DIGITAL LITERACY

Competency Level: Intermediate Digital Literacy (Version 1.0)

Nominal Durations: 140 Hours

Prepared by Digital Amhara Initiative

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Bahir Dar-Ethiopia

Acknowledgment

The Amhara Regional State President launched Digital Amhara, which is kindly funded by Big Win Philanthropy and supervised by the President's Delivery Unit.

One element of the Digital Amhara Initiative is the Intermediate Digital Literacy Competence. The Initiative would like to express its gratitude to all of its partners who helped to create this program.

The committed professionals and groups from the Amhara Innovation and Technology Bureau, Bahir Dar University, Bahir Dar Polytechnic College, and the Amhara Education Bureau deserve special attention. Their knowledge, dedication, and cooperation allowed for the creation and execution of an extensive program that enhances digital competency throughout the area.

This achievement demonstrates sincere collaboration and a common dedication to developing digital skills, encouraging creativity, and propelling educational change in the Amhara region and beyond.

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Abbreviation

2FA	Two-Factor Authentication
Apps	Applications
BMP	Bitmap Image File
CC	Creative Commons
CSV	Comma-Separated Values
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
E-learning	Electronic Learning
Email	Electronic Mail
ETL	Extract, Transform, Load
GB	Gigabyte
HDMI	High-Definition Multimedia Interface
HTTPS	Hypertext Transfer Protocol Secure
IP	Internet Protocol
LAN	Local Area Network
LMS	Learning Management System
MAC	Media Access Control
MFA	Multi-Factor Authentication
MS Paint	Microsoft Paint
MS Word	Microsoft Word
NFC	Near Field Communication
OS	Operating System
PDF	Portable Document Format
PHP	Hypertext Preprocessor
PNG	Portable Network Graphics
PSK	Pre-Shared Key
RAM	Random Access Memory

RAR	Roshal Archive
RCS	Revision Control System
RFID	Radio Frequency Identification
SDLC	Software Development Life Cycle
SSID	Service Set Identifier
SVN	Subversion
TCP	Transmission Control Protocol
USB	Universal Serial Bus
VCS	Version Control System
VGA	Video Graphics Array
VLC	VideoLAN Client
WAP	Wireless Access Point
WPA	Wi-Fi Protected Access
PCs	Personal Computers

Introduction

The Intermediate Digital Literacy Program is the second level of the Digital Amhara Initiative's three-tier digital literacy framework, following the Basic level and preceding the Advanced digital literacy. This program is designed to strengthen learners' ability to apply, analyze, and create in digital environments, building on foundational skills while preparing them for practical and professional use.

Aligned with Ethiopia's Digital Education Strategy and Implementation Plan (2023–2028), the UNESCO Global Framework of Reference on Digital Literacy Skills (Indicator 4.4.2), and the Technical Guidelines for Commissioning Digital Literacy Training Platforms for African Governments by Big Win Philanthropy, the program ensures learners acquire globally recognized and nationally relevant digital competencies.

The program develops learners' capacity to: configure and manage digital devices and productivity software; organize, convert, compress, back up, and securely manage data; communicate and collaborate responsibly online while managing their digital identity; design, create, edit, and integrate digital content in multiple formats while applying copyright principles; implement safe digital practices; analyze and troubleshoot common software, network, and application problems; and apply basic programming knowledge and explore digital career pathways.

By completing this program, learners will gain intermediate-level digital literacy competencies that enable them to participate effectively in education, employment, and entrepreneurial activities, solve real-world digital challenges, and contribute to Ethiopia's digital transformation and technology-driven development goals.

Modules Covered in the Program

The program is structured into **seven core modules**, each addressing a critical area of digital competence:

1. Devices and Software Operations
2. Information and Data Literacy
3. Communication and Collaboration
4. Digital Content Creation
5. Safety

6. Problem-Solving
7. Career-Related Competencies

Learning Objectives

By the end of this program, learners will be able to:

- **Configure and manage** digital devices and **apply** advanced features of productivity software to perform complex tasks.
- **Organize, convert, compress, back up, and secure** files using local and cloud-based systems.
- **Demonstrate** effective communication, collaboration, and responsible participation in digital spaces while **managing** personal online identity.
- **Design, create, edit, and integrate** digital content across multiple formats while **applying** copyright and licensing principles.
- **Implement** secure practices to protect accounts, data, and digital identity in online environments.
- **Analyze, diagnose, and troubleshoot** common software, network, and application issues independently.
- **Explain and apply** basic programming concepts, software development tools, and identify digital career opportunities.

Instruction

The program adopts a **competency-based, learner-centered approach,** integrating theory with practical activities to ensure that learners develop the skills and knowledge outlined in the program objectives. Each module is designed to progressively build digital competencies, from device and software management to career-related skills, allowing learners to **apply, analyze, and create** in real-world digital contexts.

Each module includes:

- **Interactive lessons** introducing key concepts, digital tools, and advanced features of productivity software.

- **Hands-on exercises and demonstrations** to practice applied skills such as file management, content creation, communication, collaboration, and problem-solving.
- **Review questions, case studies, and scenario-based activities** to assess understanding, encourage critical thinking, and connect learning to practical situations.
- **Individual and collaborative tasks** that promote digital citizenship, responsible online behavior, and teamwork in virtual environments.

Facilitators and learners are encouraged to **contextualize examples to local and professional settings,** ensuring that learning is relevant, inclusive, and directly applicable to education, employment, and entrepreneurial opportunities. Learners are expected to **actively engage, practice consistently, and apply their skills** in authentic scenarios, demonstrating mastery of intermediate digital competences such as digital content creation, safe technology use, troubleshooting, and career-related digital skills.

Certification

Upon successful completion of the program and the **final evaluation**, learners will be awarded a **Certificate of Intermediate Digital Literacy Competence**. This certification validates their ability to apply intermediate-level digital skills across education, work, and everyday life, and positions them for advanced training or entry into digital career pathways.

Note: Learners must complete the final evaluation to be awarded the Intermediate Digital Literacy Certificate, which verifies their mastery of the program's core digital skills and competencies.

Module 1: Device Management and Software Operations

Introduction

This module equips learners with essential skills to configure digital devices and manage their applications effectively. Learners will explore practical techniques, configuration, and optimization of devices to ensure a smooth and efficient digital work environment. Under session 1, working with nearby devices and their connectivity is discussed. The remaining sessions address productivity software usage. Session 2 covers advanced document formatting topics and editing in MS Word. The last lesson covers more complex spreadsheet management features, including creating graphs, using formulas, filtering and sorting data, and more data analysis topics.

Session 1: Working with nearby devices

Introduction

Dear learners, welcome to this session. In this session, you will explore working with nearby devices

The most common activity in the digital world is resource sharing. To carry out our regular tasks, devices such as printers, PCs, and smartphones must be locally connected. These sessions cover the most common local connectivity technologies, connectivity techniques, and device settings. Thus, learning the fundamentals of nearby sharing technologies and how to set them up enables students to connect nearby devices and share resources, such as files, images, and printers, with ease.

You may have connected devices nearby to share resources. But how familiar are you with local connectivity technologies and their configuration?

Learning objectives

By the end of this session, learners will be able to:

- Identify the concept of local connectivity technologies

- Identify common local connectivity technologies and connect to them
- Configure common digital devices

Contents outline

1.1 Working with nearby devices

This session includes the identification of common wired and wireless local Connectivity technologies configuration for local communication.

Working with Nearby Devices refers to connecting and interacting with physically closer devices, using local communication technologies without needing an internet connection. This feature is designed to make file transfer, communication, and device interaction fast, secure, and user-friendly in short-range environments.

Key Features

- **Local Sharing:** Files are transferred directly between devices, no internet required.
- **Cross-Device Compatibility:** Windows to Windows, Android to Android, and some cases Windows to Android.
- **Security:** Transfers are encrypted, and users must accept incoming files.
- **Ease of Use:** Simple interface in system settings or right-click share menu.
- **Multiple File Types:** Supports documents, images, videos, PDFs, and more.

Advantages

- **No Internet Required:** Works in offline environments.
- **Secure and Private:** Users control who can send or receive files.
- **Efficiency**: Quick access to shared resources.
- **Cost-saving**: Fewer devices needed (e.g., one printer for many users).
- **Collaboration**: Easier teamwork and data exchange.

Limitations

- **Distance Restriction:** Typically within 10 meters.
- **Device Compatibility:** Some older devices or OS versions may not support it.
- **File Size:** Extremely large files may take longer to transfer.
- **Battery Usage:** Can drain battery if used continuously.

1.2 Common Local Connectivity Technologies

Local connectivity can be categorized as wireless or wired connections.

1. Common Wireless Local Connectivity

Common wireless local connectivity is primarily achieved within a limited area, such as, homes or offices, providing network access without wires. Key components include access points, which broadcast the network, and devices with wireless network adapters that connect to it.

	W**IFI -** The standard for wireless local area networking. Provides high-speed internet and local area network access to devices like laptops, smartphones, TVs, and game consoles.
	**Bluetooth** – Wireless connection for sharing files, audio, and peripherals (headphones, mouse, keyboards, etc.).
	**Wi-Fi Direct-** for connecting devices directly, without needing internet or a router/access point for file transfer or streaming
	**NFC (Near Field Communication)** – Quick pairing, payments, or data exchange by tapping devices. Mostly works by using radio frequency identification (RFID)
	**AirDrop / Nearby Share**-Platform-specific sharing features for Apple and Android devices.

Table 1 Comparison of wireless local communication technologies

Technology	**Range**	**Used for**
WIFI	50 – 100M	Laptops, smartphones, TVs, and game consoles

Bluetooth	10–100 m	Audio devices, file sharing, keyboards, mice
Wi-Fi Direct	Up to 100 m	File transfer, printing, and screen mirroring
NFC	< 10 cm	Mobile payments, quick pairing, contact sharing
Airdrop/Nearby Share	Varies	Fast file sharing between phones and laptops

Table 2 Wireless Technologies and tier use

Connection Procedures for Common Technologies

I. Connecting via WIFI

- **Turn Wi-Fi on:** Go to your phone or computer's Settings → Wi-Fi (sometimes "Network & Internet").
- **Choose a network:** A list will appear—pick the one that matches your router or hotspot name (SSID).
- **Enter the password:** Type the Wi-Fi key (usually written on the router or given by the network owner).
- **Connect:** Hit "Connect" or "Join." Once it works, you'll see the Wi-Fi symbol on your status bar.

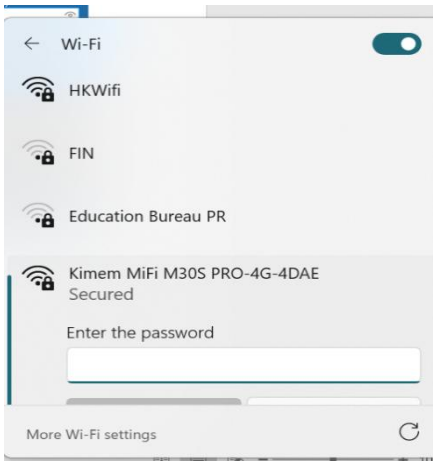


Figure 1: Connect to WIFI

II. Connect via Bluetooth

Step 1: Turn on Bluetooth

- On phones or Windows computers, go to Settings → Bluetooth and turn on**.**
- On other devices (e.g., headphones), press and hold the power or Bluetooth button to enter pairing mode**.**
- Mac: Go to Apple Menu → System Preferences → Bluetooth → turn on.

Step 2: Make Device Discoverable

- Select the device name to initiate pairing in the list of available Bluetooth devices.

Step 3: Confirm Pairing

- You may be asked to confirm a code or accept the connection.

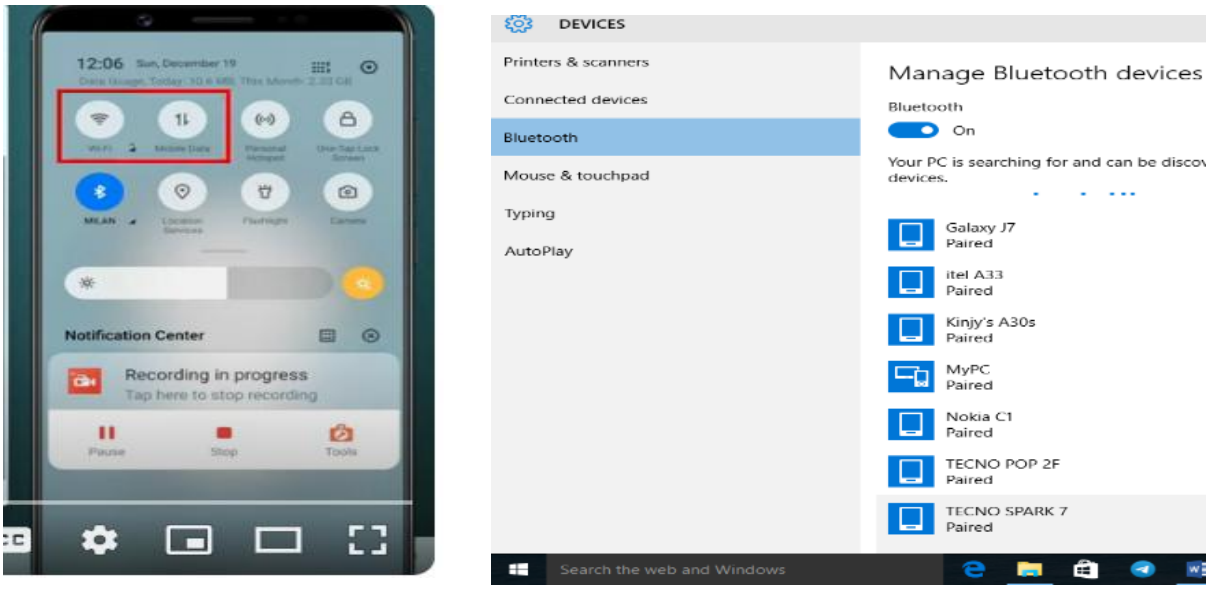


Figure 2 Bluetooth Connectivity

III. Wi-Fi Direct

Steps to Connect:

1. Enable Wi-Fi Direct in device settings (often under “Connections” or “Network”).
2. On one device, create a Wi-Fi Direct connection or search for nearby devices.
3. On the second device, accept the connection**.**
4. Use apps like File Manager or Gallery to send files.

IV. NFC (Near Field Communication)

Used for: Quick pairing, mobile payments, contact sharing, and hotel room by tapping it against a reader.

Steps to Connect:

1. Enable NFC on both devices (usually under “Connections”).
2. Tap the devices together (within 4 cm).

3. Confirm the action (e.g., file transfer or payment).
4. For NFC tags, use apps like NFC Tools to program actions.

V. Airdrop / Nearby Share

Airdrop (Apple Devices)

1. Turn on Wi-Fi and Bluetooth**.**
2. Open Control Center → enable Airdrop.
3. Choose visibility: Contacts Only or Everyone.
4. Open the file → tap Share → choose AirDrop recipient.
5. Recipient accepts the transfer.

Nearby Share (Android Devices) works with either WIFI or Bluetooth connection

1. Open the file → tap Share → select Nearby Share **(**such as Bluetooth, WhatsApp, Telegram, etc**)**.
2. Choose the nearby device and confirm.

Scenario:

Selam wants to send her project file to Dawit, but the internet is down. How she shares the file to Dawit?

She uses Nearby Device Sharing to send it wirelessly.

Steps:

1. Enable Sharing – Selam turns on *Nearby Sharing* on her laptop.
2. Activate Receiver – Dawit enables *Nearby Share* on his Android phone.
3. Send the File – Selam selects the file → chooses Share → Nearby Sharing → selects Dawit's phone.
4. Accept the Transfer – Dawit taps Accept when prompted.
5. Transfer Complete – The file is received quickly using Wi-Fi Direct.

Learning Points:

- Works without internet.
- Devices must have Bluetooth/Wi-Fi enabled and be close (within 10 meters).
- Safer and faster than using USB or email for local transfers.

2. Local Wired Device Connectivity

The second form of local connectivity, or nearby sharing technologies, is the one that uses cables. Different types of cables are used for different devices. The most common ones are:

- Personal Computer ↔ Monitor: VGA, HDMI, Display Port, or USB-C for extended displays.
- Phone ↔ Speaker: 3.5mm audio jack for direct sound output.
- Computer ↔ Printer: USB and Ethernet cable for fast and reliable printing,
- Router ↔ Switch↔ PC: Ethernet for a stable internet connection.
- Phone ↔ Laptop: USB, Type C for charging and file transfer.
- PC to PC: Ethernet for a stable internet connection.

1. 3 Digital Device Configuration

Device configuration is the process of setting up and adjusting a device's settings and features to make it work correctly. This can include devices like computers, smartphones, and network equipment. Proper device configuration ensures that devices run smoothly and meet the user's needs

Digital devices need to be configured to interact within a network and communicate effectively, regardless of their connection method. This includes:

I. Computer configuration

- IP Addressing: Static (manually set) or dynamic (assigned by a router via DHCP).
- Default Gateway: The router's address that allows devices to communicate outside
- DNS -This is the IP address of the server your computer queries to resolve names.
- Enable or disable Wi-Fi or Ethernet connections based on network type.

- Resource Sharing: Set up file sharing, network drives, and printer sharing.

Steps to configure IP for computers

1. Right-click on the Network icon on the desktop & select properties
2. Click on Change Adapter Settings
3. Right-click on the Ethernet icon & select properties
4. Select Internet protocol version 4(TCP/IP 4) & Click on properties
5. Select "obtain an IP address automatically" to assign an IP using DHCP or "Use the following IP address assigning steps" to assign an IP manually (static).

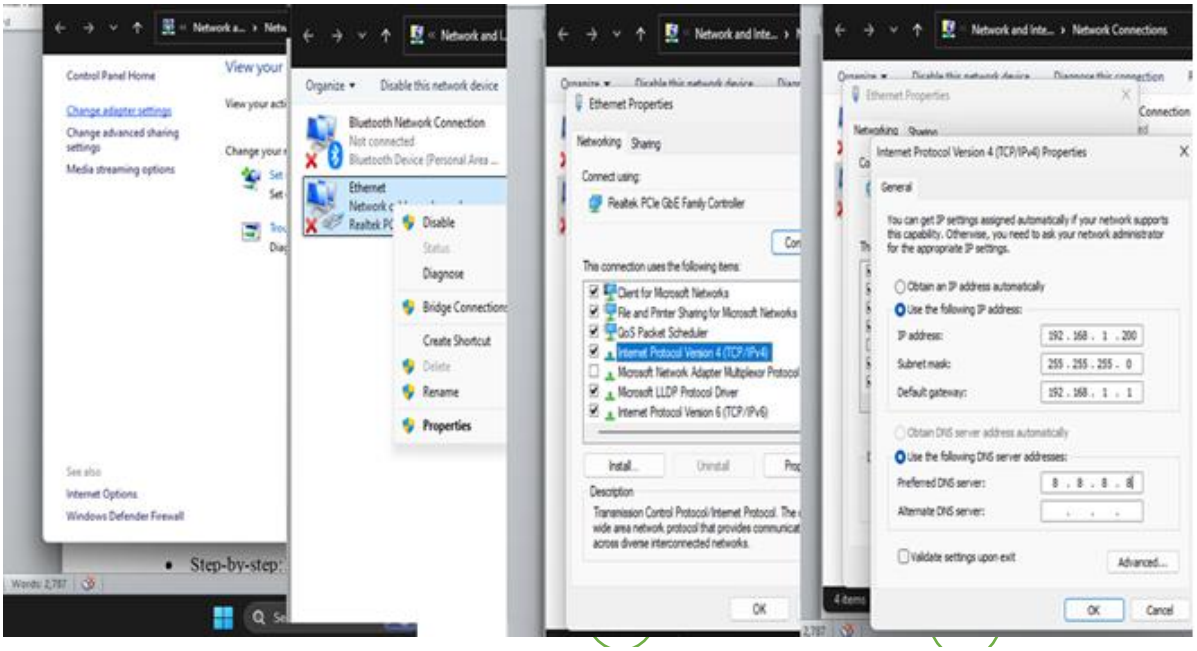


Figure 3: IP setting manually

II. Printer sharing configuration

Step-by-step printer sharing on a Windows-based PC

1. Connect your printer to the computer: Connect your printer to the PC (via USB or network cable). And add the printer to your computer if not already installed.
2. Open settings: Press Windows key + I to open *Settings* & Go to Devices → Printers & scanners.
   - Select the printer to share: Click the printer you want to share and click Manage.

- Open sharing options: Click Printer properties →Sharing tab → Check Share this printer. & Click OK
- Access the shared printer from another PC: On the other PC, open Settings → Devices → Printers & scanners → Add a printer or scanner.

    - Select the shared printer from the list & click Next and install drivers if prompted.
    - On the "Run" Windows, write the IP address of the other pc preceded with two backslashes (such as: \\192.168.1.10) and double-click the printer to set up installation.

How to Connect to a Network-Shared Printer Using an IP Address

You need to know the name of the printer and the IP address of the computer that the printer is connected to. Or the printer IP Address.

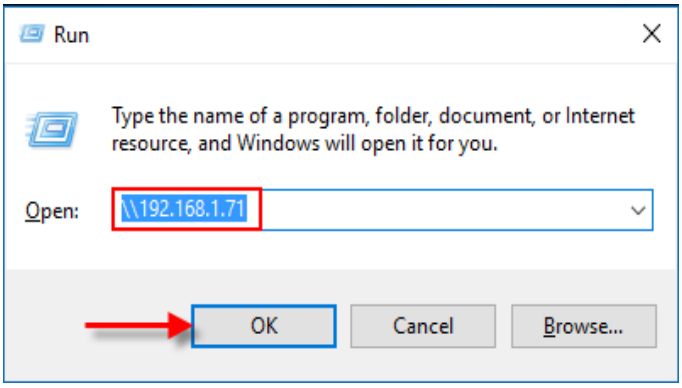


Figure 4 Run Windows with sample IP

Option 1: Connect to Printer using IP Address

Step 1: Press shortcut keys: **Win + R** to open the Run box, enter the printer's IP address.

Step 2: Click on the shared printers from the result list. Connect to that printer.

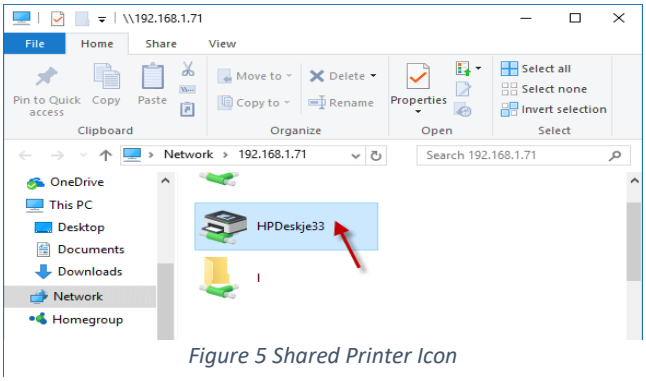


Figure 5 Shared Printer Icon

Step 3: When it prompts a dialog "Do you trust this printer?", click on install drivers.

Step 4: Complete the additional steps in the wizard, and then click Finish.

Option 2: Add a Printer using IP Address or Hostname

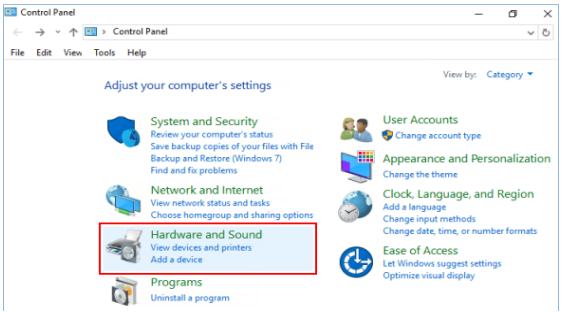


Figure 6 Start Printer share from control Panel

Step 1: Open Control Panel, click **H**ardware and Devices**,** and then click Devices and Printers.

Step 2: Click on Add a printer in the toolbar of Devices and Printers.

Step 3: If you see the printer you're looking for, click the printer you want to install. Windows will handle the installation, download drivers if needed.

Tips: If you don't see the printer you want to install, and you're sure you're properly connected to the network, click the printer that I want isn't listed link. Go on to Step 4.

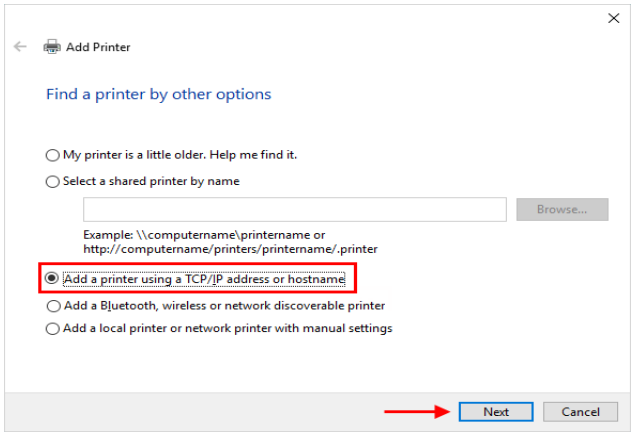


Figure 7 Printer Selection Option

Step 4: Select Add a printer using a TCP/IP address or hostname and then click Next.

Step 5: Keep Device type to Autodetect and fill in the Hostname or IP address. Ensure that Query the printer and automatically select the driver to use is ticked, click Next.

Step 6: Wait for the detection TCP/IP port. When it jumped to install the printer driver process, select the manufacturer of the printer in the left pane, select the shared printer in the right pane, and then click Next.

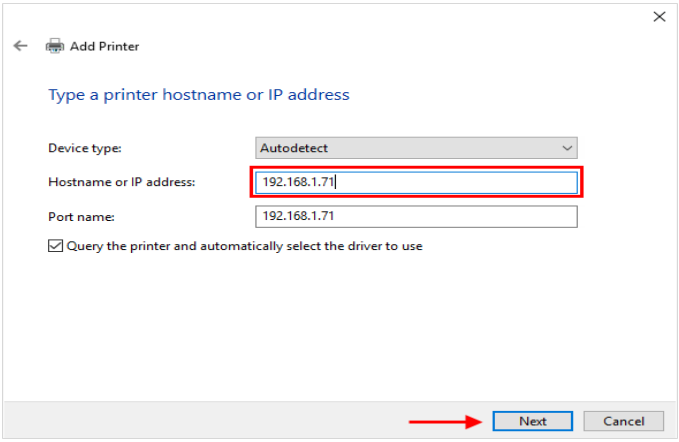


Figure 8 Adding Other computer IP address

Step 7: Type a new name for the printer if the default name doesn't suit you, and then click Next.

Step 8: Finally, choose whether to set the new printer as the default and then click the Finish button.

III. Wireless Access Point (WAP) Configuration:

A WAP stands for Wireless Access Point, which is a device that allows Wi-Fi devices (like phones, laptops, and tablets) to connect to a wired network. WAP can be configured to create and manage connections and security issues. Some of the settings to be configured include:

- SSID (Service Set Identifier) Setup: Network name for wireless devices to connect to.
- Security Protocols: Wi-Fi Protected Access (WPA/WPA2) settings to secure the wireless network.
- Broadcast ID - helps you to hide your WIFI name from the users. If the broadcast is hidden, you have to add your network to the device you are using.
- MAC – Address Filtering – this configuration helps you either block or allow devices with their MAC addresses.
- Concurrent Connection Management: Limit bandwidth to prevent network congestion.

Figure 9: Access point

Steps to configure an Access Point:

1. Connect the WAP to your computer with Ethernet cable or via wireless
2. Open your web browser, and type WAP's IP address (eg, 192.168.0.1) in the address bar.
    - If you're using a new WAP, it might have a default IP address. Check documentation for your specific model (e.g., 192.168.1.254 for some Cisco WAPs). Or the back side of the device

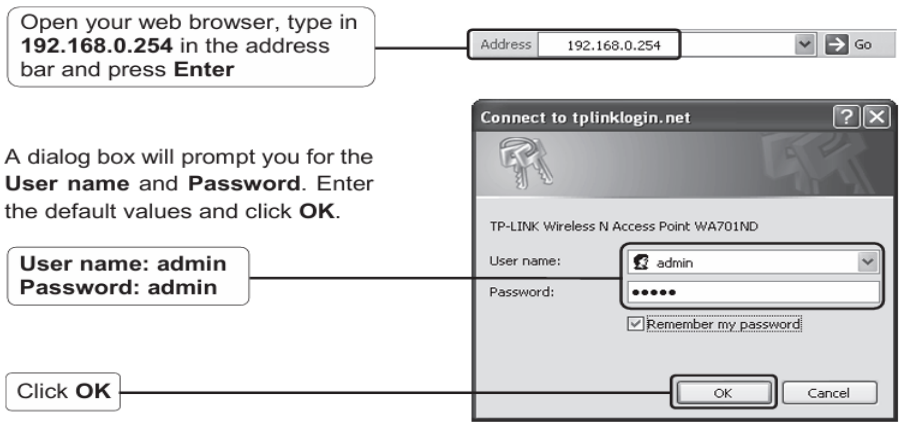


Figure 10: Wifi login

- You might log in with default credentials (e.g., username "admin" and password "admin"). Or check the backside of the device for more details.

3. Configure Wireless Settings:

   a. Go to the wireless settings and configure the SSID (network name).
   b. Choose a security protocol (e.g., WPA2) and set a strong password
   c. Create a name that is easy to remember
   d. Create the most secure password (>=8, Mixed characters and numbers as well as WPA/WPA2-PSK encryption.

Figure 11 : Security protocol choosing

4. Configure IP Address (if not using DHCP):

If you're using a static IP, enter the desired IP address, subnet mask, and the default gateway.

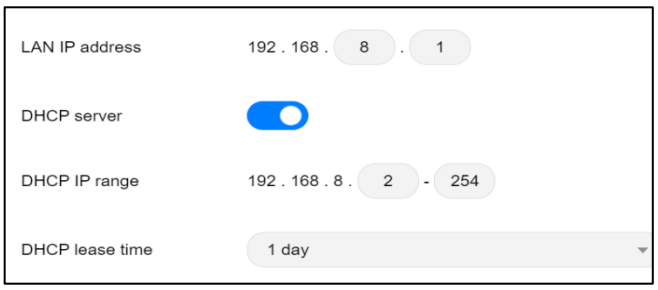


Figure 12: IP configure

If you're using DHCP WAP is configured to obtain an IP address automatically.

Summary

Effective configuration of digital devices within a network ensures optimal device communication, resource management, resource sharing, and security. By properly setting up each device and managing its interactions, networks can function efficiently and securely, enhancing productivity and reducing costs. In this session, you learned about the basic configuration of nearby devices, how to connect them, and how to configure them in your local working environments.

Review Questions

Reflective question: Match the correct technology to the question:

1. Works within less than 10 cm and is used for mobile payments.	A. Bluetooth
2. Has a range of up to 10–100 m and is common for audio devices.	B. Wi-Fi Direct
3. Allows fast file sharing between phones and laptops.	C. NFC
4. Used for printing and screen mirroring with a range of up to 100 m.	D. Air Drop / Nearby Share
5. Connects the laptop to the Monitor.	E. Laptop ↔ Monitor: HDMI
6. Connects the computer to the printer.	F. Computer ↔ Printer: USB

Multiple Choice (5 Questions)

1. Which port is most commonly used today to connect a PC to a modern monitor?
    A. VGA
    B. HDMI
    C. PS/2
    D. Serial
2. What information is usually required to connect a device to a Wi-Fi network?
    A. IP address and MAC address

B. Network name (SSID) and password
C. Device serial number
D. Operating system version

3. Which connector is an older analog standard for connecting monitors?
   A. HDMI
   B. DisplayPort
   C. VGA
   D. USB-C
4. What is the purpose of the initial setup wizard on a new device?
   A. To install games
   B. To configure basic settings like language, accounts, and Wi-Fi
   C. To test device speed
   D. To check for viruses
5. What does configuring power management settings on a device mainly help with?
   A. Improving battery life and energy efficiency
   B. Increasing internet speed
   C. Reducing storage space
   D. Enhancing screen resolution

True / False (5 Questions)

6. DisplayPort and HDMI can both carry video and audio signals. (True / False)
7. Troubleshooting usually starts by checking simple things like cables, power, and connections. (True / False)
8. USB-C is only used for charging and cannot transmit video or data. (True / False)
9. Device drivers are small programs that allow the operating system to communicate with hardware. (True / False)
10. Troubleshooting often begins by checking simple issues like power, cables, and connections. (True / False)

Session 2 Advanced Document Formatting (Word Processing)

Introduction

Dear learners, welcome to this session. In this session, you will explore Advanced Document Formatting (Word Processing)

Microsoft Word has many features to support users in editing, formatting, and managing their documents. In the previous Competency, the basic features of MS-Word were discussed in detail. In this session, advanced features of MS Word, such as formatting styles and themes, formatting page numbers, inserting references, tables, and figures, as well as mail merging and reviewing documents, will be discussed.

Learning Objective:

By the end of this session, learners will be able to:

- Apply Formatting styles and themes
- Practice formatting page numbers, tables, and inserting Objects
- Practice how to insert different references
- Use mail merge and review documents.

Lesson Outline:

2.1 Use Styles & Themes
2.2 Formatting Page Numbers, Tables, and Objects
2.3 Insert References
2.4 Mail Merge and Reviewing Documents
2.5 MS Word Security and Protections

2.1 Use Styles & Themes

The intermediate session of word processing is a continuation of the basic level. At this moment, it is believed that you can work on basic word formatting. The home and insert tabs were discussed

under the basic skill of digital literacy. Styles ensure consistency in headings, body text, captions, etc. Themes apply a uniform color, font, and effects design to the entire document.

I. Modify your styles in Microsoft Word

To change the style, go to the Home tab in Microsoft Word, locate the Styles group, and then right-click on the style you want to change in the Styles gallery. From the menu, select Modify, make your desired formatting changes in the dialog box, and then click OK.

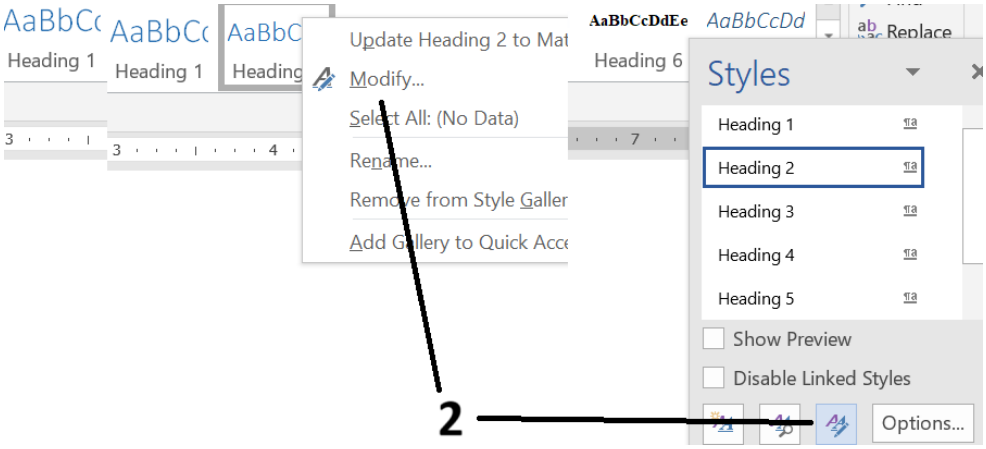


Figure 13: Modify MS Word Styles

II. Modify your theme in Microsoft Word

MS Word has many built-in themes. You can go to the design tab and select the one you choose, or customize it if you want another one. Instead of the default theme, you can customize your theme according to your interests. To do this, go to the Design tab and select from the built-in Themes to apply a new color scheme, fonts, and effects.

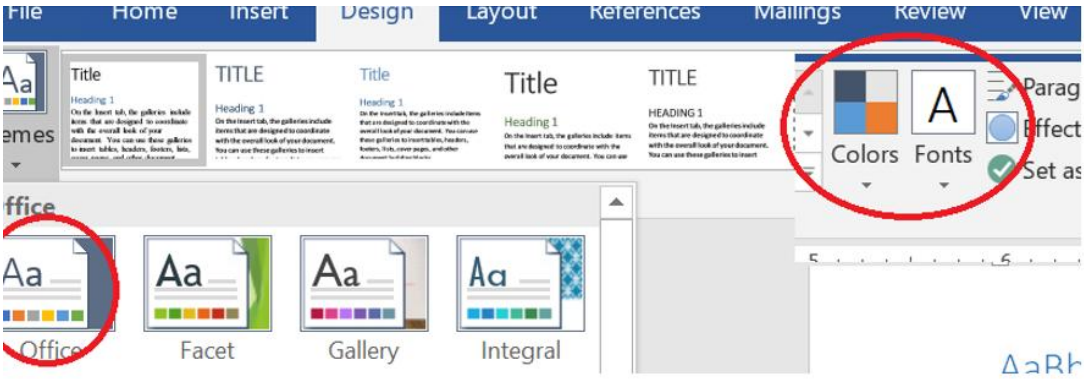


Figure 14: Modify MS Word Themes

Note: Hover the mouse over the selections in the *Themes Gallery* to preview how each *theme* will look when applied to your document.

2.2Formatting Page Numbers, Tables, and Objects

I. Formatting Page Number

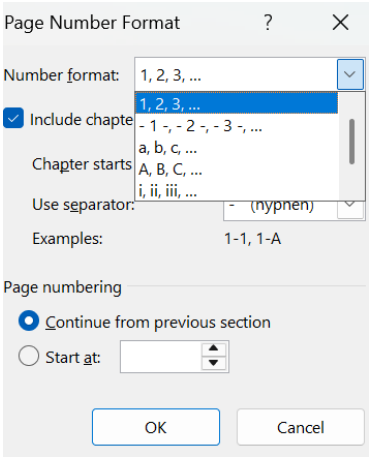


Figure 15 Formatting Page Numbers

Formatting page numbers is used to enhance reader navigation, improve document organization, and ensure a professional presentation of the document. To format page numbers in MS Word:

Insert them via the Insert tab → then select Page Number → Format Page Numbers to choose a different number format (like Roman numerals, Arabic numbers, or alphabets) or start at, to set a starting number for a section.

To skip the first page, use the Different First Page option in the Header & Footer tools.

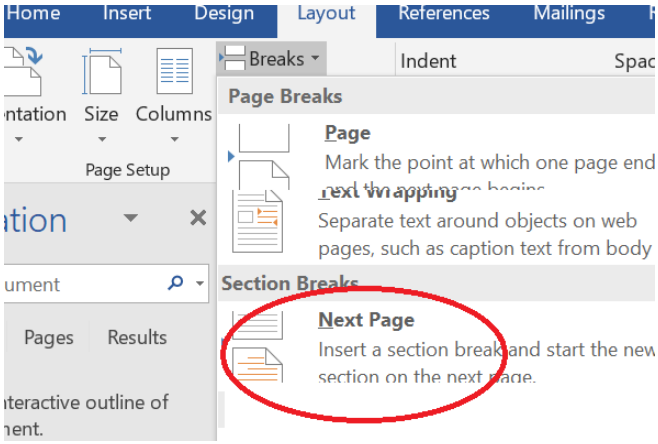


Figure 16 Section Breaks

To apply different page number formats to different document parts, such as preliminary pages of research roman numbers (I, ii,...) and your main text section using Arabic numbers (1,2,3,..), use Section Breaks and apply formatting independently to each section. In the design tab, click breaks → click on Next-Page to make a section break.

II. Tables Formatting

To format a table in Word, insert a table from the Insert tab, then select the table and go to the Table Design tab on the Ribbon to apply preset Table Styles. You can further customize the look by adjusting Table Style Options to change row and column formatting, or manually change shading, borders, and alignment using options on the Design and Layout tabs. Or right-click and see the table properties.

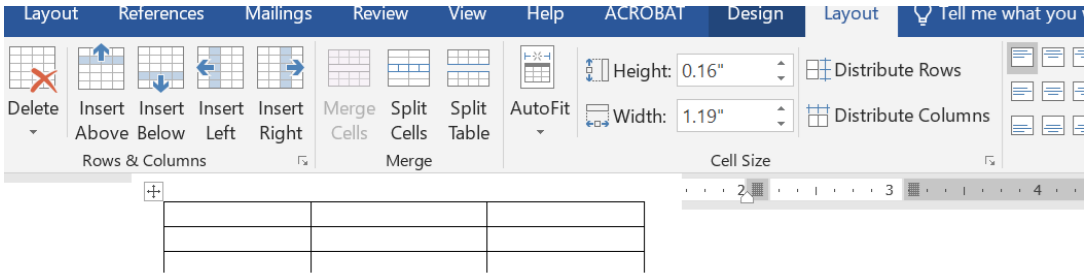


Figure 17 Table Layout View

III. Inserting objects and Mathematical Questions

to embed or link data and graphics from other applications (like Excel or PowerPoint), add non-text elements such as shapes, WordArt, or clip art, or organize complex drawings into a single unit for easier manipulation. This helps to organize and present information more clearly and effectively, creating a visually appealing layout. In the insert tab, click Insert Objects and choose the object from the pop-up window.

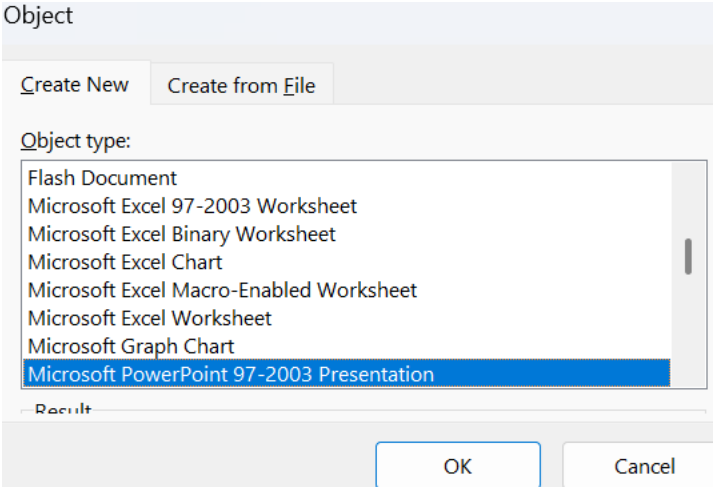


Figure 18Insert Objects Window

Besides inserting objects, the inserted equation helps to add mathematical questions that cannot be found from a traditional keyboard, such as: $\frac{-b\pm\sqrt{b^2-4ac}}{2a}$

IV. Inserting page backgrounds

To add a background in Microsoft Word, go to the Design tab, then select Page Color. You can choose a solid color, a gradient, a texture, a pattern, or a picture from the Fill Effects options. For a background image, select Fill Effects > Picture > Select Picture to browse and insert your desired image file.

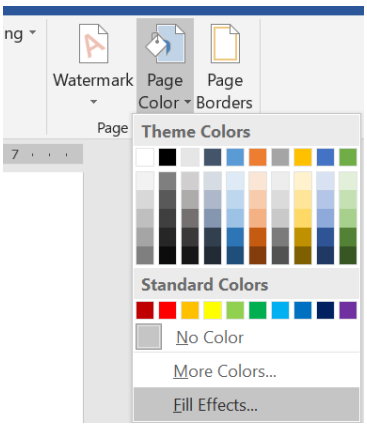


Figure 19 inserting Page Backgrounds

V. Adding Columns

Columns can enhance readability, particularly in specific types of documents, such as newspaper articles, newsletters, and flyers. Word also allows you to adjust your columns by adding column breaks. To add a column in MS Word:

Select the text to be columnized (Like the above text divided into three columns), go to the Layout tab on the ribbon, select Columns, and choose the desired number from the dropdown menu. Alternatively, for more control, select More Columns to open a dialog box for adjusting width, spacing, and adding lines between columns.

2.3 Insert References

Table of Contents: This group includes commands to create and manage a Table of Contents for your document, automatically pulling in headings and corresponding page numbers. To insert the table of contents, first arrange your titles based on the level of headings.

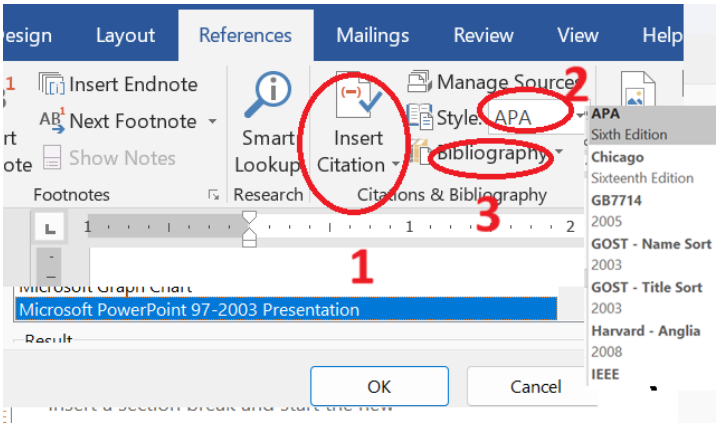


Figure 20 Insert Citations

1. **Citations & Bibliography:** This is where you add, manage, and format sources for your in-text citations and the final bibliography. To insert a reference in Microsoft Word, place your cursor where you want the citation, navigate to the References tab:
2. Click Insert Citation, and then select Add New Source to enter the details of the source type (like book or website) or choose from your existing list.
3. On the pop-up window, fill all necessary information such as Author, Title, Publisher, Date, and pages, etc.
4. After adding the citation, click the style you want the reference to be generated. The default format selected is APA.
5. After adding the citation, click the Bibliography button on the References tab to insert an automatically generated bibliography at your cursor's location.

A. **Footnotes and Endnotes**: Use this section to insert and manage footnotes and endnotes, which provide supplementary information or definitions without cluttering the main text.

B. **Captions**: Use these commands to insert captions for figures, tables, and other media within your document, and to create a Table of Figures or Table of Tables.

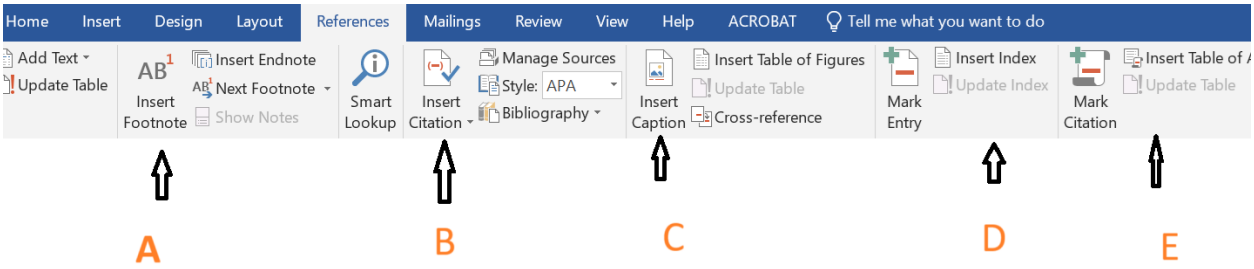


Figure 21: Inserting References

C. **Index**: This group allows you to create an index, which is a list of key terms or topics found in your document and the pages where they appear.

2.3 Mail Merge and Reviewing Documents

I. Mail Merge

Mail merge is used to personalize mass communications by automatically combining a main document with a data source to create multiple unique documents for each recipient, thereby saving time and reducing manual errors in tasks such as sending personalized letters, labels, and emails.

How it works:

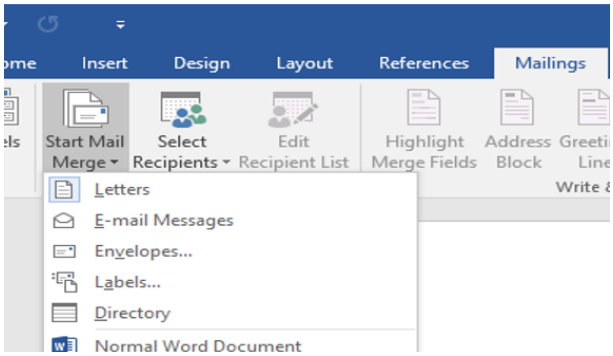


Figure 22 Mail Merge

- **Main Document:** You create a template document (like a letter or email) with fixed, boilerplate text and "merge fields" (placeholders for personalized information).
- **Data Source:** You provide a separate data source, such as a spreadsheet, a database, or a list, containing individual recipient details like names, addresses, and other relevant information. The data source is in the format (e.g., "FirstName," "LastName," "Email").

- **Preview Your Results:** Click the Preview Results button on the Mailings tab. Scroll through the records to ensure the personalized information appears correctly.
- **Finish and Merge:** Click the Finish & Merge button. Choose to Edit Individual Documents (to create a new document with all the merged records), Print Documents, or Send Email Messages, depending on your task.

II. Review Document

The Review tab in Microsoft Word provides a collection of tools for proofing documents, collaborating with others, and managing changes and feedback. Some of the key features are presented below:

A. Proofing and Language Tools

- Spelling & Grammar: Checks your document for errors in spelling and grammar.
- Thesaurus: Helps find synonyms and related words.
- Word Count: Displays the number of words, characters, and other statistics for your document.
- Language: Allows you to translate selected text or the entire document, or set the proofing language.
- Accessibility Checker: Identifies potential issues for people with disabilities to make your document more accessible.

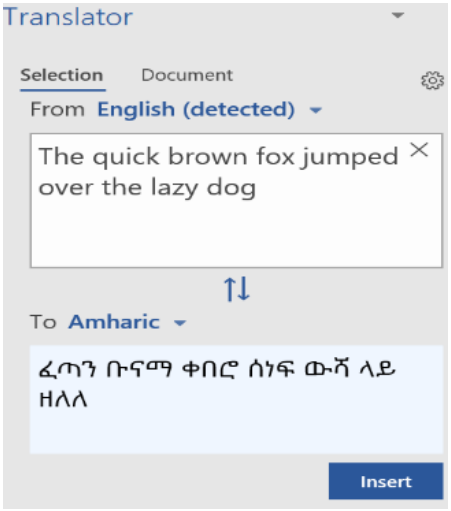


Figure 23Language Translation

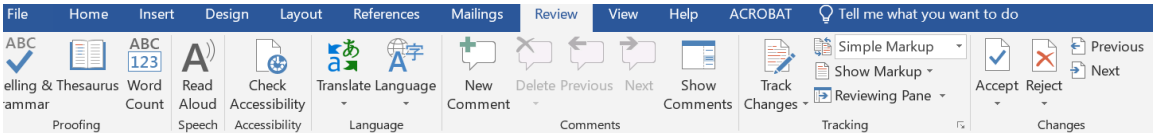


Figure 24 Review Document tab

- Comments: Let's you add notes and feedback directly into the document without altering the main text.
- Track Changes: Records every modification made to a document, showing who made the change and when.
- Accept and Reject Changes: Allows you to review suggested changes and choose to incorporate or discard them.

- Compare: Shows the differences between two versions of a document side-by-side.
- Combine Revisions: Merges changes from multiple authors into a single document**.**

B. Protect: Restricts editing or formatting to specific parts of the document or sets password protection. **Adding Dictionary**

We add a word to the Microsoft Word dictionary to prevent it from being flagged as a spelling error and to add it to the program's known vocabulary; for example, “Bahirdar” is not known by the dictionary. Therefore, add this word to the dictionary. To add a custom dictionary in Microsoft Word:

- Go to File > Options > Proofing and click the Custom Dictionaries... button to add, edit, or create new dictionaries.

You can also add words by right-clicking a word flagged as misspelled and selecting Add to Dictionary from the context menu. If you're on a Mac, navigate to Word > Preferences and then to Spelling & Grammar under Authoring and Proofing Tools.

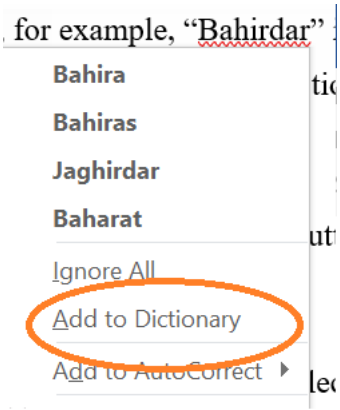


Figure 25 Adding to Dictionary

2.5 MS Word Security and Protections

Microsoft Word offers several ways to protect your documents, each designed for a different purpose, from preventing others from opening a file to only allowing specific types of changes.

Protection Type	Primary Purpose	Key Limitations & Considerations
Encrypt with Password	Prevent opening of the document	• Password is case-sensitive, max 15 characters • Microsoft cannot recover a lost password

Protection Type	Primary Purpose	Key Limitations & Considerations
Restrict Editing	Control how the document is modified	• Can limit to comments, tracked changes, or filling forms • Can specify editable sections for specific users
Always Open Read-Only	Recommend read-only access	• Users can choose to enable editing when prompted
Mark as Final	Declare the document as a completed version	• Not a security feature; easily reversed • Disables typing and editing commands
Add a Digital Signature	Verify authenticity and integrity	• Requires a digital certificate or signing provider

Which protection is appropriate for you? Your choice should depend on what you are trying to achieve:

- **For maximum confidentiality**: Use **Encrypt with Password** to prevent anyone without the password from even opening the file.
- **For collaborative control**: Use **Restrict Editing** if you need others to add comments only, fill in forms, or edit specific sections.
- **For final version distribution**: Use **Mark as Final** to gently discourage editing and let readers know they are viewing a final version. Remember, this is not a security lock.

Important Security Considerations

It's crucial to understand the limitations of Word's native protection:

- **"Restrict Editing" is not foolproof**: The read-only protection can often be bypassed by saving the document in a different format (like PDF) or by using a different text editor.

- **Passwords cannot be recovered**: If you forget a password you set for encryption or editing restrictions, Microsoft offers no way to retrieve it. It is critical to keep a copy of your passwords in a secure place.

The above session helps you choose the right protection for your document.

Practical Exercise

Open Microsoft Word and perform the following activities on the document you created:

Styles and Table of Contents

1. Write a short document with a title and three headings.
2. Apply the Heading 1 style to your main headings.
3. Insert an automatic Table of Contents at the beginning of the document.
4. Change one of the headings and update the Table of Contents to reflect the change.

Tables and References

1. Insert a Table with 4 columns and 5 rows.
2. Merge the cells in the first row to create a single header.
3. Apply a Table Style (e.g., Grid Table 4 - Accent 1).
4. Sort the data in one of the columns alphabetically.
5. Add a Footnote somewhere in the text to explain a term.

Mail Merge

1.Create a simple data source in Excel with three columns: Name, Address, and Product.
2.In Word, write a short letter with placeholders for the name, address, and product.
3.Use the Mail Merge wizard to link your Excel data source to the letter.
4.Complete the merge and preview the results for each recipient.

Collaborative Review (Track Changes and Comments)

1. Turn on Track Changes.

2. Delete a sentence and add a new one. Observe how the changes are marked.
3. Insert a Comment on a specific paragraph with the text: "Please verify this information."
4. Accept the deletion you made and reject the addition you made.
5. Turn off Track Changes.

Advanced Layout and Formatting

1. Divide the document into three Sections.
2. Set the first section to have Two Columns.
3. Add a Watermark that says "DRAFT" in the background.
4. Apply a different Page Border to each section.
5. Use the Format Painter to copy the formatting from one heading to another.

Mastering Styles and Automation

1. Create a new Custom Style called "Important Quote" with specific formatting (e.g., Italic, Indent, background color).
2. Apply this new style to a paragraph.
3. Insert a Cross-reference that refers to a heading in your document.
4. Create a Quick Part from your company's name and address and insert it into the document.

Restrict and protect

1. For the document you have created, add a restriction that it cannot be edited
2. In addition, add a password for your document so that others cannot open it easily

Summary:

Advanced formatting ensures that documents are not just functional but visually professional. It makes information easy to navigate, especially in long documents. At this point, the advanced features of MS Word, such as changing the styles and themes, formatting the page numbers, adding references, and generating a list of references, as well as the skills of how to review your documents and send documents via mail merge, were discussed in the sessions. Besides these,

working with security and document protection was discussed under this topic. Therefore, you have better skills in working with MS Word.

Review Question:

Multiple questions

1. What feature in MS Word helps you automatically correct common spelling mistakes?
   A. AutoCorrect
   B. Thesaurus
   C. Word Count
   D. Grammar Check
2. What is MS Word Mail Merge?
   A. A feature used to create mailing labels, envelopes, and form letters
   B. A feature to combine multiple Word documents into one
   C. A feature that merges different file formats into one
   D. A feature used to send personalized emails to a group
3. A document theme consists of three main components—theme colors, theme fonts, and theme effects.
   A. True
   B. False
4. How do you use the Compare Documents feature in Word?
   A. Compare changes between two versions of a document
   B. Remove all formatting
   C. Edit text automatically
   D. View multiple documents side-by-side
5. What is the “Thesaurus” feature in Word used for?
   A. Highlight text automatically
   B. Change document themes
   C. Provide synonyms and antonyms for words
   D. Insert text boxes

Session 3. Spreadsheet Proficiency (Microsoft Excel)

Introduction

Dear learners, welcome to this session. In this session, you will explore Spreadsheet Proficiency (Microsoft Excel)

Spreadsheet proficiency involves using Excel to manage, analyze, and visualize data using formulas, formatting, and charts.

Learning objective

To enable learners to perform efficient data management, analysis, and presentation in Excel

- Know charts and Graphs
- Insert formula and functions
- Apply data analysis tools

Content Outline:

3.1 Charts and graphs
3.2 Using Formulas & Functions
3.3 Advanced Data Sorting & Filtering
3.4 Data Analysis

3.1 Charts & Graphs

Excel charts are used to present large, complex datasets in a graphical format, making them easier to understand, visualize relationships, and quickly identify trends and comparisons. Charts help to convert raw numbers into visual elements like bars, lines, or slices. Excel offers a variety of chart types to suit different data visualization needs, helping you to convey information effectively.

	A	B	C	D	E
1	**Test1**	**Test2**	**Mid**	**Final**	**Total**
2	7	8	24	44	83
3	6	9	29	37	81
4	8	6	25	47	86
5	9	10	13	33	65

Figure 26 Excel Simple Table

Some Key Reasons to Use Excel Charts:

- Simplify Large Datasets: Charts transform large amounts of data into simple.
- Identify Trends and Patterns: Visualizing data helps in quickly spotting patterns.
- Show Relationships: Charts help to reveal correlations or comparisons.
- Enhance Communication: charts are easier for presentations or reports.
- Aid Understanding: Charts help to get the meaning behind the numbers for your audience.

Variety of Chart Types: Excel supports numerous chart types, such as column charts, line charts, pie charts, and combination charts, allowing you to choose the best format for your data.

Excel makes it simple to create charts by selecting your data and inserting the desired chart type from the menu. You can easily modify and customize charts after they are created, adjusting chart types, colors, and elements to ensure your message is conveyed effectively.

Steps to Create a Chart

1. Select Your Data: Highlight the range of cells containing the data you want to visualize.
2. Go to the Insert Tab: On the Excel ribbon, click the Insert tab. Choose a Chart Type:
   Recommended Charts: Click Recommended Charts to let Excel suggest suitable chart types based title, chart inserting on your data.
3. Specific Chart Type: Select a specific chart type (like Line, Pie, or Column) from the Charts section of the ribbon.

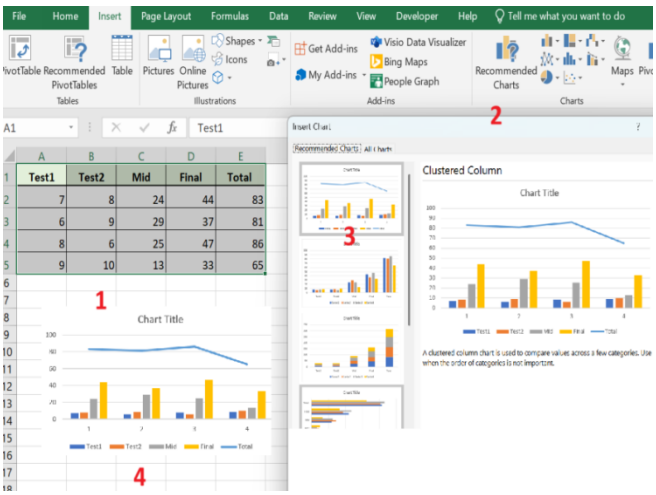


Figure 27 Excel Charts

4. Insert the Chart: Select the desired chart from the options, and Excel will insert it directly onto your spreadsheet.

Modifying and Customizing Your Chart

1. Select the Chart: Click on the chart to activate the chart tools. Or double-click the chart
2. Access Chart Tools: When the chart is selected, the Chart Design and Chart Format tabs will appear on the ribbon.
3. Add or Edit Elements: Add Chart Element: On the Chart Design tab, click Add Chart Element to add or modify elements like titles, axis labels, and data labels.

   Quick Layout: Use the Quick Layout command to apply predefined sets of chart elements.
4. Change Chart Appearance: Chart Style: Use the Chart Styles group on the Chart Design tab to change the overall look of your chart.

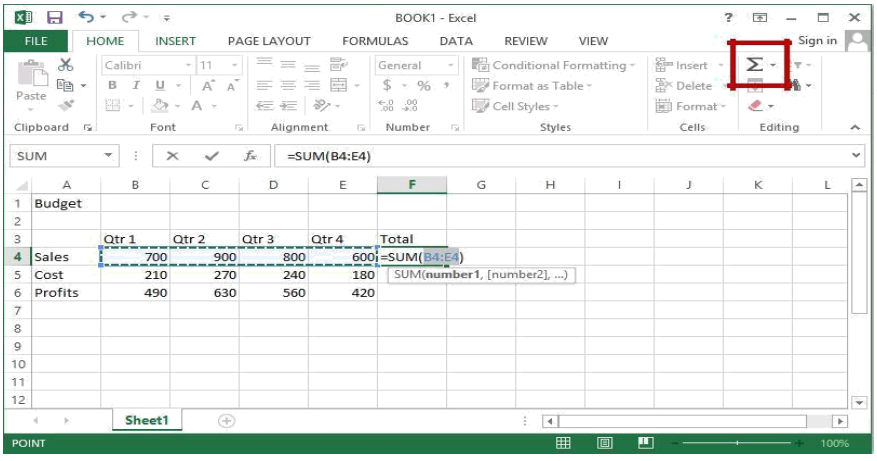
   Change Chart Type: Click Change Chart Type on the Chart Design tab to switch to a different chart format.
5. Adjust Data View: Click the Switch Row/Column or Select Data buttons to change how your data is displayed in the chart.

3.2 Using Formulas & Functions:

Formula Bar: A place where you can enter or view formulas or text

Creating Formulas: A formula starts with an equal sign (=). It is possible to create formulas in Excel using the actual values, such as “4000*.4”, but it is more beneficial to refer to the cell address in the formula, for example, “D1*.4”.

*The most common formulas in Excel are SUM, AVERAGE, and COUNT functions



Nested If

A nested IF in Excel involves placing one IF function inside another's argument to test multiple conditions and return different results. For example, if we wanted to insert students' status based on their average marks from Excellent to Fair, we would write the nested if statement on H2 and drag it below as follows.

=IF(F2>90,"Excelent", IF(F2>85,"V. Good", IF(F2>80,"Good","Fair")))

	A	B	C	D	E	F	G	H
1	**Name**	Amharic	English	Maths	Total Marks	Average	Rank	**Status**
2	Barkot	80	83	86	249	83.0	3	Good
3	Amen	89	91	92	272	90.7	1	Excelent
4	Almaz	89	86	83	258	86.0	2	V.Good
5	Fatuma	85	72	81	238	79.3	4	Fair

Figure 29 Excel - Nested if Table

3.3 Data Sorting, Filtering, and Formatting

A. Sort:

Sorting rearranges rows and columns of data based on specific criteria, such as alphabetical, numerical, or chronological order, or even by custom lists, colors, or font styles. To sort data in Excel, select a cell within your data, go to the Data tab, and click the Sort button.

If you select cells, Excel will think you only want to sort or filter by that selection, but if your dataset has no blank rows and no blank columns Excel will see the whole range as one dataset.

Ascending sorts

	A	B	C
1	Apples	123	1/1/1971
2	Bananas	456	2/2/1982
3	Cherries	789	3/3/1993

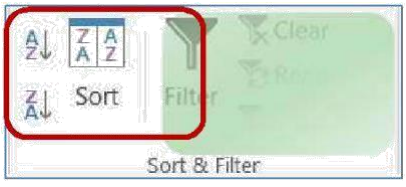


Figure 30 sort ascending and Descending

1) Text: Sort alphabetically from A to Z
2) Numbers: Sort from the smallest to the largest number
3) Dates: Sorts from the newest date to the oldest date

Descending Sorts

	A	B	C
1	Cherries	789	3/3/1993
2	Bananas	456	2/2/1982
3	Apples	123	1/1/1971

1. Text: Sort alphabetically from Z to A
2. Numbers: Sort from largest number to smallest number
3. Dates: Sort from the oldest date to the newest date

B. Filters:

Show or hide specific data within a sheet based on defined criteria, making it easier to work with subsets of data. To apply a filter in Excel, first, ensure your data has a header row, then select any cell within the data range and navigate to Data > Filter to add dropdown arrows to your headers. Next, click the desired header's dropdown arrow to open the filter menu, where you can uncheck "Select All" and check only the specific values you want to view

	A	B	C	D	E	F	G
1	Name	Amhari	English	Maths	Total Mar	Average	Rank
2	Barkot	80	83	86	249	83.0	3
3	Amen	87	81	92	260	86.7	1
4	Almaz	80	86	89	255	85.0	2
5	Fatuma	83	65	84	232	77.3	4

Figure 32 Excel Filter Table

C. Conditional Formatting:

Apply unique formatting (like color, icons, or data bars) to cells that meet specific, user-defined criteria. Such as students who scored above 85. Select the cells and in the Home Tab → conditional formatting → highlight → greater than "85".

	A	B	C	D
1	Name	Amharic	English	Maths
2	Barkot	80	83	86
3	Amen	87	81	92
4	Almaz	80	86	89
5	Fatuma	83	65	84

Figure 33 Excel Conditional Formatting

3.4 Further Data Analysis

A. Pivot Tables:

A pivot table is an interactive tool for summarizing and analyzing large datasets, allowing you to group, count, average, and otherwise aggregate your data to reveal patterns and trends. Pivot tables are a powerful data analysis tool available in spreadsheet programs like Microsoft Excel and Google Sheets.

How It Works

1. Select Your Data: Start with your raw data, which should be organized in a tabular format with a single header row.
2. Insert a Pivot Table: In Excel, go to the "Insert" tab and select "PivotTable".
3. Arrange Fields: A field list will appear. You can drag your data fields into the four areas of the pivot table:
   - Rows: Fields placed here define the rows in your summary.
   - Columns: Fields here define the columns.
   - Values: Fields placed here are typically the numerical data that will be aggregated (e.g., summed or counted).
   - Filters: Fields here allow you to narrow down the data shown in the pivot table.
4. Analyze and Report: Your pivot table will update dynamically, allowing you to analyze relationships, spot trends, and present concise reports.

Common Uses: Summarizing sales data by region and product, Identifying outliers in large datasets, Comparing metrics across different categories, and Creating interactive dashboards for reporting.

B. Power Query:

Connect to external data sources, clean, transform, and load data directly into Excel, streamlining data preparation.

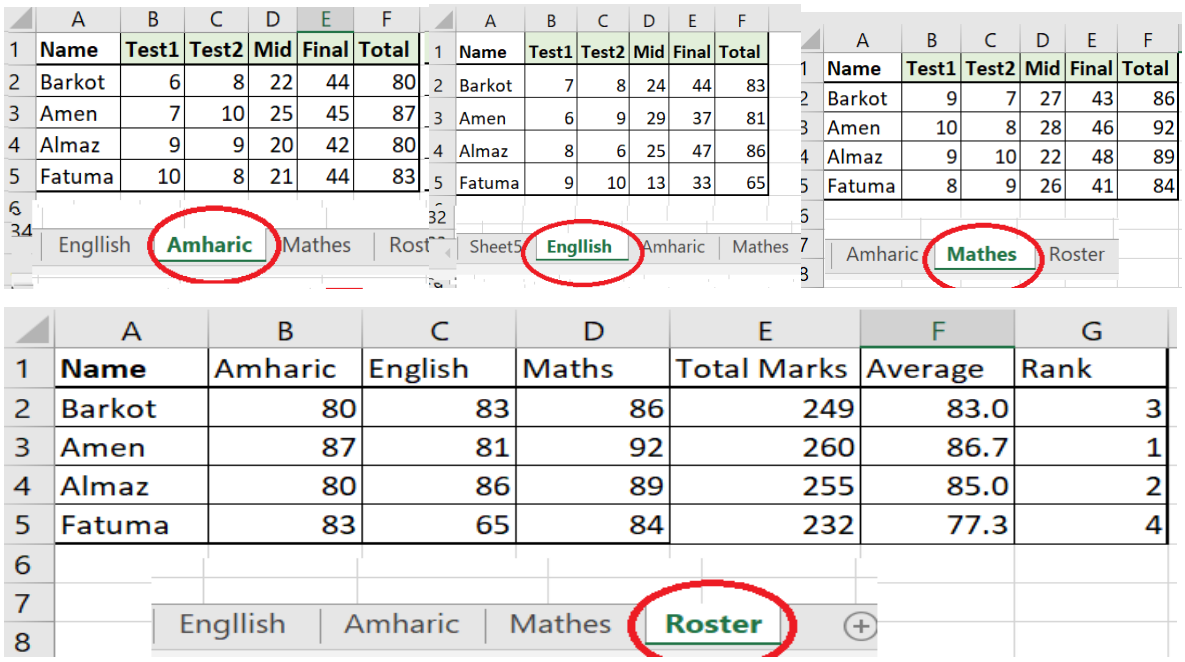
How Power Query Works: Power Query follows a simple, automated process known as ETL (Extract, Transform, Load):

1. Extract: Connect to a data source, such as a web page, a database, a folder of files, or another Excel workbook.
2. Transform: Clean and reshape the data within the Power Query Editor. This involves steps like removing columns, filtering rows, changing data types, replacing values, and splitting columns.
3. Load: Load the transformed data into an Excel table for further analysis, charting, or reporting.

Example:

Method 1: Link to a Specific Cell (Static Link) This method creates a static link to a particular cell. The following example shows how to do a Roster from three subjects.

1. Open both workbooks/sheets: – the source workbook (with the data) and the destination workbook (where you want the data).
2. Select the destination cell in your new workbook where the linked data should appear.
3. Type an equal sign: (=) to start a new formula.
4. Switch to the source workbook.
5. Click the cell you want to link to.
6. Press Enter. Excel will automatically populate the formula in the source workbook's name, worksheet, and cell.
7. Use the summation formula for total marks, the average formula, and the rank formula from the formula function to summarize the roster.



Name	Test1	Test2	Mid	Final	Total
Barkot	6	8	22	44	80
Amen	7	10	25	45	87
Almaz	9	9	20	42	80
Fatuma	10	8	21	44	83

Engllish | Amharic | Mathes | Rost

Name	Test1	Test2	Mid	Final	Total
Barkot	7	8	24	44	83
Amen	6	9	29	37	81
Almaz	8	6	25	47	86
Fatuma	9	10	13	33	65

Sheet5 | Engllish | Amharic | Mathes

Name	Test1	Test2	Mid	Final	Total
Barkot	9	7	27	43	86
Amen	10	8	28	46	92
Almaz	9	10	22	48	89
Fatuma	8	9	26	41	84

Amharic | Mathes | Roster

Name	Amharic	English	Maths	Total Marks	Average	Rank
Barkot	80	83	86	249	83.0	3
Amen	87	81	92	260	86.7	1
Almaz	80	86	89	255	85.0	2
Fatuma	83	65	84	232	77.3	4

Engllish | Amharic | Mathes | Roster

Figure 34 Link Different Sheets Value to one

Practical Exercise

Assume you are requested to work on the Inventory Management and Reordering System You are managing inventory for a warehouse. You need a system that flags items that need to be reordered and calculates the required order quantity.

Your Raw Data (Columns in a sheet named Inventory):

- ProductID
- ProductName
- CurrentStock
- MinimumStockLevel (reorder point)
- Supplier
- LeadTime (in days)

Your Tasks is

1. **Automatic Reorder Flags:**

- Use an IF statement to create a "Reorder Status" column. If CurrentStock is less than or equal to MinimumStockLevel, it should display "ORDER NOW", otherwise "OK".
- Use **Conditional Formatting** to highlight entire rows where the status is "ORDER NOW" in red.

2. **Calculate Order Quantity:**
   - Add a column "Order Quantity". The logic should be: (MinimumStockLevel * 2) - CurrentStock. This ensures you order enough to bring stock back to a safe level.
   - Use an IF statement so that this calculation only appears for items that need reordering; otherwise, the cell should be blank.
3. **Supplier Summary Report:**
   - On a new sheet, use the FILTER function (or PivotTable) to create a list that shows *only* the items that need reordering, grouped by Supplier. This is the list you would send to each supplier.
4. **Advanced: Projected Stock-Out (Optional):**
   - Assume you have a separate sheet with SalesForecast (units predicted to sell per day).
   - Use a VLOOKUP/XLOOKUP to bring the forecast into your inventory table.
   - Create a "Days Until Stock-Out" column: =CurrentStock / SalesForecast. Format this to show warnings for values less than the LeadTime.

Summary

Excel provides various tools for managing statistical and numerical data. This session covers the advanced features of Excel, such as using charts, using formulas and functions, data analysis tools that enable users to sort, filter, and use pivot tables to organize and visualize data, identify patterns, and extract insights.

Review question

Multiple choice

1. What is the correct formula to calculate the average of cells B2 through B10?
   A. =SUM(B2:B10)
   B. =AVERAGE(B2:B10)

C. =COUNT(B2:B10)

D. =MAX(B2:B10)

2. What is the difference between relative and absolute references in Excel?
   A. Relative references always point to A1, absolute references do not
   B. Relative references adjust when copied, absolute references remain fixed
   C. Relative references are for charts only
   D. Absolute references change automatically
3. Which tool allows you to highlight cells that meet certain conditions (e.g., values greater than 5000)?
   A. Data Validation
   B. Conditional Formatting
   C. PivotTable
   D. Goal Seek
4. Which Excel feature is best for visually representing sales growth over time?
   A. Sort
   B. Filter
   C. Chart
   D. Freeze Panes

Module 2: Information and Data Literacy

Introduction

In today's digital world, the ability to handle files effectively is a core digital literacy skill. Whether it's converting files into different formats, compressing them for easier storage and sharing, or managing them securely across networks, these skills are essential for both personal and professional use.

Three main topics will be covered in this module: Learn how to convert files across formats in Session 1 to guarantee compatibility, enhance usability, and modify files for various software or devices. The second session contains Compression and Decompression of Files. Learn how to recover compressed files to their original format and how to minimize file sizes for quicker sharing and easy storage. Third Session: Backup and Network File Management To ensure data security and accessibility, learn how to arrange, exchange, and safeguard your files across networks and cloud platforms.

Session 1: File conversion

Introduction

Dear learners, welcome to this session. In this session, you will explore File conversion

In this session, we will learn how to convert files from one format to another, an essential digital skill that allows you to share, edit, or open files across different devices and software. File conversion is the process of changing a digital file's format so it can be opened, modified, or used by various programs or platforms. This is especially useful when a file doesn't open on your device, needs to be shared in a compatible format, or must be compressed for easier transfer. Understanding how to convert files effectively ensures greater flexibility, accessibility, and efficiency in managing digital content.

Learning Objectives

By the end of this session, learners will be able to:

- Identify common methods of file conversion.
- Demonstrate the use of built-in software to convert files.
- Explore online file conversion tools for quick, cross-platform file format changes.

Content Outline:

1.1 File Conversion and Its Importance

File conversion is the process of changing a file from one format to another. It can be done using dedicated software, online tools, or built-in features in many applications.

For example, convert a Word document (.docx) into a PDF (.pdf), xlsx to .csv, Bmp to jpg MP4 to MP3, etc

Importance of File Conversion in Digital Literacy

- Collaboration across different platforms.
- Data preservation and archival.
- File optimization for web or mobile use, such as a smaller size for web or high quality for printing.
- Support **d**ifferent devices and applications in different file formats.

Reflective questions:

1. List the importance of File conversion.
2. How does file conversion affect accessibility and compatibility?

1.2 Methods of File Conversion

Have you ever tried to open a file that your device couldn’t read? What did you do?

File conversion changes a file from one format to another to ensure compatibility, reduce size, or meet specific usage needs. Some of them are Built-in software, online file conversion tools, and Mobile apps for conversion.

Some of the common File Conversion methods are:

1. Using Offline Software

Many applications can support or export files into different formats without needing extra tools. Such as MS-Word, MS-Paint, Nitro PDF, VLC player, etc. Examples**:** MS Word → PDF, BMP → JPEG, and MP4 to MP3, etc.

2. Online File Conversion Tools

Web-based platforms that allow you to upload a file and download it in a new format. Example: Cloud Convert (DOCX → PDF), OneDrive (Excel → CSV), etc.

Step for File Conversion

A. Convert Word to PDF

Example: Word → PDF - MS Word 2013 or later can easily convert Word files to PDF.

- Step 1: Open a Word 2013 document, click "File" on the top Menu Bar, as shown in the following screenshot.
- Step 2: In the next interface, choose "Save As" on the left and tap the Browse folder on the right.
- Step 3: As the Save As window turns up, click the Word Document bar beside Save as type, select "PDF" in the pop-up list, and tap the **Save** option.

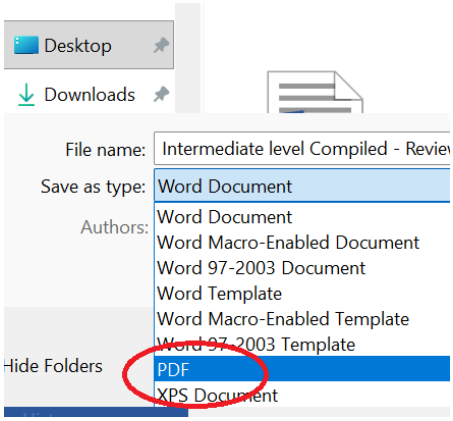


Figure 35 Save as PDF Option

B. Convert the PDF back to Word

Nitro converter is one of the tools that helps you convert PDF to Word. If you don't have download from https://nitro-pdf-reader.en.softonic.com/download

I. Open your PDF document on Nitro PDF reader
II. Select the convert group and click on To Word

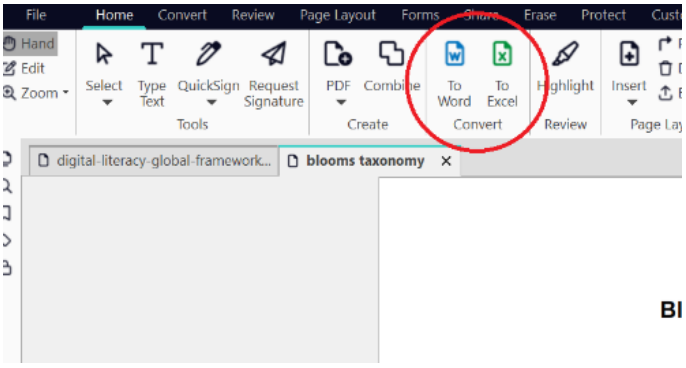


Figure 36 Nitro PDF to Word

C. Convert Video to MP3

Find VLC Media player on your computer if not installed, install it from https://images.videolan.org/vlc/

1. Open the VLC player
2. Click on Media
3. Click on "Convert/save "
4. Add your video file
5. Click the convert/save drop-down
6. Select MP3 and convert your file to Audio

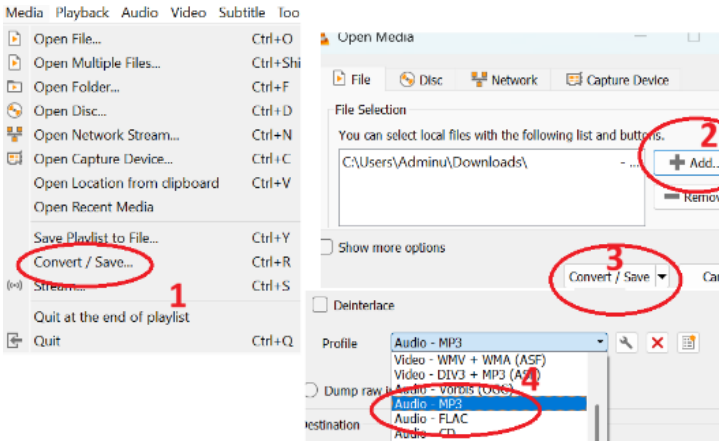


Figure 37 VLC Media Player convert Video to MP3

Exercise: Do the following exercise based on the information is given below.

1. Using File Explorer, locate a Word document (e.g., exerse2.docx) and open it in its default application.
2. Convert the Word document exerse2.docx into a PDF file.
3. Open the newly converted PDF file to ensure it displays correctly.

a. Did the PDF open without errors?
b. Was the formatting (text, images, layout) preserved from the original Word document?

Using Online Tools:

Using Cloud Convert on Computers or mobiles:

Steps:

1. Open a Web Browser

   - Open Microsoft Edge, Chrome, or Firefox.
   - Go to the website: https://cloudconvert.com

2. Select the File to Convert

   - Click “Select File”.
   - Choose a file from your computer, Google Drive, Dropbox, or via URL.

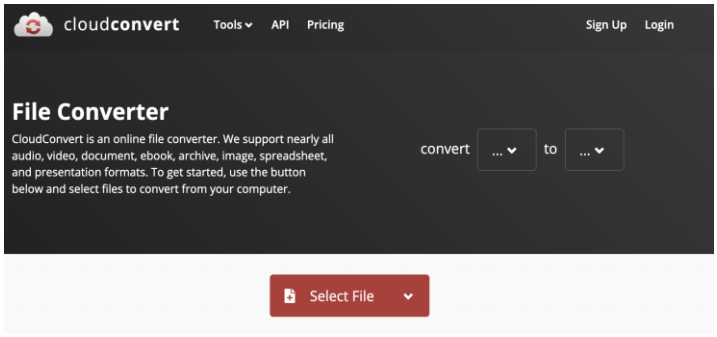


Figure 38 Cloud file conversion page

3. Choose Conversion Format
   - After uploading, select the output format from the dropdown menu (e.g., MP4 → MP3).

4. Adjust Conversion Settings (Optional)

   - Click the wrench icon to change settings like resolution, quality, or file size.
   - This step is optional; you can skip if default settings are fine.

Figure 39 Choosing file type for conversion

5. Start Conversion

   - Click “Convert” to begin.

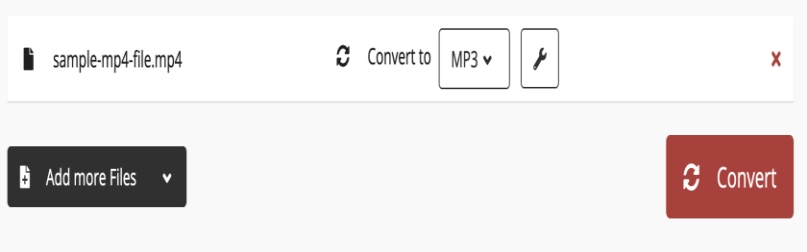


Figure 40 File converting

- Cloud Convert will process the file.

6. Download the Converted File

- After conversion, click “Download” to save the file to your computer.

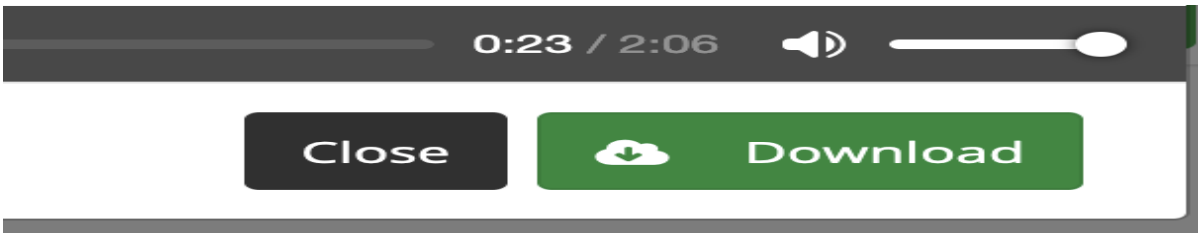


Figure 41: Converted file downloading

7. Access Converted File

- Open the folder where you saved the file and check it.
- You can now use or share it as needed.

Reflection Questions

1. Why is online file conversion is useful compared to using desktop software?
2. What types of files might you need to convert in your school or work projects?

Exercise: Do the following task based on the information given below.

a. Open your web browser and go to https://cloudconvert.com.
b. Upload a file from your computer.
c. Choosing a Target Format

d. Convert the file and then download the converted file.

Summary

File conversion involves transforming files from one format to another to ensure compatibility, usability, or optimization. Common types of file conversion include document conversion (e.g., Word to PDF), image conversion (e.g., JPEG to PNG). These methods may vary in speed, quality, and security depending on the file type and conversion requirements. at this point, you are familiar with the basics of converting work to PDF and vice versa, converting Video to MP3.

Review Questions

Multiple Choices

1. Which of the following best describes file conversion?

   A. Copying a file from one folder to another
   B. Changing a file from one format to another to suit a specific purpose
   C. Compressing a file to reduce its size
   D. Downloading a file from the internet

2. Why is file conversion important in digital work?

   A. It helps in upgrading the operating system
   B. It allows files to be compatible with specific software or devices
   C. It makes files automatically compress themselves
   D. It removes viruses from files

3. Which of the following is NOT a common method of file conversion?

   A. Using built-in software
   B. Using online conversion tools
   C. Using mobile conversion apps
   D. Restarting the computer

4. In Windows 11, what is the first step in converting a file format using built-in software like Paint or Word?

   A. Right-click the file and select “Convert Now”
   B. Open the file in a compatible program
   C. Compress the file into a ZIP folder
   D. Rename the file with a new extension

5. When using Cloud Convert on Windows 11 to convert files, which step usually comes first after visiting the website?

   A. Dragging and dropping or uploading the file you want to convert
   B. Downloading the converted file
   C. Choosing the output format
   D. Signing out of your account

6. Which of the following is an advantage of using online tools for file conversion like Cloud Convert?

   A. They work only without internet
   B. They require no software installation on the computer
   C. They can only convert image files
   D. They delete the original file automatically

Session 2: File Compression and Decompression

Introduction:

Dear learners, welcome to this session. In this session, you will explore File Compression and Decompression

File compression is a crucial skill in digital literacy that entails minimizing the size of digital files (compression) to conserve storage space and enable quicker sharing, followed by restoring those files to their initial state (decompression) when required. This procedure is vital for the efficient management of digital content, allowing users to systematically organize, store, and communicate data effectively across different devices and platforms.

Learning Objectives:

By the end of this session, learners will be able to:

- Define file compression and decompression.
- Identify common file compression formats
- Use appropriate software tools to compress and decompress files and folders across different devices and operating systems.

Content Outline:

2.1 File Compression and Decompression

File Compression

Have you ever had trouble sending a file because it was too large? What did you do? Do you think videos, photos, or text documents compress the most? Why?

File compression reduces the size of files or folders to save storage space or make them easier to share. And Decompression (or extraction) restores compressed files to their original form.

Types of File Compression

1. **Lossless Compression:** is a type file compression ensures that no data is lost during compression. When decompressed, the file returns to its original form (e.g., text files, software files). Example: ZIP, GZIP , 7Z,etc
2. **Lossy Compression: is** another type of compression that some data is permanently removed to reduce file size. This is commonly used for multimedia files like images, audio, and video where perfect quality is not always necessary. Example: MP3 (audio), JPEG (images), MP4 (video).

Importance of File Compression

- Reduces file size, optimizing storage on local drives and cloud platforms.
- Enables faster uploads and downloads, saving time and bandwidth.
- Makes backups smaller, easier to store, and quicker to manage.
- Ensures compatibility across devices and operating systems.
- Helps organize and manage large collections of documents, images, and media efficiently.
- Restores files to their original state during decompression, preserving integrity.

Reflective questions

1. Why compress files to manage storage and improve file transfer efficiency?

File Decompression

File decompression (also called extraction) is the process of **restoring a compressed file back to its original format and size**. After compressing files to save storage space or make sharing easier, decompression allows you to access the content just as it was before compression.

Key Points about File Decompression

1. **Purpose:**

- To retrieve and use files that were previously compressed.
- Ensures the original data, quality, and structure are preserved.

2. **Types of Decompression:**
   - **Lossless Decompression:** Returns the file to exactly its original state without any data loss. Example: ZIP, GZIP, 7Z.
   - **Lossy Decompression:** Restores a file to a usable form, but some original data removed during compression may not be recovered. Example: MP3 (audio), JPEG (images), MP4 (video).
3. **Why It Matters:**
   - Access files for editing, viewing, or sharing.
   - Restore files for proper functionality in applications.
   - Maintain data integrity when sharing across devices and platforms.
4. **How It Works:**
   - A compressed file is typically in a format like `.zip`, `.rar`, `.7z`, or `.tar`.
   - Decompression software (e.g., WinRAR, 7-Zip, Windows built-in extractor, or macOS Archive Utility) reads the compressed data and rebuilds it into the original files or folder structure.
   - Once decompressed, files are ready to use without errors.

2.2 File Compression and decompression Formats and Tools

Common compression formats and tools are methods and software used to reduce the size of digital files and bundle multiple files into a single archive for easier storage, sharing, and management. Examples like ZIP, RAR, 7z, TAR, etc.

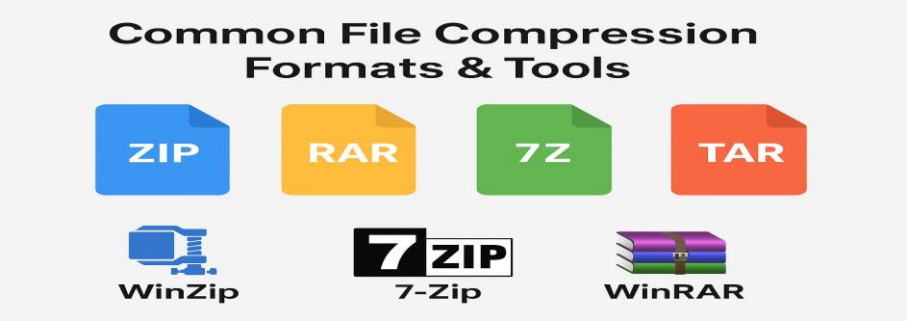


Figure 42 Common file format

Some of the common Compression Formats and Tools are:

Compression Formats

- ZIP**:** A widely used lossless compression format supported natively by Windows, macOS, and many other systems.
- RAR**:** A proprietary compression format offering high compression ratios and error recovery features (requires WinRAR or similar).
- 7z**:** An open-source format using high-compression algorithms, supported by 7-Zip software.
- Use**:** Compressing large game files or software packages
- GZIP**:** A lossless compression format mainly used in UNIX/Linux environments and for compressing web content.

Tools for Compressing and Decompressing

- WinRAR**: A** tool for creating and extracting RAR and ZIP files with advanced compression and encryption. Download from: https://www.win-rar.com/download
- 7-Zip: Free, open-source compression tool supporting multiple formats including 7z, ZIP, and TAR. Download from: https://www.7-zip.org/download.html
- WinZip: **A** commercial tool for ZIP and other formats, with cloud integration and encryption features. Download from https://www.winzip.com/en/download/
    - GZIP: gzip (GNU zip) is a compression utility designed to be a replacement for compress. Download available from: https://ftp.gnu.org/

Steps for File Compression

In this lesson, we will focus on how to apply these common steps using popular compression tools. This will help learners understand practical usage while choosing the right format for their needs.

File Compression in Computers

Using Zip Files in Windows Using File Explorer

1. Press **Win + E** to open **File Explorer.** Select files/folders.
2. Right-click > "Show more options" > "Sent to".
3. Click "Compressed (zipped) folder."
4. A new zipped folder (.zip) appears at the same location

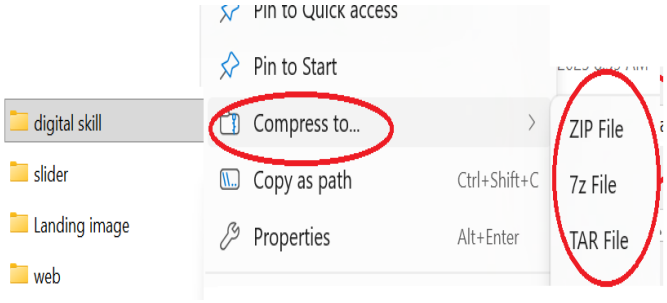


Figure 43 File compression

Steps for File Decompression

Extract ZIP Files

Method 1: Unzip Files in Windows Using File Explorer by

1. Press Win + E to open File Explorer. Select files/folders to extract.
2. Right-click > "Extract All".
3. Choose the extraction destination.
4. Click "Extract" to unzip the files.

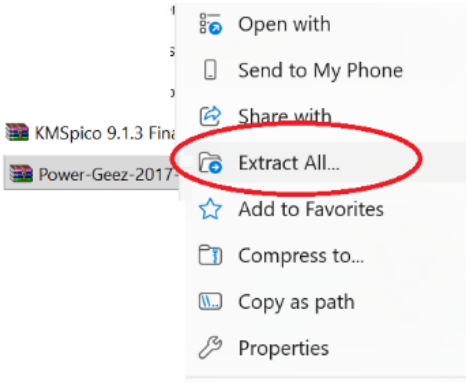


Figure 44 File decompression

Activity 1: Do the following tasks based on the information given below.

1. Select 3 files of different types (e.g., a document, an image, and a video).
2. Use the above compression tool to create a compressed file. (ZIP or RAR).
3. Compare the file size before and after compression.

4. Extract all files to a new folder.
5. Open the compressed file created in question number 2.
6. Check if all files are intact and usable.

Steps to Compress Files on Mobile using Android - ZArchiver

Once you download ZArchiver from the Google Play Store, follow these steps to create a ZIP file on your phone:

1. Organize the files and folders you want to compress into a single folder using a file manager.
2. Launch ZArchiver, locate the organized folder, and long-press it.
3. Tap Compress to *.zip to start file compression.
4. Monitor the status bar that pops up until it reaches 100%.
5. Your ZIP file should be ready, and you can locate it in the same place as the original folder in your file manager.

Exercise: Based on the information given below, do the following tasks.

1. Install ZArchiver from the Google Play Store.
2. Use a mobile app (like ZArchiver) to compress a set of at least three image files from your mobile phone.
3. You receive a ZIP file containing multiple documents via email. To view and use these files:
    1. Right-click the ZIP file.
    2. Select **Extract All** (Windows) or **Open With → Archive Utility** (Mac).
    3. Choose a destination folder.
    4. Access the decompressed files in their original formats, ready for editing or sharing.

Summary

File compression is the process of reducing the size of files to save storage space, facilitate faster file transfers, and simplify backups, either through lossless methods that preserve all data or lossy methods commonly used for multimedia files. Common compression formats include ZIP (widely supported), RAR (high compression with extra features), 7Z (very high compression and encryption), and TAR/GZ (popular on Linux/Unix).

Tools such as WinRAR, 7-Zip, WinZip, and mobile apps like ZArchiver help to create, extract, and manage compressed files, making file organization and digital storage more efficient across devices and platforms.

Review Questions

Multiple Choices

1. What is the main purpose of file compression?

    A. To change a file from one format to another
    B. To reduce the file size for easier storage and transfer
    C. To encrypt a file for security
    D. To delete unnecessary files automatically

2. Which of the following is NOT a benefit of file compression?

    A. Faster file transfer over the internet
    B. Saving storage space on devices and cloud
    C. Improving file compatibility with certain software
    D. Increasing the file's original size for higher quality

3. Which of these is a common compressed file format?

    A. DOCX
    B. .ZIP
    C. .MP3
    D. .TXT

4. Which tool is widely used to create and extract ZIP files in Windows?

    A. Adobe Photoshop
    B. WinRAR
    C. VLC Media Player

D. Microsoft Excel

5. Why does someone compress files before sending them via email?

A. To make them look more professional
B. To bypass email attachment size limits
C. To convert them to a different format automatically
D. To prevent them from being opened by others

6. Which of the following is an example of a lossless compression format?

A. JPEG
B. PNG
C. MP4
D. MP3

Session 3: Network File Management and Backup

Introduction

Dear learners, welcome to this session. In this session, you will explore Network Management and Backup

Welcome to today's session on Network File Management and Backup. We'll explore how to organize, share, and protect files across networks efficiently.

Network File Management involves organizing, storing, and retrieving digital files across a network.
It includes sharing files, controlling access, and ensuring data security. Users can locate and retrieve files from network locations and save documents in shared folders. Setting permissions and using version control help maintain data integrity. Overall, it enables secure and efficient collaboration in networked environments.

Learning Objectives

By the end of this session, learners will be able to:

- Understand the concept of sharing files using a Local Area Network.
- Identify popular cloud storage providers and their key features.
- Demonstrate how to upload, organize, and manage files in the cloud effectively.
- Practice how to share files and folders in Google Drive using a computer.

Content Outline:

3.1 Network File Management

3.2 Cloud Storage and Backup

3.1 Network File Management

Network file management is one of the digital literacy skills that involves organizing, storing, and protecting files across connected devices within a network. Effective network file management ensures that digital data is accessible, well-organized, and securely shared among users or systems in an organization or home environment.

Sharing a File using Local Area Network (LAN):

A Local Area Network (LAN) is a network that connects computers and devices within a limited area, such as a home, school, or office, allowing them to share resources like files, printers, and internet connections.

To share files over a LAN in Windows 11, you first need to enable Network Discovery and File and Printer Sharing in the advanced sharing settings. This allows other computers connected to the same local network to find your device and access shared files securely.

Steps to Share a Folder in Windows 11

On Windows, you can either use the public folder to share files or share the folder you created to users on the LAN.

To use the C:\Users\Public folder to share files, place files in, to make them accessible to all users on the computer and potentially to others on your network. For network sharing, you must also ensure the network sharing settings in the Control Panel are configured to allow public folder access.

I. Using the C:\Users\Public Folder

- Locate the folder: Open File Explorer and navigate to This PC > Local Disk (C:) > Users > Public.
- Add files: Open one of the default subfolders (e.g., Public Pictures) and copy or move the files you want to share into it.
- Access files: Other users on the same computer can now access these files by navigating to their own C:\Users\Public folder.

Network Sharing Settings

To make files in the Public folder accessible to others on your network, you must enable public folder sharing in the network settings:

- Open Control Panel: Search for and open the "Control Panel" on your computer.
- Go to Network and Sharing Center: Click on "Network and Internet" and then select "Network and Sharing Center".
- Change advanced sharing settings: On the left side, click on "Change advanced sharing settings".
- Turn on sharing: Under "Public folder sharing," select the option to "Turn on public folder sharing".
- Save changes: Click "Save Changes" to apply the settings.

With these steps, files in the Public folder will be visible and accessible to others

II. Locate the Folder

- Open File Explorer.

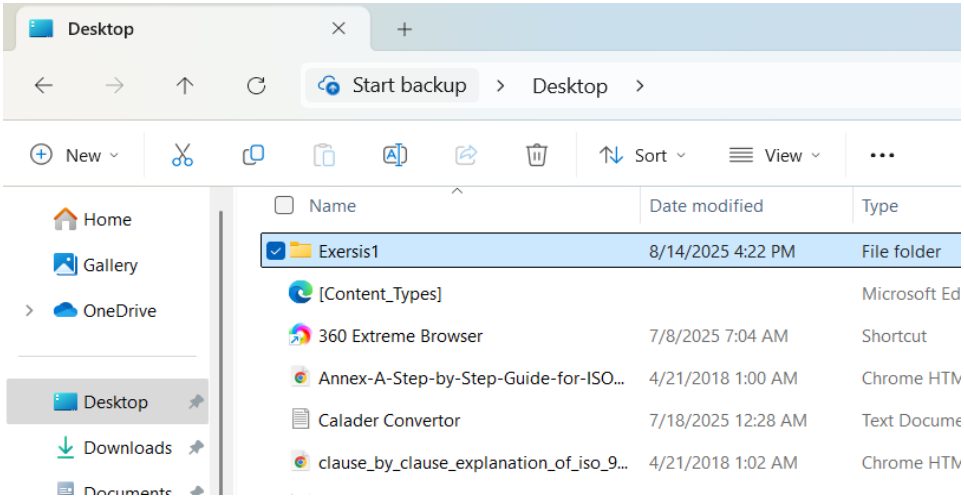


Figure 45: File placing for local sharing

- Navigate to the folder you want to share.

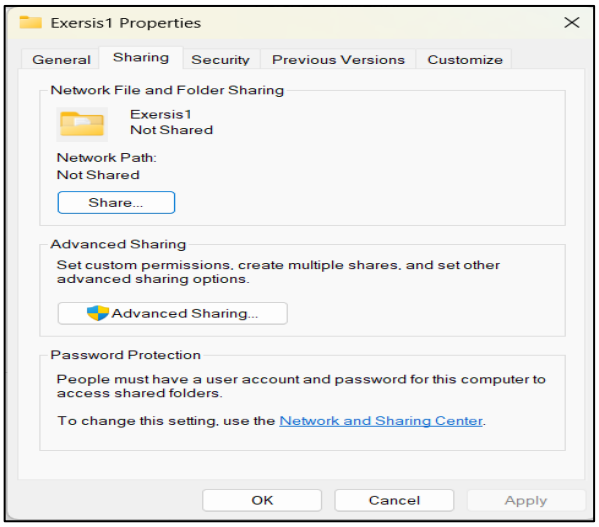


Figure 46: Sharing the file

2. Open Properties

- Right-click the directory you want to share and select Properties.
- Go to the Sharing tab.

3. Enable Sharing

- Click Share… to open the File Sharing window.
-

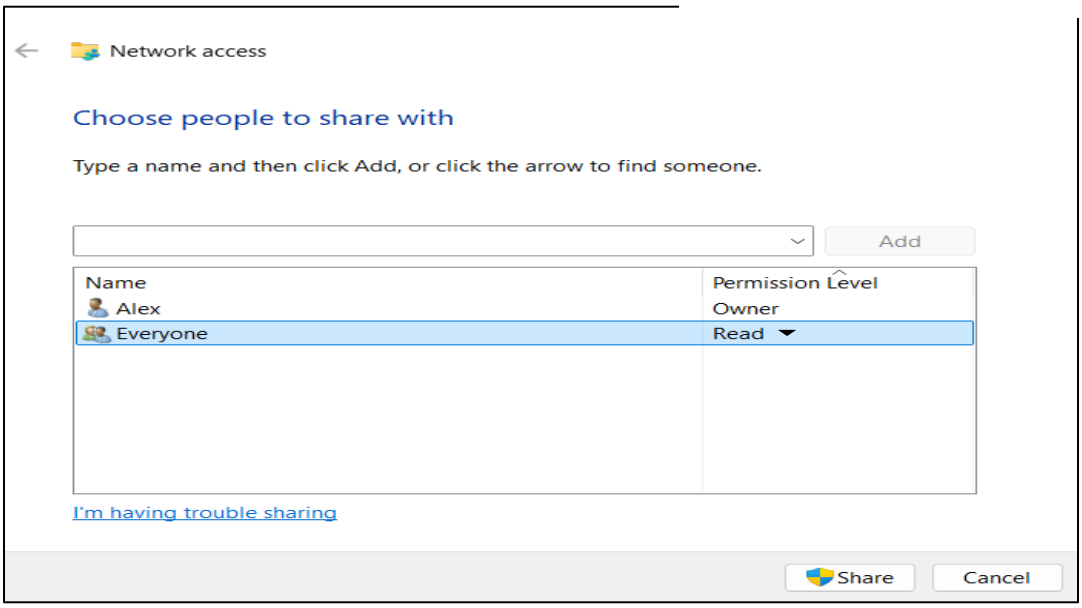


Figure 47: Choosing the people to share with

- Choose the users you want to share with from the dropdown menu or type their names.
- Set the permission level (Read or Read/Write) for each user.
- Click Share, and in the coming dialog box, click on the Done button and then the close button.

How to access the shared folder?

Steps:

Method 1: Access Shared Files from Another Device:

- Open File Explorer → in the address bar type:
- \\ ComputerName or \\ IPaddress
- Browse and copy files as needed.

Method 2: Access from another computer:

Press **Windows + R**, type `\\ComputerName\SharedFolder`.

Exercise: Based on the given information, do the following tasks.

1. Create a new folder on your desktop called **ClassDocuments** and share it with other users on the same network.

A. Which steps did you follow to create the folder?
B. How did you share the folder with other users?
C. What permission level did you assign when sharing?

2. Access the 'ClassDocuments' folder from another computer on the same LAN.

A. How did you find the shared folder on the other computer?
B. Did you use the network path or IP address it as a network drive?
C. Were you able to open files in the shared folder?

3. Change the permissions of the 'ClassDocuments' folder to allow a specific user full control.

A. Which steps did you follow to modify the permissions?
B. How can you verify that the user now has full control?

4. Stop sharing the folder after completing your project.

A. Which steps did you follow to stop sharing the folder?
B. How did you confirm that the folder was no longer shared on the network?

3.2 Cloud Storage and Backup

Have you ever shared a file with someone without using email? How did you do it? What's the most important file on your computer that you'd want to back up?

Cloud storage services like Google Drive**,** OneDrive, and Dropbox let you save files online, sync them across devices, and access them anytime. They function as both storage (keeping files safe in the cloud) and backup (protecting against local device loss or damage).
On computers, install the desktop app, sign in, and drag files into the synced folder to upload automatically.
On mobile, install the app, sign in, and use the upload or backup feature to store photos, documents, and videos online.

Cloud storage is a service that allows users to store**,** manage, and access files over the internet instead of on a local computer or physical storage device. Files are saved on remote servers maintained by cloud providers such as Google Drive, OneDrive, Dropbox, or iCloud.

Functions of Cloud Storage

- Accessibility: Access files from any device with an internet connection.
- Collaboration: Multiple users can view, edit, and comment on files in real-time.
- Data Protection: Cloud storage often includes automatic backups and version history.
- Scalability: Easy to increase storage space as needed.

Good Practices

- Use both local and cloud backups for maximum data protection.
- Regularly update backups to include recent changes.
- Organize files and folders consistently for easy retrieval.
- Ensure cloud accounts are secure with strong passwords and two-factor authentication.

Cloud Storage Providers

Cloud storage providers are service providers that allow users to store, manage, and access files online, offering features such as file synchronization, sharing, collaboration, and backup.

Common Cloud Storage Providers:

1. **Google Drive**

   - Free storage: 15 GB (shared with Gmail and Google Photos).
   - Features: Real-time collaboration (Docs, Sheets, Slides), file versioning, link sharing.
   - Platforms: Web, Windows, Mac, Android, iOS.

2. **Microsoft OneDrive**

   - Free storage: 5 GB (upgradable with a Microsoft 365 subscription).
   - Features: File synchronization, collaboration with Office apps, version history.
   - Platforms: Web, Windows, Mac, Android, iOS.

3. **Dropbox**

   - Free storage: 2 GB (upgradable with paid plans).
   - Features: File sharing, versioning, smart sync, integration with third-party apps.
   - Platforms: Web, Windows, Mac, Linux, Android, iOS.

4. **iCloud**

   - Free storage: 5 GB (Apple ecosystem).
   - Features: Syncing across Apple devices, backup for iOS devices, file sharing.
   - Platforms: Mac, iOS, Windows, Web.

5. **SharePoint / OneDrive for Business**

   - Features: Enterprise collaboration, document libraries, advanced permissions, integration with Microsoft 365.
   - Platforms: Web, Windows, Mac, mobile apps.

Reflection Questions

1. List at least three cloud storage providers.
2. Discuss the advantages of storing files in the cloud.

Uploading and Managing Files on the Cloud

Cloud storage allows users to upload, organize, and manage digital files online**.** Efficient management ensures easy access, sharing, collaboration, and secure backup of files.

Uploading Files and Folders

A. From Computer:

- Using the web interface or cloud desktop apps (Google Drive, OneDrive, Dropbox).
- Drag-and-drop or "Upload" button for files/folders.

➢ Upload Files and Folders to Google Drive (Computer)

1. Open Google Drive
2. Go to https://drive.google.com in a web browser.

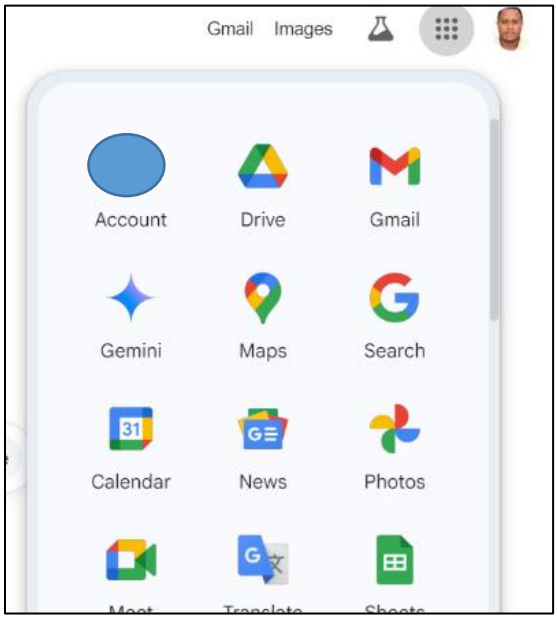


Figure 48 Selecting google drive

3. Locate and Sign in with your Google account in with email address and password. But, if you don't have an account, select Sign up to create an account.
4. Your Google Drive will appear here, and locate and select the grid's upper corner, choose your Google Drive appear here.
5. Choose Upload Method

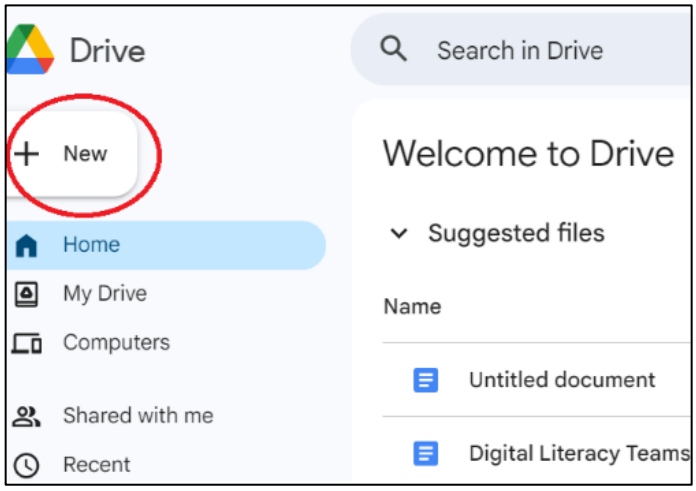


Figure 49 Upload file to google drive

Option A – Using the "New" Button

1. Click **New** on the top-left menu.
2. Select **File upload** to upload individual files or **Folder upload** to upload an entire folder.
3. Browse your computer and select the file(s) or folder(s).
4. Click **Open** to start the upload.

Option B – Drag and Drop

1. Open the folder on your computer that contains the files/folders.
2. Drag the file(s) or folder(s) directly into the Google Drive browser window.
3. Wait for the upload progress bar to finish.

Exercise: Do the following questions based on the information below.

1. Create an account in a cloud storage service using Google Drive.
2. Upload at least two files (documents, images, or videos) to your cloud storage.

a. Which files did you upload?
b. Where in your cloud storage did you save them?
c. How long did the upload take?

3. Create folders and move your uploaded files into appropriate folders.
   a. What folders did you create?
   b. How did organizing files into folders help manage your storage?

Share Files and Folders in Google Drive

Steps:

1. Open Google Drive

- Go to https://drive.google.com in a web browser.
- Sign in with your Google account.

2. Drag and drop the file directly into your Drive.

- Browse My Drive, Shared drives, or search for the file/folder you want to share.

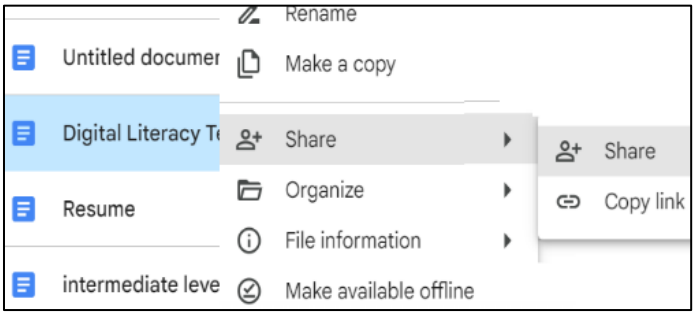


Figure 50 Share drive Document

3. Open Sharing Options: Alternatively, select the item and click the **Share icon** at the top-right of the screen.

4. Choose Sharing Method: Add people or groups: Enter email addresses of recipients.

- **Share via link:** Click **Copy link** to create a shareable link.

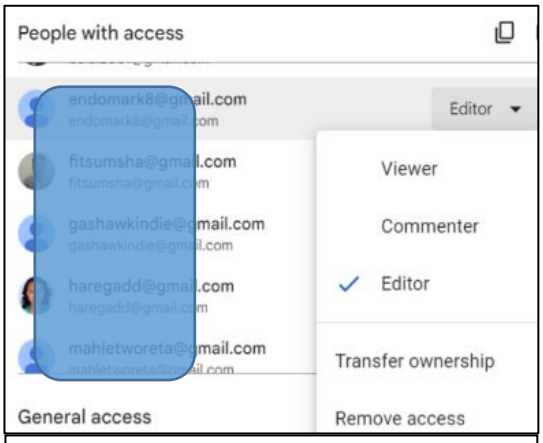


Figure 51 Set Permission

5. Set Permissions

- **Viewer:** Can only see or download the file.
- **Commenter:** Can view and add comments.
- **Editor:** Can view, edit, or delete the file.

6. Send or Copy Link

- Click Send to notify recipients via email.
- Or click Copy link and share manually through messaging apps or email.

Sync Files and Folders to Google Drive:

1. **Open Your Browser**
   - On your Windows 11 computer, open Google Chrome (recommended), Microsoft Edge, or Firefox.
2. **Go to Google Drive**
   - Type drive.google.com in the address bar and p**ress** Enter**.**
3. **Sign in to Your Google Account**
   - Enter your Gmail address and password, then click Next**.**
4. **Upload a File**
   - Click the **+ New** button (top-left corner).
   - Select **File upload**.
   - In the Windows file picker, locate the file you want to upload.
   - Click **Open** to start the upload.
5. **Upload a Folder**
   - Click **+ New** again.
   - Select **Folder upload**.
   - Choose the folder from your computer and click **Upload**.
6. **Drag-and-Drop (Quick Method)**
   - Open **File Explorer** (Windows key + E).
   - Drag the file or folder from File Explorer and drop it into your Google Drive browser window.
7. **Wait for Upload to Finish**
   - Check the progress box in the bottom-right of Google Drive.
   - When you see a green checkmark, the upload is complete.
8. **Verify the Sync**
   - Refresh the page (F5).
   - Your files/folders should now appear in **My Drive** and be accessible from any device with your account.

Exercise 1- Do the following questions based on the information given below.

1. Create a new folder in Google Drive named 'Group Project**'.**

2. Upload multiple files into the 'Group Project**'** folder i.e. upload at least two files and organize. them inside the folder.

3. Share the 'Group Project**'** folder with a classmate or trainer with set permission for editing.

6. Remove all shared access for the Group Project folder.

7. Demonstrate version control using Google Drive.

Summary

Network file management and backup are essential skills for organizing, storing, and protecting files while ensuring efficient access and security. LAN sharing enables computers on the same network to exchange files quickly and securely. On the other hand, Cloud storage and backup store files on remote servers, allowing safe access from multiple devices and easy recovery from data loss. Cloud Providers like Google Drive, Dropbox, OneDrive, and iCloud offer file synchronization, sharing, and storage management features. Applying LAN sharing and cloud storage improves collaboration, file accessibility, and overall data security.

Review Questions

Multiple Choices

1. Which of the following best describes file sharing over a Local Area Network (LAN)**?**

    A. Uploading files to a public website
    B. Transferring files using a USB drive
    C. Allowing devices on the same network to access shared files or folders
    D. Storing files in the cloud for public download

2. Which of these is NOT an example of a cloud storage provider?

A. Google Drive
B. Dropbox
C. Microsoft OneDrive
D. File Explorer

3. What is the first step in uploading files to most cloud storage services?

A. Rename the file
B. Log in to your cloud storage account
C. Compress the file into ZIP format
D. Share the link with others

4. In cloud backup, what is one advantage compared to local backup?

A. It is not affected by physical damage to your device
B. It does not require an internet connection
C. It is faster than any other backup method
D. It can only store text documents

5. When managing files in the cloud, which action helps keep storage organized and efficient?

A. Uploading files without folders
B. Using clear folder names and regularly deleting unnecessary files
C. Storing all files in the root directory
D. Avoiding file version history features.

Module 3: Communication and Collaboration

Introduction

Imagine working on a school project with classmates who live in different cities you need to exchange ideas, edit shared documents, and present your results, all without ever meeting face-to-face. How would you make it work? This module helps you find the answer by exploring the essential skills for effective online communication, collaboration, and responsible digital engagement.

Therefore, the module consists of four sessions. Session 1 focuses on online communication and virtual meetings, Session 2 explores collaboration through various digital technologies, Session 3 addresses how to express oneself as a digital citizen online, and finally, Session 4 examines how one can manage their digital identity. By the end of this module, you will be able to communicate and collaborate confidently online, share and co-create digital content safely and ethically, participate actively in digital communities, and protect your digital identity and reputation in an increasingly connected world.

Session 1: Online Communication & Virtual Meetings

Introduction

Dear learners, welcome to this session. In this session, you will explore Online Communication and Virtual Meeting

Online communication and virtual gatherings utilize digital resources such as internet-enabled devices and conferencing applications to link individuals in various locations for immediate discussions, teamwork, and the sharing of information. You have just received an invitation to a virtual meeting with a group of unfamiliar individuals. Some participants are in your age group, while others are older. Some reside in Ethiopia, whereas others live in other countries. How will you ensure that your message is clear, respectful, and comprehensible for everyone?

In this session, we'll explore how to communicate effectively online and master virtual meetings from preparation to follow-up so that you can collaborate confidently in diverse, digital environments.

Learning Objectives

By the end of this session, you will be able to:

- Apply principles of effective online communication**.**
- Adapt communication styles to accommodate cultural and generational differences.
- Differentiate between synchronous and asynchronous communication tools
- Set up, participate, and follow up virtual meetings using professional etiquette.

Content outline

1.1 Principles of effective online communication
1.2 Synchronous Vs. Asynchronous communication
1.3 Set up and participate in virtual meetings professionally

1.1 Principles of Effective Online Communication

Before we explore the principles of effective online communication, it is important to understand what communication is**. Communication** is the process of sharing information, ideas, thoughts, or feelings between individuals or groups, enabling understanding and connection. It can take several forms:

- **Verbal Communication -** Using spoken or written words.
- **Non-Verbal Communication** - Using body language, facial expressions, gestures, and tone of voice.
- **Visual Communication** - Using images, charts, diagrams, or videos to convey meaning.
- **Digital Communication** - Using online tools, social media, emails, and messaging platforms to share messages.

Effective communication occurs when the message sent is accurately received and understood as intended. In face-to-face interactions, messages are often supported by gestures, facial expressions, and tone of voice. In online settings, particularly in text-based communication, these cues are absent, making the words themselves even more significant.

Therefore, effective online communication is not just about what you say it also involves how you say it and how attentively you listen to others. Following key principles of clarity, engagement, and understanding helps ensure your message is interpreted correctly and fosters meaningful digital interactions.

Clarity: Your message should be easy to read, understand, and act on. Avoid long, complicated sentences or unnecessary details.

Tips for clarity:

- Use short sentences.
- Start with the most important information.
- Use bullet points for multiple ideas.
- Avoid jargon unless you're sure your audience understands it.

Tone: is the emotional quality of your message or voice. Online, it can be tricky without facial expressions or voice inflection; the same words can sound friendly, neutral, or rude.

Why it matters: A misunderstood tone can cause conflict or make others feel unwelcome.

Tips for managing tone:

- Use polite, positive wording.
- If appropriate, add a friendly greeting or closing.
- Be cautious with humor—it may not translate well across cultures.
- Use emojis/icons sparingly to soften tone, if the setting allows.

Respect: Respect in communication means valuing others' opinions, ideas, and time.

Why it matters: Respectful communication builds trust and encourages collaboration.

Tips for showing respect:

- Acknowledge others' contributions ("Good point, I agree…").
- Avoid interrupting during calls.
- Avoid using all caps (it can feel like shouting).
- Don't use offensive or discriminatory language.

Active Listening: Active listening is more than just hearing words; it's focusing, understanding, and responding thoughtfully.

Why it matters: When people feel heard, they are more likely to engage and collaborate.

Tips for active listening in virtual calls:

- Keep your attention on the speaker (avoid multitasking).
- Show you're listening nod, use "mm-hmm," or give short verbal confirmations.
- Wait for the person to finish speaking before replying.
- Summarize or paraphrase what they said to confirm understanding.

Quick Self-Check:

Think of your last online message or meeting. Did you apply all four principles: Clarity, Tone, Respect, and Active Listening? Which one could you improve next time?

Cultural & Generational Diversity

When communicating online, remember: one style does not fit all. What feels natural and polite to you might feel too formal, too casual, or even confusing to someone from a different cultural or age group.

Digital communication happens in a global space; you might be talking to someone in your own city or on the other side of the world. Understanding cultural and generational differences will help you avoid misunderstandings and build stronger relationships.

Why This Matters

- Miscommunication can cause frustration, conflict, or even lost opportunities.
- Awareness of differences shows respect and professionalism.
- Adapting your style helps your message be understood and appreciated by all audiences.

Key Differences to Consider

I. Formal vs. Casual Language

- Some cultures or generations prefer a formal approach, using titles, full sentences, and polite phrases.
- Others may be comfortable with casual language, abbreviations, or even slang.

Example: Formal: *"Dear Mr. Alemu, I hope you are doing well. Could we schedule a meeting next week?"*

- **Casual:** *"Hey Alemu, can we meet next week?"*

II. Use of Emojis

- In some professional contexts, emojis are friendly and help convey tone.
- In others, they may be seen as unprofessional or distracting.
- Generational differences play a role—younger people may use emojis frequently; older professionals may prefer plain text.

III. Time Sensitivity & Response Expectations

- Some cultures and individuals value instant replies to show attentiveness.
- Others are comfortable with delayed responses, especially if they need time to think before replying.
- Generationally, younger people accustomed to instant messaging may expect quick interaction, while older generations may not.

Discussion Activity

1. Think of a time when your message was misunderstood because of different communication styles.
   - What caused the misunderstanding?
   - How could you have adapted your message?
2. If you're unsure about someone's communication style, what's the safest way to start?

   (Hint: formal, neutral, and polite)

Pro Communication Strategy

When you communicate online with someone from a different culture or generation:

1. Observe first: Check how they greet, respond, and structure messages.
2. Adapt respectfully: Match their level of formality and tone.
3. Clarify politely: If something is unclear, ask respectfully rather than assume.

1.2 Synchronous vs. Asynchronous Communication

When working online, especially with teams spread across different locations, choosing the right communication type can make your collaboration more effective and less stressful. There are two main categories: Synchronous (real-time) and Asynchronous (delayed). Understanding the difference helps you pick the right method for each situation.

I. Synchronous Communication

Synchronous communication occurs in real-time, where all participants are present simultaneously and can respond immediately. This type of communication allows for instant feedback, active engagement, and dynamic interaction, making it effective for discussions, decision-making, and collaborative problem-solving.

Examples of Synchronous Communication

1. **Video Calls & Meetings**
   - A virtual meeting where participants can see and hear each other live, often with options to share screens, presentations, or documents.

- **Usage:**
  - Conduct team meetings or project updates.
  - Host workshops, webinars, or online classes.
  - Collaborate on tasks by discussing ideas and clarifying questions instantly.
- **Tools:** Zoom, Google Meet, Microsoft Teams, Cisco Webex, BlueJeans

Figure 52 Instant Messaging / Chat

2. **Instant Messaging / Chat**
   - Real-time text-based communication that allows participants to send messages and receive responses immediately.
   - **Usage:**
     - Quick updates or urgent questions within a team.
     - Coordinating work tasks or schedules.
     - Sharing links, files, or short instructions for immediate action.
   - **Tools:** Slack (direct messages), Microsoft Teams chat, WhatsApp, Telegram
3. **Live Voice Calls**
   - Verbal communication conducted in real-time, either via traditional phone networks or internet-based voice applications.
   - **Usage:**
     - Discussing complex topics that are easier to explain verbally.
     - Resolving issues quickly without waiting for email or text responses.
     - Team check-ins or one-on-one mentorship conversations.
   - **Tools:** Phone calls, WhatsApp voice calls, Discord voice channels

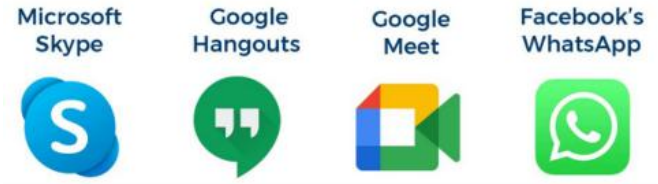


Figure 53 Live Voice Calls

4. **Webinars & Virtual Workshops**

- Live online sessions where a presenter shares information with an audience, often with interactive Q&A or polls.
- **Usage:**
  - Conducting training sessions or educational seminars.
  - Engaging audiences through live questions and discussions.
  - Providing real-time demonstrations or tutorials.
- **Tools:** Zoom Webinar, GoToWebinar, Microsoft Teams Live Events

Figure 54 Webinars & Virtual Workshops

Key Point: *Synchronous communication is best for activities requiring immediate interaction, active participation, and real-time decision-making.*

Challenges:

- Requires all participants to be available at the same time
- Time zone differences can make scheduling difficult
- Can feel rushed, less time to think about your response

How to use Zoom Call

This practice helps you build confidence in using Zoom for online learning. You will practice joining a meeting, greeting the group, asking a question, and sharing your screen.

Step 1: Join the Meeting

- Click the Zoom link and open Zoom.
- Enter your name as FirstName – School.
- Allow microphone and camera.
- Join with Computer Audio and test sound.

- Mute until your turn.

Figure 55 How to use a Zoom call

Step 2: Greet the Group

- Unmute and smile at the camera.
- Example: "Good morning, everyone. I'm [Introduce yourself]. Can you hear me clearly?"
- Pause for confirmation.
- Re-mute when finished.

Step 3: Ask a Clear Question

Structure your question:

- Context (1 sentence)
- The question (1 sentence)
- Thank you (1 phrase)
- Example: "For the Internet Basics module, could you confirm the due date? Thank you."

Step 4: Share Your Screen

- Open your file before sharing.
- Click Share Screen and choose the correct window.
- Point out what others should notice.
- Stop sharing when done.

Troubleshooting Tips

- No one hears me: check mic mute and select the right microphone.
- Echo: mute extra devices or use headphones.
- Cannot share screen: ask the host to enable screen share.
- Low bandwidth: turn off video and use chat if needed.

II. Asynchronous Communication

Asynchronous communication takes place when participants are not communicating in real-time. There is a delay between when a message is sent and when it is read or responded to. This type of communication allows individuals to participate at their own convenience, making it ideal for teams working across different time zones or with flexible schedules.

It supports thoughtful reflection, well-structured responses, and inclusive participation especially in online learning environments.

Figure 56 Asynchronous communication

Examples of Asynchronous Communication

1. **Email**
    - A digital messaging system used to send written messages, files, and attachments to individuals or groups.
    - **Usage:**
        - Sharing updates, instructions, or formal announcements.
        - Sending assignments, reports, or documents.
        - Communicating with team members who are unavailable at the same time.
    - **Tools:** Gmail, Outlook, Yahoo Mail

Figure 57 Email Tools

2. **Discussion Boards & Forums**

- Online platforms where participants can post messages, respond to others, and engage in threaded discussions over time.
- **Usage:**
  - Facilitating class discussions that allow reflection before responding.
  - Sharing opinions, feedback, or resources on specific topics.
  - Encouraging participation from all learners, even those who prefer to think before speaking.
- **Tools:** Moodle forums, Google Classroom discussions, Edmodo, Reddit, Microsoft Teams channels

3. **Recorded Video or Audio Messages**
   - Pre-recorded videos or voice messages shared for others to view or listen to later.
   - **Usage:**
     - Providing feedback or explanations that require tone and expression.
     - Sharing lectures or presentations for learners to access at any time.
     - Allowing learners to respond through their own recorded reflections.
   - **Tools:** Loom, Flip (formerly Flipgrid), YouTube (unlisted videos), VoiceThread, WhatsApp voice notes
4. **Shared Documents with Comments**
   - Collaborative documents that allow users to leave comments, suggestions, or edits asynchronously.
   - **Usage:**
     - Reviewing and providing feedback on written work.
     - Co-authoring documents without needing to be online simultaneously.
     - Tracking version history and maintaining a record of all contributions.
   - **Tools:** Google Docs, Microsoft Word Online, Dropbox Paper
5. **Learning Management System (LMS) Activities**
   - Platforms that host assignments, quizzes, announcements, and content that learners can access and complete on their own time.
   - **Usage:**
     - Uploading course materials and assignments for flexible access.
     - Allowing learners to engage in peer review or reflection activities.

        - Tracking learner progress without the need for live sessions.
    - **Tools:** Canvas, Moodle, Google Classroom, Schoology

Key Point: *Asynchronous communication is best for situations where participants need flexibility, time to reflect, or the ability to contribute across different schedules. It encourages thoughtful responses and supports inclusive participation in online environments.*

Challenges:

- Slower decision-making
- Urgent messages may be missed if not checked promptly
- Requires self-discipline to check and respond regularly

Step-by-Step Guide

Mailing Lists (e.g., Gmail Group, Outlook Distribution List)

1. Access your email platform (e.g., Gmail, Outlook).
2. Create a group contact list:
    - In Gmail: Go to *Google Contacts* → *Create Label* → *Add contacts*.
    - In Outlook: Go to *People* → *New Contact Group* → *Add members*.
3. Name the mailing list clearly (e.g., *Project Team 2025*).
4. Add members by entering their email addresses.
5. Save and test the mailing list by sending a short message.
6. Use for announcements or updates when you want all members to receive the same email.

Choosing the Right Method

Situation	**Best Choice**	**Why**
Urgent problem with a client	Synchronous	Immediate action is needed
Brainstorming new ideas	Synchronous	Live discussion encourages creativity

Gathering detailed feedback on a proposal	Asynchronous	Gives people time to review and think
Communicating across time zones	Asynchronous	Flexible for everyone's schedule

Table 3: synchronous vs asynchronous

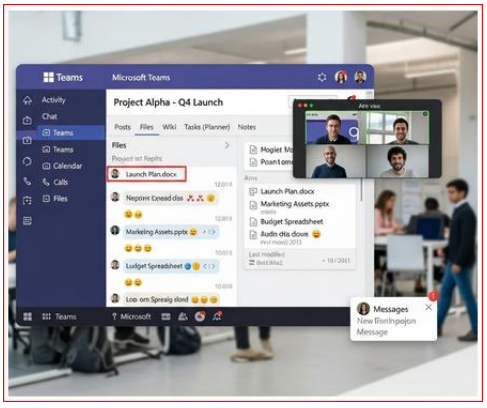
1.3 Virtual Meeting Tools and Etiquette

Figure 58 webinars using zoom meeting

Virtual Meeting Tools

In today's connected world, virtual meetings are an essential platform for work, study, and collaboration. There are many platforms available, each with unique features suited to different needs. Here are three of the most popular tools:

1. **Zoom**
   - Best for: Webinars, online classes, and large meetings.
   - Features:
     - Breakout rooms for small group discussions.
     - Screen sharing for presentations and demonstrations.
     - Recording options to review sessions later.
   - Why it's popular:
     - Works on multiple devices (computers, tablets, smartphones).
     - Easy to join meetings with a link—no account required for participants.
2. **Microsoft Teams**



   - Best for: Team collaboration and ongoing projects.
   - Features:
     - Integrated chat, file sharing, and task management.
     - Can schedule and host both small and large meetings.

- Integration with Microsoft 365 tools (Word, Excel, PowerPoint).

- Why it's useful:

Figure 59 Microsoft Teams interface

  - Centralized workspace for communication, documents, and meetings.
  - Ideal for long-term collaboration in organizations and schools.

3. Google Meet

Figure 60 Google Meet video call

- Best for: Quick, simple meetings, especially for those with Gmail accounts.
- Features:
  - Easy link-based joining with no software download needed.
  - Live captions for accessibility.
  - Integration with Google Calendar for scheduling.
- Why people like it:
  - Seamless connection with Google tools like Drive and Docs.
  - Simple interface that's beginner-friendly.

Virtual Meeting Etiquette

Just like face-to-face meetings, virtual meetings require professional behavior. Following proper etiquette makes communication smooth and respectful.

Before the Meeting

- Test your device settings: Check the camera, microphone, and internet connection.
- Prepare: Read the agenda and write down your talking points.
- Environment: Choose a quiet, well-lit space with minimal distractions.

During the Meeting

- Mute when not speaking: This prevents background noise from disrupting the conversation.

- Use the chat respectfully: Ask questions or share links politely without interrupting the speaker.
- Keep your camera on (if possible): Seeing faces builds trust and connection.
- Be present: Avoid multitasking: stay focused on the discussion.

After the Meeting

- Follow up: Send notes, summaries, or confirmation of your assigned tasks.
- Thank the participants: A short message of appreciation can strengthen professional relationships.

Exercise

Objective: Practice hosting and participating in a professional virtual meeting.

Instructions:

1. Break into small groups in breakout rooms.
2. Assign roles:
    - Host – Leads the meeting and keeps it on track.
    - Participant – Contributes ideas and responds to questions.
    - Note-taker – Records key points and action items.
3. Run a 5-minute virtual meeting on a chosen topic.
4. After the meeting, discuss:
    - What went well?
    - What could improve for next time?

Practical Exercise

1. You are writing an email to your instructor asking for an extension on your project deadline.

- Rewrite the message below to demonstrate *clarity*, *respectful tone,* and *professional structure*:

"Hey! I'm too busy right now. Can I get more time for the project?"

- What changes did you make to improve clarity and tone?

2. You are collaborating with two teammates—one older teacher from another country and one younger student from your region. The older teammate prefers formal communication; the younger prefers chat messages with emojis.

- How will you adjust your tone and style to communicate effectively with both?
- Write a sample greeting or message that balances both styles.

3. During a virtual meeting, one participant keeps interrupting others and another is silent throughout.

- As the meeting host, how would you handle this situation respectfully?
- Mention at least two strategies for maintaining engagement and respect in virtual spaces.

Summary

Effective online communication is essential for working in today's digital and global environment. It requires clarity, a respectful tone, and active listening, especially since many non-verbal cues are absent in text-based interactions. Cultural and generational awareness helps prevent misunderstandings and builds stronger relationships by adapting language, tone, and response expectations.

Choosing between synchronous (real-time) and asynchronous (delayed) communication ensures that messages are delivered and responded to in the most efficient way for the situation. Virtual meetings, whether on Zoom, Microsoft Teams, or Google Meet, require preparation, professional etiquette, and appropriate follow-up to be productive and respectful. Mastering these skills enables you to collaborate confidently across cultures, generations, and time zones.

Review Questions

Multiple choice

1. You need urgent clarification from your teammate about a client issue. Which communication method is BEST?

   A. Email

B. Recorded video message
C. Video call
D. Shared Google Doc with comments

2. In a virtual meeting, someone from another culture sends a very short reply that seems blunt to you. What should you do first?

A. Assume they are being rude
B. Ask politely for clarification
C. Ignore their message completely
D. Respond with an equally short message

3. Which of these is NOT a tip for maintaining clarity in online communication?

A. Use bullet points for multiple ideas
B. Avoid jargon unless everyone understands it
C. Hide your key point in the middle of a long paragraph
D. Start with the most important information

4. You are working with a team spread across three time zones. The task requires thoughtful review of a proposal. Which tool is MOST suitable?

A. Instant messaging chat
B. Email with attached document
C. Live brainstorming call
D. Phone call

5. During a Zoom meeting, what is the BEST way to show active listening?

A. Keep your camera off and type messages in chat
B. Nod occasionally and give short verbal confirmations
C. Multitask while the other person is speaking
D. Interrupt with your opinion immediately

Session 2: Collaborating through Digital Technologies

Introduction:

Dear learners, welcome to this session. In this session, you will explore Collaborating through Digital Technologies

Collaborating through digital technologies involves using tools like project management software, communication platforms, and shared document editors to enable teams to work together regardless of their physical location, fostering increased efficiency, better communication, and more organized workflows.

Let's start with a quick scenario: You and your classmates have a group project due in two weeks. The challenge? Everyone lives in different towns across Ethiopia: Addis Ababa, Bahir Dar, Dire Dawa, and Hawassa. Meeting in person is impossible.

Think about this:

- How will you share your ideas?
- How will you split the work?
- How will you make sure everything comes together on time?

Digital collaboration answers all this. By the end of this session, you'll know how to work effectively as a team online—whether it's with a small local group, a large organization, or even partners across the globe.

Learning Objective

By the end of this session, learners will be able to:

- Explain the concept, types, and benefits of digital collaboration.
- Use online communication, file-sharing, and task-management tools to plan and manage group work.

- Evaluate common challenges in virtual teamwork and create practical solutions through a collaborative project.

Content outline

2.1 Concepts of Digital Collaboration and its benefits
2.2 Digital Collaboration Tools
2.3 Common challenges in virtual teamwork

2.1 Concepts of Digital Collaboration and Its Benefits

What is Digital Collaboration?

Digital collaboration refers to the process of **working together with others using online tools and digital platforms** to achieve a shared goal. It allows people to **plan, create, share, and communicate** without needing to be in the same physical space. In a world where teams are often spread across different cities or even countries, digital collaboration helps ensure that work continues smoothly, regardless of distance or time zone.

Types of Digital Collaboration

There are two main types of digital collaboration based on how and when team members interact:

1. **Real-Time (Synchronous) Collaboration**
    - In this form, all participants work together **at the same time**, often through live communication tools.
    - Examples include **video meetings on Zoom or Microsoft Teams, instant messaging on Slack**, or **co-editing a Google Document** while discussing ideas in real-time.
    - This approach allows for **immediate feedback, quick decision-making, and active discussion,** similar to an in-person meeting.
2. **Asynchronous Collaboration**
    - Here, team members **work and contribute at different times**, which provides flexibility for people in different time zones or with varying schedules.

- Examples include **adding comments to a shared Google Doc, posting updates on Trello or Asana,** or **sharing recorded video messages**.
- This method is useful when real-time interaction is not necessary, helping everyone participate at their own pace.

Both forms of collaboration are valuable the best approach often depends on the team's goals, the task at hand, and participants' availability.

Benefits of Digital Collaboration

When done effectively, digital collaboration offers numerous advantages that go beyond simple online communication. It helps teams become **more efficient, innovative, and inclusive,** while overcoming traditional barriers of time and space.

1. Work with People Anywhere, Anytime

- Digital collaboration allows teams to connect **regardless of geographical location**.
- Team members can contribute from **different cities, regions, or even countries**, as long as they have an internet connection and a digital device.
- ***Example*:** Teachers in Addis Ababa can collaborate with educators in Hawassa or Bahir Dar to design lesson plans using Google Docs, without having to meet physically.
- This global connectivity encourages **knowledge sharing** and **diverse perspectives,** enriching the final outcome.

2. Save Time and Reduce Costs

- Traditional collaboration often requires **travel for meetings, training, or workshops**, which can be expensive and time-consuming.
- Online collaboration eliminates much of this need; meetings can be held virtually, documents can be shared instantly, and feedback can be exchanged in minutes.
- As a result, teams make **faster decisions** and spend **less money on transportation or logistics**.

- Instead of spending hours traveling, members can use that time to **focus directly on project tasks.**

3. Keep Work and Communication Organized in One Place

- Digital collaboration tools like **Google Workspace, Microsoft Teams, or Trello** allow users to **store files, chat histories, meeting notes, and project updates** in one central location.
- This organization prevents confusion caused by searching through multiple emails, phone messages, or USB drives.
- Everyone can view the **latest version of a document**, track who made changes, and access shared materials anytime.
- Such transparency promotes **accountability and smooth teamwork.**

4. Combine Different Skills and Perspectives for Better Results

- Teams are often made up of individuals with **diverse backgrounds and expertise** such as writing, design, teaching, or technical problem-solving.
- Digital collaboration enables these varied skills to come together effectively, regardless of where each person is located.
- By blending different viewpoints and experiences, teams can create **more innovative, creative, and comprehensive outcomes.**
- This inclusivity also builds a stronger sense of community and shared ownership of the work.

2.2 Digital Collaboration Tools

Digital collaboration is only as effective as the tools you use. The right tools help teams communicate clearly**,** share resources efficiently, and stay on track with deadlines no matter where members are located.

Below is your digital toolkit**,** organized into three categories: communication**,** file sharing, and task management**,** plus the steps to use them effectively.

For Communication

a) WhatsApp / Telegram: *Fast Messaging & Group Chats*

- Purpose**:** Share quick updates, create group discussions, send images, and share files instantly.
- Steps to Use:
  1. Create a dedicated group chat for your project or team.
  2. Set clear rules for communication (e.g., working hours, avoid spamming).
  3. Use voice notes for complex messages when typing is inconvenient.
  4. Pin important messages so everyone can find key information quickly.

b) Zoom / Microsoft Teams / Google Meet – *Video Meetings & Screen Sharing*

- Purpose**:** Host real-time discussions, share screens for presentations, and record meetings for later review.
- **Steps to Use:**
  1. Schedule the meeting using a shared Google Calendar invite.
  2. Share the link in your team's main chat group.
  3. Test your microphone and camera before joining.
  4. Use the screen share option to walk the team through documents or slides.
  5. Record the meeting if some members can't attend.

For File Sharing

a) Google Drive / OneDrive / Dropbox – *Store, Share, and Co-edit Documents*

Purpose: Keep all files in one place so everyone can view, edit, and comment in real-time.Step-by-Step Guide (Google Drive)

Step 1: Open Google Drive

1. Open your internet browser (Chrome, Edge, or Firefox).
2. In the address bar, type drive.google.com and press Enter.

3. Log in with your Google account (Gmail) if asked.
4. You will see your Google Drive homepage where all your files and folders are stored.

Step 2: Create a New Project Folder

1. On the left side, click the New button.
2. Select Folder from the menu.
3. Type a clear name for the folder, for example:
    - *Magazine Project*
    - *Class Assignment Folder*
4. Click Create.
5. The new folder will now appear in your Drive.

Step 3: Upload Files to the Folder

1. Double-click to open your new folder.
2. Inside the folder, click New → File Upload (or Folder Upload to add many files at once).
3. Select the file(s) from your computer — for example:
    - Images (photos, graphics)
    - Draft documents (Word, Google Docs)
    - PDFs or presentations
4. Wait for the upload to finish. You'll see the file appear in the folder.

Step 4: Share the Folder with Teammates

1. Right-click the folder name.
2. Select Share.
3. A box will open where you can type your teammates' email addresses.
4. Next to each email, choose their permission level:
    - Viewer → Can only look at files.
    - Commenter → Can leave comments but cannot change files.
    - Editor → Can add, remove, or edit files.
5. Click Send → your teammates will get an email with access to the folder.

Step 5: Work Together in the Shared Folder

- Everyone with access can now:
  - Upload new files.
  - Edit documents (if they are shared as Google Docs, Sheets, or Slides).
  - Organize content by making subfolders (e.g., *Drafts*, *Final Versions*, *Images*).
- Any changes made are saved automatically and visible to all team members.

Step-by-Step Guide (Google Docs)

Step 1: Open Google Docs

1. Open your internet browser (e.g., Chrome, Edge, Firefox).
2. In the search bar, type docs.google.com and press Enter.
3. If you are not signed in, log in with your Google (Gmail) account.

Step 2: Create a New Document

1. On the Google Docs homepage, you will see a plus sign Blank Document (+).
2. Click Blank to start a new empty page.
   - If you want to use a ready-made format (like a resume, report, or letter), click on one of the Templates.

Step 3: Start Writing

1. Place your cursor on the white page.
2. Start typing your text for example:
   - Write an article (about a topic you like).
   - Write a story.
   - Write a school or work report.
3. Your work is saved automatically in Google Docs you don’t need to click Save.

Step 4: Share the Document with Others

1. In the top-right corner, click the blue Share button.
2. A box will appear where you can type the email addresses of the people you want to share the document with.
3. Next to each email, you will see a drop-down menu with roles.

Step 5: Choose Roles (Permissions)

- Viewer → Can only look at the document but cannot make changes.
- Commenter → Can add suggestions and comments but cannot edit the text directly.
- Editor → Can make full changes to the document.

(Tip: If you are working in a group project, make your teammates "Editors" so they can write with you.)

Step 6: Use Comments to Give Suggestions

1. Highlight (select) the text you want to comment on.
2. Click Insert → Comment (or right-click and choose *Comment*).
3. Type your suggestion in the box and press Comment.
4. Your teammate will see the comment and can reply or fix it.

Step 7: Collaborate in Real Time

- When multiple people open the document, you can see their names or initials at the top.
- Each person's text appears in real time changes show up instantly.
- You can chat or reply to comments inside the document for teamwork.

For Task Management

a) Google Calendar - Schedule Deadlines & Meetings

- Purpose**:** Keep track of project timelines, events, and meetings in one shared calendar.

Step-by-Step Guide (Google Calendar)

Step 1: Open Google Calendar

1. Open your internet browser (Chrome, Edge, or Firefox).
2. In the address bar, type calendar.google.com and press Enter.
3. Log in with your Google account (Gmail) if needed.
4. You will now see your calendar view (by day, week, or month).

Step 2: Create a Shared Project Calendar

1. On the left-hand menu, find Other Calendars.
2. Click the + **(plus sign)** next to it.
3. Select Create new calendar**.**
4. Give the calendar a name (e.g., *Project Team Calendar*).
5. Add a description (optional, e.g., *For tracking deadlines and meetings*).
6. Click Create Calendar.
7. To share with your team:
    - Go to Settings & Sharing → enter teammates' email addresses.
    - Choose permissions: *View only* or *Make changes*.

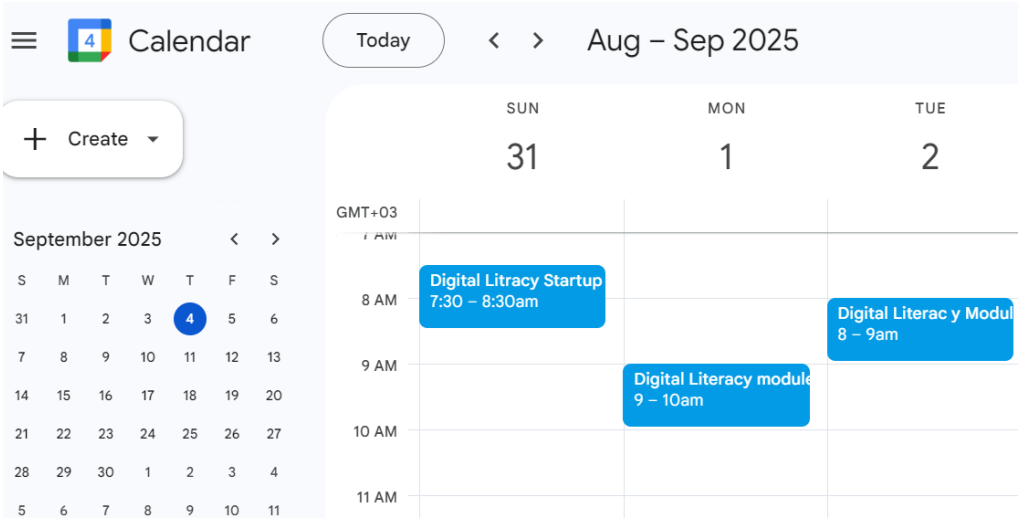


Figure 61 Working with Google Calendar

Step 3: Add Deadlines and Meetings

1. Click on a date in the calendar where you want to add an event.
2. A box will pop up → type the event name (e.g., *Submit Draft Report*).
3. Choose Event type**:**
    - Deadline → Set the due date and time.
    - Meeting → Add meeting link (Google Meet/Zoom).
4. Invite teammates: Add their emails in the "Guests" section.
5. Click **Save** → your event will appear in the calendar.

Step 4: Set Reminders for Events

1. When creating or editing an event, look for Notifications.
2. Add reminders such as:
    - 1 day before (so people prepare in advance).
    - 1 hour before (so no one forgets).
3. You can add multiple reminders for the same event.

Step 5: Color-Code Events

1. Click on an event in the calendar.
2. Select the event color from the color menu.
3. Use a simple color system, for example:
    - **Red** → Deadlines
    - **Blue** → Meetings
    - **Green** → Presentations or milestones
4. This makes the calendar easy to read at a glance.

b) Microsoft Teams

Microsoft Teams is a digital collaboration platform that brings together chat, meetings, file sharing, and teamwork tools in one place. It helps organize people, conversations, and resources around shared goals or projects.

1. Creating a Team

A *Team* is a digital workspace for a group of people who collaborate on a common task or topic.

Steps:

1. Open **Microsoft Teams** (desktop app or web version).
2. On the **left navigation panel**, click on the **Teams** icon
3. At the bottom of the Teams list, click **"Join or create a team."**
4. Choose **"Create a team."**
5. Select one of the following options:
    - **From scratch** – Build a new team from the beginning.
    - **From a group or team** – Reuse an existing Microsoft 365 group (if available).
6. Choose the **privacy level**:
    - **Private** – Only invited members can join.
    - **Public** – Anyone in your organization can join.
7. Enter a **Team name** and **Description** (optional).
8. Click **Create** to finalize your new team.

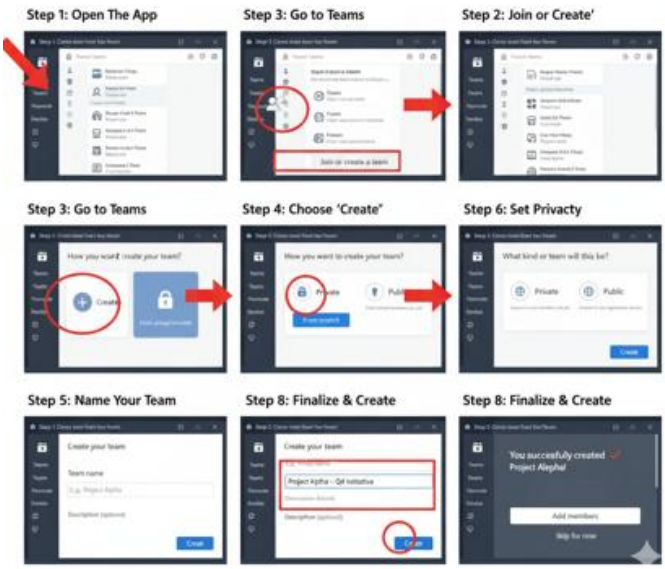


Figure 62 Creating a Team

Tip: *Create teams based on courses, departments, or projects (e.g., "ICT Teachers Group" or "Digital Skills Project Team").*

2. Adding Members, Guests, and Channels to a Team

A. Add Members and Guests

Once your team is created, you can invite people to join.

Steps:

1. Open the **Teams** tab and select your new team.
2. Click the **three dots (⋯)** next to the team name.
3. Choose **"Add member."**
4. Type the **name, email address, or contact** of the person you want to add.
5. Select **Add** to include them.
    - **Members** – People within your organization.
    - **Guests** – External users (for example, a partner or student from another school).
6. Click **Close** when finished.

Tip: *Guests will receive an email invitation to join the team. They can access shared resources but with limited permissions.*

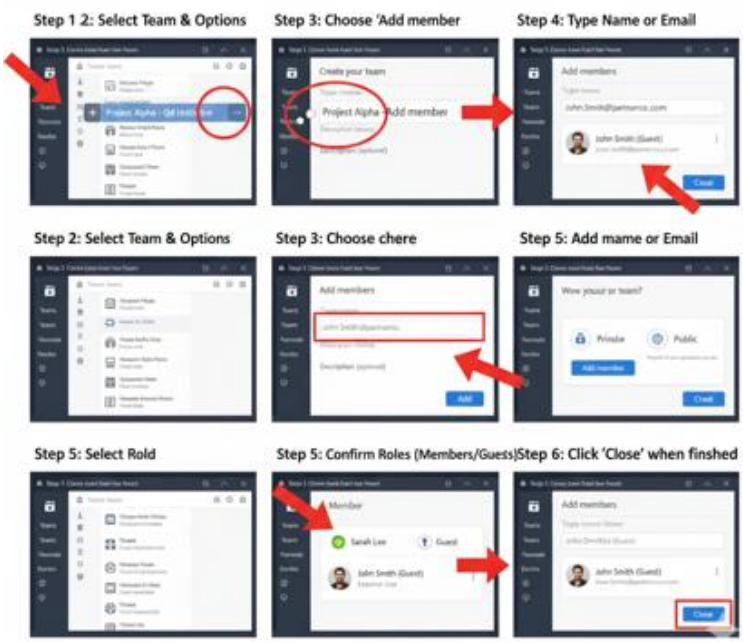


Figure 63 Add Members and Guests

B. Add Channels

Channels help organize discussions and files by topic or function within a team.

Steps:

1. Click the **three dots (⋯)** next to your team name.
2. Select **"Add channel."**
3. Enter a **Channel name** (e.g., "Lesson Planning" or "Student Support").
4. Add a **description** (optional).
5. Choose the **Privacy setting**:
    - **Standard** – Everyone on the team can access it.

Figure 64 Add Members and Guests

- **Private** – Only specific members can access it.

6. Click **Add** to create the channel.

Tip: *Use channels to separate work areas — for example, "Assignments," "Meetings," and "Resources."*

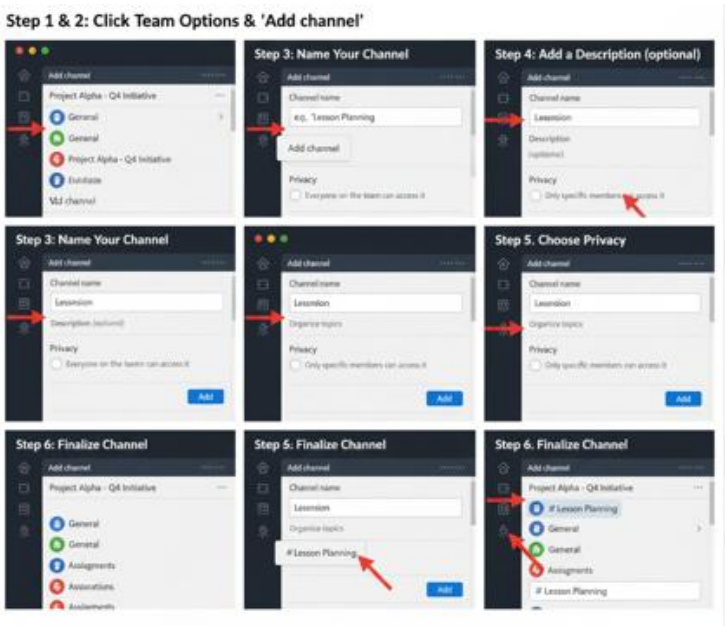


Figure 65 Add Channels

3. Removing Members, Guests, and Channels from a Team

A. Remove Members or Guests

Sometimes you may need to remove someone from the team.

Steps:

1. Go to your **Team** and click the **three dots (⋯)** next to its name.
2. Select **"Manage team."**
3. Under the **Members** tab, you will see a list of all team participants.
4. Click the **X (Remove)** next to the person's name.
5. Confirm removal if prompted.

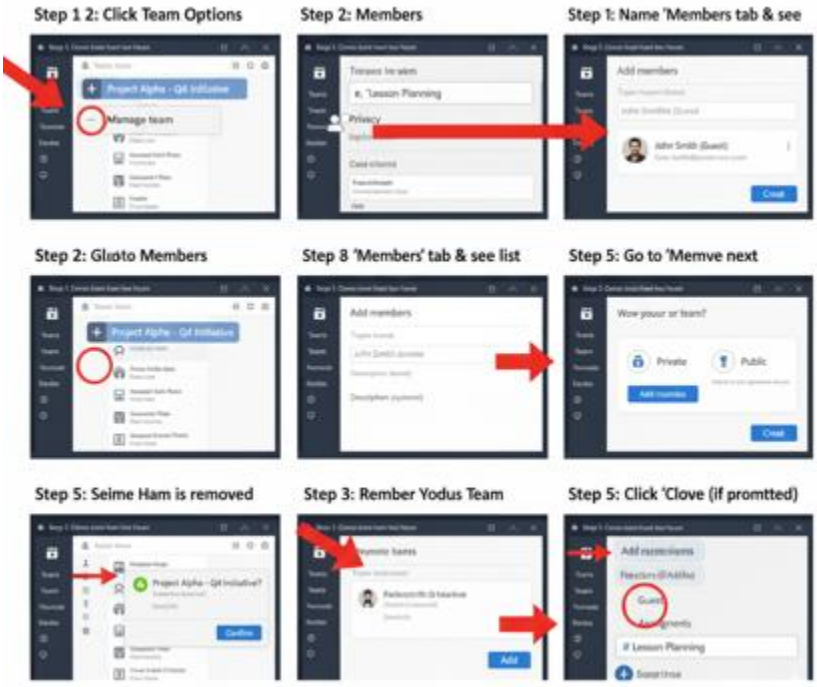


Figure 66 Remove Members or Guests

Note: *Only the **team owner** (creator or assigned leader) can add or remove members.*

B. Remove a Channel

If a channel is no longer needed, it can be deleted.

Steps:

1. Find the **channel name** under your team.
2. Click the **three dots (···)** beside it.
3. Choose **"Delete this channel."**
4. Confirm by clicking **Delete.**

Tip: *Deleting a channel removes all posts and files in it, so make sure to back up important materials first.*

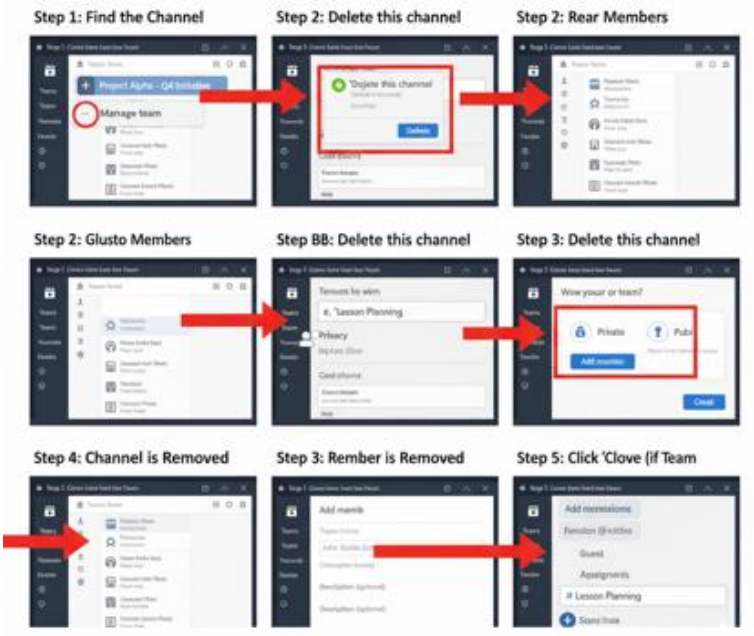


Figure 67 Remove a Channel

4. Viewing Team Information and Analytics

Team analytics help you understand how active your team is who's participating, how many messages are sent, and how files are used.

Steps:

1. Click the **three dots (···)** next to your team name.
2. Select **"Manage team."**
3. Go to the **Analytics** tab (or **Insights** if available).
4. Review details such as:
    - Number of active members
    - Posts, replies, and reactions
    - File sharing activity
    - Channel usage trends

Tip: *Use this data to monitor engagement and identify areas where participation can be improved.*

C) Trello and **Asana** - Project management tools

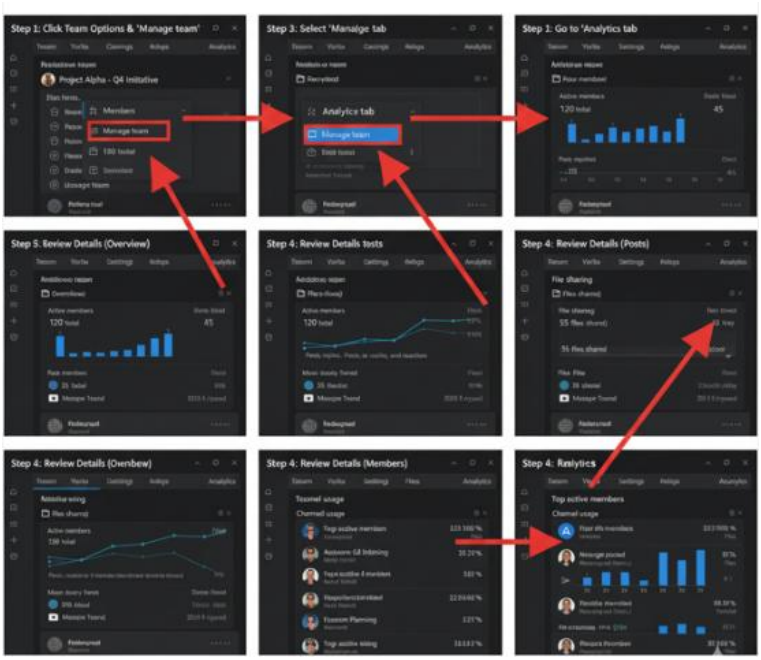


Figure 68 Viewing Team Information and Analytics

Project management tools like Trello and Asana help teams stay organized, on track, and clear about responsibilities. They work like digital "to-do lists" where you can assign tasks, set deadlines, and track progress all in one place.

Step-by-Step Guide (Trello Example)

Step 1: Open Trello

1. Open your internet browser (Chrome, Edge, or Firefox).
2. In the search bar, type trello.com and press Enter.
3. Click Log in (if you already have an account) or Sign up (to create a free account).
4. After logging in, you will see your Trello workspace.

Step 2: Create a New Board

1. On the homepage, click Create new board.
2. A box will appear asking for details:
    - Board Name → Type a name for your project (e.g., *Online Magazine Project*).
    - Background → Choose a color or image to make it easy to recognize.
    - Visibility → Decide if the board is *private* (only you), *workspace* (team only), or *public*.

3. Click Create Board.

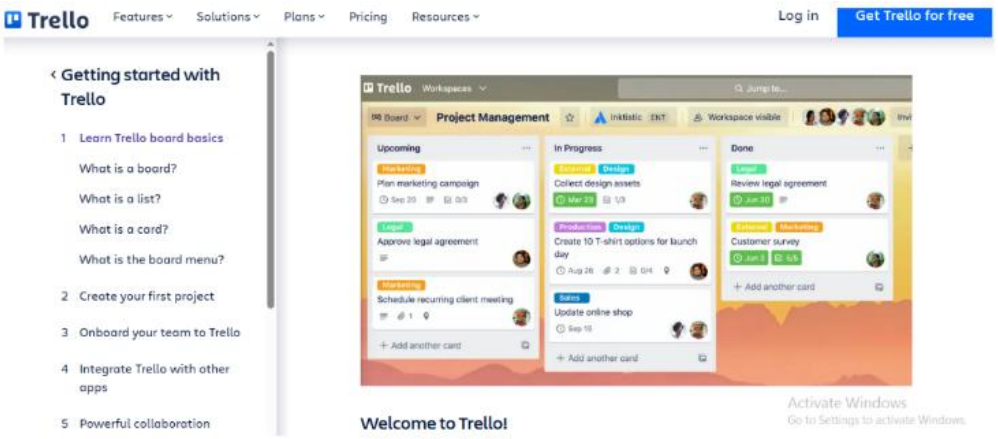


Figure 69 Working with Trello

Step 3: Add Lists to Organize Work

1. On your board, you will see an option to Add a list.
2. Type the first list name, for example:
    - To Do → Tasks not started yet.
    - In Progress → Tasks currently being worked on.
    - Done → Finished tasks.
3. Press Enter after each list.
4. Now you have a workflow to track your project.

Step 4: Create Cards (Tasks)

1. Under the To Do list, click + Add a card.
2. Type the name of the task, for example:
    - "Write Article"
    - "Design Cover"
    - "Publish Final Version"
3. Click Add Card.
4. Each card represents one task in the project.

Step 5: Assign Tasks to Teammates

1. Click on a card (e.g., "Write Article").
2. A pop-up window will open.
3. On the right side, click Members.

4. Type the teammate's name or email to assign them.
5. Their profile will now show on the card, meaning they are responsible for that task.

Step 6: Track Progress by Moving Cards

1. As work begins, drag the card from To Do → In Progress.
2. When the task is completed, drag the card from In Progress → Done.
3. This visual movement helps the whole team see what's finished and what still needs work.

Step 7: Use Extra Features for Better Organization (Optional)

- Due Dates: Set deadlines for tasks.
- Labels: Add colors (e.g., red for urgent, green for completed).
- Checklists: Break down big tasks into smaller steps.
- Attachments: Upload files, images, or links related to the task.

Best Practices for Successful Collaboration

Working together online can be smooth and productive but only if your team follows certain habits from the start.

These best practices help avoid confusion, delays, and misunderstandings, ensuring that your project moves forward efficiently.

Set Clear Goals from the Start

- Why**:** If the team doesn't agree on what they're working toward, people may waste time on tasks that don't matter.
- How**:**

1. Define the project's purpose and expected outcome.
2. Write these goals in a shared document so everyone can refer back to them.
3. Break big goals into smaller milestones.
    - Example**:** Instead of "Improve community awareness," set "Create and share a health awareness poster online within 3 weeks."

Assign Roles and Responsibilities

- Why**:** Avoids confusion and ensures every task is covered.
- How**:**

1. Assign tasks based on each member's strengths.
2. Clearly list who is responsible for what in the shared task list.
3. Check in regularly to ensure roles are clear and still suitable.
    - Example**:** In a school project, one person could handle research, another writes content, and another designs the slides.

Use a Shared Calendar or Task List

- Why**:** Keeps the whole team on track and aware of deadlines.
- How**:**
    1. Use Google Calendar, Trello, or Asana to list all deadlines and meetings.
    2. Set reminders so no one misses important dates.
    3. Update tasks as they are completed.

Communicate Regularly and Respectfully

- Why**:** Frequent, polite communication prevents misunderstandings and builds trust.
- How**:**
    1. Agree on a main communication channel (e.g., WhatsApp group).
    2. Send short, clear updates instead of long, confusing messages.
    3. Respect working hours, avoid sending late-night messages unless urgent.

Keep All Files in One Shared Folder

- Why**:** Saves time searching for documents and ensures everyone works on the latest version.
- How**:**
    1. Use Google Drive**,** OneDrive**, or** Dropbox.
    2. Name files clearly and organize them in folders.

3. Remove outdated versions to avoid confusion.

Give Constructive, Polite Feedback

- Why**:** Feedback improves quality and helps teammates grow, but harsh words can discourage people.
- How**:**

1. Be specific: say what's good and what can be improved.
2. Use "I" statements (e.g., "I think this section could be clearer" instead of "You wrote this wrong").
3. Suggest solutions, not just problems.

2.3 Common Challenges in Digital Collaboration & How to Solve Them

Digital collaboration offers flexibility, creativity, and teamwork across distance but it also brings unique challenges that can affect communication, productivity, and team relationships. In this lesson, you will explore the most common challenges teams face when working online and learn strategies and digital tools to overcome them.

No.	Challenge	Description	Examples	Solutions / Strategies
1	Miscommunication & Lack of Clarity	Messages misunderstood due to missing tone or context.	"We need this report soon" → unclear deadline.	- Use clear, specific language.- Confirm understanding.- Use shared docs and video messages for clarity.
2	Unequal Participation	Some dominate while others stay silent.	Few speak in meetings; others remain off-camera.	- Use structured turns, polls, breakout rooms.- Rotate roles.- Create inclusive space.
3	Time Zone & Scheduling Conflicts	Difficult to find common meeting times.	Members in different countries miss meetings.	- Blend live & async communication.- Use scheduling tools.- Record sessions.- Share meeting notes.
4	Technology Issues	Poor connectivity or tool failures interrupt collaboration.	Mic/camera doesn't work in a meeting.	- Offer tech orientation.- Provide backup tools.- Share offline resources.-

				Teach troubleshooting basics.
5	Lack of Accountability	Tasks delayed due to unclear follow-up.	Shared file left unupdated after meeting.	- Use task trackers (Trello, Asana).- Send recap emails.- Set check-ins.- Foster responsibility culture.
6	Cultural & Language Barriers	Misunderstandings due to diverse backgrounds.	Local slang or idioms confuse others.	- Use simple, inclusive language.- Discuss communication norms.- Be patient & respectful.- Use visuals.
7	Information Overload	Too many messages/tools cause confusion.	Updates shared on email, Teams, and WhatsApp.	- Choose one main platform.- Organize chats by topic.- Limit notifications.- Summarize discussions.
8	Building Trust & Team Connection	Hard to build rapport online.	Team feels distant; low motivation.	- Use icebreakers.- Celebrate wins.- Encourage video sessions.- Keep commitments.

Table 4 : Common Challenges in Digital Collaboration & How to Solve Them

Hands On Exercise: Digital Team Collaboration Project

Exercise Title: Plan and Manage a Group Project Using Online Collaboration Tools

Instructions:

1. Form a small group of 3-5 members.
2. Choose a simple group project, such as preparing a short presentation or designing an awareness poster (e.g., “Promoting Safe Internet Use”).
3. Set up your digital workspace using the following tools:
    - Communication: Create a group on WhatsApp or Telegram for team discussions and updates.
    - File Sharing: Create a shared Google Drive folder to store all project files and allow team members to edit documents together.
    - Task Management: Create a Trello board (or Google Calendar) to assign tasks, set deadlines, and track progress.

4. Collaborate and complete your tasks online. Each member should contribute by:
    - Sharing ideas and updates in the chat group.
    - Uploading or editing project documents in Google Drive.
    - Updating progress on the Trello board or calendar.
5. Present your outcome (e.g., a shared Google Slides presentation or digital poster) to the class or instructor.
6. Reflect briefly (3 - 5 sentences): What digital tools helped your group the most, and what challenges did you face while collaborating online?

Summary

In this session, we explored how to make online teamwork effective and productive. Successful digital collaboration requires clear goals, well-defined roles, and the use of shared tools like calendars, task lists, and file storage platforms. Good communication, regular, respectful, and organized, is key to avoiding misunderstandings. Keeping all work in one shared location ensures everyone is on the same page, while polite, constructive feedback helps improve the final outcome. We also discussed common challenges like poor internet, unclear messages, and uneven participation, along with practical solutions such as using lightweight tools, clear communication methods, and fair task distribution. By applying these best practices, teams can work together smoothly no matter where members are located.

Review Question

1. Which of the following is a best practice for successful online collaboration?
    A. Waiting until the last day to share your part of the work
    B. Using a shared document where everyone can edit
    C. Avoiding communication to prevent conflicts
2. Why is assigning roles and responsibilities important in a team project?
    A. It helps avoid confusion and ensures every task is covered
    B. It allows some members to skip tasks
    C. It reduces the need for communication
3. Which tool is best for organizing deadlines and meetings?

   A. WhatsApp
   B. Google Calendar
   C. Dropbox

4. How can teams handle different internet speeds effectively?
   A. Only work with people who have fast internet
   B. Use lightweight apps and enable offline editing
   C. Delay meetings until everyone gets better internet
5. Giving constructive feedback means:
   A. Pointing out mistakes without offering solutions
   B. Being specific, polite, and suggesting improvements
   C. Ignoring problems to avoid hurting feelings

Session 3: Engaging in Citizenship through Digital Technologies

Introduction

Dear learners, welcome to this session. In this session, you will explore Engaging in Citizenship through Digital Technologies

Think for a moment about an issue in your community you wish you could change perhaps your school needs new classrooms, your neighborhood struggles with waste management, or your local park could use more trees. Now, imagine being able to share your idea with hundreds or even thousands of people within minutes, all without leaving your home. That is the power of digital tools, giving you a voice to raise awareness, connect with others, and inspire action.

In this session, you'll learn how to:

- Use online platforms to raise awareness for causes you care about.
- Gather support and work with others even across long distances.
- Make your voice heard while staying respectful, safe, and effective.

By the end of this lesson, you'll be ready to act as a responsible digital citizen, someone who uses technology not just to connect, but to create real change.

Learning Objectives

By the end of this lesson, you will be able to:

- Explain what digital citizenship is and why it matters in community engagement.
- Identify safe, respectful, and effective ways to participate in online civic activities.
- Apply digital tools to promote awareness and mobilize people for local causes.

Content outline

3.1 Basic concepts of digital citizenship

3.2 Ways to Engage in Digital Citizenship

3.1 Basic Concepts of Digital Citizenship

Digital citizenship today goes beyond the early focus on online safety, such as protecting passwords or avoiding harmful content. In the 21st century, it has evolved into a broader concept that emphasizes responsible, respectful, and effective participation in digital society**.**

A digital citizen is someone who:

- Thinks critically about information and online content.
- Stays informed about local, national, and global issues.
- Engages responsibly in civic, cultural, and professional spaces.
- Promotes positive values online while discouraging harmful behavior such as cyberbullying or misinformation.
- Protects themselves and others**,** contributing to a safe and ethical digital environment.
- Uses technology for innovation, advocacy, and entrepreneurship**,** helping solve community and societal challenges.

In short, digital citizenship is about being an active, ethical, and informed participant in today's interconnected digital world. Here are the Key Dimensions of Advanced Digital Citizenship as *(from Ribble's 9 Elements)*

1. **Digital Access**: Ensuring that everyone has equal opportunity to use technology, the internet, and digital tools for learning, communication, and daily life.

   Example**:** Schools offering computer labs or Wi-Fi for all.

2. Digital Communication: The exchange of information using digital platforms such as email, social media, messaging apps, and video conferencing.

   Example**:** Using the school email to send homework questions.

3. Digital Literacy: The ability to find, evaluate, use, and create digital content responsibly. It involves understanding how technology works and analysing information critically.

Example**:** Checking if an online article is from a reliable source.

4. Digital Security (Self-Protection): Practices that protect personal information, devices, and online accounts from unauthorized access or cyber threats.

Example**:** Using strong passwords and two-step verification.

5. Digital Etiquette: Following socially acceptable standards and responsible behavior online. This includes being polite, professional, and respectful.

Example**:** Avoiding rude comments in online discussions.

6. Digital Rights & Responsibilities: Recognizing that everyone has rights online—such as privacy, access to information, and freedom of expression—while fulfilling responsibilities like ethical behavior and reporting misuse.

Example**:** Reporting cyberbullying instead of ignoring it.

7. Digital Law: Legal frameworks governing digital activity, including copyright, intellectual property, data protection, and cybercrime regulations.

Example**:** Respecting Creative Commons when using images in assignments.

8. Digital Health & Wellness: Maintaining physical and psychological well-being while using digital technology. Includes screen-time management, ergonomics, and mental health awareness.

Example**:** Taking screen breaks to avoid eye strain.

9. Digital Commerce: Buying, selling, or conducting financial transactions safely online. Includes understanding risks and practicing ethical behaviour in e-commerce.

Example**:** Using secure payment methods when shopping online.

3.2 Ways to Engage in Digital Citizenship

Digital citizenship is not just about knowing your rights and responsibilities online; it's about taking action to make a positive impact in your community, your country, and even globally. Here are practical ways to participate in civic engagement using digital tools:

A. Social Media Advocacy 

Social media platforms like Facebook, Instagram, TikTok, and Twitter (X) are powerful tools for raising awareness.

- You can share posts, images, or videos about causes you support, such as environmental conservation, education, or women's rights.
- Use **hashtags** to reach wider audiences (#CleanAddis, #SaveLakeTana, #EthiopiaForEducation).
- Tag community leaders, organizations, or influencers to help spread your message.

B. Online Petitions

Platforms like Change.org and Avaaz allow you to gather digital signatures for a cause.

- Create a petition explaining the problem, why it matters, and the change you're requesting.
- Share the petition link through WhatsApp groups, Telegram channels, and social media to collect support.
- Present the results to local authorities, schools, or NGOs.

C. Community Groups

Joining Skool, Circle, Might Networks, WhatsApp, Telegram, or Facebook groups is a great way to stay informed and coordinate activities.

- Participate in discussions, share useful information, and volunteer for tasks.
- Organize clean-up drives, charity events, or awareness campaigns.
- Respect group rules to maintain constructive dialogue.

D. Online Volunteering

Even without traveling, you can offer your digital skills to help others.

Examples:

- Graphic Design**:** Creating posters for awareness campaigns.
- Translation**:** Translating materials into local languages.
- Content Writing**:** Writing articles or social media posts for NGOs.
- Data Entry**:** Helping digitize records for community projects.

Digital Participation Trends in Ethiopia

Around the world, digital tools are transforming how citizens interact with governments, communities, and movements. This trend also influences Ethiopia to be governed in it.

A. E-Governance & Smart Services: EthioGov / Digital Ethiopia 2025 Strategy. Ethiopia's national digital strategy aims to integrate digital platforms into governance, service delivery, and economic growth. This includes**:** Online tax filing, trade licensing, and some e-learning platforms., National Digital ID (Fayda Project).
B. Civic Tech & Open Data- Ethiocoders: A civic-tech initiative inspired by the government to improve digital citizen engagement. Include programs such as data analysis, Artificial intelligence, and Programming etc.
C. Digital Financial Inclusion (Telebirr): A mobile money platform by Ethio Telecom that enables millions of Ethiopians to make digital payments, transfer money, and pay bills.
D. Citizen Activism & Social Movements - #NoMore Campaign: A digital activism campaign started by Ethiopian and Eritrean diaspora communities to counter misinformation about Ethiopia's conflict in global media.
E. COVID-19 Digital Awareness Campaigns**:** During the pandemic, Ethiopian institutions and civil society groups used SMS, Telegram, and Facebook to spread accurate health information and combat misinformation.

3.3 Responsible and Safe Participation

Being an active digital citizen is not just about using technology; it's about safe and responsible online participation in the digital world. Every time you post, comment, or share, you are shaping your digital footprint and contributing to the larger digital community.

Public vs. Private Participation

When engaging as a digital citizen, it's important to understand the difference between public and private participation, as each has its advantages, limitations, and safety considerations.

Public Participation

Public participation means sharing your views, ideas, or content openly, where anyone can see and interact with it.

Examples:

- Posting a Facebook status update that is visible to "Everyone"
- Commenting on a public Twitter/X thread about environmental policies
- Writing a blog post or publishing an article on a public website
- Participating in open online forums like Reddit or public community boards

Advantages:

- Can reach a wide audience quickly
- Encourages open debate and discussion
- Raises awareness on a large scale

Risks:

- Your words and content are visible to strangers, which may invite criticism or negative comments
- Personal safety concerns if sharing sensitive details
- Information can be copied or shared without your control

Private Participation

Private participation happens in controlled or closed spaces, where communication is limited to selected individuals or groups.

Examples:

- Sending a direct message to a local council member on Telegram
- Participating in a closed Facebook or WhatsApp group
- Emailing an NGO about a community project
- Sharing documents in a private Google Drive folder

Advantages:

- Greater control over who sees your messages
- Safer for discussing sensitive or personal matters
- Allows more focused, in-depth discussions

Risks:

- Limited reach compared to public posting
- Still possible for private messages to be leaked or forwarded

Safety Tip: If you are discussing politically sensitive issues, organizing an event that could attract attention, or sharing personal details, use private channels. Always verify the trustworthiness of the group or person before sharing sensitive information

Safe participation

Being an active digital citizen is powerful, but it also comes with responsibility. The way you act online not only affects your own reputation and safety but can also impact your community. Responsible and safe participation ensures that you contribute positively while protecting yourself and others.

Stay Respectful Even in Disagreement

Online spaces often bring together people with different opinions, cultures, and experiences. Disagreements are natural, but they must be handled respectfully.

- Avoid personal attacks, insults, or hate speech.
- Focus on the issue, not the individual.
- Use polite, professional language, even if the other person is being rude.

Verify Information before Sharing

Misinformation spreads quickly online and can cause harm to people, communities, or even national stability.

- Check reliable news sources or official government announcements.
- Avoid sharing posts with no clear source or suspicious headlines.
- Use fact-checking websites like Africa Check **or** BBC Reality Check**.**

Protect Your Personal Data

Your personal information can be misused for fraud, harassment, or identity theft.

- Never share your full home address, phone number, bank details, or ID numbers publicly**.**
- Be cautious with location-sharing features on social media.
- Use strong, unique passwords and two-factor authentication.

Follow Community Guidelines and Platform Rules

Every online platform, whether it's Facebook, Telegram, or Zoom, has rules to maintain safety and respect.

- Read and understand the terms of service.
- Avoid posting banned content (e.g., hate speech, violent imagery, copyrighted material).
- Report harmful behavior when you see it.

3.4 Digital Citizenship promoting platforms

Digital tools make it easier than ever to connect with others, share ideas, and take action on issues that matter. By learning how to use these tools effectively, you can mobilize communities, gather feedback, and organize meaningful change.

Facebook Groups / Telegram Channels – Mobilizing Communities

These platforms allow you to bring people together for a common cause.

- Why use them? They have a wide reach and enable discussions, updates, and event organization.
- **How to use effectively:**
    1. Create a group or channel with a clear name and purpose (e.g., “Green Addis Tree Planting Initiative”).
    2. Set group rules to keep discussions respectful and on-topic.
    3. Post regularly to keep members engaged (updates, images, calls to action).
    4. Use polls and announcements to make decision-making easier.

Google Forms – Gathering Feedback and Opinions

Google Forms lets you create surveys or questionnaires to collect community opinions.

- Why use it? Free, easy to use, and results are automatically collected in Google Sheets for analysis.
- **Steps to create a form:**
    1. Go to forms.google.com.
    2. Click Blank Form or use a template.
    3. Add questions (multiple choice, short answer, checkboxes).
    4. Share the link via WhatsApp, Telegram, or email.
    5. Review results and make informed decisions based on responses.

Exercise

Choose a community issue you care about (e.g., school, neighborhood, environment) and use digital tools to raise awareness and involve others safely.

Steps:

1. Write a short description of the issue and why it matters.
2. Create a digital post (text, image, or video) about the issue.
3. Share your post in a private group or online community.
4. Create a simple survey or poll to collect opinions or support.
5. Take screenshots of:
    - Your post
    - The shared group or survey
    - Survey/poll results
6. Write a short reflection (3-4 sentences) on what you learned about responsible and safe online participation.

Submission: Combine all screenshots, post, and reflection into a single Word or PDF document and submit with your name.

Summary

This session introduced digital citizenship as the responsible, respectful, and effective use of technology to participate in society. Learners explored ways to engage in online civic activities such as social media advocacy, online petitions, community groups, and online volunteering. The lesson highlighted the difference between public and private participation, emphasizing when each is appropriate. Safety practices like staying respectful, verifying information, protecting personal data, and following platform rules were discussed. Learners also discovered practical digital tools (Facebook/Telegram, Google Forms, Zoom/Teams) to mobilize communities, gather feedback, and host virtual meetings.

Review Question

Multiple Choices

1. Which of the following best defines digital citizenship?
   A. Knowing how to use a smartphone
   B. Using technology responsibly to participate in society
   C. Creating social media accounts for entertainment
   D. Downloading free software from the internet
2. Which is an example of online civic engagement?
   A. Playing online games with friends
   B. Sharing a hashtag campaign about tree planting
   C. Watching random YouTube videos
   D. Installing a new mobile app
3. What is one advantage of public participation online?
   A. It is always completely private
   B. It reaches a wide audience quickly
   C. It cannot be criticized
   D. It keeps information secure
4. Which safety step should you take before sharing information online?
   A. Share first, check later
   B. Only check with friends
   C. Verify with reliable sources
   D. Post on multiple platforms at once
5. Which digital tool is most suitable for collecting community opinions?
   A. Facebook Groups
   B. Google Forms
   C. Telegram Channels
   D. Zoom
6. Which is an example of private participation?
   A. Tweeting about a new school policy
   B. Posting a public Facebook update
   C. Sending a direct message to a community leader
   D. Writing an open blog post

Session 4. Managing Digital Identity

Introduction

Dear learners, welcome to this session. In this session, you will explore Managing Digital Identity

Imagine you are applying for a scholarship, a job, or a leadership position, and before making a decision, the committee searches your name online. What will they find your inspiring achievements, thoughtful posts, or perhaps old content you wish would disappear? In this session, you will learn how to create, protect, and maintain a positive digital identity so that your online presence supports your goals and opens doors to new opportunities rather than limiting them.

Learning Objective

- Explain what digital identity is and why it matters.
- Apply strategies to build and protect a positive online presence.
- Edit and improve their own digital footprint.

Content outline

4.1 Digital Identity and its importance
4.2 Building a Digital Identity
4.3 Protecting Your Digital Identity and Digital Footprint

4.1 Digital Identity and its importance

Basic concepts of Digital Identity

Digital identity is the electronic representation of a person, organization, or even a device in the digital world. It's not just what you choose to share; it's the entire compilation of data about you that can be found on the internet. This includes information you've posted yourself, as well as things others have posted about you.

It includes:

Your digital identity is made up of a wide range of components, including:

- Social media profiles: Your accounts on platforms like Facebook, LinkedIn, X (formerly Twitter), and Instagram are a major part of your digital identity.
- Photos, videos, and posts: The content you've shared, from vacation photos to personal opinions, all contribute to your online persona
- Comments, likes, and reviews: Your interactions with other people's content and your feedback on products and services also become part of your digital footprint.
- Public records and media mentions: Articles, news stories, and any public records that are available online add to the picture of who you are.
- Online forum and community participation: Your contributions to discussions in online forums, groups, and communities are also a part of your digital identity.

Importance of Digital Identity

Your digital identity is the version of you that exists online, and it's more important than ever. What you post, share, and engage with online creates a lasting impression that can impact your life in tangible ways. Here's why you need to pay attention to your digital footprint:

i. First impressions are now online. Before a school, a potential employer, or even a new friend meets you in person, they will likely search for you online. What they find can shape their opinion of you and influence their decision.

ii. It builds trust and credibility. A clean and professional online presence shows that you are responsible and take your reputation seriously. It can signal to others that you are reliable and trustworthy in the real world as well.

iii. It protects your personal information. By actively managing what is visible to the public, you can reduce the risk of your personal information being misused. Limiting what you share and adjusting your privacy settings can help you avoid scams, identity theft, and other security risks.

iv. It opens up opportunities. A strong digital identity can be a powerful tool. Networking, collaborations, and new opportunities often arise from your online presence. Whether it's

showcasing your skills on a professional site or connecting with others who share your interests, your digital identity can help you stand out and get noticed.

4.2 Building a Digital Identity

Best Practices (Simple Rules to Follow):

I. **Choose a good profile picture**

- Use a clear photo of yourself where your face is visible.
- Avoid silly or unprofessional images, especially on accounts that others (like employers or schools) may see.

II. **Post useful and positive content**

- Share things that show your skills, achievements, or interests (for example: educational tips, inspiring quotes, or projects you've done).
- Stay away from posting harmful, offensive, or inappropriate material.

III. **Join the right communities**

- Be active in online groups that match your studies, career, or hobbies.
- This helps you learn, grow, and connect with people who share your goals.

IV. **Separate personal and professional life**

- Use one account for friends and family, and another for school or work.
- This keeps your professional image clean and focused.

V. **Think before you post**

- Ask yourself: *Would I be okay if my teacher, employer, or family saw this?*
- If the answer is no, don't post it. Remember: once online, it's hard to erase.

4.3 Protecting Your Digital Identity and Digital Footprint

I. Protecting Your Digital Identity

Safeguarding your digital identity is crucial for maintaining your privacy and security online. By taking a few proactive steps, you can significantly reduce your risk and protect your personal information.

Steps to Stay Safe:

1. Check Privacy Settings: Regularly review and adjust the privacy settings on all your social media accounts and other online platforms. Make sure you understand who can see your posts, photos, and personal information.
2. Use Strong, Unique Passwords: Create complex passwords that are difficult to guess and avoid using the same password for multiple accounts. Using a password manager can help you keep track of them securely.
3. Limit Personal Data Sharing: Be mindful of the personal information you share online. Avoid posting sensitive details such as your home address, phone number, financial information, or identification numbers. This helps prevent identity theft and other forms of misuse.
4. Enable Two-Factor Authentication (2FA): Whenever possible, enable Two-Factor Authentication (2FA) on your accounts. This adds an extra layer of security by requiring a second form of verification (like a code sent to your phone) in addition to your password.

Scenario:

Abebe, a teacher, uses Facebook to connect with friends, share photos, and participate in professional groups. Recently, someone created a fake profile using his pictures and sent friend requests to his contacts. Abebe decided to take immediate steps to strengthen his digital identity protection.

Action	What Abebe Did	Outcome / Benefit
1. Checked Privacy Settings	He went to Settings → Privacy → "Who can see your future posts?" and changed it to	Strangers could no longer see his personal photos,

	Friends only. He also reviewed his old posts and limited their audience.	reducing impersonation risks.
2. Used Strong, Unique Passwords	He changed his old password ("abebe1985") to a stronger one ("@bebeT3@ch!ng2025") and stopped reusing passwords across other sites.	Prevented password-guessing or hacking attempts.
3. Limited Personal Data Sharing	He removed his phone number, address, and workplace from the "About" section, and turned off location tagging in posts.	Reduced personal data exposure and stopped targeted scams.
4. Enabled Two-Factor Authentication (2FA)	He activated 2FA under Settings → Security and Login, using his phone number for login alerts.	Even if someone learned his password, they couldn't access his account without his phone verification.
5. Reported and Educated	He reported the fake account to Facebook and warned his friends not to accept duplicate requests.	The fake profile was removed, and his network became more cautious.

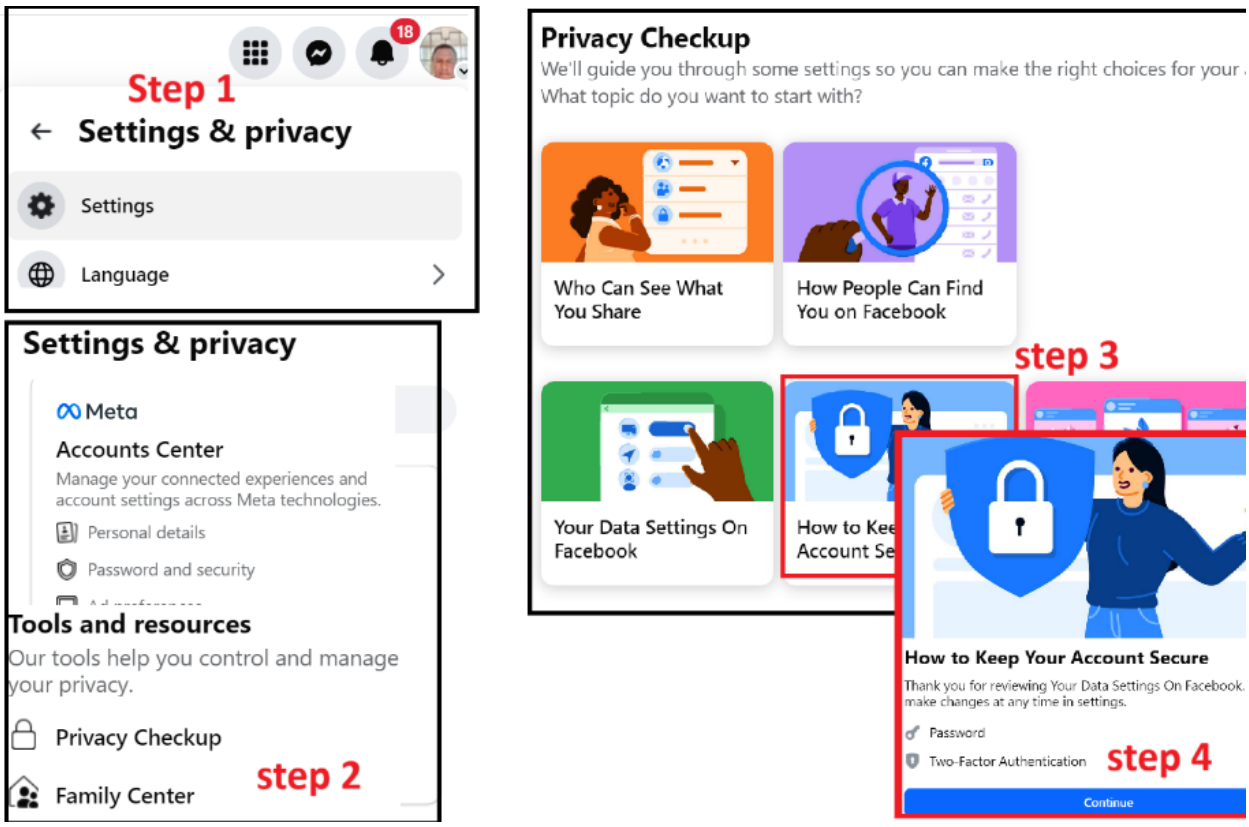


Figure 70 Facebook Security and Privacy settings

II. Monitoring Your Digital Footprint

Your digital footprint is the trail of data you leave behind from all your online activities. It includes everything from your social media posts to the websites you visit. Monitoring this footprint is an essential part of managing your digital identity.

How to Check Your Digital Footprint:

1. Google Yourself and Review the Results: A simple but effective way to see what's publicly available about you is to search for your own name and any associated usernames on a search engine like Google. Pay close attention to what comes up on the first few pages of results.
2. Audit Old Content: Go back through your social media profiles, old forum posts, and any other platforms you use. Delete or hide any content that is no longer representative of who you are today, or that could be seen as unprofessional or inappropriate by a school, employer, or anyone else.

3. Set Up Google Alerts: To stay on top of new information about you as it appears, set up a Google Alert for your name and any other relevant keywords. This will send you an email notification whenever your name is mentioned in a new online article, blog post, or other web content.

Exercise

- Audit personal social media accounts for privacy and professionalism.
- Create a LinkedIn profile or personal online portfolio.

Exercise: Managing Your Digital Identity

Audit your online presence, improve your professional image, and secure your digital identity by completing the following steps:

1. Google your name and review what is publicly visible. Take notes or screenshots of any content that may be unprofessional or sensitive.
2. Adjust privacy settings on your social media accounts to control who can see your posts, photos, and personal information. Enable Two-Factor Authentication (2FA) if available.
3. Create or update a professional online profile (e.g., LinkedIn or personal portfolio) with a clear profile picture, bio, and highlights of your skills, achievements, or projects.
4. Delete or hide any old content that may negatively impact your professional image.
5. Write a short reflection (3–4 sentences) on what you learned and how you will maintain a positive online presence.

Submission:

Submit a Word or PDF document including:

- Screenshots of your audit and privacy settings
- Link to your professional profile
- Your written reflection

File name: DigitalIdentity_[YourName].docx

Summary

In this session, learners explored the concept of digital identity, the information about them that exists online through social media, posts, public records, and more. They learned why maintaining a positive online presence is essential for building trust, attracting opportunities, and protecting personal information. The lesson covered practical ways to create a professional image, safeguard accounts with privacy settings and strong passwords, and monitor their digital footprint. By applying these strategies, learners can ensure their online reputation works in their favor.

Review Questions

Multiple Choice Questions

1. Which of the following best describes a digital identity?
   a) Your offline ID card information
   b) The collection of data and online profiles that represent you online
   c) Only your social media accounts
   d) Your email password
2. A digital footprint refers to:
   a) The physical devices you own
   b) The data trail you leave while using the internet
   c) Your identity card number
   d) Your credit card details
3. Which of the following is a good practice for protecting your digital identity?
   a) Using the same password across all platforms
   b) Sharing your login credentials with friends
   c) Using strong, unique passwords and enabling two-factor authentication
   d) Clicking unknown links in emails
4. Which action can help minimize your digital footprint?
   a) Regularly clearing browser history and cookies
   b) Posting personal information openly online
   c) Accepting all friend requests without checking
   d) Using unsecured public Wi-Fi for banking

5. Which of the following is part of your digital identity?

    A. Your social media posts
    B. Comments you leave on blogs or videos
    C. Mentions of your name in online news articles
    D. All of the above

5. Which action best builds a positive digital identity?

    A. Posting funny memes without checking appropriateness
    B. Sharing educational content related to your career interests
    C. Liking or commenting on negative posts
    D. Posting personal details like your address

Module 4: Digital Content Creation

Introduction

This module covers the principles and practices of creating, editing, and integrating digital content across various formats while respecting copyright and licensing rules. The module is structured into three main sessions. Session 1: Understanding Digital Content: Learn about types, features, and purposes of digital content and its role in communication and learning. Session 2: Creating and Editing Digital Content: Explore practical techniques to produce and refine text, image, audio, and video content with clarity, originality, and audience engagement. Session 3: Integrating and Re-elaborating Digital Content: Learn to combine multiple sources into coherent, relevant, and original digital products.

By the end of this module, you will be able to create and edit diverse digital content, integrate and adapt information effectively, and apply copyright and licensing principles responsibly when sharing or modifying content.

Session 1: Developing Digital Content

Introduction

Dear learners, welcome to this session. In this session, you will explore Developing Digital Content

Digital tools give us countless ways to express ideas, tell stories, and share information. In this session, you will learn how to create and edit digital content in a variety of formats, from text and images to audio and video, so that your message is clear, engaging, and impactful.

You'll explore how to transform your thoughts and creativity into meaningful digital expressions that connect with your audience. Whether you're aiming to inform, persuade, or inspire, this session will give you the practical skills and confidence to bring your ideas to life in the digital space.

Learning Objectives

By the end of this session, you will be able to:

- Identify what digital content is
- Create and edit digital content in various formats.
- Create and modify content for different audiences and platforms.

Content Outline:

1.1. Understanding Digital Content
1.2. Creating Digital Content
1.3. Editing and Refining Content

1.1 Understanding Digital Content

Digital content is any type of information or media created, shared, and consumed in a digital format. If you've ever written a social media post, uploaded a video, or listened to a podcast, you've already engaged with digital content. It can be stored, accessed, and shared through devices like computers, tablets, and smartphones.

Purpose of **digital content**:

- To inform: Providing knowledge, facts, or instructions.
- To educate: Teaching skills or concepts in a structured way.
- To entertain: Engaging the audience through storytelling, humor, or visuals.
- To communicate and express ideas**:** Sharing opinions, messages, or creative works.
- To promote or persuade**:** Influencing audiences in marketing, campaigns, or social causes.

Common Formats of Digital Content

- **Text:** Text-based content includes articles, blogs, social media posts, captions, and eBooks.
- **Images:** Images such as photographs, illustrations, infographics, and memes are used to grab attention, enhance comprehension, and support visual storytelling.
- **Audio:** Audio content includes podcasts, music, voice notes, and audiobooks.

- **Video:** Videos include short clips, tutorials, animations, and webinars. By combining visual and audio elements
- **Interactive Media:** Interactive media includes quizzes, simulations, games, and interactive infographics. It encourages active participation, experimentation, and instant feedback, enhancing learning and engagement.

Figure 71 Types of Digital Contents

Reflection Question:

Which content format do you use most often, and why? (Write 2–3 sentences and discuss with your group)

1.2 Creating Digital Content

Creating digital content involves producing information or media in a digital format that communicates a message, educates, entertains, or engages an audience. Effective creation balance's purpose, audience, format, and creativity.

Key Steps in Creating Digital Content

1. **Planning:**
   - Define the purpose and target audience.
   - Determine the format (text, image, video, audio, interactive).

- Outline key messages and ideas.

2. **Researching and Gathering Resources:**
   - Collect accurate information, media assets, and references.
   - Ensure sources are reliable and properly credited.
3. **Content Production:**
   - Use appropriate digital tools for creation (word processors, graphic design software, video/audio editors).
   - Focus on clarity, readability, and visual appeal.
4. **Editing and Refining:**
   - Review for errors, clarity, and coherence.
   - Improve visuals, audio quality, and overall engagement.
   - Ensure accessibility (alt text for images, captions for videos).
5. **Finalizing and Preparing for Distribution:**
   - Format content for the intended platform or audience.
   - Ensure compliance with copyright, licensing, and ethical standards.

- Accessibility: Ensure content is usable by people with different abilities.

Principles of Effective Digital Content Creation

- Clarity**:** Content should be easy to understand and concise.
- Relevance: Align content with audience interests and purpose.
- Consistency: Maintain style, tone, and format across platforms.
- Engagement: Use visuals, storytelling, and interactivity to maintain attention.

Digital Content Creation tools and Platforms

Do you have prior experience using digital tools? If yes, which tools have you used?

Digital content creation tools are software or platforms that allow users to design, edit, and publish content.

Here are some popular and accessible tools to create and edit digital content efficiently.

1. **Text Tools:** Used for writing, formatting, and editing documents, articles, or social media posts.

    - Tools: Microsoft Word, Google Docs, LibreOffice Writer.
    - Basic Functions:
        - Typing and formatting text.
        - Adding images, tables, or hyperlinks.
        - Checking spelling and grammar.

2. **Image Tools:** Used to create, modify, and enhance images.

    - Tools: Canva (online), Adobe Photoshop, GIMP, Pixlr.
    - Basic Functions:
        - Cropping, resizing, and adjusting colors.
        - Adding text or shapes.
        - Applying filters and effects.

3. **Audio Tools:** Used to record, edit, and mix audio files.

    - Tools: Audacity, Ocenaudio, and Online Voice Recorder.
    - Basic Functions:
        - Cutting or trimming audio clips.
        - Adjusting volume and adding effects.
        - Mixing multiple audio tracks.

4. **Video Content Tools:** Used to produce and edit video materials for social media, presentations, or tutorials.

    - Tools: CapCut, Clipchamp, Canva Video Editor
    - Basic Functions:
        - Cutting and joining video clips.
        - Adding captions, background music, or voiceovers.
        - Inserting transitions and effects.

Selection Criteria

When choosing a tool for creating and editing digital content, it is important to consider the following factors:

- Ease of Use – Beginner-Friendly Interface
- Features – Templates, Editing Tools, Export Formats
- Compatibility – Works on Your Device and Operating System
- Cost – Free or Affordable Plans

Now, let's start using this tool for creating digital content

1.2.1 Document Creation Using Google Docs

In this activity, you will learn how to create, format, and edit text using Google Docs. Follow each step carefully and complete it before moving to the next. At the end of the activity, save and upload your document.

Activity 1: Create a Document for a School Assignment

Step 1: Access Google Docs

- Go to https://docs.google.com.
- Sign in with your Google account. If you don't have one, create a free account.

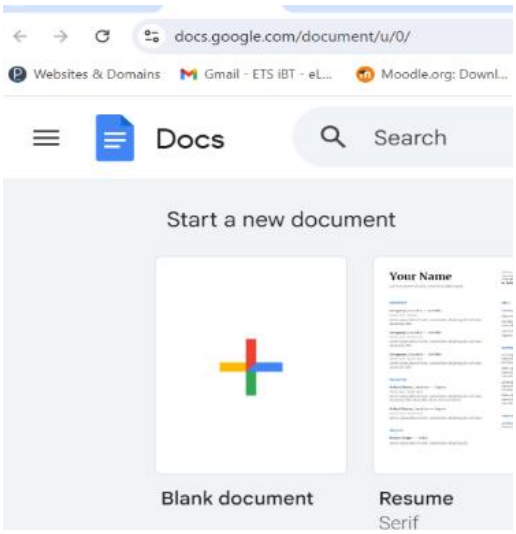


Figure 72 New Google Docs

Step 2: Start a New Document

- Click the Blank document option.
- A new untitled document will open.

Step 3: Add Your Text

- Click anywhere in the document to start typing.
- Type the content for your assignment, poster, or report.

Step 4: Format Your Text

- Change Font: Highlight text → Click the font dropdown → Choose a font.
- Change Size: Highlight text → Select font size from the toolbar.
- Bold, Italic, Underline: Highlight text → Click B, I, or U.

- Text Color: Highlight text → Click the text color icon → Choose a color.
- Highlight: Highlight text → Click the highlight icon → Choose a color.

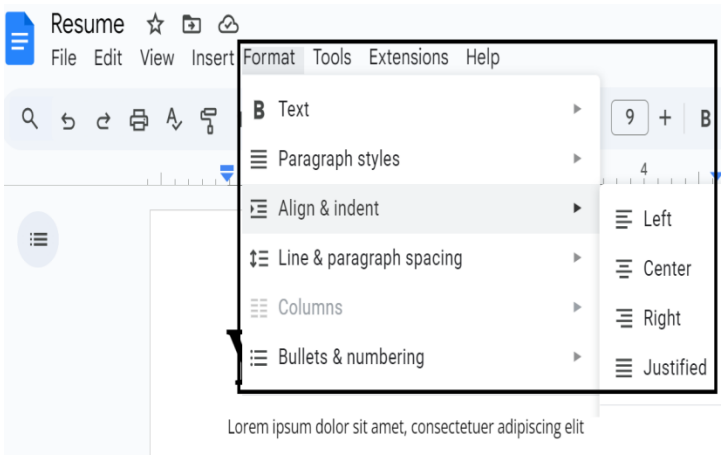


Figure 73 Formatting Text

Step 5: Organize Your Content

- Headings: Select text → Click Styles → Choose Heading 1, 2, or 3.
- Bullet Points/Numbering: Highlight text → Click Bulleted list or Numbered list.
- Alignment: Click Left, Center, Right, or Justify in the toolbar.

Step 6: Insert Images, Links, or Tables (Optional)

- Image: Click Insert → Image → Upload from computer or Search the web.
- Link: Highlight text → Click Insert → Link → Add URL.
- Table: Click Insert → Table → Choose number of rows and columns.

Step 7: Review and Edit

- Proofread your text for spelling, grammar, and clarity.
- Make sure formatting is consistent and content is easy to read.

Step 8: Save and Share

- Google Docs saves automatically.
- To export, click File → Download → PDF or Word.

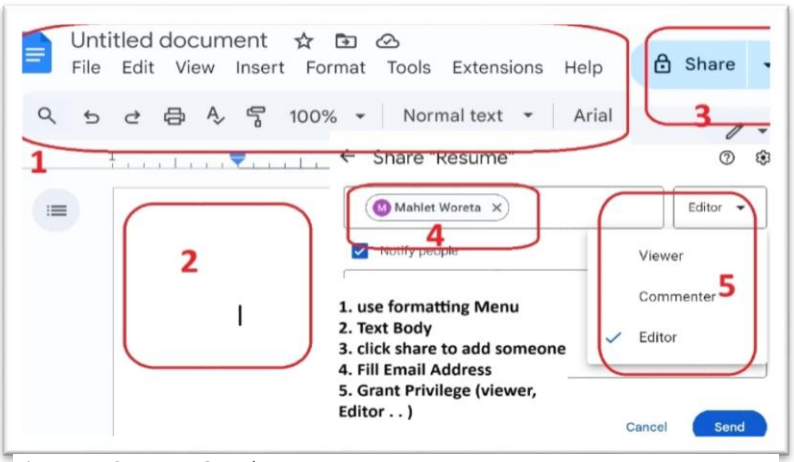


Figure 74 Steps on Google Docs

Discuss with your group

Which formatting option (font, size, bold, color) improved your text the most?

Did inserting images or links make your document more engaging? Explain.

How did you ensure your text is clear and easy to read?

Practical Exercise

create a simple document with:

A title (use a large font and bold).

3–4 lines of text about a topic of their choice.

Apply at least two formatting options (color, highlight, bold, italic, etc.).

1.2.2 Image Creation

In this activity, you will learn how to create an image using Canva by following step-by-step instructions, so follow each step carefully and complete it before moving to the next. At the end of the activity, save and upload your poster.

Activity 1: Imagine your school is hosting a digital poster competition on a topic you care about, such as health, the environment, or online safety. Your task is to create a poster that effectively conveys your message. Canva is one of the tools for supporting such activities.

Step 1: Access Canva

- Click here to open Canva → Canva.com
- If you don't have an account, create a free account or log in using Google/Facebook.

Step 2: Choose a Template

- Click "Create a design" → Select "Poster"
- Browse available templates that match your school event theme. Click "Use this template" to start.

Step 3: Customize Text

- Click on existing text boxes to edit text.
- Replace with your event details: title, date, location, and call-to-action.

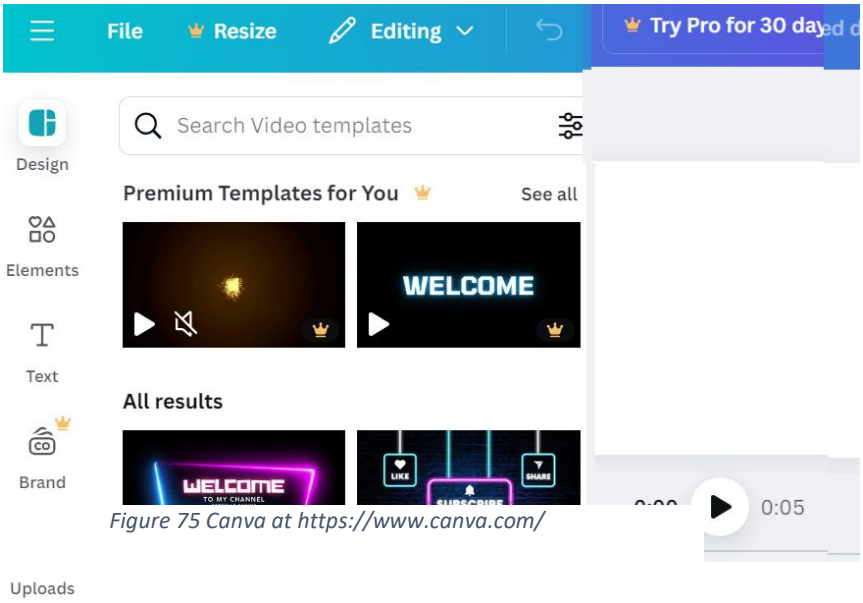


Figure 75 Canva at https://www.canva.com/

Step 4: Add or Replace Images

- Go to the **"Photos" tab** or click **Upload** to use your own images.
- Drag and drop images into your poster; resize or reposition as needed.

Step 5: Adjust Colors and Fonts

- Change colors by clicking on elements and selecting new colors from the toolbar.
- Choose fonts from the dropdown menu, keeping styles consistent.

Step 6: Apply Basic Effects (Optional)

- Add filters, adjust brightness/contrast, or apply transparency.

Step 7: Save and Download

- Click "Share" → "Download", select PNG or PDF, then click Download.

Sharing and a Reflective question

1. Share your poster with a partner or group
2. suggests one improvement for your partner's poster.
3. Write down your feedback and reflect on what you learned

practical exercise

using the following requirements create a poster for an upcoming sports Day school event

- Include a title, date, location, and call-to-action.
- Use at least two different fonts and two colors for text.
- Add one or more images (from Canva library or uploaded).
- Apply one effect (filter, brightness/contrast, or transparency).

1.2.3 **Video Creation and Editing**

In this activity, you will learn how to create a video using **Clipchamp** and **CapCut** by following step-by-step instructions so follow each step carefully and complete it before moving to the next. At the end of the activity, save and share with your friends.

What is Clipchamp and CapCut?

Clipchamp: A web-based video editor (with desktop app options) focused on ease-of-use, templates, and online editing.

CapCut: A cross-platform video & graphics editor (mobile, web, desktop) with both simple and advanced features.

Key Similarities

Feature	Clipchamp	CapCut
Trim / Cut / Split clips	basic video trimming & splitting)	basic trimming, splitting
Text overlays / Titles	Can add text, overlays	text, animated text, auto captions etc
Audio / Music / Volume control	stock music + ability to adjust audio levels	library of music, voiceover support, volume control
Effects, filters, transitions	filters, transitions, color correction	filters, transitions, effects, keyframe animations, etc
Templates & Stock Media	Have templates and royalty-free content	Have templates, built-in effects, asset library

Main Differences & Strengths

Aspect	Clipchamp	CapCut
Platform / Access	Primarily web-based (works in browser) with desktop app	Multi-platform: mobile (iOS/Android), desktop, web.
Ease for Beginners	Very user-friendly; drag-and-drop, template-based for quick edits.	Also beginner-friendly, but with more advanced options available.
Advanced Features	Some advanced effects, color correction, transitions, AI tools.	More advanced tools: keyframe animation, auto captions, chroma key, motion tracking, etc.
Export / Output Quality	Free version may have limitations (watermarks, resolution caps) depending on plan.	Free version is robust; Pro version offers higher export quality, premium assets, remove watermark, etc.
AI Tools / Automation	Offers AI tools, e.g. “remove silence,” auto-transcription, etc.	Strong AI support: auto captions, vocal isolation, text-to-speech, etc.
Integration & Ecosystem	Integration with Microsoft, OneDrive, Windows environment.	Better integration with mobile workflows and social media (TikTok, etc.) area of strength.

Which One to Use When?

- Use **Clipchamp** if:
    1. You want to edit from a browser (no installation)
    2. You prefer working on a desktop environment
    3. You value easy template-based workflows and Microsoft integration
- Use **CapCut** if:
    1. You want more advanced editing options (keyframes, motion, chroma key)
    2. You work across mobile and desktop
    3. You want richer creative tools and AI-powered features

Let's using both **Clipchamp** and **CapCut** to understand video editing practically.

Activity 1 – Imagine your school is creating a short video campaign on a topic you care about. Your task is to create and edit a video that communicates your message clearly. Using Clipchamp helps you to develop short videos

Step 1: Access Clipchamp

- Go to https://clipchamp.com and sign up or log in.
- Then, select a task on the dashboard. You can choose between **Create a new video** or **Record something**, then click it.

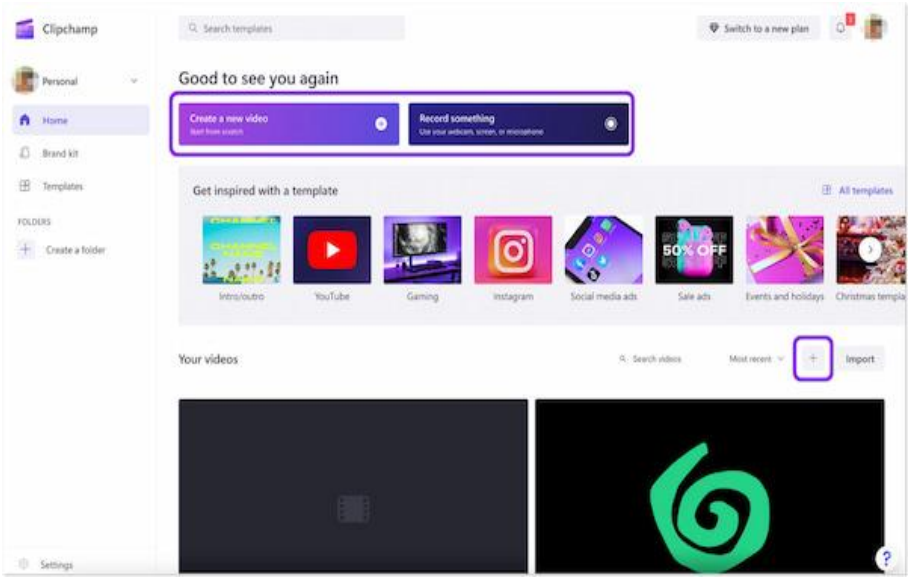


Figure 76 Access Clipchamp

Step 2: Start a New Project

- Click "Create a video", set the aspect ratio (e.g., 16:9 for YouTube or 1:1 for Instagram).

Step 3: Record Video or Audio

- Use the Record & Create button to capture a short video or voice clip (30-60 seconds).
- Alternatively, upload a pre-recorded clip.

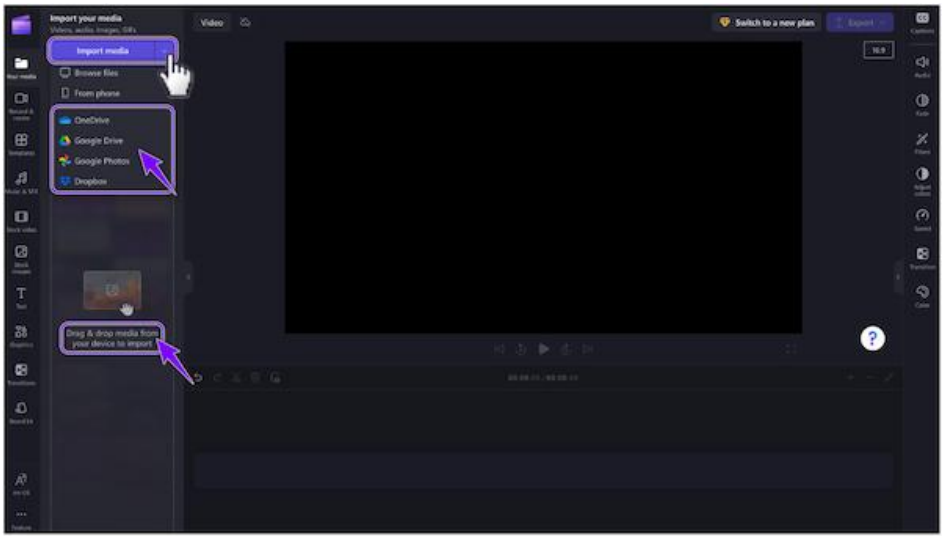


Figure 77 Start a New Project

Step 4: Load a video on timeline

To load a video to timeline, drag the edges of the clip on the timeline to trim unwanted parts.

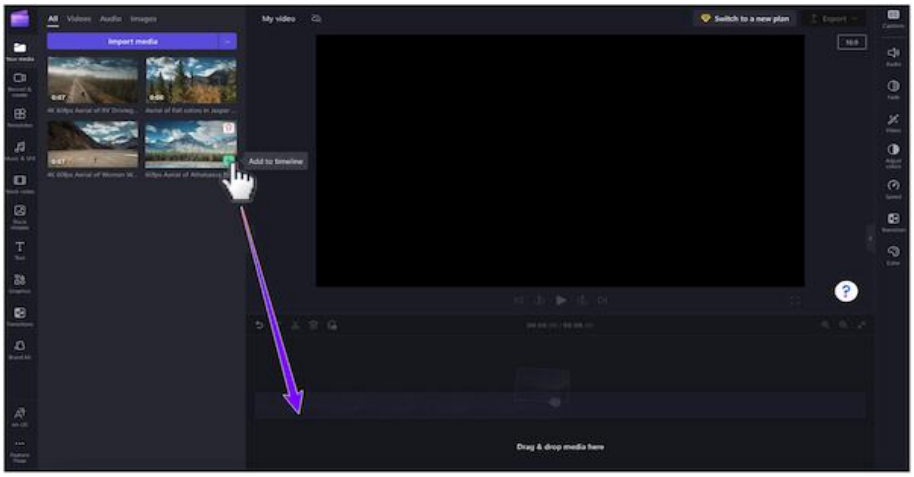


Figure 78 Load a video on timeline

Depending on your editing needs, choose among editing tools on the left and right-side panels and at the bottom of the timeline.

Step5: Trim and edit the video

- To **trim** a video, click on it in the timeline and click and drag the bars **backward** and **forwards**.

Figure 79 Trim and edit the video

- to add text, click the **Text** tab on the timeline's left side panel to add text to your video.
- Scroll over the provided texts to find your preferred style for your video. Click the + symbol to add it to your timeline.

- Add a **filter, fade, adjust colors, edit speed,** or **change volume**, use the tabs on the right-side panel of the timeline.

Step 5: Preview and Export

- Click the Play button to preview.
- When satisfied, click Export, choose video quality, and download.

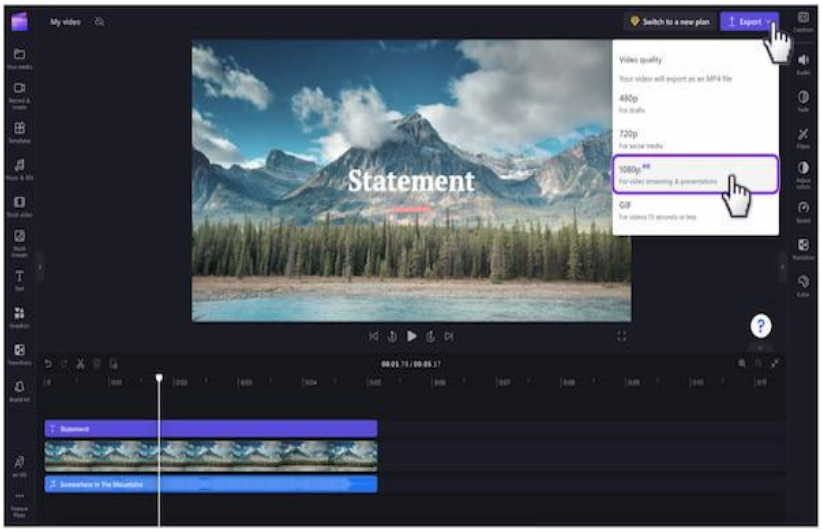


Figure 80 Preview and Export

Reflective question:

1. Which steps did you find easiest while creating your video? Explain why.
2. Which step was most challenging, and how did you overcome it?
3. What feature did you use (text overlay, background music, trim) and why?

Activity 2- Imagine your school is launching a **video awareness campaign**. You are part of the creative team responsible for producing a **30–60 second short video** on digital safety topic. Use CapCut to edit your video and make it engaging for your audience.

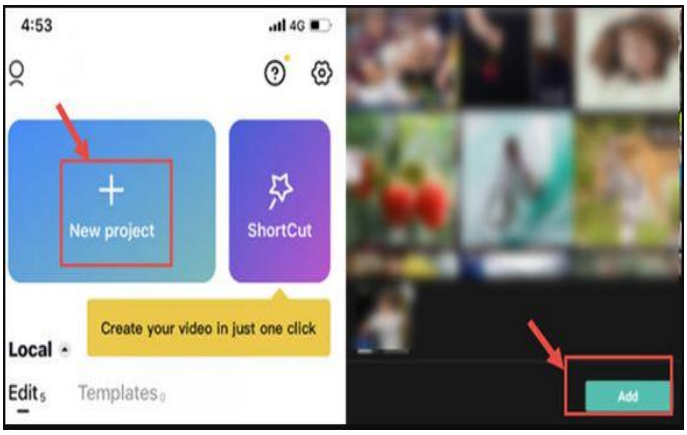


Figure 81 start the Cupcut project

Steps to create your video using CapCut

Step 1. Install CapCut app and open it.

Step 2. Tap the "New Project" icon to create a project.

- Click add to import videos, images, or audio from your device.

Step 3. Start editing on the timeline.

- Drag and drop clips into the Timeline (bottom area).
- Rearrange by dragging clips left or right.

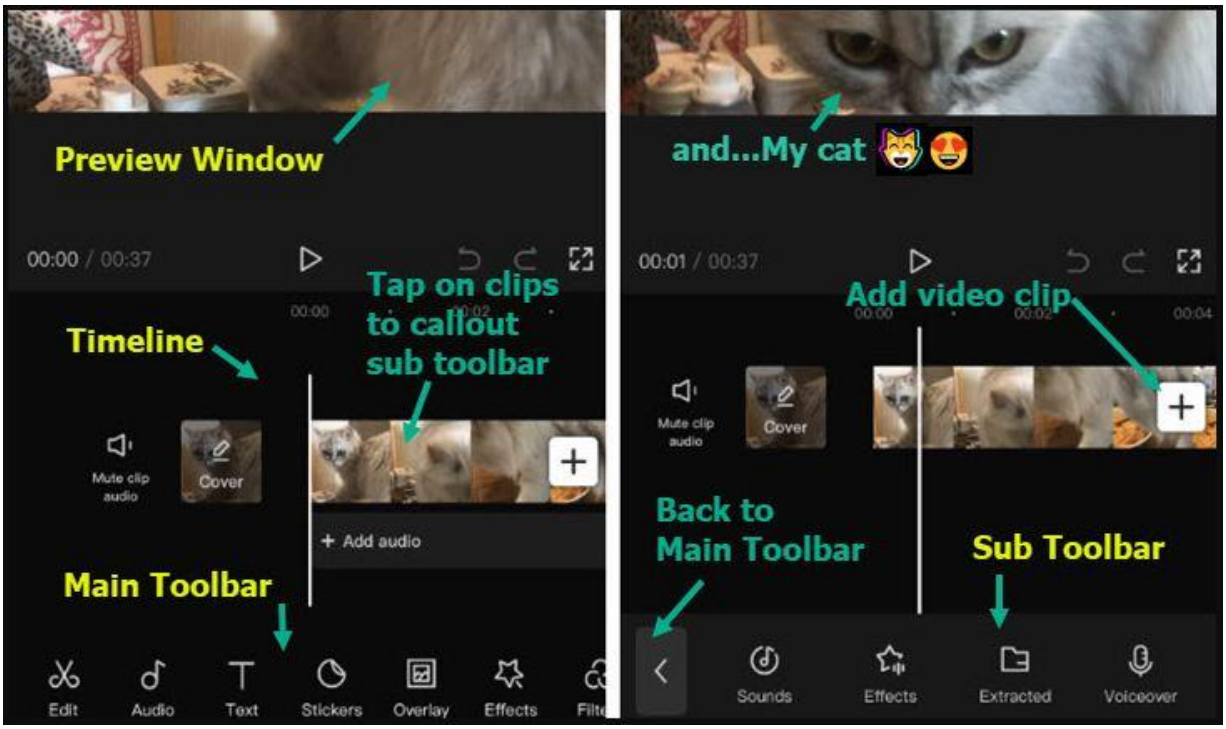


Figure 82 start the Cupcut project

You can stack clips (video, audio, text, overlays) on different tracks.

To trim video

After adding videos to the timeline, follow these steps to trim videos in CapCut:

1. click the video clip, you shall see white frames around it.

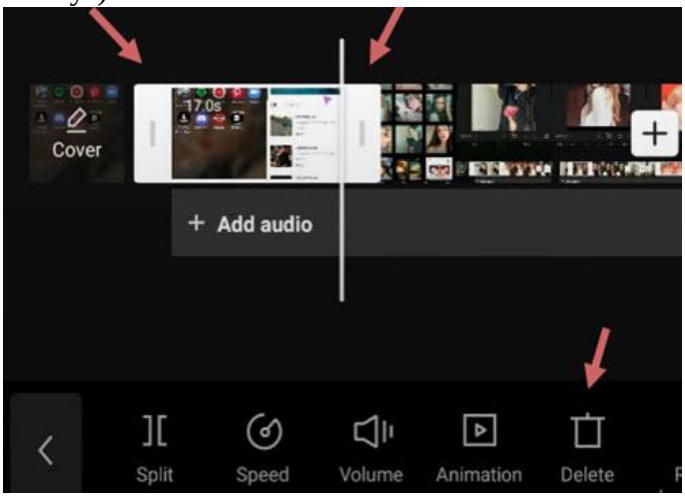


Figure 83 Load Video

2. click and hold on the white edge, and drag it to trim the video.
3. You can also drag the opposite position to retrieve trimmed parts.

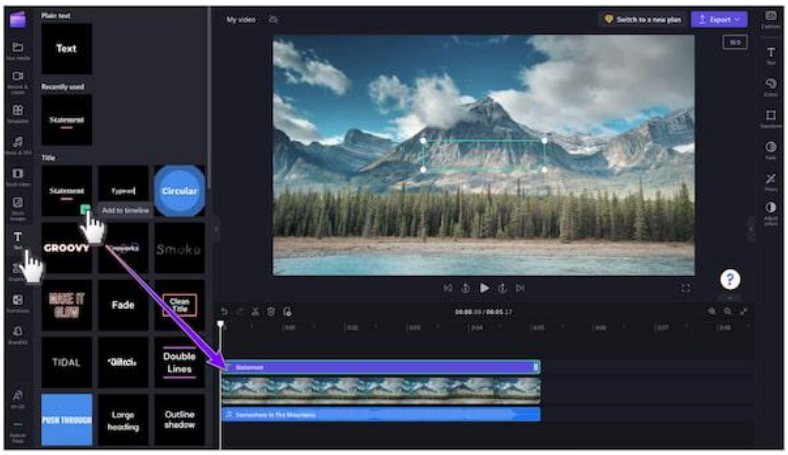


Figure 84 Trim and edit the video1

When you are trimming videos by dragging the edges, the adjacent clips will move along. In this way, there won't be gaps (and hence black screens) in your project.

If you want to trim out a section in the middle, you need to split the footage, and delete the clip in the middle.

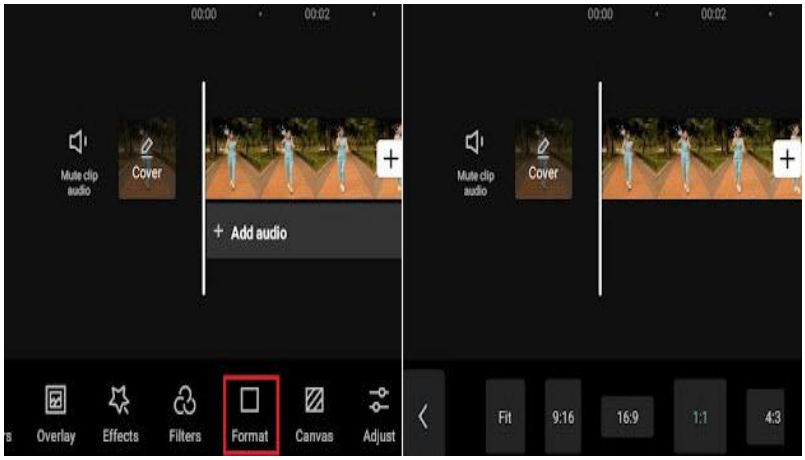


Figure 85 Trimming videos

To split a video clip, follow these steps:

1. Tap the video clip to make sure it is selected.

2. Hit the Split icon at the bottom of CapCut.

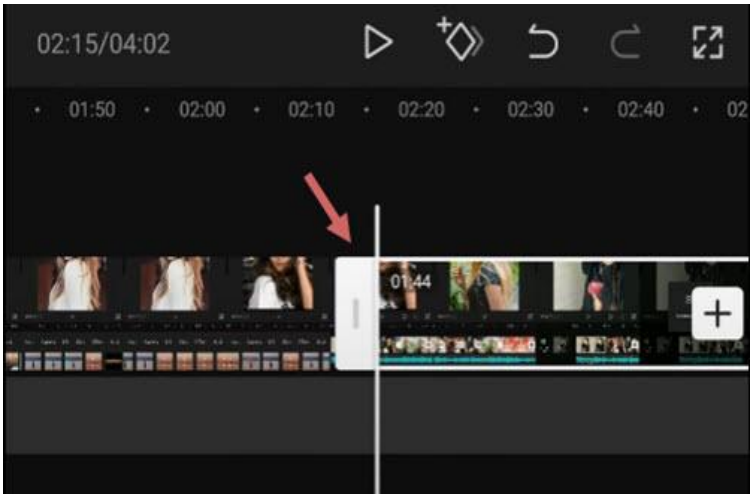


Figure 86 Split Video

By splitting the video, you can perform the following edits:

- Add transitions in between after creating the split;
- Remove unwanted parts by tapping the split clip, and click the Delete icon at the bottom of the screen;
- Insert new clips in between two video clips.

To resize videos, follow these steps:

1. click the video clip that you want to change size.
2. click the **Format** icon at the bottom of the editor.
3. Choose a different as aspect ratio.

To Add Text & Titles Click Text in the bottom panel.

- Choose a style (title, subtitle, handwriting, etc.).
- Edit text in the Preview Window and adjust font, size, and animation from the toolbar on the right.

To Add Effects & Filters

- Go to Effects (left panel).
- Drag an effect (e.g., Glitch, Blur, Cinematic) onto the timeline track above your clip.
- Adjust effect duration by resizing its bar on the timeline.

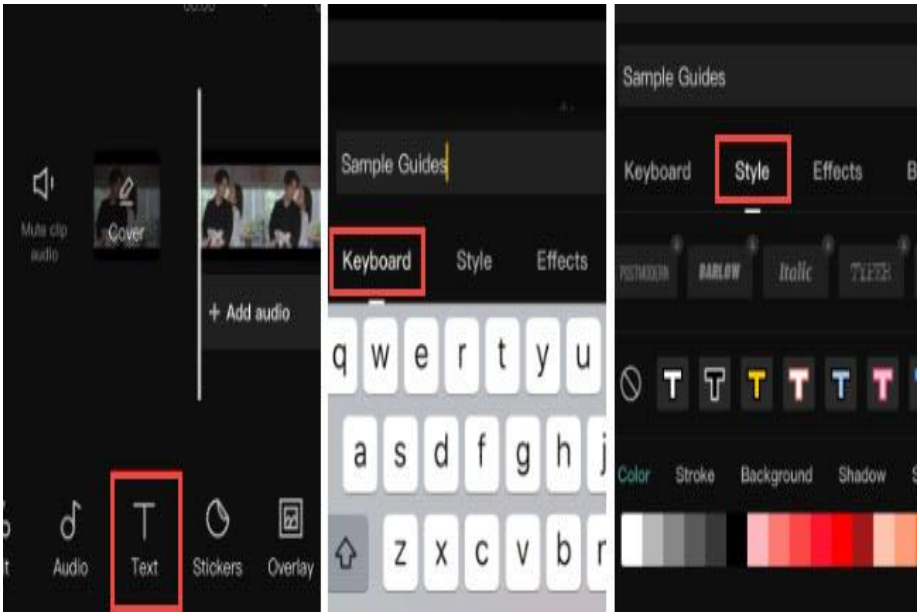


Figure 87 Add Effects & Filters

To Ad Music & Sounds

- Click Audio → choose from stock library or import your own.
- Drag audio to the audio track in the timeline.
- Adjust volume and fade-in/out in the right toolbar.

Step 4 Export Your Video

- Once editing is done, click Export (top right).
- Choose resolution (up to 4K), FPS (frames per second), and quality.
- Save to device or upload directly to TikTok/YouTube

Figure 88 Export Video

Reflection and Sharing

1. Share your video with classmates
2. Discuss what message does your video deliver?
3. Discuss what editing tools helped you make it clear and engaging?

1.3 Editing and Refining Content

How to improve the quality, clarity, and usability of digital content?

Techniques for Improving Accuracy and Quality

- Proofreading**:** Check for spelling, grammar, punctuation, and formatting errors.
- Fact-checking: Verify all information, data, and references for accuracy.
- Clarity and Concise: Remove unnecessary words, simplify complex sentences, and ensure the message is easy to understand.
- Consistency: Maintain uniform style, tone, fonts, colors, and formatting across the content.
- Peer Review: Have others review the content for feedback and improvements.

Exercise

Open one of your previous posters and:

Check for any spelling or grammar mistakes.

Suggest one improvement for clarity or accuracy.

Enhancing Visual and Audio Elements

- **Visuals:**
  - Adjust brightness, contrast, and saturation of images.
  - Crop or resize images to focus on key elements.
  - Use graphics, charts, or icons to make information easier to understand.
- **Audio:**
  - Remove background noise and enhance clarity.
  - Adjust volume levels for consistency.
  - Use sound effects or music carefully to support, not distract from, the message.
- **Multimedia Integration:** Combine text, images, video, and audio smoothly for cohesive content.

Exercise

Edit your Clipchamp video by applying at least one visual or audio enhancement.

Ensuring Content is Accessible and User-Friendly

- **Accessibility Guidelines:**
  - Use descriptive alt text for images.
  - Include captions or transcripts for videos and audio content.
  - Ensure adequate color contrast for readability.
  - Choose legible fonts and proper font sizes.
- **User Experience (UX):**
  - Organize content logically with headings, bullet points, and sections.
  - Ensure navigation is simple for interactive content.
  - Check content responsiveness for different devices (desktop, tablet, mobile).

Exercise

Review your content and check if it meets accessibility and UX guidelines. Write a short note on one improvement you can make.

Summary

In this session, you learned about digital content, its formats, purposes, and the principles of clear communication. You explored how to plan, create, edit, and finalize text, image, audio, and video content using digital tools. Activities in Google Docs, Canva, Cupcut and Clipchamp provided hands-on experience to produce engaging, clear, and accessible digital content for your audience. Emphasis was placed on editing for accuracy, enhancing visual/audio quality, and ensuring usability across devices. By following these steps, learners can create professional and effective digital content.

Review Questions:

Part 1: Multiple Choice

1. Which step comes first in creating digital content?

   A. Editing and refining
   B. Researching and gathering resources
   C. Planning
   D. Publishing

2. Which tool would you use to create a visual poster?

   A. Google Docs
   B. Canva
   C. Audacity
   D. Clipchamp

3. Which principle ensures that text, images, and audio are organized for easy understanding and readability?

   A. Accessibility
   B. Engagement
   C. Relevance
   D. Clarity

Part II: Short Answer

1. Which content format do you prefer using (text, image, audio, video, interactive), and why?
2. Describe one editing or refinement step you applied to improve a text, image, or video
3. How did you ensure your content is accessible to all users?
4. What challenges did you face while creating digital content, and how did you overcome them?

Session 2: Integrating and Re-elaborating Digital Content

Introduction

Dear learners, welcome to this session. In this session, you will explore Integrating and Re-elaborating Digital Content

Integrating and re-elaborating digital content involves taking existing information, improving it, and combining it with other resources to create something new and relevant. This process includes evaluating sources, rewriting or restructuring content, and merging different media types to suit a specific audience or purpose. In this session, you will learn how to refine, combine, and publish content in ways that add value while respecting copyright rules.

Learning Objectives

By the end of this session, learners will be able to:

- Re-elaborate content by rewriting or restructuring it for clarity
- Integrate multiple media types (text, images, audio, video) into a cohesive digital product.
- Publish content responsibly, respecting copyright and attribution rules.
- Promote digital content

Content outline

2.1 Integrating Multiple Digital Products

Up until now, you have created your text, images, audio, and video separately. In this lesson, we will learn how to bring all these elements together into a single, cohesive digital project.

Integration is the ability to take existing digital content (text, images, audio, and video) into a single cohesive product and **combine it with other materials**, and producing something meaningful, new, and useful.

Why Integration is Important:

- Enhances engagement by appealing to multiple senses.
- Improves understanding and retention of information.
- Makes content more professional, creative, and visually appealing.
- Encourages originality through modification and re-elaboration of existing content.

Step-by-Step Process for Content Integration

1. Select and Gather Sources
    - Collect relevant text, images, audio, and video from reliable sources.
2. Evaluate Content for Relevance and Accuracy
    - Check each item for correctness and relevance to your topic.
3. Plan Integration Strategy
    - Decide how text, images, audio, and video will complement each other.
4. Re-elaborate and Modify Content
    - Rewrite text to be clear and original.
    - Edit images or videos to better fit your message.
5. Merge Media and Design Final Product
    - Combine all media using tools like Canva, PowerPoint, or Google Slides.
6. Add Attribution and Citations
    - Properly credit all external sources to respect copyright.
7. Export and Publish
    - Save your project in a suitable format (MP4, PDF, PPTX).

Example:

- You can create a multimedia presentation about “My Hobby” using Canva, PowerPoint, or Google Slides.

- Your presentation could include:
  - A written paragraph describing the hobby
  - Images showing the hobby in action
  - A short video demonstrating the hobby
  - Background music or narration to enhance the experience

Practical Activity – Integrate a Multimedia Project

Instructions:

Step 1 – Choose a Topic

- Pick a topic you enjoy or know well (e.g., *My Hobby*).

Step 2 – Gather Your Materials

- Text: Write a short paragraph (3–5 sentences) explaining your topic.
- Images: Select 2–3 images (photos you take or copyright-free sources).
- Video/Audio: Add a short clip or voice recording (10–30 seconds) explaining your topic.

Step 3 – Open a Digital Tool

- Use Canva, PowerPoint, or Google Slides.

Step 4 – Combine Your Media

- Insert your text in clear, readable slides or sections.
- Place images to support your text.
- Add video or audio clips.
- Adjust layout, fonts, and colors for clarity, aesthetics, and originality.

Step 5 – Modify and Re-elaborate

- Revise your text for clarity, originality, and coherence.
- Edit images or video to improve quality and relevance.

Step 6 – Save, Preview, and Cite

- Export your project in MP4, PDF, or PPTX format.
- Ensure all media works seamlessly.
- Include citations for any external media used.

Step 7 – Submit

- Upload your final multimedia project to the assignment submission box, including a short paragraph reflecting on your media choices and text improvements.

Reflective question:

1. What did you learned about integrating multiple digital products?

2.2 Publishing Digital Content

Publishing digital content means making your text, images, videos, or other materials available for others to view online or share electronically. This can be through websites, blogs, social media platforms, or learning management systems (LMS) like Moodle.

Why Publishing Matters

- Reach a wider audience: anyone with internet access can see your work.
- Share information quickly: no printing or shipping delays.
- Enable interaction: people can comment, like, or share your content.
- Build your portfolio: showcase your skills to employers or clients.

Common Publishing Platforms

- Social Media – Facebook, Instagram, TikTok, YouTube.
- Blogs & Websites – WordPress, Wix, Blogger.
- Video Platforms – YouTube.
- Learning Platforms – Moodle, Google Classroom.
- Cloud Storage & Sharing – Google Drive, Dropbox, OneDrive.

Key Considerations Before Publishing

1. Audience – Who will see the content? Adjust tone and style accordingly.
2. Purpose – Is it for education, marketing, entertainment, or personal use?
3. Format & Quality – Ensure the content is clear, well-formatted, and error-free.
4. Copyright & Permissions – Only use media you have the right to share.
5. Privacy & Security – Avoid sharing sensitive personal information.

Basic Steps to Publish Content

1. Prepare Your Final Version: Proofread text, check visuals, and confirm file formats.
2. Choose the Platform: Select where your audience is most active.
3. Upload or Post: Follow the platform's upload process.
4. Add a Title and Description: Make it clear, engaging, and searchable.
5. Promote & Share: Use links, tags, and social sharing tools.
6. Monitor Engagement: Track views, likes, comments, or shares.

Steps to Publish Your Project

Step 1 – Prepare Your File for Publishing

- Export your integrated multimedia project (from Lesson 2.1) into a shareable format (PDF, MP4, PPTX).
- Double-check spelling, layout, and media quality.

Step 2 – Choose a Publishing Platform

- For Classroom Sharing: Moodle Assignment, Google Drive, USB.
- For Public Sharing: YouTube, Blogger, Instagram, Facebook.

Step 3 – Upload Your Project

- Follow the platform's upload process.
- Add a short title and description to help your audience understand your project.

Class activity

Publish your video on YouTube

Steps to Publish Your Project on YouTube

Step 1: Sign in to YouTube

- Go to www.youtube.com.
- Click **Sign In** (top right corner) and enter your **Google account** email and password.

Step 2: Go to the Upload Page

- Click the **Create (+)** icon at the top right.
- Select **Upload video** from the menu.
- The YouTube Studio upload window will open.

Step 3: Select Your Video File

- Click **Select files** or drag and drop your project video into the window.

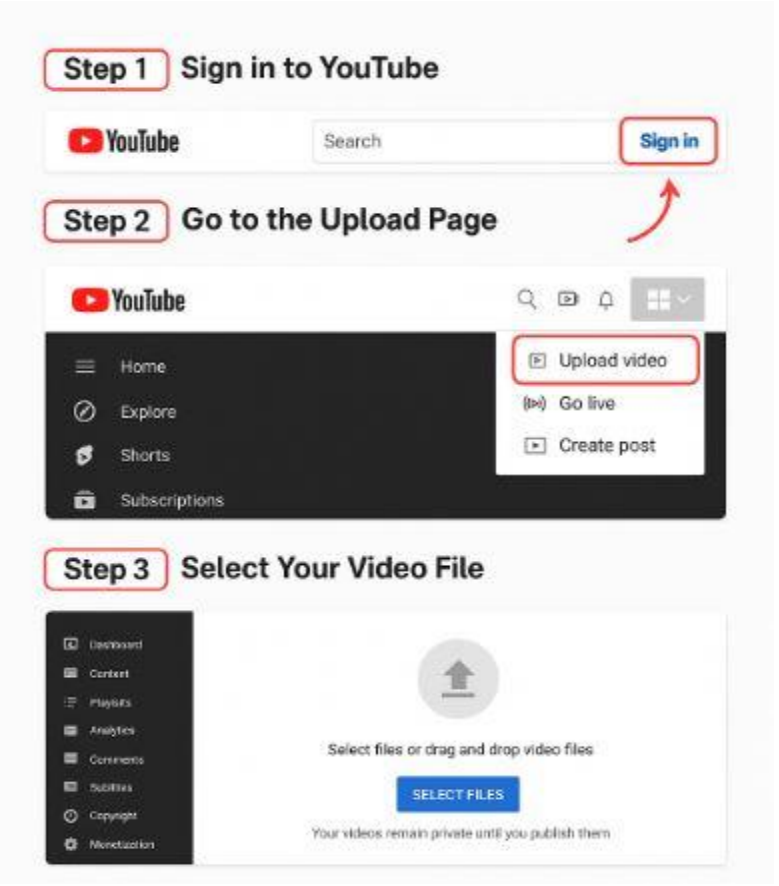


Figure 89 Sign in and upload Video

- Wait for the video to upload.

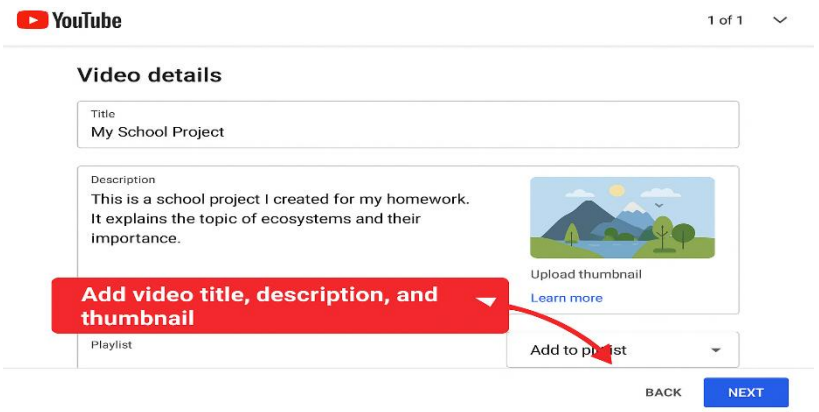


Figure 90 Add Meta Data

Step 4: Add Video Details

Fill in the required information:

- **Title**: Write a clear and descriptive title.
- **Description**: Add details about your project (topic, purpose, etc.).
- **Thumbnail**: Choose or upload an image that represents your video.
- **Playlist**: (Optional) Add your video to a playlist if you have one.

Step 5: Set Audience

- Choose **"Yes, it's made for kids"** if your video is for children, or
- **"No, it's not made for kids"** if it's for general audiences.

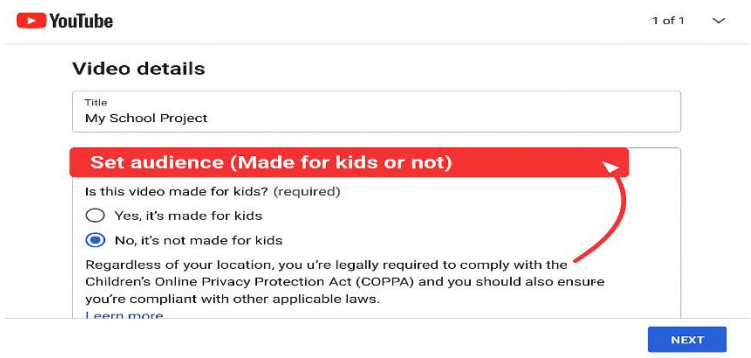


Figure 91 Set Audience

Step 6: Add Tags and Category (Optional)

- Add **keywords or tags** related to your topic (e.g., "school project," "digital content," etc.).
- Choose a **category** (e.g., Education).

Step 7: Choose Visibility Settings

Select who can see your video:

- **Public**: Everyone can see it.
- **Unlisted**: Only people with the link can watch it.
- **Private**: Only you (and specific users you invite) can see it.

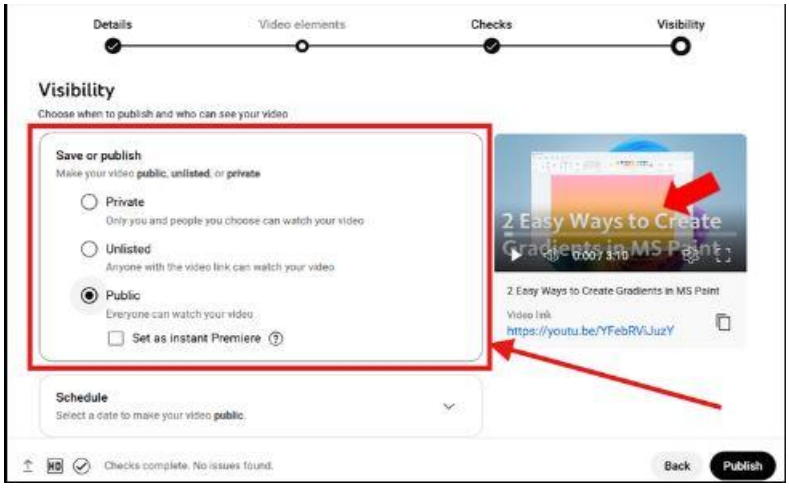
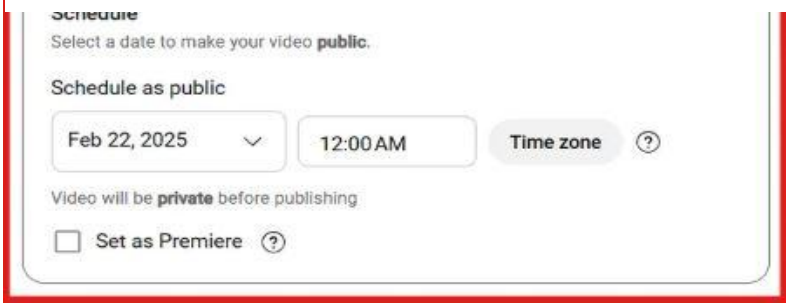


Figure 92 Choose Visibility and Publish

Step 8: Publish or Schedule

- Click **Publish** to make it live immediately, or
- Choose **Schedule** to post it later at a specific date and time.



Step 9: Share Your Video

- After uploading, copy the **video link** and share it with classmates, teachers, or on social media.

Review and Respond

- Watch your video once it's live.
- Check comments (if enabled) and reply politely.
- Track views and feedback to improve future projects.

2.3 Distributing & Promoting Digital Content

Distributing and promoting digital content means sharing your published materials with your intended audience and encouraging them to engage with it. This can involve sending direct links, posting on social media, embedding in websites, or using other communication channels.

Promotion focuses on increasing visibility, reach, and interaction so your work gets noticed and achieves its purpose.

Why Distribution & Promotion Matter

- Increase Reachability – More people see and interact with your content.
- Boost Engagement – Encourages likes, comments, shares, and discussions.
- Achieve Purpose – Whether educational, marketing, or entertainment, your content reaches its intended audience.
- Build Credibility – Regularly sharing valuable content strengthens your reputation.

Common Distribution & Promotion Channels

- Social Media: Facebook, Instagram, TikTok, X (Twitter), LinkedIn.
- Messaging Apps: WhatsApp, Telegram, Messenger.
- Email: Newsletters or targeted email campaigns.
- Websites & Blogs: Embedding or linking content on your site.
- LMS Announcements: Sharing within Moodle or Google Classroom.

Key Considerations Before Distribution

1. Audience Location: Where are they most active (social media, email, forums)?
2. Timing: Post at times when your audience is most likely to see it.
3. Content Format: Adjust size, style, and length for each platform.
4. Message & Call-to-Action: Tell your audience exactly what to do next (e.g., “Watch Now,” “Download,” “Share”).
5. Tracking & Feedback: Use analytics to measure how your content performs.

Basic Steps to Distribute & Promote Content

1. Identify Target Audience: Who needs to see your content?
2. Choose Distribution Channels: Pick platforms where your audience is active.
3. Prepare Content for Each Platform: Resize images, shorten text, create platform-specific captions.
4. Share & Promote: Post, send, or publish content with engaging titles and tags.
5. Encourage Interaction: Ask for feedback, comments, and shares.

6. Monitor & Adjust: Use analytics to improve future distribution.

Practical Exercise: Distribute & Promote Your Project

Step 1 – Prepare Your Published Content

- Use the final published version from Lesson 1.2 (PDF, MP4, PPTX, or link).

Step 2 – Choose Two Distribution Channels

- Example: Facebook & WhatsApp, YouTube & Moodle Announcement, Email & Instagram.

Step 3 – Adapt Content for Each Channel

- Create a short caption or description for social media.
- For email, write a 2–3 sentence introduction with a clickable link.

Step 4 – Share Your Content

- Post or send your content on your chosen platforms.
- Use relevant hashtags, tags, or groups to boost reach.

Reflection: Write a short paragraph (3–5 sentences) on:

- Which platforms worked best for reaching your audience.
- Any feedback or engagement you received.
- How you might improve future promotions.

Summary

In this session, you learned the complete workflow of creating a professional digital product from creating your text, images, audio, and video into a single, cohesive project, to publishing it in a format suitable for your audience, and finally distributing and promoting it through the right channels. By mastering integration, you ensured your content was clear, engaging, and original.

Through publishing, you prepared your work for sharing while maintaining quality and copyright compliance. By understanding distribution and promotion, you gained the skills to reach the right audience at the right time, increasing the visibility and impact of your work. These combined skills enable you to transform an idea into a finished product that is not only well-crafted but also widely seen and appreciated.

Review Questions

Multiple choses

1. Which of the following is NOT a common publishing platform?

    A. YouTube
    B. Moodle
    C. Instagram
    D. Microsoft Word
2. What is the main purpose of integrating multiple digital products before publishing?
    A. To make the file size smaller
    B. To combine elements into a cohesive, professional project
    C. To ensure it can be printed
    D. To increase download speed

3. Which factor is MOST important when choosing a distribution channel?
    A. The color of the platform's interface
    B. The size of your audience on that platform
    C. The amount of free storage it offers
    D. The number of fonts available
4. Which of the following best describes "promotion" in digital content?
    A. Editing your video before publishing
    B. Actively increasing awareness and engagement for your content
    C. Backing up files to a secure location
    D. Compressing images for faster loading
5. Which statement is TRUE about publishing digital content?

A. Once published, you can never edit it again
B. It's only necessary if you're selling your work
C. It prepares your work for sharing in a usable format
D. It's the same as integrating content

Practical Exercise

- Create integrated multimedia projects, then
- Publish your integrated multimedia project to a platform of your choice.
- Submit /share the link or file to your group
- Add a short reflection (3–4 sentences) describing your publishing choice, target audience, and promotion strategy.

Session 3: Copyright and Licenses

Introduction

Dear learners, welcome to this session. In this session, you will explore Copyright and License

Not everything you find online is protected by copyright in the same way. Understanding how copyright and licenses work will help you use and share digital content legally and ethically. It also helps you protect your own work and respect the rights of others.

When you create a digital product/content such as text, images, audio, or video, you automatically have certain legal rights over it. These rights are called copyright. It also guides you in using and sharing content legally, which is essential for ethical digital content creation.

Learning objectives

By the end of this session, learners will be able to:

- Explain what copyright is and how it applies to digital content.
- Identify different types of licenses and their conditions.
- Apply best practices for using and sharing digital content legally and ethically.
- Recognize the importance of respecting copyright to protect both their own and others' work.

Content outline

3.1 Facts and Row Data in Digital Content
3.2 Copyright in Digital Content
3.3 Licenses in digital content

3.1 Facts and Raw Data in Digital Content

Not all information you find online is protected by copyright. In digital content, it's important to distinguish between facts/raw data and creative expression.

What is row data?

Raw data refers to the original, unprocessed information collected from different sources.

Example of Raw Data:

Name	Age	City	Score
Hana	15	Addis Ababa	85
Miki	16	Adama	78
Saba	14	Bahir Dar	90

Right now, it's just numbers and names. It doesn't tell a story yet.

What are Facts?

Facts come from processing the raw data. They are **true and verified pieces of information**.

Example: From the table above, we can say:

- "Saba scored the highest with 90 points."
- "The average score of students is 84.3."

Facts help us understand the data. They turn numbers into meaningful insights.

Key Points to Remember:

1. Facts and raw data are free for anyone to use.
2. The creative arrangement or unique presentation of those facts may be protected by copyright.
3. Always check if the way the data is presented is original before reusing it.

Importance in Digital Content

- Digital content (like blogs, videos, reports, infographics, or social media posts) should be **based on accurate facts** derived from **reliable data**.
- Misusing or misrepresenting data can lead to **misinformation** or **loss of credibility**.
- Content creators must:
    - Check the **source of data**.

- Verify **facts** before publishing.
- Present **data visually** (charts, graphs, tables) to make it clear and engaging.

3.2 Copyright in Digital Content

Copyright is a legal protection given to the creators of original works, including digital content such as articles, photos, music, videos, and software.

Digital content that contains creative expression, such as infographics, research reports, e-learning videos, blogs, or unique images, is protected by copyright. Using someone else's protected work without permission may be an infringement unless covered by an exception or a license.

Purpose:

1. To give the creator control over how their work is used.
2. To prevent unauthorized copying, distribution, or modification.

Automatic Protection: In most countries, you do not need to register your work for it to be copyrighted it happens automatically when you create it.

Example:
If you write an original blog post or design a unique poster, no one else can legally copy, sell, or modify it without your permission.

3.3 Licenses in Digital Content

A license is permission given by the copyright owner for others to use their work in certain ways. Licenses clearly outline what is allowed and what is restricted when using digital content.

Types of Licenses:

1. All Rights Reserved – No one can use your work without explicit permission.
2. Creative Commons (CC) Licenses – Allow sharing and use under specific conditions. Common types:
    - CC BY: Use allowed with credit to the creator.

- CC BY-SA: Use allowed with credit, and new work must have the same license.
- CC BY-ND: Use allowed with credit, but no changes to the work.
- CC BY-NC: Use allowed with credit, but not for commercial purposes.

3. Public Domain – No copyright; work can be used freely by anyone.

Example:
A photo with a CC BY license can be used in your presentation as long as you give credit to the photographer.

Why licenses matter:

- They tell you what you can and cannot do with content.
- They help protect creators while allowing fair and legal use.

Best Practices for Using Digital Content Legally

1. Always check the license before using someone's work.
2. Give proper credit (name of creator, source, and license type).
3. When in doubt, create your own original content.
4. Use copyright-free or Creative Commons-licensed resources.

Summary

Understanding copyright and licenses is essential for anyone creating or sharing digital content. Copyright laws give creators legal protection over their original works, ensuring that their ideas, designs, writing, or media are not used without permission. By learning about different types of licenses such as Creative Commons, open-source, or proprietary licenses you can clearly know what others allow and what requires explicit permission.

Moreover, understanding and applying copyright and licenses fosters a culture of creativity and innovation. When creators know their work is protected, they are more likely to share, collaborate, and contribute new ideas confidently. Likewise, by respecting others' work, you contribute to a community where creativity is valued, recognized, and ethically shared. In essence, mastering

copyright and licensing is not just about avoiding problems it's about promoting integrity, respect, and sustainability in the digital world.

Review Questions

1. What does copyright protect?
   A. Ideas
   B. Original works of expression
   C. Names and slogans only
   D. Facts and numbers.
2. Which Creative Commons license allows use only for non-commercial purposes?
   A. CC BY
   B. CC BY-NC
   C. CC BY-SA
   D. CC BY-ND
3. What is the main purpose of a license?
   A. To increase file size
   B. To allow others to use a work under certain conditions
   C. To delete old content
   D. To hide ownership of a work

Short Answer

Give one example of how you can legally use an image from the internet.

Capstone Project: Creating and Publishing Digital Content

Assignment Tasks / Steps

Step 1: Project Planning

- Select a topic: school event, community awareness, environmental campaign, or cultural heritage.
- Define your target audience and purpose.

- Create a project plan including:
    - Type of content (poster, video, presentation, blog, etc.)
    - Required resources (software, images, audio, etc.)
    - Timeline for completing each step
- Example: “A short video promoting school cleanliness for students aged 12–18.”

Deliverable: Written project plan

Step 2: File Management

- Create a main project folder with subfolders: Text, Images, Audio, Video, Drafts.
- Name your files clearly (e.g., poster_final.png, script_draft.docx).
- Use search and sort tools to organize and quickly find your files.

Deliverable: Properly organized project folder with all files

Step 3: Content Creation

- Text: Write clear and engaging copy relevant to your topic.
- Images/Graphics: Create or source images and graphics, ensuring proper licenses.
- Video/Audio (Optional): Record or source media responsibly; edit using tools like CapCut or Clipchamp.
- AI Tools (Optional): Use AI tools to improve text, generate images, or enhance your content.

Deliverable: Draft content including text, images, and optional audio/video

Step 4: Copyright and Licensing

- Verify all media for usage permissions.
- Give proper credit to original creators.
- Follow licensing rules such as Creative Commons or other usage licenses.

Deliverable: Documentation of sources and licenses used

Step 5: Editing and Refining

- Edit videos, images, and text to make content polished and professional.
- Ensure logical flow and visual appeal.
- Check grammar, spelling, and readability.

Deliverable: Finalized digital content ready for publishing

Step 6: Publishing

- Choose a platform (school website, YouTube, digital gallery).
- Add title, description, tags, and thumbnail.
- Set audience (Made for kids or not) and visibility (Public, Unlisted, Private).
- Publish and copy the link for submission.

Deliverable: Published digital content link

Step 7: Reflection

- Write a short reflection (5–10 sentences) addressing:
    - Challenges you faced
    - How you followed copyright and licensing rules
    - Lessons learned about digital content creation

Deliverable: Reflection report

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Module 5: Safety

Introduction

In today's digital world, protecting your personal data and managing your online identity is more important than ever. Safety in this context refers to the ability to understand and recognize threats that exist on the internet, as well as having the skills and knowledge to avoid these threats. This includes knowing how to keep personal information private and secure online, protecting devices from malware, avoiding harmful or illegal content, and managing online relationships safely. The module is organized into four sessions where: Session 1 focuses on your account management, Session 2 discusses the basic privacy settings, Session 3 identity and common threats, and Session 4 deals with secure practice of online environment. in these sessions, Learners will also explore secure practices such as strong password creation, two-factor authentication, and safe browsing habits to protect themselves and others in digital environments.

Session 1: Account Management

Introduction

Dear learners, welcome to this session. In this session, you will explore Account Management

Digital security skills are the abilities and practices used to safeguard devices, data, accounts, and online activities from unauthorized access, cyberattacks, and data loss. They include using strong passwords, enabling multi-factor authentication, securing files, managing account permissions, avoiding phishing threats, and maintaining regular backups. These skills are essential for safeguarding personal and organizational information in today's connected world.

Learning Objectives

At the end of the session, learners will be able to:

- Manage user account.
- Assign appropriate roles, permissions, and enable MFA for security.
- Monitor activity and maintain updated recovery options.

Content Outline

1.1 Introduction to Account Management

Account Management refers to the processes and skills required to create, secure, maintain, and optimize user accounts in digital systems (e.g., email, cloud services, operating systems, and applications). It ensures users have the correct access to resources, data is protected, and accounts remain organized and functional

Purpose of Account Management

Why accounts are needed in digital systems: Accounts provide a unique identity for each user, allowing the system to store personalized settings, track activities, manage access rights, and ensure secure interaction with data and services.

Role in identifying and authenticating users**:** Accounts help the system recognize who is trying to access it (identification) and verify that they are indeed the rightful user (authentication), often through passwords, PINs, biometrics, or security tokens

Types of Account Management: Here is the summary of personal, organizational, shared account, and administrative account management, and their purpose with examples.

Type	**Purpose**	**Examples**	**Best Practices**
Personal Account Management	For individual services and personal use	Gmail, Facebook, LinkedIn	Use strong & unique passwords, enable MFA, avoid for work tasks

Table 5 Account type, example, and best practice

Workplace/Enterprise Account Management	Managed by the organization's IT for business operations	Microsoft 365, ERP systems, corporate email	Follow company policies, keep credentials private, report suspicious activity
Shared Account Management	Accessed by multiple authorized users for collaboration	Shared Dropbox folders, team social media accounts	Limit access, use a password manager, track activity logs
Administrative Account Management	Full control over systems, settings, and user permissions	Windows Administrator, domain admin accounts	Use only when needed, secure with MFA, maintain usage logs

1.2 Security Practices

- **Creating strong passwords**: Use long, complex, and unpredictable passwords combining letters (upper & lower case), numbers, and symbols to make guessing or brute-force attacks difficult.
- **Using password managers**: Tools that securely store and organize passwords, allowing users to create unique, complex passwords without needing to remember them all. Google Password Manager manages your saved passwords in Android or Chrome. whereas there are other tools, such as NordPass, 1Password, and RoboForm are exceptional password managers that offer great value, robust security, and user-friendly interfaces.

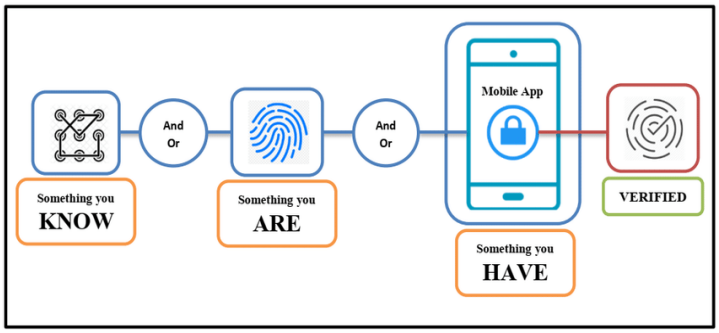


Figure 93: Multi-factor authentication

- **Multi-Factor Authentication (MFA)**: Adds extra verification layers beyond a password (e.g., SMS codes, authentication apps, biometrics) to ensure that only the legitimate user can access the account. These factors typically fall into three categories:
    - Something you know (like a password or PIN),
    - Something you have (such as a phone or hardware token), and
    - Something you are (like a fingerprint or other biometric data).

MFA supports protecting your password even if it is stolen.

- **Keeping recovery options updated**: Regularly check and update email addresses, phone numbers, and security questions linked to accounts to ensure account recovery is possible if access is lost.

Profile Customization

- Adding a profile picture, contact information, and preferences: Personalizes the account, makes it easier for others to recognize and contact the user, and tailors the system experience according to user preferences.
- Importance of keeping profiles professional in workplace accounts**:** Maintains a positive and credible image, supports professional communication, and ensures appropriate representation within the organization or with clients.

1.3 Account Maintenance, recovery, and closure

A. Account Maintenance

1 Updating passwords regularly**:** Helps protect accounts from unauthorized access, especially if old passwords have been exposed or compromised.

2 Reviewing account permissions and connected devices**:** Ensures only necessary apps, services, and devices have access, reducing security risks.

3 Monitoring account activity for suspicious logins**:** Detects unauthorized attempts early, allowing timely action to secure the account and prevent potential breaches.

B. Account Recovery

- Resetting passwords**:** Allows users to regain access when a password is forgotten or compromised.
- Using recovery email/phone**:** Sends verification codes or links to a trusted contact method to securely recover the account.
- Security questions and backup codes**:** Provide additional ways to verify identity and restore access if standard recovery methods are unavailable.

C. Account Closure & Archiving

- When to close an account**:** Close accounts that are no longer needed, unused, or pose a security risk.
- Backing up important data before closure**:** Ensures valuable files, contacts, and settings are saved before losing access permanently.
- Understanding permanent deletion vs. temporary deactivation**:** Permanent deletion removes all data and access permanently, while temporary deactivation disables the account temporarily, allowing future reactivation without data loss.

Link: activity Click the Link

- Demonstrating the process of setting up security alerts in Gmail or Outlook.
- https://www.youtube.com/watch?v=RgFJbJFyvw0

Exercise

1. Create a new email account (can be demo-based).
2. Set a secure password and enable two-factor authentication.
3. Add an alternate recovery email and phone number.
4. Share screenshots of each step in a training portfolio.

Summary

Staying safe at this digital age is essential. Digital device users should know how to manage their existence and participation online. Account Management is a fundamental digital skill that safeguards user access, protects sensitive data, and enhances productivity. Whether for personal or organizational use, proper account management involves creating accounts correctly, securing them with strong authentication, keeping credentials up-to-date, and responsibly closing or archiving accounts when no longer in use. Mastering these practices ensures a safer and more efficient digital work environment. Besides knowing the safest online practices and maintaining their accounts is one skill on digital safety.

Review Question

Multiple choices

1. Which of the following is an example of a cloud account?

    A. Local Windows login without internet
    B. Microsoft 365 account
    C. Calculator app settings
    D. Offline document editor

2. The best password example is:

    A. 123456
    B. mihretu1990
    C. Sun!River#93
    D. password123

3. Multi-factor authentication (MFA) improves account security by:

    A. Using the same password for all accounts
    B. Adding an extra verification step beyond the password
    C. Disabling password requirements
    D. Sharing credentials with team members

Session 2: Privacy Settings

Introduction

Dear learners, welcome to this session. In this session, you will explore privacy settings

Privacy settings allow users to control who can see their information, activity, and shared content. Adjusting these settings helps protect personal data, manage visibility, and maintain security while using digital accounts.

They are controlled within software, apps, or devices that allow you to manage who can see your information, how it is used, and what is shared**.** In productivity tools (such as Word, Excel, and PowerPoint) and related online services (like OneDrive, SharePoint, or email), privacy settings protect personal data, control access to files, and ensure compliance with workplace or legal standards.

Learning Objective

By the end of this lesson, learners will be able to:

- Configure privacy settings in digital platforms.
- Protect personal and work-related data.
- Explain and demonstrate the concepts of sharing, editing permissions, and data visibility.

Content Outline

2.1 Privacy in Digital Tools
2.2 privacy setting features and settings

2.1 Privacy in Digital Tools

Why privacy matters in productivity software: Protects sensitive data, personal information, and work-related documents from unauthorized access, ensuring confidentiality and compliance with organizational policies.

Risks of ignoring privacy settings: Can lead to data breaches, accidental sharing of confidential information, identity theft, or misuse of personal and professional data.

Privacy Settings in Microsoft Word, Excel, and PowerPoint

- Account and sign-in privacy options**:** Control how your account information is used, who can see your activity, and manage connected apps or services.
- Document properties and personal information removal**:** Remove metadata like author name, comments, or editing history to protect identity and confidential information.
- Managing sharing permissions in OneDrive/SharePoint**:** Set who can view, edit, or share files to ensure that sensitive documents are only accessible to intended collaborators.

2.2 privacy setting features and settings

A. General Privacy Features

- Password-protecting files**:** Adds a layer of security so that only users with the password can open or modify documents.
- Disabling macros from untrusted sources: Prevents potentially harmful automated scripts from running, reducing the risk of malware or data breaches.
- Controlling collaborative editing and version history**:** Manages who can edit documents and tracks changes, ensuring accountability and protecting sensitive information from unauthorized modifications.

B. Types of Privacy Settings

- File-Level Privacy**:** Who can open, edit, or copy a document.
- Account-Level Privacy**:** Control over your Microsoft/Google account data.
- Collaboration Privacy**:** Permissions for shared workspaces and team editing.
- Device Privacy**:** Settings that control app access to the microphone, camera, and location when using productivity tools online.

C. Best Practices for Privacy

- Regularly reviewing privacy preferences: Ensures settings stay up-to-date with changing needs and helps protect personal and organizational data.
- Using “View only” or “Restricted Access” modes: Limits what collaborators can do, preventing unauthorized editing or sharing of sensitive files.
- Enabling multi-factor authentication (MFA) for account protection: Add an extra security layer, making it harder for unauthorized users to access accounts even if passwords are compromised.

Exercise 1:

You are preparing a confidential financial report in Excel for your company’s internal use. Before sending it to the manager, you:

1. Remove hidden personal author information.
2. Save the file with a password.
3. Share it via OneDrive with “View only” permission so no one can edit it without approval.

Exercise 2:

Open an existing document in Word.

- Access **File → Info → Inspect Document** to remove personal information.
- Save the file with a password.
- Share it with a colleague using “Can View” rights only.

Exercise 3:

Practice: Go to Facebook privacy settings and limit profile visibility

Summary

In this session, you learned that privacy settings help protect your personal and work-related information by controlling who can see, edit, or share your files. Adjusting privacy settings in tools like Microsoft Word, Excel, PowerPoint, and OneDrive helps prevent unauthorized access and

data misuse. You also explored how to remove personal details from documents, use passwords for protection, and manage sharing permissions to keep files secure. Understanding file-level, account-level, and collaboration privacy ensures you can safely work and share in digital environments. Regularly reviewing privacy settings, using “View only” options, and enabling multi-factor authentication are essential habits for maintaining security and confidentiality online.

Review Questions

Multiple Choices

1. Which privacy feature prevents unauthorized users from editing your document?

    A. Track Changes
    B. Password Protection
    C. Spell Check

2. What does “Inspect Document” do in Microsoft Word?

    A. Checks for spelling errors
    B. Removes personal metadata
    C. Translates the document

3. True or False: Once you share a document with “Can Edit” permission, you can change it to “View only” later.

Session 3: Identify Common Threats

Introduction

Dear learners, welcome to this session. In this session, you will explore identifying common Threats

Recognizing phishing, malware, social engineering, and other cyber threats. In the digital world, threats are risks or dangers that can harm devices, data, or users. These threats may be intentional, such as hacking, or unintentional, like accidental data loss. Understanding common threats is essential for protecting personal information, maintaining system integrity, and ensuring safe online activities.

Learning Objective

By the end of this lesson, learners will be able to:

- Define and recognize different types of digital threats and their sign.
- Apply preventive measures to reduce the risk of threats.

Content Outline

3.1 Digital Threats and Their Types

3.2 How to Prevent Threats

3.1 Digital Threats and their signs

Digital threats refer to any dangers or malicious activities that target digital systems, devices, networks, or data. These threats can disrupt operations, steal sensitive information, or damage systems.

Common Signs of a Threat

Common signs of a digital threat include signs related to your computer system, signs related to accounts and access, and signs related to network and internet connectivity

Signs on Your Computer/System

- Slow performance: Your computer or network may run significantly slower than usual.
- System crashes: Frequent, unexplained shutdowns or crashes.
- Unexplained changes: Unauthorized changes to your system & security settings, or installed programs.
- Unknown programs or files: The appearance of unfamiliar applications or files on your device.
- Strange pop-ups: Unexpected pop-up messages, security alerts, or warnings.
- Encrypted files: Files that are inaccessible and may have an unusual file extension, indicating a potential ransomware attack.

Signs Related to Accounts & Access

- Locked accounts: Being locked out of your accounts without reason.
- Password changes: Your password is being changed without your knowledge.
- Inaccessible files: You may find you can no longer access certain documents or files.
- Unauthorized access alerts: Notifications of unauthorized attempts to log in or access your accounts.

Signs in Network & Internet Activity

- Unusual network activity: High data usage or unusually slow network performance.
- Redirected internet searches: Being redirected to unexpected websites when you try to search the internet.
- Strange emails: Emails coming from your domain that you didn't send, or emails asking for sensitive information.
- Automatic email sending: Emails are being sent automatically from your account without your knowledge.

They come in many forms, and understanding them is essential for cybersecurity.

- Man-in-the-Middle (MitM) Attack**:** An attacker secretly intercepts and relays communication between two parties who believe they are directly communicating with each other. Such as*:* Using an unsecured public Wi-Fi network, where an attacker can see the data you send and receive.
- Denial-of-Service (DoS) / Distributed Denial-of-Service (DDoS) Attack:
  - DoS: Flooding a target server with so much traffic that it cannot function & goes offline.
  - DDoS: A larger attack where the flood of traffic comes from many compromised computers (a "botnet") simultaneously. This is extremely difficult to stop.
- SQL Injection (SQLi): An attack on a web application. Attackers insert malicious code into a website's search box or login form. If the website is poorly designed, this code can trick the database into revealing sensitive data (like user passwords).
- Zero-Day Exploit: An attack that targets a software vulnerability that is unknown to the software vendor. This means there is no patch available, making the attack highly dangerous until the vendor can create and release a fix.
- Advanced Persistent Threat (APT): A prolonged, targeted attack where an intruder gains access to a network and remains undetected for a long period. The goal is usually to steal data over time, not cause immediate damage. Often conducted by nation-states or highly organized criminal groups.

Concept Name	**Simple Explanation**	**Real-World Analogy**
DDoS Attack	Overwhelming a website with fake traffic to knock it offline.	A mob is blocking the entrance to a store so legitimate customers can't get in.
Zero-Day	Attacking a secret flaw before a fix exists.	A thief discovers a unique, unknown flaw in a bank's alarm system.
MFA/2FA	You need two proofs of identity to log in.	You need both a key (something you have) and a code (something you know) to enter a building.

Table 6: Real-world Examples of Attacks

3.2 How to Prevent Threat

Preventing a breach of your network and its systems requires protection against a variety of cyber-attacks. For each attack, the appropriate countermeasure must be deployed/used to deter it from exploiting a vulnerability or weakness.

- Disconnect: Immediately disconnect the device from the internet (Wi-Fi and Ethernet) to stop data theft or the spread of malware.
- Scan for Malware: Use a reputable antivirus/antimalware program to run a full system scan.
- Change Passwords: On a clean device, change the passwords for any compromised accounts (and any accounts that used the same password). Enable Multi-Factor Authentication (MFA/2FA) everywhere possible.
- Check Accounts: Review your bank and credit card statements for fraudulent charges. Consider placing a fraud alert on your credit.
- Update and Restore: Update your operating system and all software. If the infection is severe, you may need to restore your system from a clean backup or completely wipe and reinstall the OS.
- Report: Report phishing attempts to your IT department and the legitimate company being impersonated. Report fraud to your bank and the relevant authorities.
- Staying vigilant and recognizing these signs early can significantly reduce the damage from a digital threat.

Threat Type	**Example Techniques**	**Primary Mitigations**
Malware	Ransomware, spyware	Antivirus, restricted admin rights
Social Engineering	Phishing, whaling	Employee training, MFA
DDoS Attacks	HTTP floods, SYN floods (Synchronous flood)	Firewalls, traffic filtering
Insider Threats	Data theft, sabotage	Activity monitoring, access controls

Threat Type	Example Techniques	Primary Mitigations
Password Attacks	Brute-force, dictionary	Strong passwords, account lockouts
Supply Chain Attacks	Compromised updates	Vendor vetting, code signing checks
Data Breaches	Unauthorized access/sharing	Encryption, Data Loss Prevention (DLP) tools

Table 7: Summary on Cyber Threats and Primary Mitigations

Practice: Review sample phishing emails and mark suspicious indicators.

Summary

Digital threats are dangers that can harm your devices, steal your information, or disrupt your online activities. Common threats include malware, phishing, unsecured networks, and insider attacks. Recognizing the signs of a threat and applying prevention strategies such as using security tools, maintaining strong passwords, and staying vigilant online can greatly reduce risks. Awareness and proactive habits are the strongest defense.

Review Questions

Multiple choices

1. Ideally, when should passwords be changed?
   A. Only when an account is compromised
   B. Every day
   C. Every 30-90 days
   D. Never

2. What is implemented to carry out distributed DDoS attacks, steal data, and send spam messages, and permits the hacker to access various devices and their connection?
   A. Trojan
   B. Virus
   C. Botnet
   D. Worm

3. What does two-factor authentication (2FA) provide when logging into an application or service?
   A. A Single Password Verification
   B. An additional verification through a separate channel
   C. No additional security measures
   D. Automatic password changes

4. Which statement best describes the relationship between 2FA and overall security strategy?
   A. 2FA should be the only security measure used.
   B. 2FA is more effective when combined with other security tools and policies.
   C. 2FA is outdated and not necessary anymore
   D. 2FA is only useful for social media accounts.

5. Which of the following is a technique in which malicious code is inserted into strings that are passed to an SQL query?
   A. SQL Malware
   B. SQL Injection
   C. SQL Hijack
   D. SQL Trojan

Session 4: Secure Practices

Introduction

Dear learners, welcome to this session. In this session, you will explore Secure practice

Secure practices refer to the safe and responsible use of productivity software and digital tools to protect data, devices, and user privacy. This includes safeguarding documents, applying access controls, managing sensitive information, and preventing unauthorized use or data loss. In advanced productivity software usage, secure practices ensure that work is not only high quality but also protected from cyber risks, accidental leaks, and unauthorized edits**.**

Learning Objective

By the end of this lesson, learners will be able to:

- Apply software-specific security features to protect files and data.
- Practice safe sharing, backup, and version control habits.
- Use password protection, encryption, and restricted editing effectively.

Content Outline

4.1 Security Practice in Productivity Tools
4.2 Advanced Security Tools

4.1 Security Practice in the Information Age

In today’s digital world, information has become one of the most valuable assets. However, with increased connectivity and data sharing come greater risks. Before exploring security practices, it is important to understand key security concepts such as data threats, the value of information, personal security, and file security. Data threats refer to the risks and attacks that can compromise or damage information. Recognizing the value of information helps users understand why protecting it is essential. Personal security focuses on safeguarding individual identities and digital activities, while file security ensures that stored or shared files remain safe from unauthorized

access or loss. Understanding these concepts lays the foundation for adopting effective security practices in the information age.

File Protection Features

- Password-protecting documents: Restricts access to authorize users only.
- Setting file permissions: Controls who can view, edit, or share files.
- Restricting editing in Word: Limits modifications to specific sections or users, preserving document integrity.

Data Privacy Measures

- Removing personal metadata: Deletes author info, comments, and document history to protect identity.
- Protecting sensitive data in Excel: Use masking, hiding cells, or locking sheets to prevent accidental or unauthorized access.

Safe Sharing Practices

- Secure cloud sharing vs. email attachments: Cloud sharing allows controlled access and tracking, reducing the risk of leaks compared to email attachments.
- Version control and change tracking: Keeps a record of edits, enabling rollback if mistakes or unauthorized changes occur.

Backup and Recovery

- AutoSave and version history – Automatically saves changes and keeps previous versions to recover from errors.
- Local and cloud backups – Provides redundancy to protect against hardware failure or data loss.

4.2 Advanced Security Tools

- Configuring Firewall: Allow or deny incoming and outgoing data based on configured rules

- File encryption options: Converts files into unreadable formats for unauthorized users.
- Digital signatures in documents: Verifies document authenticity and confirms that content has not been altered.

Firewall

- A firewall is a network security system that acts as a barrier between a trusted network, such as a private internal network, and an untrusted network, like the internet.
- It monitors and controls incoming and outgoing network traffic based on predefined security rules, selectively allowing or blocking data packets to prevent unauthorized access and malicious activity.
- Firewalls can be either software programs or dedicated hardware.

Basic features of a firewall:

1. **Packet Filtering** – Inspects incoming and outgoing packets, allowing or blocking them based on rules (e.g., source/destination IP, port, protocol).
2. **Stateful Inspection** – Tracks the state of active connections and decides whether packets are part of a valid session.
3. **Proxy Service** – Acts as an intermediary between users and the internet, masking internal addresses and providing content filtering.
4. **Network Address Translation (NAT)** – Hides internal IP addresses by translating them into a public IP, adding a layer of security.
5. **Access Control** – Defines which users, devices, or applications are allowed or denied access to certain network resources.
6. **Logging and Monitoring** – Keeps detailed records of traffic, including attempts to breach the network, which helps in auditing and threat detection.
7. **Intrusion Detection/Prevention (IDS/IPS) Integration** – Identifies suspicious activities and may block malicious traffic in real time.
8. **VPN Support** – Enables secure remote connections through encrypted tunnels.
9. **Application Layer Filtering** – Inspects traffic at the application level (e.g., HTTP, FTP) to block malicious content or unauthorized usage.

10. **Alerts and Notifications** – Notifies administrators when potential threats or unusual traffic patterns are detected.

Accessing firewall

- To access the Windows Firewall basic settings
  1. Type Windows Firewall in the search box and click on the Windows Firewall app
  2. Click on Windows Firewall on or off
  3. Click on Turn on or Turn off to change settings (Private, or Public) and click ok button
- Use the Advanced settings to create custom inbound and outbound rules for specific applications or ports

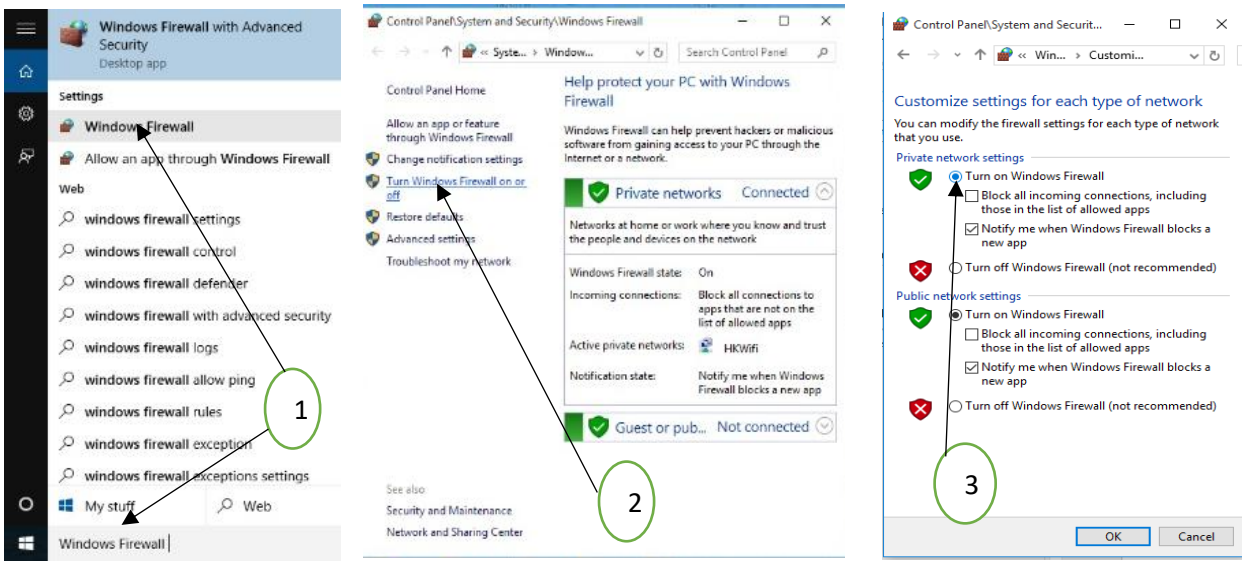


Table 8 Firewall settings

Firewall Rules

Inbound Rules (Traffic Coming In)

- **Purpose:** To prevent unauthorized access to your device from the internet or other networks.
- **Default Behavior:** Blocks any inbound traffic that doesn't match an existing "Allow" rule.

- **Example Use:** You might create an inbound rule to allow specific remote desktop connections or incoming data for a particular application.
- **Outbound Rules (Traffic Going Out)**
- **Purpose:** To control which applications or services can send data from your device to external networks.
- **Default Behavior:** Allows all outbound traffic by default.
- **Example Use:** In a highly secure environment, you could block all outbound traffic and then create specific "Allow" rules for particular applications or URLs to control which services can connect to the internet.

Steps to Manage Rules (using wf.msc)

1. Press the Windows key + R to open the Run dialog box.
2. Type wf.msc and press Enter to open Windows Firewall with Advanced Security.
3. In the left pane, click on either Inbound Rules or Outbound Rules.
4. To create a new rule, click New Rule... in the Actions pane on the right.
5. Follow the wizard to select the rule type (e.g., Program, Port), specify the protocol (TCP/UDP), the local and remote ports/addresses, the action (Allow or Block), and the profiles the rule applies to (Domain, Private, Public networks).

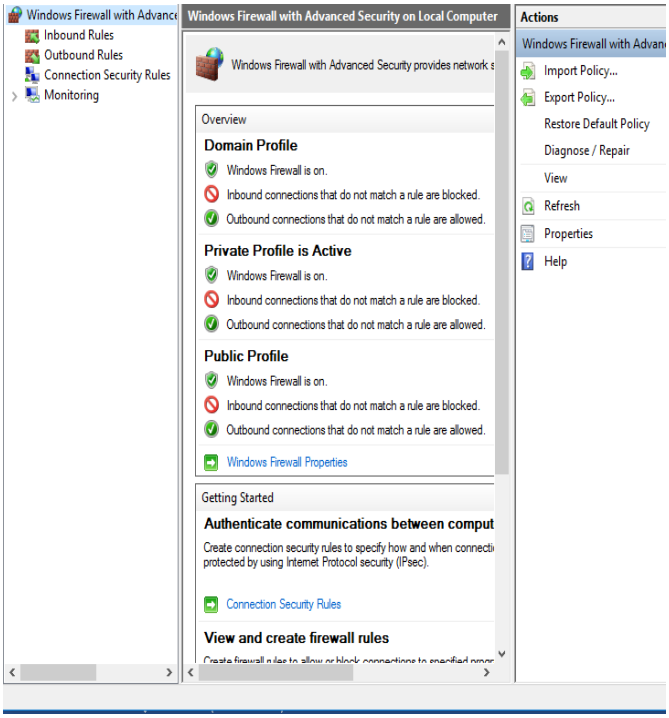


Figure 94 Windows Firewall advanced Security

Practical Scenarios

- **Protecting financial reports**: Apply strong passwords, restrict editing, and control sharing to safeguard sensitive numbers.

- **Securing confidential presentations**: Use encryption, manage access permissions, and track versions to maintain confidentiality during collaboration.

Types of Secure Practices

- **Password Protection** (Word, Excel, PowerPoint file-level security)
- **Restricted Editing** (Track Changes, lock sheets, limit slides edits)
- **Data Encryption** (Secure sensitive business data)
- **Safe Sharing & Permissions** (OneDrive, SharePoint, Teams access controls)
- **Backup & Recovery** (Offline and online backup systems)

Exercise: Protecting a Confidential Excel Report

Step-by-step Example:

1. Open the Excel file.
2. Go to File → Info → Protect Workbook.
3. Choose Encrypt with Password and set a strong password.
4. Hide sensitive sheets (Right-click → Hide).
5. Lock important cells (Format → Lock Cell + Protect Sheet).
6. Save the file and share via a secure cloud link with "View Only" permission.

Exercise

Scenario: You are preparing a company salary report in Excel.

- Secure by adding a password.
- Hide columns containing personal information.
- Share only with HR staff via a secure link.

Exercise

1. In Word: Create a short confidential agreement and restrict editing so only comments can be added.

2. In Excel: Prepare a budget spreadsheet **and** lock all formula cells.
3. In PowerPoint: Create a presentation and set a password for opening.

Summary

Secure practices in productivity software involve protecting files, controlling access, securing sensitive data, and ensuring safe sharing**.** By using built-in security tools such as passwords, encryption, restricted editing, and version control, professionals can safeguard work from unauthorized access and accidental loss. These skills are essential for maintaining data confidentiality, integrity, and availability in modern digital work environments.

Careful practice Practice: Enable browser HTTPS-only mode, create a backup on external drive.

Review questions

Multiple Choices

1. Which of the following is NOT a secure practice?

   A. Password protecting files
   B. Sharing unprotected files over public Wi-Fi
   C. Restricting editing in Word
   D. Encrypting sensitive Excel sheets

2. Hiding a sheet in Excel without protecting it is a secure way to keep data safe. (True/False)
3. Name two advantages of using digital signatures in Word or Excel.

Module 6: Problem-Solving

Introduction

In our digital world, problems with software, networks, and applications are common and can disrupt everyday activities. Users should know these problems and solve them accordingly. Problem-solving in digital literacy refers to the ability to identify, analyze, and resolve issues that arise when using digital technologies, devices, applications, or online resources. It's not just about fixing technical errors—it also includes making decisions, finding reliable information, adapting to new tools, and applying critical thinking in digital environments. This module focuses on helping you understand and fix these issues so that your devices and applications run smoothly.

First, we will explore common software problems, their symptoms, and practical troubleshooting methods to resolve them. Then, we will move on to network and application issues, learning how to identify causes of connectivity failures or app malfunctions and apply the right solutions.

By the end of this module, you will have the skills to recognize, diagnose, and fix frequent digital problems, making you more confident and independent in managing your devices.

Session 1: Resolving software issues

Introduction

Dear learners, welcome to this session. In this session, you will explore Resolving software issues

Software is the most susceptible part of the computer system to corruption or damage due to many reasons (power failure, improper shutdown). So resolving software issues is critical. This session introduces you to common software issues of digital devices, their symptoms, and resolving mechanisms. Let's start our journey.

Software issues are the most frequent problems of digital devices that affect our digital lives. So let' start with a few questions to explore your experience.

- What do you think about your device being slow after a few days of normal use?
- Do you have experience with the problems of not responding in your device's app and how you fix it?

- Do you have any experience with mobile apps that are not installed on your device?

This session provides you with the basic skills of identifying symptoms of common software problems and the mechanisms of how to solve these problems. Let's start our journey.

Learning Objectives

At the end of this session, learners/trainees will be able to:

- Explain the common software problems of digital devices
- Identify common symptoms of software problems and fix software problems

Contents outline

1.1 Common Software-Related Problems
1.2 Troubleshooting techniques/ common symptoms of software problems and their solutions

1.1 Common Software-Related Problems

Software-related problems are issues that occur in a computer or digital device due to malfunctions, bugs, misconfigurations**,** or incompatibilities within the software (the programs and operating systems) rather than the hardware. The most common software-related problems of digital devices are listed below:

1. Operating system errors

- Blue Screen of Death (Windows)
- System freezing or random restarts
- Boot loops or device stuck on startup

2. Application crashes or freezes

- Apps not opening at all
- Apps closing unexpectedly during use

3. Performance problems

- Slow startup or sluggish operation and lag in games or video playback

4. Compatibility issues

- Software not working after OS update
- Older apps incompatible with new hardware or OS versions

5. Network & connectivity problems

- Wi-Fi not connecting or frequently disconnecting and Bluetooth pairing failures
- Slow internet caused by misconfigured settings

6. Update failures

- OS updates not installing correctly and app updates stuck or failing in app stores

7. Security & malware infections

- Pop-ups, unwanted ads, or strange programs appearing
- Ransomware or viruses causing file loss or lockouts

8. Corrupted files or settings

- Files failing to open due to corruption
- System settings or registry errors causing malfunction

9. Storage & file system errors

- Insufficient storage preventing installations
- Disk read/write errors or bad sectors

10. Driver/software conflicts

- Hardware not functioning because of outdated or incompatible drivers

- Printer, webcam, or audio devices not detected

Software Problem	Possible Cause	Possible Solution
Slow performance	Too many background apps, low storage, malware	Close unused apps, free up storage, run an antivirus scan
App not responding/freezing	Software bug, low RAM, corrupted files	Force close and restart the app, update or reinstall it
The operating system is not booting	Corrupted system files, failed update	Use system repair tools (Windows Recovery / macOS Recovery), restore from backup
Frequent crashes / Blue Screen	Driver issues, incompatible software	Update drivers, uninstall conflicting apps, run diagnostics
Unable to install software	Insufficient permissions, low storage, compatibility issues	Free storage, run as administrator, check system requirements
Internet not connecting	Network misconfiguration, driver issues	Restart router, reset network settings, update network drivers
Printer not working	Missing/corrupt driver, wrong settings	Reinstall printer driver, check connections, and set as default printer
File won't open	File corruption, unsupported format	Use file repair tools, try compatible software
Pop-ups or strange apps appearing	Malware infection	Run an antivirus/antimalware scan, uninstall unknown apps
Update fails repeatedly	Network issues, insufficient space, corrupted update files	Ensure stable internet, free up space, and clear update cache

Table 9 Common software problems on digital devices and their solutions

Scenario:

Sara opens Microsoft Word to finish her report, but the program **keeps freezing** and won't respond. How does she solve the problem?

Steps Taken:

1. She presses **Ctrl + Alt + Delete** and opens **Task Manager**.
2. She selects **Microsoft Word → End Task** to close the frozen app.
3. She restarts Word — the same problem happens again.
4. She checks for **updates** in Office settings or CD/USB drive and installs the latest version.
5. After restarting her computer, Word runs smoothly without freezing.

Learning Points:

- Use **Task Manager** to close unresponsive programs.
- **Software updates** often fix bugs and improve performance.
- **Restarting** helps apply fixes and clear temporary issues.

1.2 Troubleshooting/Resolving Techniques method

Device troubleshooting is not a random task; rather, it is a systematic process that starts from external to internal and from simple to complex problems.

1. Identify and define the problem

- Note exactly what's wrong (error messages, crashes, slow performance, missing features).
- Determine when the issue started and anything changed (new software, updates, or change settings).

II. Check for simple causes first

- Restart the device — many temporary issues clear after a reboot.
- Close unnecessary apps or processes that might be using too many resources.
- Ensure cables, accessories, or network connections are working.

III. Verify software is up to date

- Check for OS updates (Windows Update, mac OS Software Update, Android/iOS updates) and Update the specific app or program from its official source.

IV. Scan for malware or unwanted software

- Run antivirus/antimalware scans (Windows Defender, Malware bytes, etc.).
- Remove or quarantine threats found.

V. Check compatibility

- Make sure the software is compatible with your OS version and hardware.
- Look up system requirements from the developer's site.

VI. Adjust settings or preferences

- Reset app preferences or settings to default.
- Check for misconfigured network, display, or security settings.
- Change only one device or setting at time

VII. Reinstall or repair the software

- Uninstall the problematic app completely, and then reinstall it from the official site/store.
- For Windows, you can also use "Repair" if available in Apps & Features.

VIII. Use built-in troubleshooting tools

- Windows: Settings → Update & Security → Troubleshoot.
- macOS: Disk Utility → First Aid or Safe Mode.
- Mobile: Safe Mode or reset network/app settings.

IX. Restore to a previous state (if recent changes caused the issue)

- Windows: Use System Restore / Windows Recovery**.**
- macOS: Restore from Time Machine backup.
- Mobile: Roll back to a stable OS version if supported.

X. Seek expert or official support

- Check the developer's support page or user forums.
- Contact technical support if the issue persists.

Best Practices

- Keep software updated.
- Avoid installing apps from untrusted sources.
- Back up important data before major changes.
- Document solutions for future reference.

Scenario: Wi-Fi Connection Problem

Abel tries to connect his laptop to the school's Wi-Fi, but it says **"No Internet Connection."**

Steps Taken:

1. He checks if **Wi-Fi is turned on**
2. He notices other students are connected, so the network is fine.
3. He runs the **Windows Network Troubleshooter**, which reports *"Incorrect IP configuration."*
4. Abel selects **Forget Network**, then reconnects and enters the correct password.
5. The laptop connects successfully and the internet works again.

Learning Points:

- Check if **the problem is with the device or the network**.
- The **Network Troubleshooter** can automatically fix common issues.
- **Reconnecting** can refresh network settings and solve IP conflicts.

Summary

Most commonly, software problems stem from low resources, corrupted files, software incompatibility (software/drivers), misconfigurations of settings, storage or file system errors, and malware infections. To solve these problems, different troubleshooting techniques are applied such as closing unused apps, freeing storage, updating/reinstalling software or drivers, repairing system files, resetting settings, and running antivirus scans

Review questions

1. What are common causes of frequent crashes or Blue Screen errors?
2. What are possible reasons why a printer is not working?
3. How can you open a file that is corrupted or in an unsupported format?
4. What should you do if pop-ups or strange apps appear unexpectedly?
5. What are the possible causes of slow performance in digital devices

Session 2: Troubleshoot network and application problems

Introduction

Dear learners, welcome to this session. In this session, you will explore Troubleshooting network application problems

Troubleshooting network and application problems involves identifying, diagnosing, and resolving issues affecting connectivity or software performance. Network and application problems should be able to identify the causes**,** apply appropriate solutions, and verify that systems are functioning important. This includes using diagnostic tools, updating software, and managing settings to maintain reliable network and application operations.

Learning Objectives

- Identify common causes of network issues on digital devices and troubleshoot.
- Identify common causes of application problems on the network and troubleshoot.

Content Outline:

2.1 Common causes of network problems and their solutions:

Have you ever had your internet fail right before a deadline or online class? What did you do first?

If your device can’t connect to the internet or has slow speeds, don’t panic the solution might be simpler than you think.

Troubleshooting the network on digital devices involves identifying and fixing connectivity problems affecting computers, smartphones, smart TVs, and other gadgets.

It includes checking hardware, network settings, and software to restore stable internet access. The process ensures smooth communication, data transfer, and online activities.

I. Computer Network Configuration Issues & Solutions

Network configuration issues occur when devices fail to connect or communicate properly within a network due to incorrect settings, faulty hardware, or software conflicts. Understanding common problems and solutions helps maintain seamless internet and intranet connectivity.

Table 10: Common Network Configuration issues

No	Issue	Description	Possible Causes
1	Incorrect IP Configuration	The device has the wrong IP settings.	DHCP server error, manual misconfiguration, static IP conflicts.
2	DNS Configuration Errors	Unable to translate domain names to IP addresses.	Wrong DNS server address, DNS server down.
3	Gateway Misconfiguration	The device can't connect outside the local network.	Wrong default gateway address.
4	Network Adapter Issues	Hardware or driver problems.	Outdated/missing drivers, disabled adapter.
5	Firewall or Security Settings	Network access blocked.	Overly restrictive firewall rules.
6	Duplicate IP Addresses	Two devices share the same IP.	Static IP conflicts, DHCP mismanagement.
7	Wireless SSID & Password Issues	Unable to connect to Wi-Fi.	Incorrect credentials, hidden SSID.

II. Router Problems and Solutions

A router is a key device that connects digital devices to the internet and local networks. Common router problems include no internet connection, slow speed, or frequent disconnections. These issues can often be solved by restarting the router, checking cables, updating firmware, or adjusting network settings.

Table 11: common Router problems and solutions

No	Problem	Possible Cause	Solution
1.	No Internet Connection	ISP outage, router malfunction, or loose cables.	- Check if other devices have internet. - Restart router and modem. - Contact ISP if the outage persists.
2.	Slow Internet Speed	Too many connected devices, an outdated router, and interference from walls or other electronics.	- Limit active devices. - Move the router to a central location. - Use a wired Ethernet connection for critical devices. - Upgrade router or plan if needed.
3.	Frequent Disconnections	Overheating router, firmware bugs, and network congestion.	- Keep the router in a cool, ventilated place. - Update router firmware. - Change Wi-Fi channel to avoid interference.
4.	Weak Wi-Fi Signal	The router is too far from the device, with thick walls blocking the signal.	- Relocate the router or device closer. - Use Wi-Fi range extenders or a mesh network.
5.	Can't Connect to Wi-Fi	Wrong password, MAC address filtering, or device blocked by the router.	- Re-enter the correct password. - Disable MAC filtering or add the device to the allowed list. - Restart both the device and router.
6.	Router Keeps Restarting	Power supply issues, overheating, and faulty hardware.	- Check the power adapter. - Place the router in an open, ventilated space. - Replace the router if the hardware is faulty.
9.	Unable to Access Router Settings	Wrong IP address or forgotten admin credentials.	- Check default gateway IP (e.g., 192.168.1.1). - Reset the router to factory settings if the password is lost.

III. Wi-Fi Connectivity Problems & Solutions

Wi-Fi connectivity problems occur when a device cannot connect to a wireless network or experiences unstable internet performance. These issues may be caused by incorrect settings, weak

signals, interference, or hardware/software malfunctions. Troubleshooting these problems is a key **digital literacy skill** for ensuring smooth communication and access to online resources.

No	Problem	Description	Possible Causes
1	No Wi-Fi Network Detected	The device can't find the network	Router turned off, SSID hidden, out of range
2	Cannot connect to Wi-Fi	Connection attempt fails	Wrong password, network overload, MAC filtering
3	Intermittent Connection Drops	Wi-Fi disconnects randomly	Weak signal, interference, faulty drivers
4	Slow Wi-Fi Speed	Pages load slowly, buffering	Network congestion, outdated router, ISP issues
5	Limited or No Internet Access	Connected but no internet	ISP outage, router config error, DNS issue
6	Authentication Errors	Incorrect credentials	Typo in password, saved wrong key
7	IP Address Conflicts	Two devices share same IP	Static IP duplication, DHCP error

Table 12 : Common Wi-Fi Connectivity Problems and Possible Causes

Review Questions

1. What steps do you usually take first when your Wi-Fi connection becomes weak or unstable, and why?
2. How can updating router firmware or adjusting router placement improve Wi-Fi connectivity at home or school?
3. In what ways does securing your Wi-Fi network (e.g., using strong passwords) help prevent connectivity problems?

2.2 Troubleshooting Application issues on networking

Troubleshooting application software in digital devices is essential to ensure smooth and efficient usage. Common problems include crashes or freezing caused by bugs, outdated versions, or limited system resources.

Users may also face installation/update errors, login/authentication issues, and performance

slowdowns.

Additionally, compatibility issues arise when applications are not supported by the device or operating system. Application problems are just as frustrating. An app that freezes during an important task can be a major setback.

Common Application Issues:

- Freezing or crashing
- Running too slowly
- Display glitches

Causes:

- Outdared application
- Insufficient storage or RAM
- Corrupted files or settings
- Conflicts with other apps

Solutions:

1. Close and reopen the application.
2. Check for updates (Microsoft Store, App Store, and Google Play).
3. Restart the device.
4. Clear cache or temporary files.
5. Uninstall and reinstall the application.

Summary

Troubleshooting network and application problems ensures reliable connectivity and smooth software use. Network issues may include no internet, slow speeds, weak Wi-Fi, or IP conflicts. Application problems often involve crashes, slow performance, or failure to launch. Solutions include checking connections, restarting devices, updating software, and using diagnostic tools. Regular updates, maintenance, and proper network management help prevent future issues.

Review Questions:

1. What is the first step when a device cannot connect to a network?

A. Update the operating system

B. Check physical connections and cables

C. Reinstall all applications

D. Contact the ISP immediately

2. If a Wi-Fi connection keeps dropping, what is a common solution?

A. Clear browser history

B. Restart the router and device

C. Delete all apps

D. Turn off device completely

3. An application keeps crashing on a smartphone. What should you try first?

   A. Reinstall the operating system

   B. Change the Wi-Fi password

   C. Disable all network connections

   D. Update or restart the application

4. Which action helps resolve IP address conflicts on a computer?

   A. Restart the router

   B. Block the device from Wi-Fi

   C. Clear the application cache

   D. Uninstall the operating system

5. Why is it important to update device firmware and applications regularly?

   A. To make the device look new

   B. To improve compatibility and fix bugs

   C. To slow down performance

   D. To delete old files automatically

6. What is a preventive practice to avoid network and application problems?

   A. Avoid using Wi-Fi entirely
   B. Turn off the device for one week
   C. Regularly update software, clear cache, and maintain storage
   D. Only use one device for everything

Module 7: Career-Related Competences

Introduction

This module provides learners with essential knowledge in software development that is relevant to their careers. It places strong emphasis on understanding software development, development environments, programming, and programming tools. In addition to developing programming skills and concepts, learners will acquire the ability to work as software developers or programmers.

Session 1: Software development basics

Introduction

Dear learners, welcome to this session. In this session, you will explore Software Development Basics

Welcome to Software Development Basics! In this session, you will explore how software is developed, the stages of the software development lifecycle, the different types of developers and the key soft skills they need, and the tools that help teams collaborate effectively, including version control. By the end, you'll understand the fundamentals of software development, recognize developer roles, and appreciate how modern tools support efficient teamwork.

Learning Objectives

At the end of the session, learners will be able to:

- Explain the concept of software development.
- Describe the phases of the software development life cycle (SDLC).
- Differentiate among types of software developers and identify essential soft skills.
- Demonstrate the use of version control and collaborative tools

Content outline

1.1 What is software development?

1.2 Lifecycle of software development

1.3 Software developers' types

1.4 Version control and collaboration tools

1.1 What is software development?

Every app, game, or website you use starts as an idea, but how does it become a reality? That's where software development comes in. In this lesson, you'll discover what software development is.

The process of designing, developing, testing, and maintaining computer programs and applications is known as software development. The goal of software development is to create a product that meets user needs and business objectives in an efficient, repeatable, and secure way.

Software developers develop the software, which itself is a set of instructions, in order to perform a specific task.

Software developers, programmers and software engineers develop software through a series of steps called the software development lifecycle (SDLC). Artificial intelligence-powered tools and generative AI are increasingly used to assist software development teams in producing and testing code.

Types of software

System software: runs the core functions of a computer, including operating systems, disk and hardware management, and essential utilities..

Programming software: Provides tools like text editors, compilers, debuggers, and linkers for writing and building software programs.

Application software (applications or apps): Helps users perform specific tasks, such as document editing, media playback, data management, or using web/mobile apps.

Embedded software: Controls the operation of devices that aren't traditional computers, such as appliances, vehicles, or industrial machines.

Nice work! Before moving on to the next subtopic, let's take a moment to see your progress in this section.

Reflective Question:

1. Who develops software through the software development lifecycle?
2. What is the main goal of software development?

1.2 life cycle of software development

Software development life cycle (SDLC) is a structured process that is used to design, develop, and test good-quality software. The SDLC stages are shown below.

Figure 95: Software development lifecycle

- **Planning**: Define the project scope, goals, resources, and timeline.
- **Analysis**: Gather and document detailed requirements from stakeholders.
- **Design**: Create system architecture, database design, and user interface layouts.
- **Implementation**: Write and integrate the actual code according to the design.
- **Testing**: Verify the system for bugs, performance issues, and requirement compliance.
- **Deployment**: Release the completed software to the intended users.
- **Maintenance**: Fix issues, update features, and ensure long-term system performance.

Software development method

A software development method is a structured approach to creating software, guiding how the SDLC is carried out.

Common methods include:

- **Waterfall**: Step-by-step, sequential process.
- **Agile**: Flexible, iterative development with user feedback.
- **Scrum**: Agile framework with short work cycles (sprints).
- **Lean**: Focus on efficiency and reducing waste.
- **DevOps**: Combines development and operations for continuous delivery.

So, Modern enterprises use DevOps**;** practices and tools that speed up delivery of high-quality applications and services.

Nice work! Before moving on to the next subtopic, let's pause and review your progress in this section.

Reflective Questions

1. How might choosing different SDLC methods (e.g., Waterfall vs. Agile) affect the speed and flexibility of software development?
2. Why is it important for software developers to follow a structured life cycle like SDLC?
3. In what ways does DevOps improve collaboration between development and operations teams?

1.3 Software developer types

Have you ever wondered what different types of software developers do? Can you guess the roles behind the apps and websites you use every day?

Here are the main types of software developers and they are summarized into three broad categories:

1. Front-End Developer**:** Builds the user interface and ensures good user experience.

Example: Designs the Telebirr app interface that you interact with like the buttons to send money, check balance, or pay bills.

2. Back-End Developer**:** Handles the server, databases, and application logic behind the scenes.

   Example: Manages transactions, account balances, and security on the server. When you send money, the back-end ensures the correct amount is deducted and added to the recipient's account.

3. Full-Stack Developer**:** Works on both front-end and back-end**,** able to build a complete application.

   Example: Works on both the app interface and server logic, ensuring that what you see in the Telebirr app matches the real-time transaction processing happening behind the scenes.

You can develop skills to become any of the above types of developers. Besides hard skills, software developers need soft skills to work well with others, solve problems, and adapt in a fast-changing tech environment. Here are key soft skills:

- **Communication**: Explaining ideas clearly to teammates, managers, and clients.
- **Teamwork & collaboration**: Working well with others, especially in cross-functional teams.
- **Problem-solving**: Thinking critically to find solutions when challenges arise.
- **Time management**: Meeting deadlines and balancing multiple tasks.
- **Adaptability & flexibility**: Learning new tools, languages, or methods quickly.
- **Creativity**: Finding innovative approaches to solve problems.
- **Attention to detail**: Spotting mistakes before they cause bigger issues.
- **Patience,** stay focused and motivated during challenges.

Excellent! Before diving into the next subtopic, let's check how well you've grasped this section.

Reflective questions:

It is obvious that you have understood the above lesson. So before move to another topic try to answer the below questions.

1. Which soft skill areas do you feel you need to improve to become an effective software developer?
2. Telebirr is launching a new feature that allows users to pay utility bills directly from the app. The interface needs to be intuitive, while the server must handle payments accurately and securely.

   Who is mainly responsible for designing the app interface?

   A) Back-End Developer

   B) Front-End Developer

   C) Full-Stack Developer

   D) All

1.4 Version control and collaboration

Have you heard about or experienced a version control system? Take 3 minutes to think about those version control systems?

If you experience it, that is great. So, Version control, also known as source control, is the practice of tracking and managing changes to software code. Version control systems are software tools that help software teams manage changes to source code over time.

What does it?

A. Version Control

A Version Control System (VCS) tracks changes by recording every edit, addition, or deletion in files, ensuring that all modifications are documented. It stores history by keeping snapshots of the project at different points in time, allowing developers to see the evolution of the work. It also enables collaboration, allowing multiple people to work on the same project simultaneously without overwriting each other's changes. Additionally, it supports rollback, making it possible to revert to a previous version if something goes wrong.

i. Types of VCS

- **Local VCS**: Stores version history only on the local computer.

  Example: RCS (Revision Control System).

- **Centralized VCS:** Stores versions on a central server. Users check out files and check them back in.

  Example: Subversion (SVN).

- **Distributed VCS**: Each user has a full copy of the repository, including history. Enables offline work and easy branching/merging.

  Example: Git, Mercurial.

ii. Popular VCS Tools

- Git (most widely used today, supports branching, merging, distributed workflows)
- SVN (centralized)
- Mercurial (distributed, Git alternative)

B. Collaborative software development

Have you thought of how exactly collaboration affects software development?

Let’s take a look at what makes collaboration work in software development.

Collaboration is a key pillar of success in software development; sharing knowledge while distributing responsibilities has become essential within the team.

So to make it clear, Collaborative software development is the process where multiple developers (often across different locations) work together to design, build, test, and maintain software. Here are the most popular tools for development:

Figure 96: Github icon

GitHub: A cloud platform that hosts Git repositories online. It Let's you store your Git projects on the internet, share them, and collaborate with others. For access, use: https://github.com/

Figure 97: GitLab icon

GitLab: Another Git-based platform for hosting repositories, similar to GitHub. Also stores Git projects online, but is especially known for its built-in DevOps tools. To access the gitlab, use: https://about.gitlab.com/

Key Steps in Collaboration with GitHub

1. Create or Fork a Repository
    - The main project owner creates a repository or team members fork it to make their own copy.
2. Clone the Repository
    - Download the repository to your local computer using
    - `git clone <repo-url>`
3. Work in Branches
    - Create a separate branch for new features or fixes:
    - `git checkout -b feature-name`
4. Commit Changes
    - Save changes locally:
    - `git add.`
    - `git commit -m "Description of change"`

5. Push to GitHub
    - Upload branch to the shared repository:
    - `git push origin feature-name`
6. Pull Requests (PRs)
    - Request to merge your branch into the main branch, allowing for code review.
7. Code Review & Merge
    - Team members review code, discuss improvements, and approve merges.
8. Sync Regularly
    - Keep your local project up-to-date:
    - `git pull origin main`

Great job! Let's briefly evaluate your learning progress before moving forward.

Reflective questions:

1. State one main advantage of collaborative software development.
2. Match each type of VCS with its description:
    1. Local VCS
    2. Centralized VCS
    3. Distributed VCS

    a. Stores the full repository, including history, on every user's machine

    b. Stores versions only on a local computer

    c. Stores versions on a central server and requires check-in/check-out

Choices:

A. 1–a, 2–b, 3–c

B. 1–b, 2–c, 3–a

C. 1–c, 2–a, 3–b

D. 1–a, 2–b, 3–c

Group Exercise (4–6 students per group):

Title: Design a Student Attendance System

Scenario:

Your team has been hired to develop a simple **Student Attendance Management System** for a

local school. The system should allow teachers to mark attendance, generate reports, and students should be able to view their attendance history.

Task:- prepare a report document that has the following parts:

Part 1: Define the Project

- **Project Name:** Give your app a creative name.
- **Purpose:** What problem does the app solve?
- **Target Users:** Who will use it?

Part 2: Assign Developer Roles

- Decide who will take on which developer roles:
    - Front-End Developer(s)
    - Back-End Developer(s)
    - Full-Stack Developer (if needed)
- Also assign a **Project Coordinator** to guide discussion and organize tasks.

❖ Use your understanding of each developer role to decide who fits best where.

Part 3: Plan the SDLC Phases

- Briefly describe what your team will do at each stage:
    - Planning
    - Analysis
    - Design
    - Implementation
    - Testing
    - Deployment
    - Maintenance

Part 4: Collaboration Tools

- Choose **one version control tool** and **one collaboration platform** your team would use.
- Explain why these tools are useful for teamwork.

Summary

This session introduced the fundamentals of software development, covering its definition, the Software Development Life Cycle (SDLC) stages, along with common methods like Waterfall, Agile, Scrum, Lean, and DevOps. The session also explored the main types of software developers: front-end, back-end, and full-stack, highlighting the importance of both technical and soft skills.

Finally, it discussed Version Control Systems (VCS), their types, and popular tools like Git, as well as collaborative software development practices using platforms such as GitHub and GitLab.

Review questions

1. Which of the following is the correct order of SDLC stages?

   A. Planning→Design→Analysis→Implementation→Testing→Deployment→Maintenance

   B. Planning→Analysis→Design→Implementation→Testing→Deployment→Maintenance

   C. Analysis→Planning→Design→Deployment→Implementation→Testing→Maintenance

   D. Planning→Implementation→Design→Analysis→Testing→Deployment→Maintenance

2. A developer who works on both the front-end and back-end of an application is called:
   A. Front-End Developer
   B. Back-End Developer
   C. Full-Stack Developer
   D. System Analyst
3. What is the main purpose of a Version Control System (VCS)?
   A. To make software slower
   B. To track and manage changes to code
   C. To design the user interface
   D. To test network connections
4. Collaborative software development ensures that:
   A. Only one developer writes all code
   B. Developers can work together without overwriting each other's work
   C. Testing is optional
   D. Soft skills are unnecessary

Session 2: Open-source vs Proprietary software

Introduction

Dear learners, welcome to this session. In this session, you will explore Open-source Vs Proprietary Software

Welcome! Have you thought about the software you use every day? Some programs are open source, meaning anyone can use, modify, and share them, while others are proprietary, owned by a company with restrictions.

In this session, you'll explore the differences among Linux, Windows, LibreOffice, and Microsoft Office, and by the end, you'll be able to identify open source and proprietary software.

Learning Objective:

By the end of the session, learners will be able to:

- Identify open source and proprietary software

Content outline

2.1 Open source and proprietary software

2.1 Open source and proprietary software

Can you think of a software you use daily? Is it open-source or proprietary?

Open-source software makes its source code freely available for anyone to use, modify, and distribute, often under specific licenses that encourage collaboration and modification. Proprietary software, on the other hand, is owned by an individual or company, with its source code kept private, and users typically need a license to use it.

Open source vs proprietary software

- Cost: Open source is usually free; proprietary software requires purchase or subscription.

- Updates: Open source gets community or publisher updates; proprietary has regular company-managed updates.
- Flexibility: Open source can be modified; proprietary software has usage and modification restrictions.
- Support: Open source relies on forums or hired help; proprietary offers official support teams.

Examples

Open Source Software Examples:

- Operating Systems: Linux, Android.
- Web Browsers: Firefox.
- Office Suites: LibreOffice.
- Media Players: VLC Media Player.
- Programming Languages: PHP.
- Cloud Platforms: OpenStack.

Proprietary Software Examples:

- Operating Systems: Windows, macOS.
- Office Suites: Microsoft Office.
- Web Browsers: Microsoft Edge, Google Chrome.
- Cloud Computing: Google Apps.

Exercise (Group Work 4–6 members)

1. Each group will list at least five software applications.
2. For each software listed, research or discuss whether it is **open-source** or **proprietary**.
3. Compare them based on:
    - Interface and usability
    - Features and customization
    - Cost and licensing
    - Update/support options
4. Which type do you prefer?

5. In what situations might open-source software be better?
6. When would proprietary software be the better choice?

Summary

This session covered open-source and proprietary software. Open-source software is freely available, modifiable, and encourages community collaboration, while proprietary software is privately owned, with restricted access and usually requires a license.

Well done! Let's take a quick moment to check what you've learned so far before we continue to next session.

Review Questions

1. Can you name one open-source and one proprietary software you use?
2. Which of the following is an open-source software?
    a. Windows
    b. Linux
    c. Microsoft Office
    d. Google Apps
3. How do users usually get help with open-source software?
    a. Official customer support teams
    b. Community forums and online guides
    c. Calling the government
    d. No support is available

Session 3: Basics of programming

Introduction

Dear learners, welcome to this session. In this session, you will explore Computer Programming Basics

Have you ever been curious about how your favorite app or game is made? It all happens through computer programming, or coding, which is the process of writing instructions that tell a computer what to do. In this session, we will explore who a computer programmer is, the essential skills needed, how to design algorithms, and the different programming environments where software is created. By the end, you'll understand how programmers turn ideas into working software.

Learning objectives

By the end of the session, learners will be able to:

- Explain the fundamental concepts of computer programming.
- Identify and describe different programming environments.

Content outline

3.1 Computer programming

3.2 Computer programming environment

3.1 Computer programming

Think of your favorite app or game. How do you think it was created?

Your favorite app or game works because someone wrote instructions for the computer. That's what we call computer programming, and in this lesson, you'll learn how it's done.

Computer programming, also known as coding, is the process of creating instructions for computers to follow. These instructions, called programs, enable computers to perform specific tasks or achieve desired computing results.

So, who do you think is in charge of writing the instructions or codes for a computer? It is called the programmer.

Essential Skills for Computer Programmers

Computer programmers need both technical and soft skills to succeed, including understanding programming languages and soft skills, such as problem-solving. Here are essential skills for programmers.

Programming Skill: Skilled in one or more programming languages such as Python, Java, or C++.

Algorithm Design: Understanding and implementing algorithms effectively. It helps optimize solutions and ensures software performs tasks efficiently.

Debugging: Identifying and fixing errors or bugs in software.

Version Control: Familiarity with systems like Git for managing code changes.

Problem-Solving: Ability to break down complex problems and find logical solutions.

Designing the Algorithm

The algorithms can be represented using tools like:

Pseudocode: A high-level, language-independent description of the steps.

Flowcharts: Visual diagrams illustrating the flow of control and operations.

Pseudocode example

```
Pseudo code to print numbers from 1 to 5

SET count ← 1
WHILE count ≤ 5 DO
    PRINT count
    count ← count + 1
END WHILE
```

Flowchart symbols

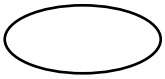
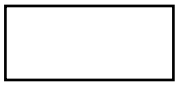
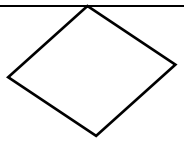
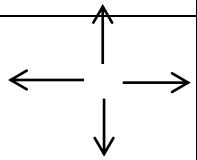
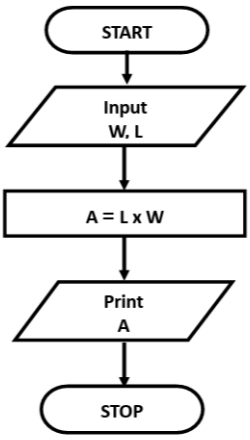
Symbol	Symbol Name	Function
	Oval	Used to represent start and End of flowchart
	Parallelogram	Used for input and output operation
	Rectangle	Processing: used for arithmetic operation and data manipulation. A single step or operation within the process.
	Diamond	Decision making: used to represent the operations in which there are two/three alternatives, true and false, etc
	Arrows	Flow line used to indicate the flow of logic by connecting symbols
	Circle	A circle with a letter inside, used to link different parts of the flowchart on the same page.
		A similar circle with a letter, but used to link parts of the flowchart on different pages.

Table 13 Flowchart Symbols

- Oval (Terminator): Marks the beginning and end of the flowchart.
- Rectangle (Process): Represents a single step or operation within the process.

- Diamond (Decision): Indicates a decision point, typically with "yes" or "no" (or true/false) outcomes.
- Parallelogram (Input/Output): Represents data input or output.
- Arrow (Flowline): Shows the direction of the process flow from one symbol to the next.
- On-page connector: A circle with a letter inside, used to link different parts of the flowchart on the same page.
- Off-page connector: A similar circle with a letter, but used to link parts of the flowchart on different pages. Example

Flowchart to read the two sides of a rectangle and calculate its area



Well done! Let’s take a quick moment to check what you’ve learned so far before we continue to the next topic.

Reflective questions

1. Who do you think writes the instructions (code) for a computer?
2. Which skill do you think is important for a programmer?
3. Can you name the two common tools used to represent algorithms?

Exercise:

1. Write pseudo code or draw a flowchart to calculate the average of three numbers.
2. Write pseudo code or draw a flowchart to find the Area and Perimeter of a Square.
3. Write pseudo code or draw a flowchart to find the smaller of two numbers.

3.2 Programming environment

If you wanted to build a mobile app or a game, what kind of tools or software would you need on your computer?

Just like a chef needs a kitchen to cook, programmers need the right tools to create programs. Let's explore what makes up a programming environment and how it helps us code.

A programming environment is the set of tools and resources that programmers use to write, test, and run their programs. It provides everything needed to create software efficiently.

Types of Programming Environments

Text-based Environment: You write code in a text editor and run it from a terminal. (e.g. Notepad++, Sublime Text).

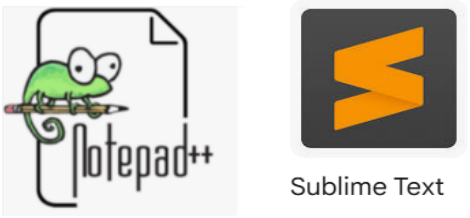


Figure 98: Text based environment

Integrated Development Environment (IDE): Combines editor, compiler, debugger, and tools in one application (e.g., Visual Studio and PyCharm).

Table 14 IDE software

Online/Cloud-based Environment: Code in your browser without installing software. Provide development tools and resources over the internet, accessible from anywhere. (e.g., Replit, GitHub Codespaces).

Reflective questions

1. Mention the programming environment that combines editor, compiler, and debugger in one application?
2. Which environment can be accessed from anywhere using the internet?

Group Exercise (4–6 students per group):

1) Develop an algorithm that takes a number as input and prints its multiplication table up to 10.
2) Develop an algorithm that accepts three numbers and displays the largest.
3) Develop an algorithm for the following

   A banking application receives a transaction amount from a user. The application needs to determine if the transaction is a deposit (positive), a withdrawal (negative), or if the transaction did not occur (zero).

Summary

This session introduced computer programming as the process of creating instructions (code) for computers to follow, enabling them to perform specific tasks. The person responsible for writing these instructions is called a programmer. We explored essential skills for programmers.

Finally, we covered programming environments: the set of tools and resources used to write, test, and run programs.

Review questions

1. Which of the following is NOT a common programming skill?
   a) Algorithm design
   b) Debugging
   c) Cooking
   d) Version control
2. What is the main purpose of computer programming?
   a) To design websites only
   b) To give instructions for computers to perform tasks
   c) To play games on a computer
   d) To write essays

3. Which flowchart symbol shows the start or end of a process?
   a) Rectangle
   b) Diamond
   c) Oval
   d) Parallelogram

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