UNDERSTANDING
SUBSIDIARY ICT
FOR ADVANCED LEVEL

A COMPETENCE-BASED THEORY AND PRACTICAL APPROACH

SENIOR FIVE LEARNERS BOOK

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TOPIC 1: INTRODUCTION TO ICTS — DURATION: 28 PERIODS

1. Definition

ICT (Information and Communication Technology) refers to all technologies used to create, store, manage, transmit, and share information. It combines computing, telecommunications, and digital technologies to improve communication and access to data.

2. Components of ICT

1. Hardware: Physical devices such as computers, smartphones, printers, routers, and storage media.
2. Software: Programs and applications that run on hardware, such as operating systems, word processors, spreadsheets, and browsers.
3. Network Infrastructure: Internet, intranets, LANs, and cloud services that connect devices and allow communication.
4. People / Users: Individuals who operate ICT tools, create content, and manage systems.
5. Data / Information: The content that is processed, stored, or communicated using ICT tools.

3. Importance of ICT

- Education: Enables e-learning, research, and digital collaboration.
- Business: Improves productivity, communication, record keeping, and online marketing.
- Healthcare: Supports telemedicine, patient records, and diagnostics.
- Governance: Facilitates e-government, public services, and data management.
- Daily Life: Powers banking, shopping, social media, and communication.

4. Characteristics of ICT

- Speed: Allows fast processing and transfer of information.
- Accuracy: Reduces errors in data handling.

- Connectivity: Enables global communication and collaboration.
- Storage: Can store large amounts of data digitally.
- Automation: Reduces manual work through software and intelligent systems.

ICT TOOLS AND THEIR DESCRIPTIONS

ICT tools are devices, software, and systems used to create, store, process, transmit, and manage information. They can be classified into hardware, software, and networking tools.

1. Hardware Tools

Physical devices used to interact with digital information.

- Computers / Laptops: Used for processing data, creating documents, programming, and internet access.
- Smartphones / Tablets: Portable devices for communication, browsing, and mobile applications.
- Printers / Scanners: Produce physical copies of documents and digitize paper documents.
- Storage Devices: USB drives, external hard drives, CDs, and cloud storage for storing and transferring files.
- Networking Devices: Routers, modems, and switches that connect devices to networks and the internet.

2. Software Tools

Programs that allow users to perform specific tasks on hardware.

- Word Processors: Create and edit text documents (e.g., Microsoft Word).
- Spreadsheets: Handle calculations, tables, and data analysis (e.g., Microsoft Excel).
- Presentation Software: Create slideshows for communication (e.g., PowerPoint).
- Database Management Systems: Store and manage structured data (e.g., Microsoft Access).

- Web Browsers: Access information on the internet (e.g., Google Chrome, Firefox).

3. Networking and Communication Tools

- Email Applications: Send and receive messages electronically (e.g., Gmail, Outlook).
- Video Conferencing Tools: Conduct virtual meetings (e.g., Zoom, Microsoft Teams).
- Social Media Platforms: Share information and collaborate online (e.g., Facebook, LinkedIn).
- Cloud Services: Store and share files online securely (e.g., Google Drive, OneDrive

5. Examples of ICT Tools

- Computers & Laptops: For word processing, programming, and data analysis.
- Smartphones & Tablets: For communication, internet access, and mobile apps.
- Printers & Scanners: For producing physical copies and digitizing documents.
- Internet & Networking Devices: For online research, communication, and cloud storage.
- Software Applications: MS Office, Google Suite, Adobe tools, and database management systems.

6. Benefits of ICT

- Improves efficiency and productivity.
- Facilitates instant communication and collaboration.
- Enhances learning and access to information.
- Supports decision-making with accurate and timely data.
- Enables innovation and creative problem-solving.

USES OF ICT IN DAILY SOCIETY:

Information and Communication Technology (ICT) play a vital role in our everyday life by transforming the way people perform tasks, communicate, and access information.

Through the use of computers, mobile phones, the internet, and digital systems, ICT has made work **easier** by reducing manual effort, **faster** by enabling instant processing and communication, and **more efficient** by improving accuracy and productivity. Activities that once required a lot of time, physical movement, and paperwork can now be completed within minutes using digital tools.

In homes, schools, offices, hospitals, businesses, and government institutions, ICT supports daily operations by simplifying complex tasks and enhancing decision-making.

1. ICT in Education

ICT in education involves using digital tools and platforms to improve teaching, learning, and school management. These tools help deliver lessons online, support self-paced learning, and make administration more efficient.

ICT Tool / Platform	Use in Education	Benefits	Ways of Maintaining
Google Classroom / Moodle	Share lessons, assignments, quizzes, and track student progress	Saves time, organizes learning materials, allows remote learning	Keep software updated, use strong passwords, backup course data regularly
Zoom / Microsoft Teams	Conduct live online classes, webinars, and virtual group discussions	Enables remote learning, supports collaboration, allows interaction with teachers & peers	Update to latest version, secure meeting links, ensure stable internet connection
Khan Academy / Duolingo	Self-paced learning in various subjects	Personalized learning, improves understanding, accessible anywhere	update apps, manage login credentials, monitor app subscriptions
Interactive Whiteboards	Display multimedia lessons, diagrams, and interactive activities	Makes lessons engaging, supports visual learning, encourages participation	Clean regularly, avoid harsh chemicals, perform software updates
E-Libraries / Online Resources	Access textbooks, journals, videos, and research materials	Expands access to information, supports research, saves cost on physical books	Maintain stable subscriptions, backup downloaded materials, update access credentials

Quizlet / Online Quizzes	Practice exercises, revision tests, and instant assessments	Immediate feedback, enhances retention, easy tracking of student progress	Regularly update quiz sets, monitor user access, keep devices charged and functional
Virtual Reality / AR Tools	Virtual labs, field trips, or immersive simulations	Makes learning interactive, enhances understanding of complex concepts	Handle VR devices carefully, store safely, update software and firmware regularly
Student Information Systems	Record attendance, grades, and manage school administration	Improves administrative efficiency, accurate record-keeping, easier reporting	Backup data frequently, restrict access to authorized personnel, update security patches

2. ICT in Business

ICT in business uses digital tools and platforms to manage operations, communication, marketing, and decision-making. It enhances productivity, efficiency, and market reach.

ICT Tool / Platform	Use in Business	Benefits	Ways of Maintaining
ERP Systems (SAP, Oracle)	Manage operations, finance, HR, and supply chains	Improves efficiency, integrates processes, reduces errors	Regular updates, secure login credentials, backup data, monitor system performance
CRM Software (Salesforce, Zoho)	Track customer interactions, sales, and marketing campaigns	Improves customer service, personalizes engagement, increases loyalty	Update software, secure access, train staff, perform periodic backups
E-Commerce Platforms (Shopify, Amazon)	Sell products online, advertise, and reach customers worldwide	Expands market reach, operates 24/7, increases sales	Monitor site security, backup website data, update software and plugins regularly

Cloud Computing (AWS, Azure)	Store data securely, enable remote access	Reduces IT costs, improves collaboration, ensures data safety	Manage access rights, use strong passwords, regularly review storage usage
Collaboration Tools (Teams, Slack)	Facilitate teamwork, meetings, and file sharing	Supports remote work, improves communication, boosts productivity	Update apps, secure login, monitor user activity, ensure stable internet
Data Analytics / BI (Power BI, Tableau)	Analyze trends, optimize operations, and make informed decisions	Supports strategic decisions, identifies opportunities, improves efficiency	Update data sources, validate data integrity, secure access, backup dashboards
Digital Marketing Tools	Advertise and promote products online	Reaches wider audience, cost-effective, measurable results	Keep account credentials secure, update campaigns, monitor analytics

3. ICT in Finance & Banking

ICT in finance and banking involves using digital technologies for transactions, data management, financial analysis, and customer services. These tools improve speed, security, and efficiency.

ICT TOOL / PLATFORM	USE IN FINANCE & BANKING	BENEFITS	WAYS OF MAINTAINING
Online Banking / Mobile Apps	Transfer funds, pay bills, check balances, view statements	Convenient, accessible anytime/anywhere, reduces need to visit bank branches	Update apps regularly, use strong passwords, monitor transactions for fraud
Core Banking Systems (Finacle, Temenos)	Manage accounts, loans, deposits, and customer data across branches	Improves efficiency, centralizes data, reduces errors	Backup data daily, update software, restrict access, monitor system performance

Electronic Payment Systems (POS, Digital Wallets)	Accept electronic payments from customers	Speeds up transactions, cashless, reduces handling errors	Secure devices, update software, perform regular audits
Financial Management Software (QuickBooks, Sage, Tally)	Track income, expenses, payroll, budgets, and generate financial reports	Saves time, accurate record-keeping, supports decision-making	Backup financial data, update software, control user access
Automated Teller Machines (ATMs)	Withdraw/deposit money, transfer funds without visiting a branch	24/7 access, reduces queues, convenient for customers	Regular maintenance, secure physical location, software updates
Data Analytics & BI (Power BI, Tableau, SAS)	Analyze trends, detect fraud, assess risks, forecast markets	Supports informed decisions, improves risk management, identifies opportunities	Backup dashboards, secure login, update data sources regularly
Blockchain / Cryptocurrency Platforms	Secure digital transactions and decentralized records	Transparent, tamper-proof, reduces fraud, speeds up cross-border payments	Keep wallets and keys secure, update software, validate transactions regularly
CRM Software (Salesforce, Zoho CRM)	Track customer interactions and manage relationships	Enhances customer satisfaction, improves loyalty, personalizes services	Update client records, secure access, perform periodic system maintenance

4. ICT in Agriculture

ICT in agriculture involves using digital tools, software, and mobile platforms to improve farming practices, monitor crops, manage resources, and access market information. These tools help farmers increase productivity, reduce costs, and make informed decisions.

ICT TOOL / PLATFORM	USE IN AGRICULTURE	BENEFITS	WAYS OF MAINTAINING

Agricultural Drones	Monitor crop health, detect pests, assess soil conditions	Saves time, increases accuracy, identifies problems early	Charge batteries, store safely, update software regularly
GPS-enabled Machinery	Precision planting, automated harvesting	Reduces waste, improves efficiency, increases yield	Calibrate sensors regularly, maintain equipment, update GPS maps
Soil & Climate Sensors	Measure soil moisture, temperature, and weather conditions	Enables precision irrigation and fertilization	Protect from harsh weather, clean sensors, replace batteries as needed
Farm Management Software	Record crops, manage finances, track inputs and outputs	Organizes farm data, improves planning, increases productivity	Backup data, update software, restrict access
Mobile Advisory Apps	Provide weather forecasts, market prices, and expert advice	Helps farmers make informed decisions, reduces risks, increases income	Update app regularly, secure login credentials, monitor notifications
Digital Marketplaces	Sell produce online, access buyers and suppliers	Expands market reach, improves income, reduces middlemen	Monitor platform security, update listings, backup transaction data
IoT-based Irrigation Systems	Automate watering based on soil moisture and weather data	Saves water, reduces costs, increases yield	Regularly inspect sensors, clean pipes, update system software

5. ICT in Healthcare

Brief Description:
ICT in healthcare (eHealth) uses digital tools and platforms to deliver medical services, manage patient data, monitor health, and educate communities. ICT improves efficiency, access, and quality of healthcare.

ICT TOOL / PLATFORM	USE IN HEALTHCARE	BENEFITS	WAYS OF MAINTAINING
Telemedicine Platforms	Conduct remote consultations, follow-ups, and diagnostics	Expands access to care, saves time, reduces travel	Ensure software updates, secure patient data, stable internet connection
Electronic Health Records (EHR/EMR)	Store patient history, lab results, treatment plans	Improves accuracy, reduces duplication, enables data sharing	Backup records, restrict access to authorized personnel, update software
Mobile Health (mHealth) Apps	Track fitness, medication, appointments, and health education	Encourages self-care, improves adherence, provides reminders	Update app, secure login credentials, monitor data privacy
Wearable Devices	Monitor heart rate, blood pressure, glucose, or activity	Enables continuous monitoring, early detection of issues	Charge devices, clean sensors, update firmware/software
Health Information Systems (DHIS2)	Collect and analyze health data for planning and reporting	Supports decision-making, improves surveillance, enhances resource allocation	Backup data regularly, restrict access, update software
AI Diagnostics & Decision Support	Assist in diagnosing diseases, predicting outbreaks	Improves accuracy, speeds up diagnosis, supports doctors	Update AI models, monitor performance, secure patient data

ICT in Transport:

ICT tools are used in transportation to improve efficiency, safety, and management. They include GPS and navigation systems for tracking vehicles, traffic management systems to control flow, online ticketing platforms for bookings, fleet management software for logistics, and electronic toll collection for faster payments. These tools help reduce travel time, prevent congestion, enhance security, and ensure smooth operations.

ICT Tool / Platform	Use in Transport	Benefits	Ways of Maintaining

GPS & Navigation Systems	Guide drivers and track vehicles	Reduces travel time; prevents getting lost; improves fleet tracking	Regular software updates; calibrate devices; secure mounting in vehicles
Traffic Management Systems	Monitor and control traffic flow	Reduces congestion; improves road safety	Update software; maintain sensors and cameras; ensure uninterrupted power supply
Online Ticketing / Booking Platforms	Book tickets for buses, trains, airlines	Convenience; reduces queues; faster service	Regular system updates; secure servers; data backup
Fleet Management Software	Schedule deliveries and track cargo	Efficient logistics; reduces operational costs	Update software; secure login credentials; regular hardware checks
Electronic Toll Collection Systems	Automate toll payments	Speeds up payments; reduces congestion at tolls	Maintain sensors and RFID readers; software updates; regular inspections
Vehicle Tracking Systems	Monitor vehicle location and driver behavior	Enhances security; improves operational efficiency	Check device connectivity; update tracking software; regular battery/maintenance checks
Communication Tools (Radio, Mobile Apps)	Coordinate drivers, dispatchers, and control centers	Faster decision-making; improves safety	Regular device maintenance; secure communication channels; software updates

7. ICT in Governance

Brief Description:
ICT in governance (e-government) uses digital tools to deliver public services, manage administration, enhance transparency, and engage citizens. ICT increases efficiency, accessibility, and accountability in government operations.

ICT TOOL / PLATFORM	USE IN GOVERNANCE	BENEFITS	WAYS OF MAINTAINING

E-Government Portals	Provide online services for taxes, licenses, benefits, and registrations	Convenient, 24/7 access, reduces bureaucracy	Update portal regularly, secure login, backup databases
Digital ID Systems (Aadhaar, e-Identity)	Identify citizens, enable access to services	Increases accuracy, reduces fraud, simplifies service delivery	Secure database, restrict access, update system
Geographic Information Systems (GIS)	Support planning, mapping, and disaster management	Improves planning, resource allocation, and crisis response	Update maps and layers, maintain servers, backup data
Online Voting / Consultation Systems	Facilitate citizen participation and decision-making	Encourages transparency, engagement, and democracy	Secure voting platform, monitor activity, perform regular updates
Electronic Document Management	Store, retrieve, and track government documents	Reduces paper use, speeds up processes, improves record-keeping	Backup documents, restrict access, update software
E-Procurement Systems	Manage tenders, bids, and government purchases digitally	Reduces corruption, saves time, improves efficiency	Monitor transactions, update software, secure access

ICT LITERACY

1. Definition

ICT Literacy is the ability to effectively use Information and Communication Technology (ICT) tools to access, evaluate, create, and communicate information. It involves not just knowing how to use devices and software but also understanding their applications in real-life contexts.

2. Components of ICT Literacy

1. Knowledge of ICT Tools:

- Understanding hardware (computers, smartphones, printers) and software (Word processors, spreadsheets, browsers).

2. Digital Skills:
   - Ability to use ICT tools for tasks such as typing, creating documents, sending emails, browsing the internet, and data management.
3. Information Literacy:
   - Ability to find, evaluate, and use information effectively and responsibly.
4. Communication Skills:
   - Using ICT tools to communicate, collaborate, and share information online (emails, video calls, social media, cloud storage).
5. Problem-Solving and Creativity:
   - Using ICT to solve problems, create content, or develop applications.
6. Ethical and Safe Use:
   - Understanding digital safety, cybersecurity, privacy, and responsible behavior online.

3. Importance of ICT Literacy

- Education: Enhances learning through digital resources, research, and online collaboration.
- Business & Work: Improves productivity, communication, and access to global markets.
- Personal Life: Facilitates online banking, shopping, and social communication.
- Information Access: Helps in retrieving, evaluating, and using information efficiently.
- Innovation: Empowers users to create digital content, applications, and solutions.

4. Skills Developed Through ICT Literacy

- Operating devices like computers, tablets, and smartphones.
- Using office applications (Word, Excel, PowerPoint).
- Managing files and folders effectively.
- Searching and evaluating online information critically.
- Communicating through email, messaging apps, and online platforms.
- Protecting data through passwords, backups, and safe online practices.

5. Examples of ICT Literacy in Practice

- A student creating a project report using Microsoft Word, inserting tables and charts from Excel, and submitting it via email.
- A business worker managing customer records on a database and analyzing data using spreadsheets.
- Using the internet to research a topic, evaluating sources, and presenting findings in a multimedia presentation.

1. UNDERSTANDING ICT COMPONENTS

An ICT system is made up of hardware, software, networks, people, and data. To form a working system, these components must interact efficiently.

Key ICT Components:

1. Hardware: Physical devices such as computers, servers, printers, scanners, routers, and mobile devices.
2. Software: Programs and applications that control hardware and allow users to perform tasks (e.g., operating systems, word processors, databases).
3. Networks: Communication links like LAN, WAN, Wi-Fi, or the Internet that connect devices and enable data sharing.
4. Data: Information stored, processed, and transmitted by the system.
5. People: Users who input data, operate the system, and make decisions.

2. Connecting ICT Components to Form a Working System

1. Input → Processing → Output → Storage

- Input devices (keyboard, scanner, mouse) feed data into the system.
- Processing units (CPU, servers) interpret and process the data using software.
- Output devices (monitors, printers, speakers) display or present the results.
- Storage devices (hard drives, cloud servers) save data for future use.

2. Network Integration
   - Devices and servers are connected via LAN, WAN, or Wi-Fi, enabling communication and resource sharing.
   - Example: A school's ICT system connects teacher computers, student tablets, and the server through a network to access a learning management system.
3. Software Coordination
   - Applications like databases, ERP, or CRM interact with hardware and networks to perform specific tasks.
   - Example: In banking, core banking software communicates with servers, ATMs, and mobile apps to process transactions.
4. User Interaction
   - People operate input/output devices, run applications, and make decisions based on system outputs.
   - Example: Farmers using mobile advisory apps enter farm data, which is processed on servers and returns advice.
5. Security & Maintenance
   - Firewalls, antivirus software, and access control systems protect the system.
   - Regular maintenance ensures all components function together efficiently.

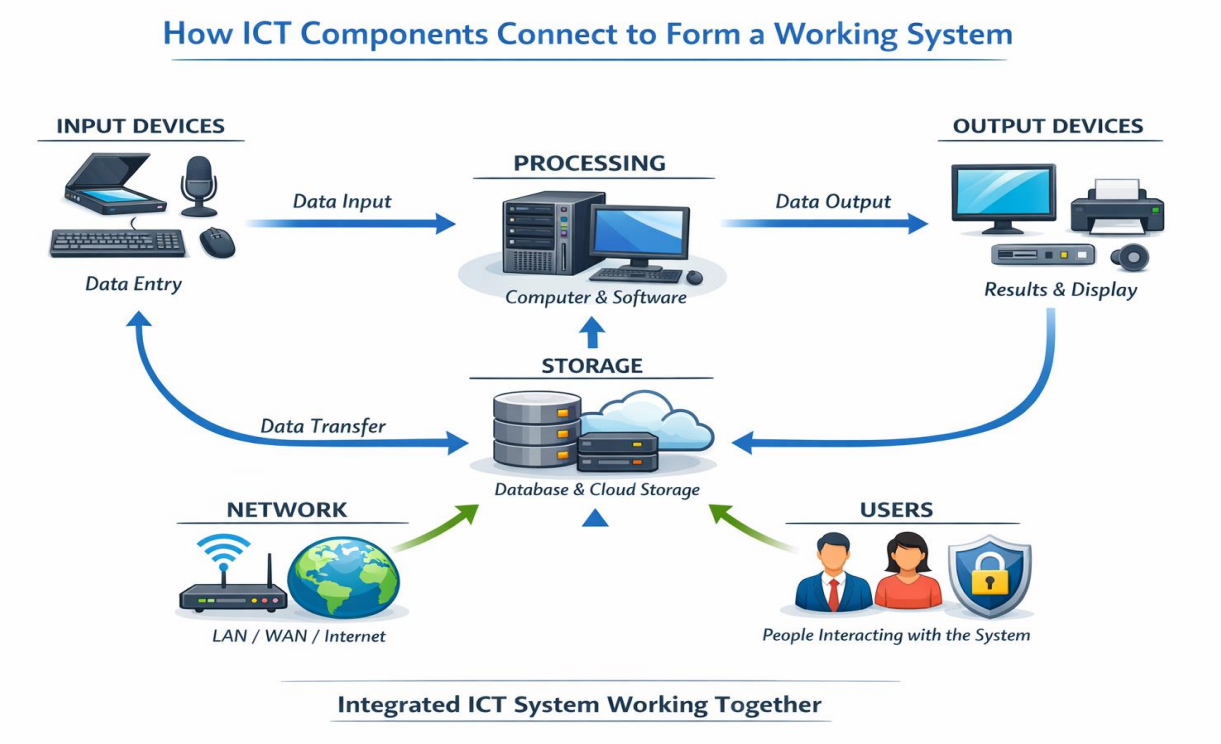
3. Example: A Working ICT System in a School

Component	Role
Computers/Tablets	Input, processing, and accessing digital resources
LMS Software	Organizes lessons, tracks progress, processes data
Network (LAN/Wi-Fi)	Connects all devices to the server and internet

Server/Cloud	Stores lessons, student records, and course materials
Printers/Projectors	Output devices for printing or displaying lessons
Teachers/Students	Users who interact with the system
Security Software	Protects data and prevents unauthorized access

Working:

1. Teacher uploads lesson content via LMS → stored on server.
2. Students access content through tablets over Wi-Fi.
3. Students complete assignments → processed by the server.
4. Teacher views results and gives feedback → printed or displayed on screen



BOOTING

Booting is the process by which a computer starts up and loads its operating system (OS) after being powered on. The term comes from "bootstrapping," which refers to starting a system with minimal instructions that then load the rest of the system.

Booting involves initial hardware checks, loading system software, and preparing the computer for user interaction. There are two main types of booting:

1. Cold Boot (Hard Boot):
   - Occurs when the computer is started from a completely powered-off state.
   - All hardware and software initialization steps are performed.
2. Warm Boot (Soft Boot):
   - Occurs when the system restarts without turning off the power (e.g., using Restart).
   - Some hardware checks may be skipped, making the process faster.

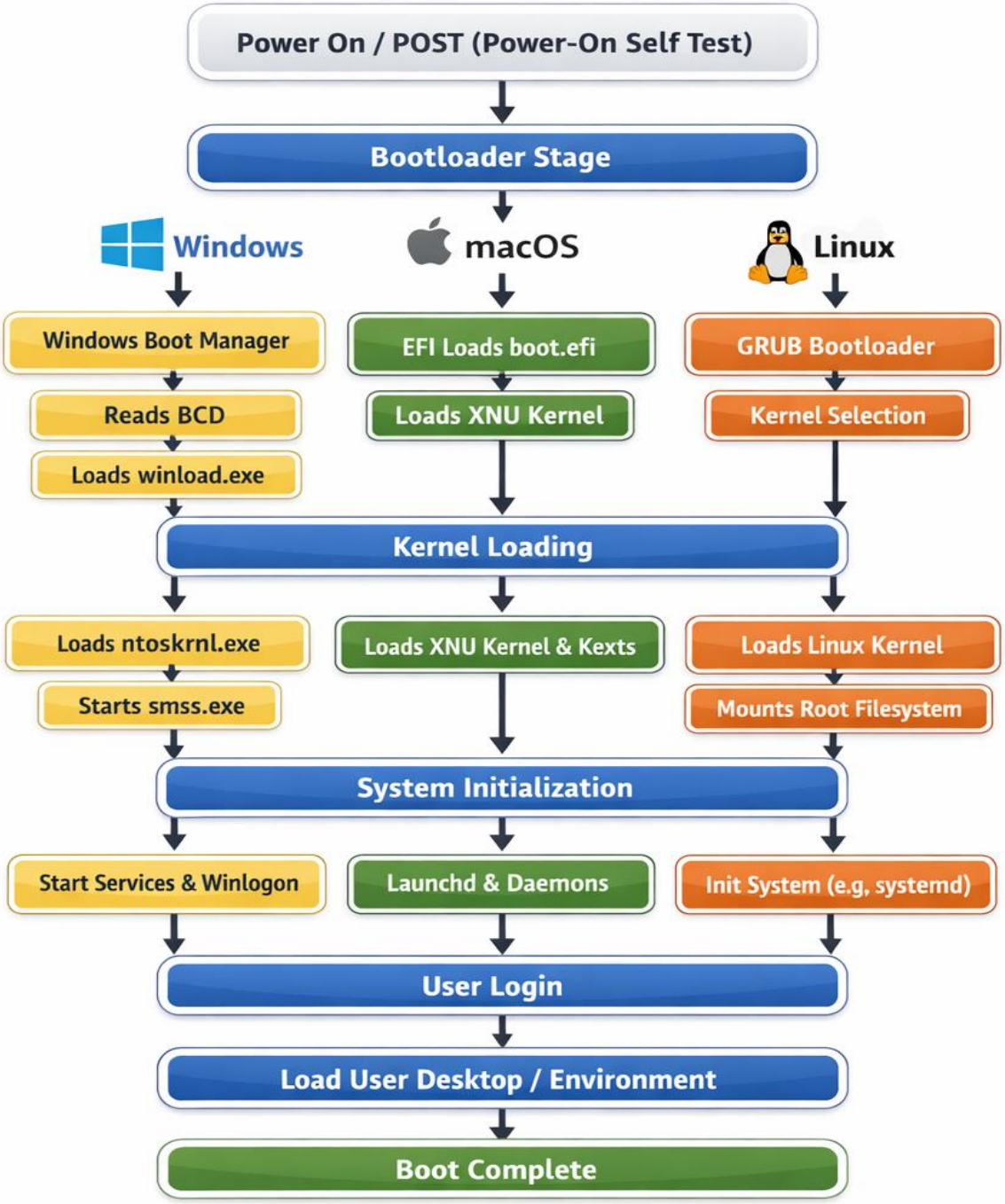
Steps in the Booting Process

1. Power-On / POST (Power-On Self-Test):
   - ❖ When the computer is powered on, the BIOS/UEFI firmware initializes hardware components like CPU, RAM, and storage.
   - ❖ Performs diagnostic tests (POST) to ensure hardware is functional.
   - ❖ If errors are detected, the boot process may halt with error messages.
2. Bootloader Loading:
   - ❖ BIOS/UEFI locates the bootloader from the system's storage.
   - ❖ Bootloader is responsible for loading the operating system kernel into memory.
   - ❖ Examples: Windows → bootmgr, macOS → boot.efi, Linux → GRUB.
3. Kernel Loading:
   - ❖ The OS kernel is loaded into RAM.
   - ❖ Initializes system resources and hardware drivers needed for the OS to function.
4. System Initialization:
   - ❖ OS starts core services, background processes, and prepares the environment.

- ❖ Examples: Windows → Session Manager and Win32 subsystem; macOS → launchd; Linux → systemd or init.

5. User Login and Desktop Loading:
   - ❖ The login manager prompts for user credentials.
   - ❖ Upon successful login, the desktop environment is loaded (e.g., Windows Explorer, macOS Finder, Linux GUI).
6. Boot Complete:
   - ❖ The computer is now fully operational and ready for use.
   - ❖ All background services continue running while the user interacts with the system.

BOOTING FLOW CHART IN DIAGRAM



STARTING AND SHUTTING DOWN ICT DEVICES

Starting and shutting down ICT devices involves the proper procedures used to power on or off devices like computers, smartphones, printers, and routers. Proper startup ensures that the device initializes correctly, loading its operating system or firmware without errors. Proper shutdown safely closes applications, saves data, and prevents hardware or software damage.

Devices may also experience forced shutdowns, which are used when a device becomes unresponsive, typically by holding the power button. This carries risks such as data loss or corruption. Unexpected power loss, such as during power outages, can also cause damage to files, hardware, or active processes, highlighting the importance of backup power solutions like UPS and careful handling.

EXPLANATION OF STARTING AND SHUTTING DOWN VARIOUS ICT DEVICES

1. Computers (Desktops & Laptops)

Scenario	Starting Procedure	Shutting Down Procedure	Notes / Precautions
Proper Startup	Press the power button; wait for BIOS/OS to load.	Use OS shutdown option (Start → Power → Shut down).	Ensures files are saved and OS isn't corrupted.
Forced Startup (after crash)	Press and hold power button for a few seconds to restart.	Press and hold power button until it powers off; then restart normally.	Use only if unresponsive; risk of data loss.
Unexpected Power Loss	N/A (device turned off abruptly)	N/A	Risk of file corruption or hardware issues; consider using a UPS.

2. Smartphones & Tablets

Scenario	Starting Procedure	Shutting Down Procedure	Notes / Precautions
Proper Startup	Press and hold power button until logo appears.	Press and hold power button → select "Power off" option.	Saves battery and avoids OS errors.
Forced Startup	Press and hold power + volume buttons (device-specific)	Same as above, or force restart if frozen.	Only if device is unresponsive.
Unexpected Power Loss	N/A	N/A	Can cause app crashes or minor data loss; backup regularly.

3. Printers

Scenario	Starting Procedure	Shutting Down Procedure	Notes / Precautions
Proper Startup	Plug in → press power button → wait for initialization.	Press power button → wait for printer to finish tasks.	Avoid interrupting printing; prevents hardware damage.
Forced Shutdown	Unplug or hold power button	N/A	Only in emergencies; may cause print job loss.
Unexpected Power Loss	N/A	N/A	Could corrupt print queue; restart printer properly once power returns.

4. Routers / Modems

Scenario	Starting Procedure	Shutting Down Procedure	Notes / Precautions
Proper Startup	Plug in → press power button if present → wait for LEDs to stabilize.	Press power button (if any) → unplug if needed.	Prevents network issues.
Forced Shutdown	Unplug immediately	N/A	Only if unresponsive; avoid frequent abrupt shutdowns.
Unexpected Power Loss	N/A	N/A	Can reset network sessions; consider surge protectors.

Key Points Across All Devices:

1. Always prefer proper shutdown to avoid file corruption or hardware damage.
2. Forced shutdowns should be last resort.
3. Unexpected power loss can damage data and components; use UPS or backup power when possible.
4. Wait for devices to fully boot or power down before turning off accessories (USB devices, external drives).

FILES AND FOLDER MANAGEMENT

1. Definition

- File: A file is a collection of related data or information stored on a storage device with a unique name and often a file extension that identifies its type (e.g., .docx for Word documents, .jpg for images).
- Folder (Directory): A folder is a virtual container used to organize files and other folders (subfolders) in a hierarchical structure. Folders help manage data efficiently and prevent clutter.

2. Importance of Files and Folders

1. Organization: Keeps data structured for easy access.
2. Data Management: Simplifies storing, retrieving, and sharing information.
3. Efficiency: Saves time by avoiding file search confusion.
4. Security: Files and folders can be protected using passwords or access permissions.
5. Backup & Recovery: Easier to backup organized folders and prevent data loss.
6. Collaboration: Supports teamwork by allowing multiple users to access organized directories.

3. Characteristics

Files:

- Have a name and extension (type identifier).
- Store digital data: text, images, videos, software, or databases.
- Can have attributes: read-only, hidden, system file.
- Must reside in a folder or directory.

Folders (Directories):

- Containers for files or subfolders.
- Can have hierarchical structures for organization.
- Can have attributes: hidden, read-only.
- Named to reflect contents for easy identification.

4. Actions Performed on Files and Folders

1. Creating: Make new files or folders to store data.
2. Opening/Viewing: Access the content of a file or folder.
3. Renaming: Change the name for better identification.

4. Copying/Moving: Duplicate or relocate to another location.
5. Deleting: Remove files/folders when no longer needed.
6. Searching: Find files/folders by name, type, or keyword.
7. Backing Up: Save copies to prevent data loss.
8. Changing Properties/Permissions: Adjust attributes like read-only, hidden, or access rights.
9. Organizing/Structuring: Group files logically into folders and subfolders for easy management.

5. Practical Examples

Directory Structure Example:

Documents

├─ School

│ ├─ Assignments

│ └─ Notes

└─ Personal

├─ Photos

└─ Projects

- Files like Math_Assignment1.docx go in Assignments.
- Files like Holiday_Photo1.jpg go in Photos.
- Subfolders allow logical grouping of related files for easier retrieval.

6. Tips for Effective File and Folder Management

- Use meaningful names for files and folders.
- Keep a consistent folder structure across projects.
- Avoid storing too many files in a single folder.

- Regularly review and clean up unnecessary files.
- Always backup important folders to external drives or cloud storage.

Creating Directories and Using Them to Manage Electronic Files (K, U, S)

K – Knowledge

- A directory (folder) is a container used to store and organize electronic files on a storage device.
- Directories can contain subdirectories, creating a hierarchical structure for better organization.
- Files and folders have names and attributes that help in identifying and protecting them.
- Understanding the importance of directories helps prevent file clutter and data loss.

U – Understanding

- Directories allow files to be grouped logically, making them easier to find and manage.
- Proper organization improves efficiency, supports backups, and facilitates sharing.
- Knowing how to create, rename, move, and delete directories ensures effective file management.
- Understanding file paths and directory hierarchies helps in navigating and retrieving data quickly.

S – Skills

- Creating directories:
    - GUI method: Right-click → New → Folder → name it.
    - Command line: Use commands like mkdir foldername.
- Managing files: Move, copy, or save files into appropriate directories.
- Structuring directories: Organize files into main folders and subfolders (e.g., Documents → School → Assignments).
- Practical skills: Renaming folders, changing properties, and maintaining a clear folder hierarchy.

FILE EXTENSIONS

1. Definition

A file extension is a suffix at the end of a file name, usually consisting of three or more characters after a period (dot), which indicates the type of file and the program used to open it.

Example:

- report.docx → .docx is the file extension for a Microsoft Word document.
- photo.jpg → .jpg is the file extension for an image file.

2. Importance of File Extensions

1. Identify File Type: Helps the operating system know which application can open the file.
2. Organization: Makes it easier to classify files (e.g., documents, images, videos).
3. Prevents Errors: Ensures that the correct program opens the file.
4. Security: Certain file extensions (e.g., .exe) may indicate executable files, alerting users to potential risks.

COMMON FILE EXTENSIONS, USES, AND FULL MEANINGS

File Ext	Full Meaning	Use / Purpose	Example Program
.docx	Document Extended	Word processing document	Microsoft Word
.xlsx	Excel Spreadsheet Extended	Spreadsheet for calculations, tables, charts	Microsoft Exce
.pptx	PowerPoint Presentation Extended	Slide presentations	Microsoft PowerPoint
.txt	Text File	Plain text document with no formatting	Notepad, Text Editor
.pdf	Portable Document Format	Document format that preserves layout across devices	Adobe Reader

.jpg / .jpeg	Joint Photographic Experts Group	Compressed image file	Image Viewers, Paint
.png	Portable Network Graphics	Image file supporting transparency	Image Viewers
.gif	Graphics Interchange Format	Animated or static image	Image Viewers, Browsers
.mp3	MPEG Audio Layer 3	Compressed audio file	Music Players
.wav	Waveform Audio File	Uncompressed audio file	Music/Audio Players
.mp4	MPEG-4 Video File	Video file format	Media Players
.avi	Audio Video Interleave	Video and audio container format	Media Players
.mov	QuickTime Movie	Video file for Apple devices	QuickTime Player
.exe	Executable File	Program that can run on a computer	Windows Applications
.html	HyperText Markup Language	Web page file	Web Browsers, HTML Editors
.css	Cascading Style Sheets	Stylesheet for web page design	Web Browsers, Editors
.js	JavaScript File	Script file to add interactivity on web pages	Web Browsers, Editors
.zip	Compressed Archive File	Stores compressed files to save space	WinZip, WinRAR
.rar	Roshal Archive	Compressed archive for multiple files	WinRAR, 7-Zip

Notes

- File extensions tell the operating system which program to use to open the file.
- Changing a file extension manually may make the file unusable.
- Common extensions are grouped by type:
    - Documents: .docx, .txt, .pdf
    - Spreadsheets: .xlsx
    - Presentations: .pptx
    - Images: .jpg, .png, .gif
    - Audio: .mp3, .wav

- Video: .mp4, .avi, .mov
- Web Files: .html, .css, .js
- Compressed Files: .zip, .rar
- Executable Files: .exe

4. Notes / Tips

- Changing a file extension manually may make the file unusable.
- The OS often associates file extensions with default programs.
- Some file extensions are hidden by default in operating systems.
- Understanding file extensions helps in organizing, sharing, and troubleshooting files.

FOLDER AND FILE SECURITY

1. Definition

Folder and file security refers to the methods used to protect files and folders from unauthorized access, modification, or deletion. Security ensures that sensitive information remains confidential, intact, and available only to authorized users.

2. Importance of File and Folder Security

1. Protect Confidential Data: Prevents unauthorized users from accessing sensitive files.
2. Prevent Data Loss: Reduces the risk of accidental deletion or corruption.
3. Control Access: Allows specific users to read, modify, or execute files.
4. Maintain Integrity: Ensures files are not tampered with or altered by unauthorized users.
5. Support Compliance: Helps meet legal and organizational data protection requirements.

3. Methods of Securing Files and Folders

1. Passwords:
   - ✓ Protect files or folders by requiring a password to open or modify them.
   - ✓ Example: Password-protecting a Word document or a ZIP folder.

2. File/Folder Permissions:
   - ✓ Control who can read, write, or execute files/folders.
   - ✓ Example: Windows allows setting permissions for users or groups (Full Control, Read-only).
3. Encryption:
   - ✓ Converts data into a coded format readable only by authorized users.
   - ✓ Example: Encrypting sensitive documents so even if accessed, content cannot be read without the key.
4. Backup Copies:
   - ✓ Store duplicate files/folders in secure locations (external drives, cloud storage) to prevent data loss.
5. Antivirus/Anti-malware Protection:
   - ✓ Protects files and folders from malicious software that may corrupt or steal data.
6. Physical Security:
   - ✓ Secure storage devices (external drives, USBs) in locked locations to prevent unauthorized access.

4. Best Practices

- Use strong, unique passwords for sensitive files and folders.
- Regularly update permissions to reflect changes in users or access needs.
- Encrypt important files to protect sensitive information.
- Backup critical data regularly to avoid permanent loss.
- Keep systems updated and secure from malware and unauthorized access.

FILE SAVING

1. Collaborating to Save Files on Various Storage Media

- Objective: Learners work together to save files on different storage devices.

- Storage Media Examples:
  - USB drives: Portable flash storage, easy to share between devices.
  - External hard drives: Large-capacity storage for backing up multiple files.
  - Cloud storage (optional): Google Drive, OneDrive for online collaboration.
- Skills Practiced:
  - Inserting devices and recognizing them on the computer.
  - Copying and moving files safely without data loss.
  - Ensuring proper ejection of devices to prevent corruption.

2. Simulating Real-World Scenarios

- Objective: Learners collaborate to mimic real-world file management tasks.
- Example Scenario: Storing a client's project information.
- Steps:

1. Create a logical file structure:
   - Example:
   - Client Project
   - ├─ Contracts
   - ├─ Reports
   - └─ Presentations
2. Assign files to appropriate folders:
   - Contracts → store signed agreements
   - Reports → store research findings
   - Presentations → store slides for meetings
3. Ensure proper naming conventions to make files easily identifiable.

- Skills Practiced:
    - Planning folder structures.
    - Collaborative file saving and organization.
    - Understanding how real-world projects manage client information.

3. Individual File Saving

- Objective: Learners save their own documents in the correct formats and folders.
- Steps:
    1. Choose the appropriate file format:
        - .docx → Word documents
        - .pdf → Portable Document Format
        - .txt → Plain text files
    2. Select the correct folder in the predefined file structure.
    3. Save with meaningful file names reflecting content or date.
- Skills Practiced:
    - File format selection for compatibility and purpose.
    - Saving files in structured folders to maintain order.
    - Attention to detail in naming files for easy retrieval.

TOPIC 2: ELECTRONIC PRESENTATION DURATION: 32 PERIODS

ELECTRONIC PRESENTATIONS

An electronic presentation is a digital way of communicating ideas using presentation software such as Microsoft PowerPoint, Google Slides, or LibreOffice Impress. It presents information in the form of slides that may contain text, images, charts, audio, video, and animations. Electronic presentations help make information clear, attractive, and easy to understand for an audience.

A good electronic presentation should be simple, well-organized, visually appealing, and interactive. Interactivity keeps the audience engaged and improves understanding.

OPENING MS POWERPOINT 2016

MICROSOFT POWERPOINT INTERFACE:

1. Title Bar

- Located at the top of the window.
- Displays the name of the presentation and the application (Microsoft PowerPoint).
- Includes Minimize, Maximize, and Close buttons.

2. Quick Access Toolbar

- Usually above the Ribbon (can be moved below).
- Contains frequently used commands like Save, Undo, Redo, and Print.
- Can be customized to include your favorite tools.

3. Ribbon

- A set of tabs across the top of the window.
- Each tab (Home, Insert, Design, Transitions, Animations, Slide Show, Review, View, etc.) contains groups of related commands.
- Example: The Home tab has Clipboard, Slides, Font, Paragraph, Drawing, and Editing groups.

4. Tabs

- Part of the Ribbon.
- Clicking a tab changes the set of commands displayed.
- Example: Insert tab lets you add Tables, Pictures, Shapes, Charts, SmartArt, etc.

5. Slides Pane / Navigation Pane

- Located on the left side of the screen.
- Displays thumbnails of all slides in your presentation.
- Allows you to switch, add, delete, or rearrange slides.

6. Slide Area / Workspace

- The central area where you design and edit a slide.

- Shows the current slide selected in the Slides Pane.
- You can add text, images, shapes, charts, and other objects here.

7. Notes Pane

- Located below the Slide Area.
- Lets you add speaker notes for the current slide.
- Useful for guiding your presentation while speaking.

8. Status Bar

- Located at the bottom of the window.
- Displays information such as slide number, design theme, view options, and zoom control.
- Can switch between Normal, Slide Sorter, Reading, and Slide Show views.

9. View Buttons

- Located at the bottom-right corner of the window (on the Status Bar).
- Quick access to Normal View, Slide Sorter, Reading View, and Slide Show.

10. Zoom Slider

- Located on the bottom-right of the window.
- Allows you to zoom in or out of the slide area for better editing.

WORKING WITH PANES IN MICROSOFT POWERPOINT:

1. What are Panes?

Panes are different sections of the PowerPoint window that allow you to view and work on slides, notes, and other elements at the same time. They make editing and organizing your presentation easier.

2. Common Panes in PowerPoint

a) Slides Pane / Navigation Pane

- Located on the left side of the window.
- Shows thumbnails of all slides in your presentation.
- Uses:
  - Select a slide to edit.
  - Reorder slides by dragging thumbnails.
  - Add or delete slides quickly.

b) Slide Area / Workspace

- Central part of the window where you edit the current slide.
- Uses:
  - Add and format text, images, charts, and shapes.
  - Apply design, transitions, and animations.

c) Notes Pane

- Found below the Slide Area.
- Lets you write speaker notes for each slide.
- Uses:
  - Prepare reminders or talking points for your presentation.

d) Outline Pane (Optional)

- Can replace the Slides Pane.
- Shows slide titles and text in outline format.
- Uses:
  - Quickly review content.
  - Reorganize text without worrying about design.

e) Task Pane (Context-Sensitive)

- Appears on the right for certain features, like animations, formatting, or design ideas.
- Uses:

- Access additional commands and settings without opening dialog boxes.

3. Tips for Working with Panes

- Resize panes by dragging their borders.
- Switch between panes using the View tab or keyboard shortcuts.
- Collapse or expand panes to give more space to the Slide Area.
- Use multiple panes simultaneously (Slide Area + Notes Pane + Task Pane) for efficient editing.

WORKING WITH MICROSOFT POWERPOINT:

1. What is Microsoft PowerPoint?

- PowerPoint is a presentation software used to create slideshows.
- It allows users to combine text, images, charts, videos, animations, and transitions into professional presentations.

2. Starting PowerPoint

- Open PowerPoint from the Start Menu or desktop shortcut.
- You can choose to start with a Blank Presentation or use pre-designed templates.

3. Key Components of PowerPoint Interface

- Title Bar: Shows the file name and application.
- Ribbon & Tabs: Home, Insert, Design, Transitions, Animations, Slide Show, Review, View.
- Slides Pane: Thumbnails of all slides on the left.
- Slide Area: Central workspace to edit slides.
- Notes Pane: For speaker notes below the slide.
- Status Bar & Zoom Controls: At the bottom for slide info and zooming.

4. Creating Slides

- Add New Slide: Home → New Slide or right-click Slides Pane → New Slide.
- Slide Layouts: Choose layouts like Title Slide, Title and Content, Two Content, etc.
- Edit Content: Add text boxes, images, charts, shapes, SmartArt, and videos.

5. Formatting Slides

- Design Tab: Apply themes and slide backgrounds.
- Format Tab (Picture, Shape, or Text): Adjust style, color, borders, and effects.
- Slide Master: Change layout or design for all slides at once.

6. Adding Transitions and Animations

- Transitions Tab: Add visual effects between slides.
- Animations Tab: Animate text, shapes, or pictures within a slide.

7. Working with Panes

- Slides Pane: Navigate and reorder slides.
- Notes Pane: Add speaker notes.
- Outline Pane: View content in text outline format.
- Task Pane: Access formatting, animations, and design options.

8. Presenting Slides

- Slide Show Tab: Start presentation from beginning or current slide.
- Presenter View: Shows notes and next slides for the presenter.
- Keyboard Shortcuts:
    - F5 → Start slideshow from beginning
    - Shift + F5 → Start slideshow from current slide

9. Saving and Sharing

- Save: File → Save or Ctrl + S (choose .pptx format).
- Export: Save as PDF, video, or images.
- Share: Email or upload to cloud storage like OneDrive.

💡 **Summary:**
Working with PowerPoint involves creating, formatting, organizing, and presenting slides using the interface's panes, Ribbon tabs, and tools. Mastering panes, slide layouts, transitions, and animations helps create professional presentations efficiently.

WAYS TO MAKE AN INTERACTIVE PRESENTATION (WITH EXAMPLES)

1. Use Images and Graphics

Example:

- Insert pictures related to the topic (e.g., road signs in a transport presentation).
- Use icons instead of long text.

2. Use Animations and Transitions

Example:

- Apply simple animations to bullet points so they appear one by one.
- Use slide transitions like *Fade* or *Push* to move between slides.

3. Insert Charts and Graphs

Example:

- Create a bar chart to show transport usage statistics.
- Use a pie chart to represent budget allocation.

4. Add Audio and Video

Example:

- Insert a short video explaining a concept.
- Add background audio or narration to explain slides.

5. Use Hyperlinks and Action Buttons

Example:

- Create a button that links to another slide or a website.
- Add "Next", "Back", or "Home" buttons for navigation.

6. Include Questions or Quizzes

Example:

- Add a slide with multiple-choice questions.
- Ask the audience a question and reveal the answer on the next slide.

7. Keep Slides Simple

Example:

- Use few bullet points per slide.
- Use large, readable fonts and consistent colors.

FORMATTING BACKGROUND IN MICROSOFT POWERPOINT:

1. What is Background Formatting?

- The **background** of a slide is the base layer behind your text, images, or other content.
- Formatting the background makes slides **more visually appealing** and **consistent with your presentation theme**.

2. How to Format Background

1. **Right-Click Slide → Format Background**
   - Or go to the **Design tab → Format Background**.
2. **Options Available in the Format Background Pane:**

a) Solid Fill

- Fill the slide with **one color**.
- You can adjust **color, transparency**, and **tint/shade**.

b) Gradient Fill

- Fill the slide with a **blend of two or more colors**.
- You can adjust **direction, angle, gradient stops, and transparency**.

c) Picture or Texture Fill

- Fill the slide with an **image or texture**.
- Options: **Insert picture from file, online source, or clipboard**.
- Adjust **transparency** to make text readable.

d) Pattern Fill

- Fill the slide with **repeating patterns** (dots, stripes, grids).
- Customize **foreground/background colors**.

3. Apply to All Slides

- After choosing your background style, click **"Apply to All"** if you want the **same background on every slide**.
- Otherwise, it only applies to the **current slide**.

4. Tips for Background Formatting

- Keep **contrast** between background and text for readability.
- Avoid **overly bright or busy backgrounds** that distract from content.
- Use **consistent backgrounds** to maintain a professional look.

💡 **Summary:**
Formatting the background in PowerPoint allows you to **enhance slide design** using **solid colors, gradients, pictures, textures, or patterns**, either on one slide or across the whole presentation.

Format Background

|

├── Solid Fill

│ ├─ Choose color

│ └─ Adjust transparency

│

├── Gradient Fill

│ ├─ Choose multiple colors

│ ├─ Set gradient stops

│ ├─ Adjust direction & angle

│ └─ Set transparency

│

├── Picture or Texture Fill

│ ├─ Insert picture (file, online, clipboard)

│ ├─ Choose texture

│ └─ Adjust transparency

│

├── Pattern Fill

│ ├─ Select pattern type (dots, stripes, grid)

│ ├─ Set foreground color

│ └─ Set background color

│

└── Apply Options

├─ Apply to current slide

└─ **Apply to all slides**

USING HYPERLINKS IN MICROSOFT POWERPOINT:

1. What is a Hyperlink?

- A **hyperlink** is a clickable link that takes you to another location.
- In PowerPoint, hyperlinks can connect to:
  - Another **slide** in the same presentation
  - A **website or URL**
  - A **different document** (Word, Excel, PDF, etc.)
  - An **email address**

2. How to Insert a Hyperlink

1. **Select the object or text** you want to turn into a hyperlink (text box, shape, or image).
2. Go to the **Insert tab → Link / Hyperlink** (or press Ctrl + K).
3. In the **Insert Hyperlink dialog box**, choose the type of link:
   - **Existing File or Web Page:** Link to a website or document.
   - **Place in This Document:** Link to a specific slide in your presentation.
   - **Create New Document:** Link to a new file that will be created.
   - **Email Address:** Open a new email with a pre-filled address.
4. Click **OK** to apply the hyperlink.

3. Editing or Removing a Hyperlink

- **Edit:** Right-click the linked object → **Edit Hyperlink**.
- **Remove:** Right-click → **Remove Hyperlink**.

4. Tips for Using Hyperlinks in Presentations

- Use **descriptive text** for links (e.g., “Visit our website”) instead of raw URLs.

- Test hyperlinks before presenting to ensure they **work correctly**.
- Combine hyperlinks with **action buttons** for interactive slideshows.

💡 **Summary:**
Hyperlinks in PowerPoint allow you to **navigate slides, open files, visit websites, or send emails** directly from your presentation, making it interactive and professional.

INSERTING SHAPES, IMAGES, TABLES, AND CHARTS IN MICROSOFT POWERPOINT:

1. Inserting Shapes

- **Purpose:** Add visual elements like arrows, rectangles, circles, or custom shapes to enhance slides.
- **Steps:**
    1. Go to **Insert tab** → **Shapes**.
    2. Select a shape from the gallery.
    3. Click and drag on the slide to draw it.
    4. **Format:** Change color, outline, or add effects via **Shape Format tab**.

2. Inserting Images

- **Purpose:** Add pictures to make slides more engaging.
- **Steps:**
    1. Go to **Insert tab** → **Pictures**.
    2. Choose the source:
        - **This Device** – from your computer
        - **Stock Images** – free images provided by PowerPoint
        - **Online Pictures** – from the internet
    3. Select the image → click **Insert**.
    4. **Format:** Use the **Picture Format tab** to resize, crop, or apply effects.

3. Inserting Tables

- **Purpose:** Organize data neatly in rows and columns.
- **Steps:**
    1. Go to **Insert tab → Table**.
    2. Hover over the grid to select the number of rows and columns or click **Insert Table** to enter numbers manually.
    3. Enter data directly into cells.
    4. **Format:** Use the **Table Design** and **Layout tabs** to change style, color, borders, and cell alignment.

4. Inserting Charts

- **Purpose:** Represent data visually (bar, line, pie, etc.).
- **Steps:**
    1. Go to **Insert tab → Chart**.
    2. Choose a chart type (Column, Line, Pie, Bar, Area, etc.) → click **OK**.
    3. An **Excel worksheet** opens → enter your data.
    4. **Format:** Use **Chart Design** and **Format tabs** to change colors, style, and labels.

💡 Tips for All Insertions:

- Keep slides uncluttered; avoid too many shapes or images.
- Use **consistent styles** for tables and charts.
- Resize objects proportionally to maintain clarity.
- Use **alignment and grouping tools** to organize multiple objects neatly.

WORKING WITH ADVANCED FEATURES IN MICROSOFT POWERPOINT, including SmartArt, Media Clips, Headers & Footers, Presentation Views, Slide Master, Slide Show, And Printing:

1. Inserting SmartArt

- **Purpose:** Visually represent information (processes, hierarchies, cycles).
- **Steps:**
    1. Go to **Insert tab → SmartArt**.
    2. Choose a category (List, Process, Cycle, Hierarchy, Relationship, Matrix, Pyramid).
    3. Click **OK** → enter text in the SmartArt graphic.
    4. Format using **SmartArt Design and Format tabs**.

2. Inserting Media Clips

- **Purpose:** Add audio or video to make slides interactive.
- **Steps:**

1. Go to **Insert tab → Audio or Video**.
2. Select source:
    - **Audio:** Record, online audio, or file.
    - **Video:** Online video or file from device.
3. Insert and adjust size/position.
4. Use **Playback tab** to set start options, volume, and trimming.

3. Headers and Footers

- **Purpose:** Add consistent information like date, slide number, or notes on slides.

- **Steps:**
    1. Go to **Insert tab → Header & Footer**.
    2. Choose what to include:
        - **Date and Time**
        - **Slide Number**
        - **Footer Text**
        - **Don't show on title slide** (optional)
    3. Click **Apply** (current slide) or **Apply to All** (all slides).

---

4. Presentation Views

- **Purpose:** View and edit slides in different layouts.
- **Types:**
    - **Normal View:** Default editing view (Slides Pane + Slide Area + Notes).
    - **Slide Sorter View:** Displays all slides as thumbnails for easy rearranging.
    - **Reading View:** View slides as a slideshow within PowerPoint window.
    - **Slide Show View:** Fullscreen presentation mode.
    - **Notes Page View:** View slide with speaker notes.

---

5. Slide Master

- **Purpose:** Maintain consistent design and layout across all slides.
- **Steps:**
    1. Go to **View tab → Slide Master**.
    2. Edit the master slide (background, fonts, colors, placeholders).
    3. Close Master View → changes reflect on all slides.

---

6. Slide Show

- **Purpose:** Present your slides professionally.
- **Steps:**
    1. Go to **Slide Show tab**.
    2. Options:
        - **From Beginning (F5)**
        - **From Current Slide (Shift + F5)**
        - **Set Up Slide Show** → select show type, timings, or loop.
    3. Use **Presenter View** to see notes and upcoming slides.

---

7. Printing Presentation

- **Purpose:** Produce hard copies of slides or handouts.
- **Steps:**
    1. Go to **File → Print**.
    2. Select printer and settings:
        - Print slides **full page** or as **handouts** (1, 2, 3, 6 slides per page).
        - Include **notes pages** if needed.
        - Choose **color, grayscale, or pure black and white**.
    3. Click **Print**.

💡 **Summary:**
These features help make your presentation **interactive, professional, and consistent**:

- **SmartArt & Media Clips:** Visual and audio enhancements
- **Headers & Footers:** Consistent information on slides
- **Slide Master & Views:** Efficient editing and uniform design

- **Slide Show & Printing:** Presenting and distributing slides

TIPS FOR MAKING A GOOD PRESENTATION IN MICROSOFT POWERPOINT OR ANY SIMILAR TOOL:

1. Plan Your Content

- Define the **purpose** of your presentation.
- Organize information in a **logical order**: Introduction → Main Points → Conclusion.
- Keep slides **focused on key ideas**, avoid overloading with text.

2. Design Slides Effectively

- Use **consistent theme and colors**.
- Limit **fonts** to 2–3 types; ensure they are **readable**.
- Use **contrasting colors** for text and background for clarity.
- Avoid **clutter**—leave enough white space.

3. Use Visuals Wisely

- Include **images, charts, tables, SmartArt** to support points.
- Avoid irrelevant or low-quality visuals.
- Use **icons and symbols** to emphasize ideas.

4. Keep Text Short and Clear

- Use **bullet points** instead of long paragraphs.
- Each slide should **cover one main idea**.
- Avoid reading directly from slides; use them as **guides**.

5. Apply Animations and Transitions Moderately

- Use **subtle transitions** between slides.
- Animate objects **only if it adds value**, not for decoration.
- Avoid distracting or flashy effects.

6. Prepare Speaker Notes

- Use the **Notes Pane** to write talking points.

- Include key facts, examples, or reminders for speaking.

7. Practice Delivery

- Rehearse the presentation **multiple times**.
- Check **timing** to stay within the allocated slot.
- Practice speaking **clearly and confidently**.

8. Engage Your Audience

- Ask **questions** or encourage interaction.
- Maintain **eye contact** and observe audience reactions.
- Use **pauses** for emphasis and clarity.

9. Check Technical Aspects

- Test **projector, screen, and sound** if using media clips.
- Ensure hyperlinks, videos, and animations **work properly**.
- Save a **backup copy** on USB or cloud.

10. Print or Share Handouts

- Provide **handouts** for detailed notes or data if needed.
- Use **condensed slides or notes pages** to save paper.

💡 **Summary:**
A good presentation is **clear, concise, visually appealing, and engaging**. Focus on content, design, and delivery, and always **practice beforehand**.

FORMATTING PRESENTATIONS FOR VISUAL APPEAL AND ENGAGEMENT (USV APPROACH)

1. U – Understanding

Focus: Making content clear and easy to understand.

- Slide layout: Use simple, uncluttered slides with one idea per slide.

- Text: Short, concise sentences; bullet points instead of paragraphs.
- Visuals: Add relevant images, icons, or diagrams to illustrate ideas.
- Example: For a topic on "Climate Change," use a diagram showing rising temperatures instead of paragraphs.

2. S – Skills

Focus: Enhancing your audience's skills through interaction.

- Charts & Graphs: Visualize data for better comprehension.
- Interactive elements: Include polls, questions, or short activities.
- Highlighting: Use color, bold text, or animations to emphasize key points.
- Example: In a business presentation, include a simple graph for "Sales Growth" and ask the audience to interpret it.

3. V – Values

Focus: Conveying ethical, cultural, or motivational values.

- Quotes & Stories: Add inspiring quotes or short real-life stories.
- Images: Use visuals that resonate emotionally with your audience.
- Design choices: Maintain professional and respectful design; avoid clutter or distracting colors.
- Example: In a leadership presentation, include a slide with a quote from a respected leader and a related image.

Additional Tips for Visual Appeal

- Consistent design: Same font, color scheme, and layout throughout.
- Readable fonts: Titles (36–44 pt), Body (18–24 pt).
- Contrast colors: Light background with dark text for clarity.

- Engaging visuals: Use diagrams, charts, infographics, and icons.
- Minimal animations: Only subtle transitions like Fade or Push.

✅ Summary Table (USV Approach)

USV Component	Key Focus	How to Apply in Presentation
U (Understanding)	Clarity of content	Simple slides, bullet points, diagrams, relevant images
S (Skills)	Practical engagement	Charts, interactive questions, highlighting key points
V (Values)	Emotional & ethical connection	Quotes, stories, images, professional design

TRIAL ACTIVITIES OF INTERGRATION

1. NATIONAL DIGITAL TRANSFORMATION

The government is implementing a National Digital Transformation Strategy to modernize service delivery across all sectors. Stakeholders require a professional presentation to explain how ICT contributes to national development and policy implementation.

Task

Using presentation software, design a presentation titled:
"ICT as a Driver of National Digital Transformation."

Requirements:

- Minimum 10 slides
- Analyze ICT applications in education, health, governance, finance, transport, agriculture, security, and business
- Evaluate benefits and challenges in at least four sectors
- Insert two charts comparing traditional vs ICT-based systems
- Include interactive navigation buttons
- Apply consistent professional design
- Save appropriately

2. DIGITAL LEARNING SYSTEMS

A national curriculum body is introducing blended and online learning systems at advanced level institutions.

Task

Create a presentation titled:
"Advanced Digital Learning Systems in Education."

Requirements:

- At least 9 slides

- Explain LMS platforms, virtual classrooms, and digital assessment tools
- Compare traditional vs e-learning using a chart
- Insert images and short explanatory notes
- Include hyperlinks to learning resources
- Apply subtle animations suitable for academic presentation

3. ICT IN HEALTHCARE MANAGEMENT

A health policy conference requires a presentation analyzing the impact of ICT on healthcare management and service delivery.

Task

Prepare a presentation titled:
"ICT in Modern Healthcare Management."

Requirements:

- Minimum 9 slides
- Analyze electronic health records, telemedicine, and health information systems
- Include a chart showing improvement in service delivery
- Evaluate ethical and security concerns
- Add interactive elements linking to case studies

4. ICT AND ENTREPRENEURSHIP

A youth innovation summit is focusing on how ICT supports entrepreneurship and digital startups.

Task

Design a presentation titled:
"ICT as a Catalyst for Entrepreneurship."

Requirements:

- At least 9 slides
- Analyze ICT tools used in marketing, accounting, and e-commerce

- Include a chart showing business growth trends
- Evaluate advantages and limitations of digital business
- Use interactive navigation and hyperlinks

5. DIGITAL BANKING AND FINANCIAL TECHNOLOGY

Scenario

A financial technology (FinTech) forum requires an analytical presentation on the evolution of digital financial services.

Task

Create a presentation titled:
"ICT in Digital Banking and Financial Technology."

Requirements:

- Minimum 9 slides
- Explain ATMs, online banking, mobile money, and blockchain concepts
- Compare traditional banking vs digital banking using charts
- Analyze security risks and mitigation measures
- Include interactive content

6. INTELLIGENT TRANSPORT SYSTEMS

Scenario

A transport planning authority is adopting Intelligent Transport Systems (ITS) to improve efficiency and safety.

Task

Prepare a presentation titled:
"ICT in Intelligent Transport Systems."

Requirements:

- At least 9 slides
- Analyze GPS, traffic monitoring, and automated ticketing

- Include charts showing traffic efficiency improvements
- Evaluate challenges such as cost and infrastructure
- Apply professional animations and interactive navigation

7. ICT IN AGRICULTURAL TECHNOLOGY

Scenario

An agricultural research institute is promoting smart farming technologies.

Task

Design a presentation titled:
"ICT in Smart Agriculture."

Requirements:

- Minimum 9 slides
- Analyze ICT tools in weather forecasting, precision farming, and market access
- Include charts showing productivity changes
- Evaluate benefits and constraints faced by farmers
- Add interactive links to research data

8. E-GOVERNANCE AND DIGITAL PUBLIC ADMINISTRATION

A public administration seminar is discussing the transition to digital governance systems.

Task

Create a presentation titled:
"ICT in E-Governance and Public Administration."

Requirements:

- At least 9 slides
- Analyze e-services, digital records, and online participation
- Include charts comparing service delivery efficiency
- Evaluate transparency, accountability, and data security issues
- Add interactive navigation

9. ICT IN SECURITY AND CYBER SAFETY

A national security workshop requires a presentation on the role of ICT in modern security systems.

Task

Prepare a presentation titled:
"ICT in Physical and Cyber Security."

Requirements:

- Minimum 9 slides
- Analyze CCTV, biometrics, and cybersecurity tools
- Include charts showing crime reduction or threat trends
- Evaluate ethical and privacy concerns
- Include interactive elements

10. ICT AND ENVIRONMENTAL SUSTAINABILITY

An international environmental forum is addressing the use of ICT in sustainable development.

Task

Design a presentation titled:
"Role of ICT in Environmental Sustainability."

Requirements:

- At least 9 slides
- Analyze environmental monitoring systems and data analysis tools
- Include charts showing environmental impact trends
- Evaluate benefits and limitations of ICT solutions
- Add interactive navigation and references

TOPIC 3: COMPUTER HARDWARE — DURATION: 28 PERIODS