PART-A
Employability Skills
Chapter 3: ICT Skills

Information and Communication Technology (ICT)

- Refers to tools and technologies like computers, smartphones, internet, apps, etc.
- Helps in faster communication, collaboration, and business processes.

Session1: Basic Computer Operations

I. COMPUTER HARDWARE AND SOFTWARE

Hardware : Physical components (CPU, monitor, keyboard, mouse, etc.)
Software: Set of instructions for hardware (e.g., OS, MS Word)

II. OPERATING SYSTEM (OS) :OS is system software that acts as an interface between user and computer hardware.

Functions of an OS

1. **Device Management**: Manages all hardware devices.
2. **Process Management**: Controls execution of processes.
3. **Memory Management**: Allocates and manages memory.
4. **File Management**: Organizes files and directories.
5. **User Interface**: Allows user to interact with system.

III. TYPES OF OPERATING SYSTEMS

Based on Interface

- **CUI**: Command Line (e.g., MS-DOS)
- **GUI**: Graphical User Interface (e.g., Windows, Linux)

Based on User

- **Single User**: One user at a time (e.g., MS-DOS)
- **Multi-User**: Many users (e.g., Unix)

Based on Processing

- **Single Tasking**: One task at a time
- **Multitasking**: Multiple tasks (e.g., Windows)

Other Classifications

- **Real-Time OS**, **Distributed OS**

IV. POPULAR OPERATING SYSTEMS

OS Name	Description
Windows	Popular GUI-based OS from Microsoft
macOS	Apple OS for Mac computers
Linux	Open-source, highly secure
Android	Google's OS for smartphones
iOS	Apple's OS for iPhones and iPads

V. BASIC OPERATIONS

Starting a Computer

1. Press power button on CPU
2. OS loads and shows login screen

Logging In

- Enter username and password

Logging Out

- Ensures safety of user data

VI. USING INPUT DEVICES

Keyboard :

- **Alphabet Keys**, **Function Keys**, **Navigation Keys**
- **Special Keys**: Ctrl, Alt, Shift

Mouse :

- Used for pointing, selecting, dragging, etc.

VII. SHUTTING DOWN THE COMPUTER

1. Click on **Start Menu**
2. Select **Power** > **Shut Down**

VIII. COMMON TERMS OF OPERATING SYSTEM

Term	Explanation
Desktop	Main screen with icons
Icons	Small pictures representing files, folders, programs
Panel/Taskbar	Horizontal bar for quick access and multitasking
Start Button	Gateway to applications and settings
System Tray	Displays time, notifications, and background apps

IX. BASIC COMPONENTS OF INTERFACE SCREEN

Component	Use
Search Box	To search files, folders, apps
Menu Bar	Shows options like File, Edit, View
Quick Access Toolbar	Provides quick access to frequently used folders
Navigation Pane	Offers quick access to directories
Address Bar	Shows current path of file/folder
Scroll Bar	Used to move up-down or side-to-side in a window

SESSION 2: Performing Basic File Operations

File System

- A file system is a structured way to store and organize information using files.
- Files can be of different types such as text, images, audio, video, etc.
- Files are identified by their **extensions**, which help determine the type of file and the program used to open it.

Common File Types and Extensions

File Type	Extension	File Type	Extension
Open Document Text	.odt	Open Document Presentation	.odp
Open Document Database	.odb	Notepad	.txt
Open Document Spreadsheet	.ods	HTML Document	.html / .htm
Music	.mp3, .wav	XML Document	.xml
Picture or Image	.jpg, .png, .jpeg	Portable Document Format (PDF)	.pdf

How to Check the File System of a Hard Disk

Steps:

1. Right-click on **This PC** and select **Manage**.
2. Go to **Disk Management** → The file system of the hard disks will be displayed.

File Management

File and Folder

- **File**: A container that stores different types of data or information.
- **Folder**: A virtual container used to organize and group files.

Examples of File Types:

- **Text Documents**: .txt, .docx
- **Spreadsheets**: .xls, .ods
- **Images**: .jpg, .png
- **Music Files**: .mp3, .wav
- **Videos**: .mp4, .avi

Creating a New Folder

Steps:

1. Navigate to the desired location (e.g., Data folder).
2. Right-click in the blank space → Select **New** → Click **Folder**.
3. A folder named **New Folder** will be created.
4. Type the new name (e.g., "Student Data") and press **Enter**.

Creating a New File

Steps:

1. Go to the folder or location where you want to create the file.
2. Right-click → Select **New** → Choose the file type (e.g., Microsoft Excel Worksheet).
3. A new file will be created. Rename it as needed.

Moving a File/Folder

Steps:

1. Right-click the file/folder → Select **Cut**.
2. Go to the new location → Right-click → Select **Paste**.

Copying a File/Folder

Steps:

1. Right-click the file/folder → Select **Copy**.
2. Go to the desired location → Right-click → Select **Paste**.

Renaming a File/Folder

Steps:

1. Right-click the file/folder → Select **Rename**.
2. Type the new name → Press **Enter**.

Shortcut: Select the file/folder and press the **F2 key**.

Deleting a File/Folder

Steps:

1. Right-click the file/folder → Select **Delete**.

Restoring a Deleted File/Folder

Steps:

1. Open the **Recycle Bin**.
2. Right-click on the deleted file/folder → Click **Restore**.

Viewing File Properties

Windows allows you to check the properties of a file (like size, type, date of creation/modification).

Steps:

1. Right-click on the file → Select **Properties**.
2. Under the **General** tab, you can view details like file size, type, location, creation date, etc.

SESSION 3: Computer Care and Maintenance

1. Importance of Care and Maintenance of Computers

- Ensures **optimal performance**, **prevents data loss**, and improves **system life**.
- Helps in managing power, security, and compatibility with new technology.

2. Precautions While Placing Computer System

- Keep away from direct heat and sunlight.
- Avoid fluctuations in power supply.
- Do not spill liquids or overcharge the battery.
- Plug/unplug devices carefully.
- Avoid running too many programs simultaneously.

3. Cleaning Hardware Parts of a Computer

Monitor

- Use soft, lint-free cloth. No spraying liquids.

Keyboard

- Shake to remove dust.
- Use brush or compressed air.

Optical Mouse

- Clean with dry cloth; clean lens with air.

Digital Camera

- Wipe with dry cloth, clean lens gently.

CD/DVD Drives

- Clean with dry cloth or cleaning kits.

4. Preparing Maintenance Schedule

Daily Tasks

- Clean external parts.
- Scan and remove viruses.
- Shut down properly.
- Avoid overcharging battery.

Weekly Tasks

- Backup data.
- Use disk defragmenter.
- Update antivirus.
- Check for physical or logical issues.

Note: Disk Defragmentation improves speed by organizing scattered files.

Monthly Tasks

- Remove unwanted files and programs.
- Install updates.
- Clear temporary files.
- Change passwords.

Yearly Tasks

- Professional deep cleaning.
- Upgrade old hardware.

5. Backup Your Data

- Save copies to USB, CDs, external hard drives, or cloud storage.

6. Scanning and Cleaning Viruses
- Use antivirus software to detect and remove threats.
- Update antivirus regularly.

7. Increasing Computer Performance
- Remove unnecessary files.
- Use disk cleanup tools like **CCleaner**.
- Avoid overcrowding storage space.

8. Removing Spam from Your Computer
- Delete unwanted emails.
- Use filters in email settings to redirect spam to specific folders.

Session 4: Computer Care and Maintenance

Importance of Care and Maintenance of Computers
- Ensures optimal performance and longer life of the computer.
- Prevents system crashes, data loss, virus attacks.
- Saves time and money while safeguarding data.

Precautions When Placing a Computer System
- Avoid direct heat/sunlight.
- Avoid temperature/electric supply fluctuations.
- Keep room dust-free and clean regularly.
- Never spill liquids.
- Avoid hardware damage (don’t overcharge battery, use proper shutdown, etc.)
- Avoid running too many programs.

Cleaning Hardware Parts of a Computer
Monitor
- Use soft, lint-free cloth with cleaning liquid.
- Avoid spraying liquid directly.

Keyboard
- Shake and blow air.
- Use brush and clean cloth.
- No liquid on keys.

Optical Mouse
- Clean bottom part and lens.
- Use compressed air.

Digital Camera
- Clean lens carefully.
- Use dry/soft cloth.

Optical Disk (CD, DVD, Blu-ray)
- Hold disk from edges, clean with lint-free cloth.
- No liquid on disks.

Preparing Maintenance Schedule
On Daily Basis
- Clean computer components.

- Check for malfunctions.
- Remove temporary files, scan for viruses.
- Proper shutdown, avoid battery overcharge.

On Weekly Basis

- Backup data.
- Disk defragmentation.
- Update antivirus.
- Scan hard drive for errors.

On Monthly Basis

- Clean computer exterior.
- Uninstall unused software.
- Update installed software.
- Delete temporary files.
- Change passwords.

On Yearly Basis

- Professional cleaning inside.
- Hardware upgrade if needed.

Backup Your Data

- Store data safely in external devices or cloud.

Scanning and Cleaning Viruses

- Use antivirus to detect and remove viruses.
- Use scanning software like **Quick Heal Total Security**.

Increasing Computer Performance

- Delete unnecessary files.
- Use cleaning software like **CCleaner**.

Removing Spam from Your Computer

- Delete spam emails.
- Use email filters to divert spam to folders.

Session 4: Computer Security and Privacy

Computer Security

- Prevents unauthorized access, malware, data theft.
- Use security software and precautions.

Threats to Computer

Type	Description
Physical	Theft of physical devices like laptop.
Identity Theft	Hacker uses identity to access sensitive info.
Software Piracy	Use/distribution of unauthorized software.
Online Predators	Misuse of online relationships to steal info or exploit.

Malware: Unwanted software that harms a computer.

- **Virus**: Replicates and spreads.
- **Boot Sector Virus**: Damages booting process.
- **Program File Virus**: Infects executable files.

Symptoms of a Virus

- System slow down.
- Pop-ups.
- Frequent crashes (BSOD).
- Corrupt files, unauthorized access.
- Unusual activity and messages.

Types of Malware

- **Worms**: Self-replicating, slows down system.
- **Trojan Horse**: Disguised as useful software.
- **Spyware**: Steals personal data.
- **Spam**: Unwanted messages, may contain malware.

How Virus Spreads

- Infected files.
- CDs/DVDs.
- Infected email attachments or links.

Ways to Prevent a Virus

Download from Trusted Websites

- Use websites with "https://"

Install Antivirus and Firewall

- Use antivirus (e.g., Avast, McAfee, Norton).
- Firewall blocks unauthorized traffic.

Scanning and Cleaning Hard Disk

- Regularly scan hard disk.
- Use tools like **Quick Heal Total Security**.

Protecting Your Data

- Update antivirus.
- Use passwords (with numbers, symbols).
- Encrypt files (BitLocker, etc.)
- Use secure websites (https).

Removing Temporary Files

Steps to Remove Temporary Files:

1. Open "This PC" > Right-click on C: > Properties.
2. Click "Disk Cleanup".
3. Select files to delete > Confirm.

Removing Files from Temp Folder

1. Press Win + R, type Temp.
2. Click OK.
3. Select all (Ctrl + A) > Shift + Delete.

Clearing Cookies

- Cookies store browsing info.
- Clearing helps protect privacy online.