

ACADEMIC DEVELOPMENT OPEN VIRTUAL HUB (ADOVH)

Student Digital Resilience Programme (2024 – 2026)

Her-Tech: Igniting Women's Digital Futures Series

Session 01: Digital Citizenship and Skills







Thursday, 29 August 2024 **Digital Citizenship and Skills**

Time	Topic	Presenter	Activity
18h00	Opening and Welcome	C Weber	
18h05	Getting Started: Join the community of learners	R Mphahlele	Join Community Activity: Introduce Yourself
18h35	Digital Citizenship and Addressing Gender- Specific Tech Challenges	R Mphahlele	Activity: Breaking Down Gender Stereotypes in Technology Part - 2
18h55	Types Of Digital Devices and Their Application	R Mphahlele R Wright	Homework Activity: Exploring and Analysing Digital Devices
19h05	Understanding Software and Navigating Operating Systems	N Samie D Harpestad	Homework Activity: Navigating and Customising Your Operating System
19h30	Cloud Computing and Online Storage	R Mphahlele R Wright	Activity: Cloud Computing with OneDrive
19h55	Closure	L Mahlangu	



Pre-Assessment

Please complete the pre-assessment at:

https://bit.ly/4e4q0E2



The first 10 will win a branded string backpack and smartphone selfie light!









Getting Stared

Join the Community







How to
Join the
Learning
Community



2

Visit the Academic Development Open Learning Platform at:

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Click on the banner to open the course page.

Join the Microsoft Engage Learning Community



Join the learning and support community to complete activities and to engage with other participants.

Click here to join the learning community

Click on the grey button to join the learning community.

Join the Microsoft Engage Community

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Join the Microsoft Engage Community

Click the Join button to join the Digital Literacy Skills community.





Demo

Joining the community.

Activity

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Digital Basics: Empowering Female Students in Technology

Understanding Digital Devices, Operating Systems, and Cloud Computing









Introduction to Digital Basics

Objective:

 Introduce the fundamental aspects of digital devices, operating systems, and cloud computing.

Focus:

 Empowering female students by addressing gender-specific challenges in technology.



Addressing Gender-Specific Tech Challenges

Overcoming Barriers and Empowering Women in Technology

- Overview: Discuss the obstacles that disproportionately affect women in technology.
- Key Point: These challenges stem from societal norms and biases suggesting technology is male-dominated.

Understanding Gender Stereotypes

- Gender stereotypes are preconceived notions about roles, attributes, and capabilities based on gender.
- **Impact on Technology**: These stereotypes suggest men are more suited for STEM fields, discouraging women from pursuing tech careers.
 - Example: Consider a classroom where students are asked to design a basic website. If the teacher or peers assume that the male students are more likely to succeed at this task simply because of their gender, this can diminish female students' confidence, even if they possess equal or greater skills.

Challenging the Norms

Awareness: Recognising and questioning gender stereotypes is the first step.

Representation: Importance of seeing successful women in tech to inspire others.

Practical Steps:

- Research: Explore biographies of influential women in tech.
- Discussion: Engage in group discussions about gender stereotypes and share experiences.

Building Confidence in Tech Use



Strategies for Building Confidence

- Start Small:
 Begin with manageable tasks and gradually take on more complex projects.
- Continuous Learning: Stay updated with new tools and techniques through courses and workshops.
- Ask for Help: Emphasize the importance of seeking assistance and collaborating with others.

Example: Start with basic tasks like creating a Word document, then progress to more advanced projects.

Joining Support Networks

Importance of Support Networks:

- Peer Support: Connecting with others in similar situations can be empowering.
- Mentorship: Having a mentor in the tech field can provide guidance and motivation.
- Online Communities: Engage with online communities to expand your network and gain support.

Benefits:

These networks can help women feel less isolated and more supported in their tech journey.

Demo

Interacting in support learning support communities



Activity

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Types of Digital Devices and Their Applications

Enhancing Productivity, Convenience, and Connectivity

- Overview: Digital devices are indispensable tools that enable us to connect, work, learn, and entertain ourselves.
- Purpose: Understanding these devices and their applications is crucial for leveraging their potential to improve quality of life.



Smartphones and Tablets

Smartphones and tablets are versatile devices designed for portability and ease of use.



Smartphones

Portable devices combining the functionalities of a mobile phone and a computer.



- High-resolution touchscreens
- Powerful processors
- Various sensors (e.g., cameras, GPS, accelerometers)

Operating Systems: Android and iOS



Tablets

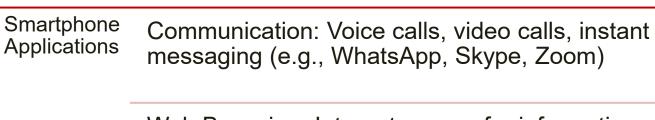
Larger than smartphones, ideal for tasks requiring a bigger screen.

Features:

- Same as smartphones with some additions.
- Often paired with accessories like styluses and external keyboards.

Operating Systems: Android, iOS, Windows

Smartphones and Tablets





Web Browsing: Internet access for information, social media, online transactions

Media Consumption: Streaming videos, music, and viewing photos (e.g., Netflix, Spotify, YouTube)

Tablet Applications

Media Consumption: Perfect for watching movies, reading e-books, browsing photos.



Productivity: Note-taking, managing emails, creating presentations (e.g., Microsoft Office, Google Workspace).

Creative Work: Digital drawing and painting (e.g., Procreate, Adobe Fresco).

Personal Computers (PCs) - Laptops and Desktops

PCs are essential tools for both personal and professional tasks.

Laptops



- Portable computers integrating display, keyboard, and touchpad into a single unit.
- Tailored for various needs such as office work, gaming, and content creation
- Operating Systems: Windows, MacOS, Linux, ChromeOS



Desktops

- Stationary computers offering more power and expandability.
- Separate components like monitor, keyboard, mouse, and CPU.
- Operating Systems: Android, iOS, Windows

Personal Computers (PCs) - Laptops and Desktops

Laptop Applications

- Office Work: Word processing, spreadsheets, presentations (e.g., Microsoft Word, Excel, PowerPoint).
- Web Development and Programming: Coding, web development, software design (e.g., Visual Studio, PyCharm).
- Design and Creative Work: Graphic design, video editing (e.g., Adobe Photoshop, Illustrator, Premiere Pro).

Desktop Applications

- High-Performance Tasks: Video editing, 3D modelling, gaming.
- Multi-Tasking: Running multiple applications simultaneously.
- Professional Workstations: Used in architecture, engineering, graphic design

Applications of Laptops and Desktops

- Office Work: Creating documents, managing data, conducting research.
- Programming: Writing code, developing software, building websites.
- Design: Engaging in graphic design, video editing, digital content creation.

Wearables

Wearable devices extend the functionality of digital tools into everyday accessories.

Examples:

- Smartwatches: Wearable devices combining watch and smartphone functionalities.
 Fitness Trackers: Monitor physical activity and health metrics.
- Smart Glasses: Display information in the user's field of vision.
- Wearable Cameras: Capture photos and videos from the wearer's perspective.
- **Smart Clothing**: Incorporate sensors to monitor biometric data.
- Virtual Reality (VR) Headsets: Immerse users in a virtual environment.
- Augmented Reality (AR) Devices: Overlay digital information onto the real world.





Wearables

Applications of Wearables

- Health Monitoring: Personalised, real-time data tracking.
- Fitness Tracking: Monitoring physical activity and health.
- Augmented Reality: Enhancing user interaction with their environment

Smart Home Devices

Smart home devices enhance convenience, security, and energy efficiency in homes.

Examples:

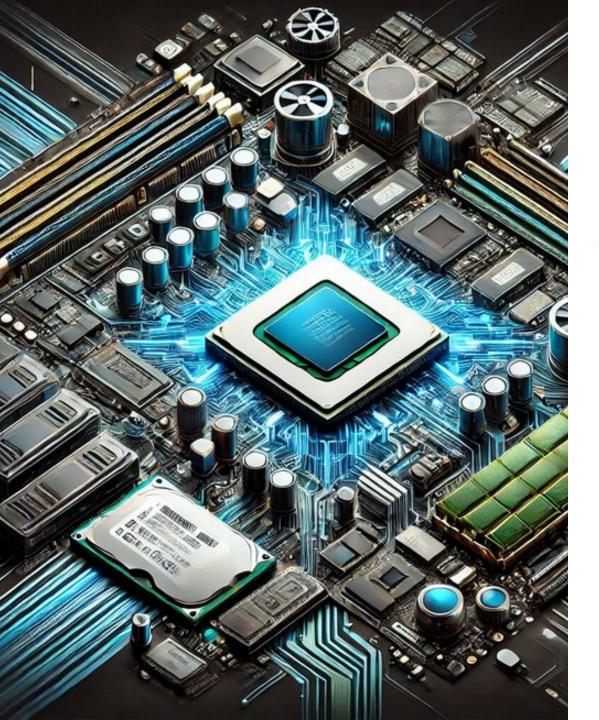
- Smart Speakers: Voice-activated devices serving as both speakers and virtual assistants.
- Smart Thermostats: Devices for remotely controlling home temperature.
- Security Systems: Devices like cameras, doorbells, and locks for enhanced home security.
- Smart Switches: Switches to control electrical devices such as lights.
- Smart Sensors: Sensors are used to detect various aspects such as temperature, presence, and wind speeds.

All devices can be linked to create a smart home; for instance, you can switch the lights in a room when a person is detected in a room.



Digital Devices and Their Applications

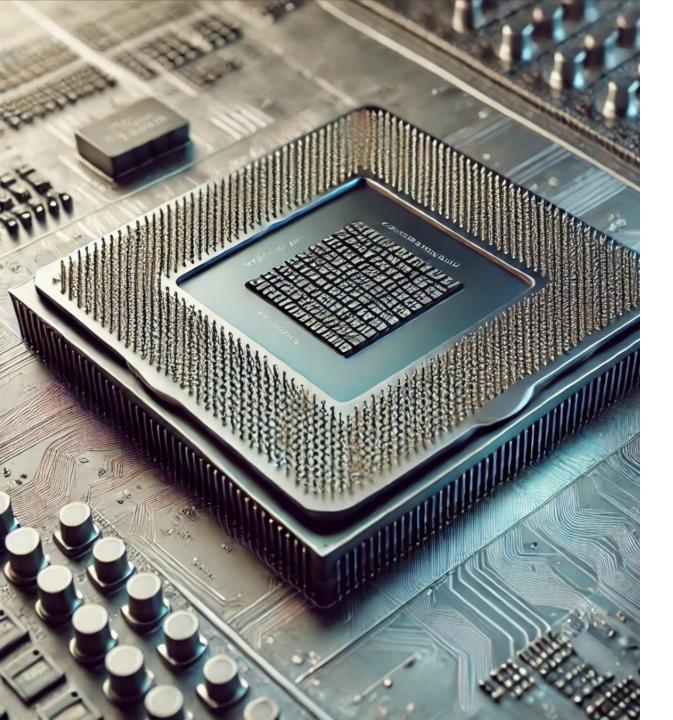
- Understanding different types of digital devices and their applications is key to enhancing productivity, convenience, and connectivity.
- Making informed decisions about integrating these technologies can significantly improve daily life.



Functions of Digital Devices

Understanding Key Components and Their Roles

- Overview: Digital devices consist of several fundamental components that enable them to operate effectively.
- Purpose: Understanding these basics is essential to fully utilize digital devices.



Processing

The Central Processing Unit (CPU) is the "brain" of a digital device.

- Function: Interprets and executes instructions from software applications.
- How it Works:
 - Fetch: The CPU fetches instructions from the device's memory.
 - Decode: Decodes instructions to understand required actions.
 - Execute: Executes instructions, performing tasks like opening apps or browsing the internet.
- Importance: The CPU's power determines the speed and efficiency of the device, which is crucial for tasks like gaming, video editing, and data analysis.
- Types of CPUs
 - Multi-Core Processors: Handle multiple tasks simultaneously (parallel processing), ideal for multitasking.
 - Clock Speed: Measured in gigahertz (GHz), indicates how fast the CPU can process instructions.

Memory (RAM)

Memory, or Random Access Memory (RAM), is a critical component that serves as the primary workspace for the CPU.

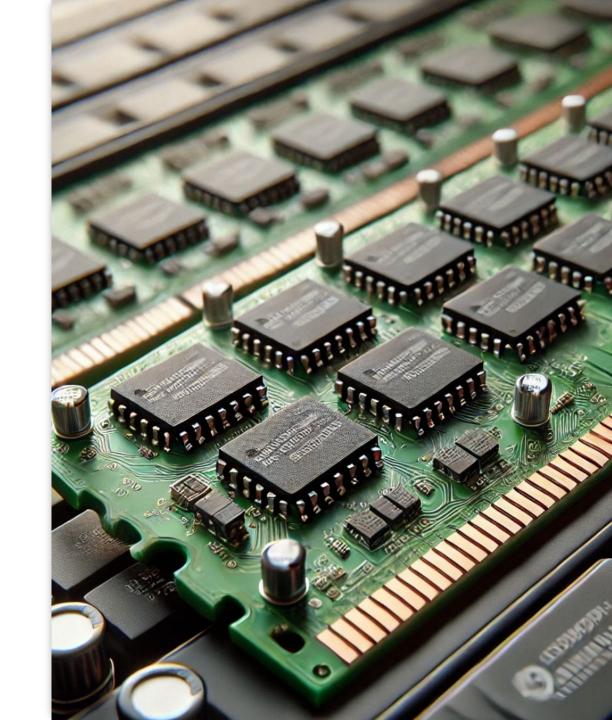
RAM temporarily holds data and instructions needed by the CPU, enabling fast read and write access for efficient task processing.

Importance of RAM

- RAM allows devices to run applications and multitask effectively without slowing down.
- Crucial for tasks like editing high-resolution videos or running multiple applications simultaneously.
- More RAM enables smoother multitasking and better performance in resource-intensive applications.

Types of RAM

- Common types include DDR4 and DDR5.
- DDR5: Faster and more efficient than DDR4, improving the speed and responsiveness of devices.
- Considerations: The choice of RAM can significantly affect a device's overall performance, particularly in demanding tasks.



Storage

Storage is where a device saves all files, applications, and the operating system. Without storage, a device cannot retain information once it's turned off.

Types of Storage

- Internal Storage:
 - Hard Drives (HDDs): Use spinning disks to read/write data, older technology.
 - Solid-State Drives (SSDs): Faster, more reliable, using flash memory.
- External Storage:
 - Devices: USB flash drives, external hard drives, SD cards.
 - Usage: For additional capacity, data backup, or transferring files between devices.
- Cloud Storage:
 - Definition: Storage accessed over the internet.
 - Examples: Google Drive, Dropbox, OneDrive.
 - Benefits: Ideal for collaborative work and data safety from local device failures.

Storage Capacity

- Measurement: Storage is measured in gigabytes (GB) and terabytes (TB).
- Examples: Smartphones typically have 64GB to 256GB, while computers might have 1TB or more.

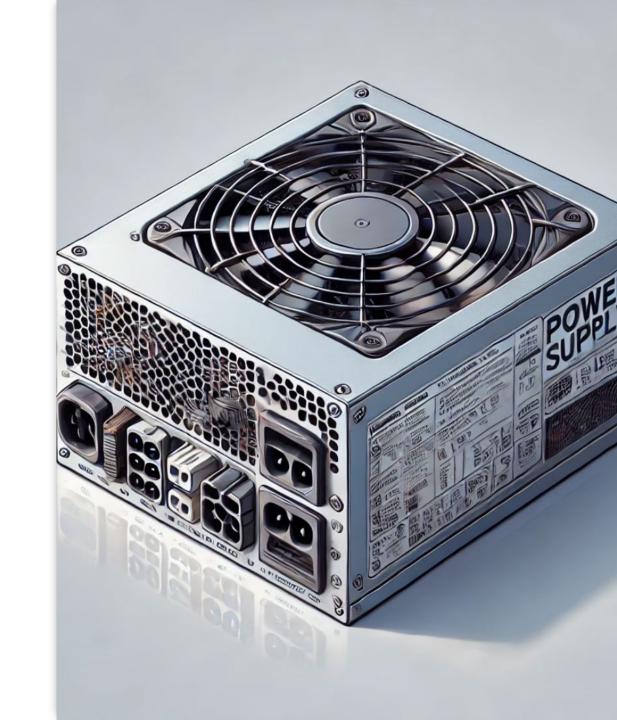


Power Supply

The component providing necessary electricity for a digital device to function.

Types of Power Supplies:

- Power Supply Units (PSUs): For larger devices like desktops, converting electricity from a wall outlet for internal components.
- Batteries: Rechargeable lithium-ion batteries used in laptops, smartphones, tablets, and smartwatches.

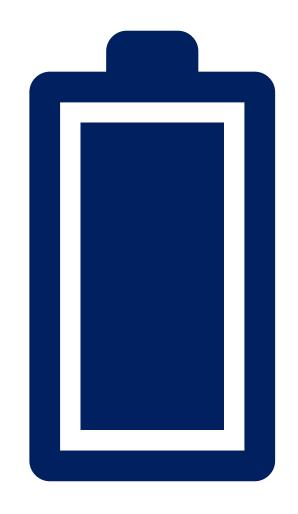


Battery Life and Management

Factors: Battery life varies based on device usage.

Power-Intensive Tasks: Gaming or video editing drain the battery faster.

Management Features: Modern devices include power management features like screen dimming, closing background apps, and reducing processor usage to extend battery life.



Connectivity

Connectivity is a device's ability to communicate with other devices and networks. Essential for internet access, data sharing, and connecting peripherals.

Types of Connectivity

- Wi-Fi: Wireless internet connection using radio waves.
- Bluetooth: Short-range wireless communication for peripherals like keyboards, mice, headphones, and data transfer.
- Cellular Networks: Mobile internet access through 4G/5G, allowing connectivity away from Wi-Fi.
- Ethernet: Wired connection for stable, highspeed internet, often used in desktops.



Peripherals

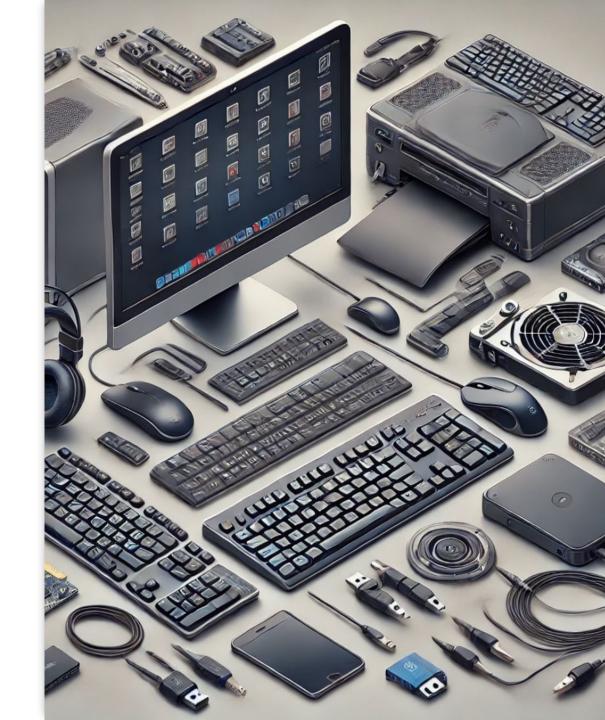
External devices that connect to a digital device to enhance its functionality.

Categories:

- Input Devices: Keyboards, mice, touchscreens, scanners.
- Output Devices: Monitors, printers, speakers, headphones.
- Storage Devices: USB flash drives, external hard drives.

Peripheral Connectivity

 Peripherals typically connect via USB ports, Bluetooth, or other connections like HDMI or DisplayPort.

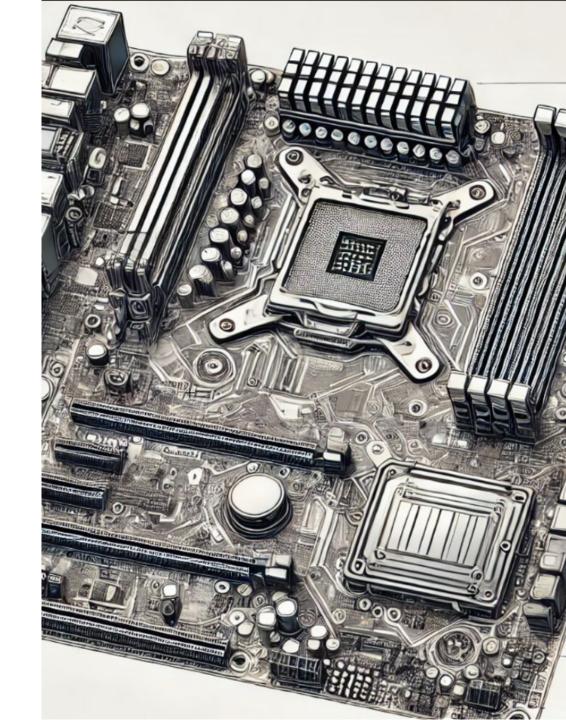


Logic or Motherboards

The motherboard (or logic board in Apple devices) is the main circuit board that connects all components of a digital device.

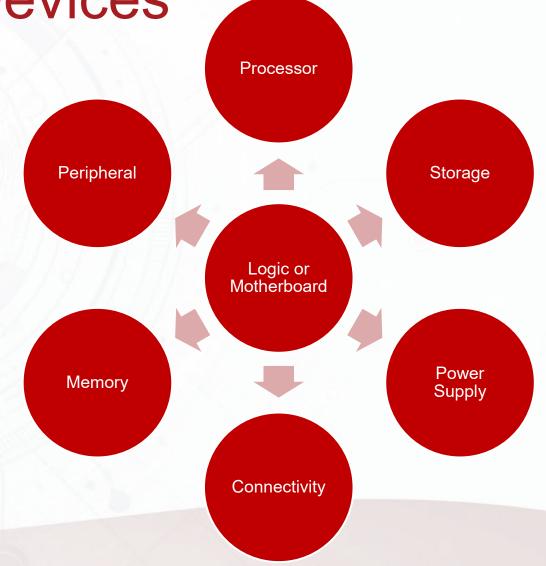
Functions:

- Component Integration: Houses the CPU, RAM, GPU, and storage drives, with slots for upgrades.
- Data Transfer: Facilitates communication between the CPU, memory, and other components.
- Power Distribution: Distributes power from the PSU to various components.
- Expansion and Customization: Offers slots and connectors for adding more RAM, better graphics cards, or additional storage.



Functions of Digital Devices

- Understanding the basic functions of digital devices provides a solid foundation for effective use and maintenance.
- Mastery of these components is crucial for maximizing the potential of digital tools in everyday tasks.



Demo

Searching for devices online and looking at their specs.



Activity

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Understanding Software

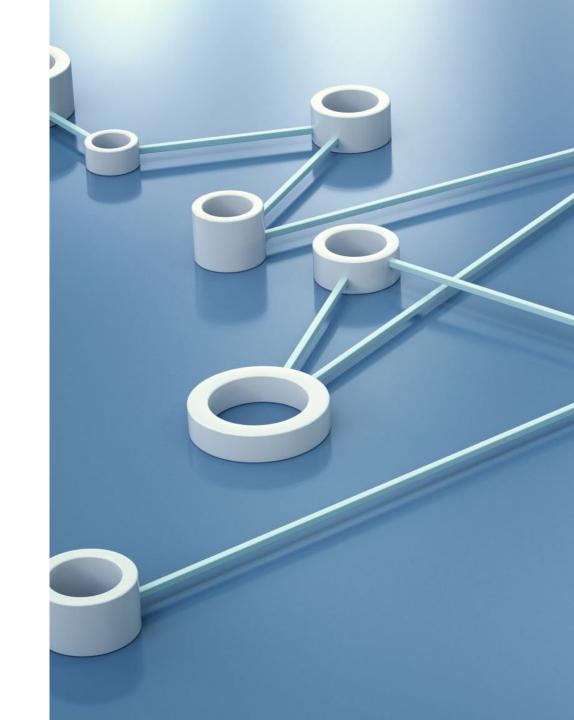
Unlocking the Power of Digital Devices

- Overview: Software enables digital devices to perform tasks, access information, and create content.
- Importance: Understanding software is crucial for effectively using computers, smartphones, and other devices in both academic and professional contexts.



Operating Systems (OS)

- An Operating System (OS) is foundational software that manages hardware and other software on a device.
- Functionality: Acts as an intermediary between the user and the device's hardware, providing a user interface (UI) for interaction.
- Roles: Manages files, runs applications, connects to networks, and handles security.



Desktop and Laptop Operating Systems







Windows:

- Overview: Developed by Microsoft, widely used, known for its user-friendly interface.
- Usage: Supports a variety of software applications, commonly used in personal, professional, and educational settings.

macOS:

- Overview: Developed by Apple, known for sleek design, security, and integration with other Apple products.
- Usage: Popular among creative professionals and users within the Apple ecosystem.

Linux:

- Overview: Opensource, highly customizable, used in various environments, including servers and personal computers.
- Usage: Favoured by developers and IT professionals.

Smartphone and Tablet Operating Systems





Android:

- Overview: Developed by Google, powers the majority of smartphones and tablets globally.
- Features: Flexible, customizable, extensive app ecosystem.

iOS:

- Overview: Developed by Apple for iPhones and iPads, known for security and stability.
- Features: Seamless integration with Apple products, curated app selection.

Applications (Apps)

- Software programs designed to perform specific tasks or functions on your device.
- Importance: Extend the functionality of devices, tailored for personal and professional needs.

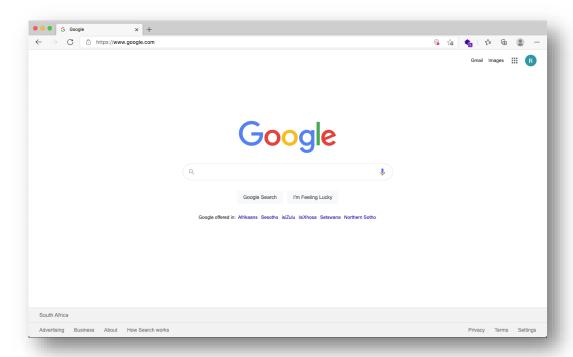


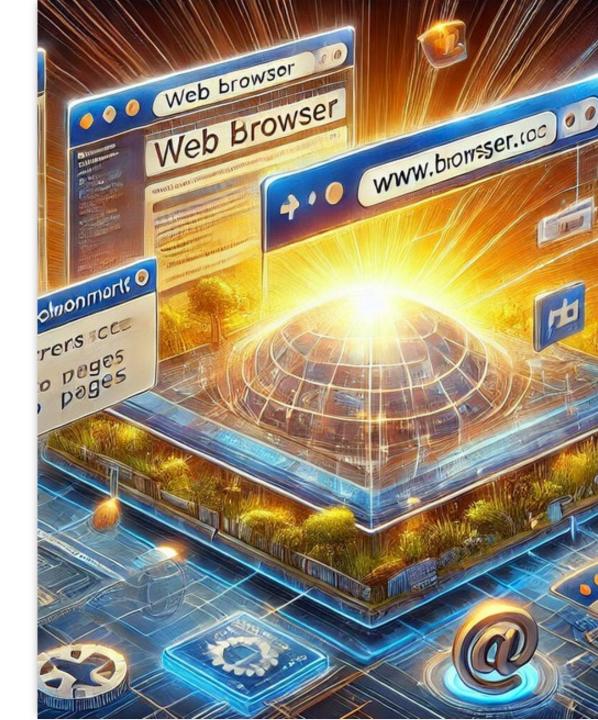
Internet Browsers

Applications that allow access to and interaction with websites on the internet.

Common Uses:

- Accessing educational platforms and LMS.
- Conducting research and joining online classes.
- Document collaboration with tools like Google Docs and Microsoft Office Online.





Internet Browsers

Popular Browsers:

Google Chrome:

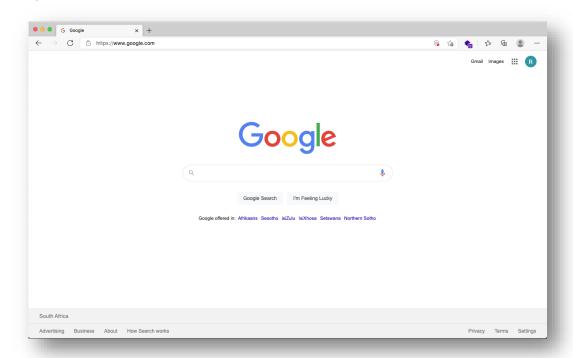
Known for speed, security, and extensive extensions.

Mozilla Firefox:

Valued for privacy features and customizability.

Microsoft Edge:

Integrated with Windows, built on Chromium.





Demo

Identifying your browser.





Productivity Applications

Tools that help users create, edit, and manage documents, presentations, and spreadsheets.

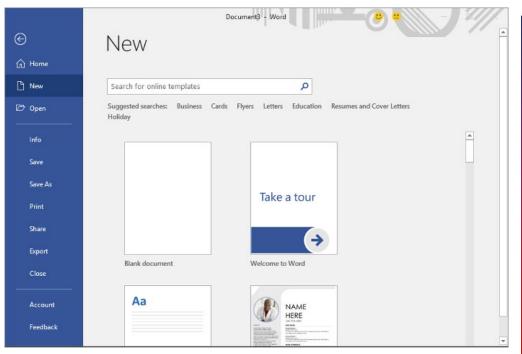
Examples:

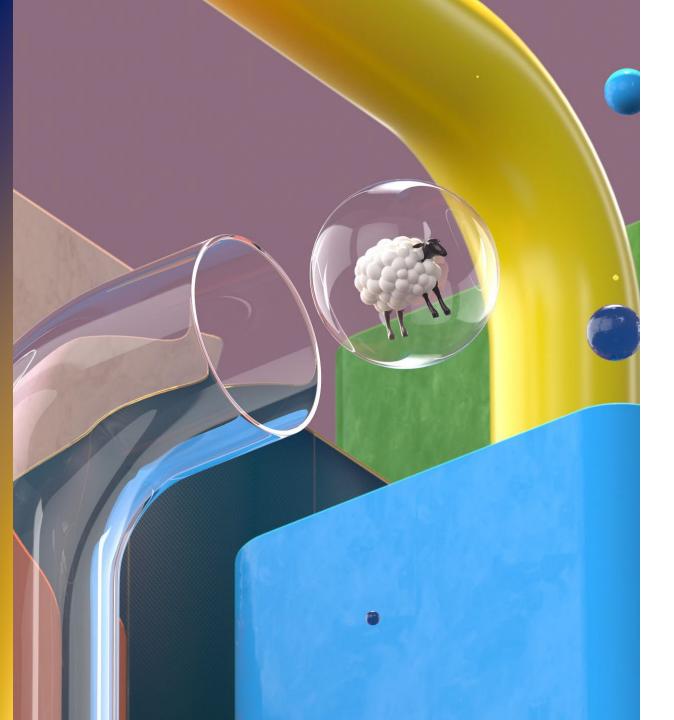
- Microsoft Office Suite:
 - Word: For text documents.
 - PowerPoint: For presentations.
 - Excel: For data analysis and spreadsheets.
- Cloud-Based Alternatives:
 - Google Workspace: Real-time collaboration tools like Google Docs, Sheets, and Slides.
 - LibreOffice: Open-source alternative to Microsoft Office.



Productivity Applications Applications in Learning:

Writing assignments, data analysis, and creating presentations.





Creative Applications

Specialized software tools for creating or editing visual, audio, or multimedia content.

Examples:

- Graphic Design: Adobe Photoshop, Adobe Illustrator.
- Video Editing: Adobe Premiere Pro, Final Cut Pro.
- Digital Drawing and Painting: Procreate, CorelDRAW.

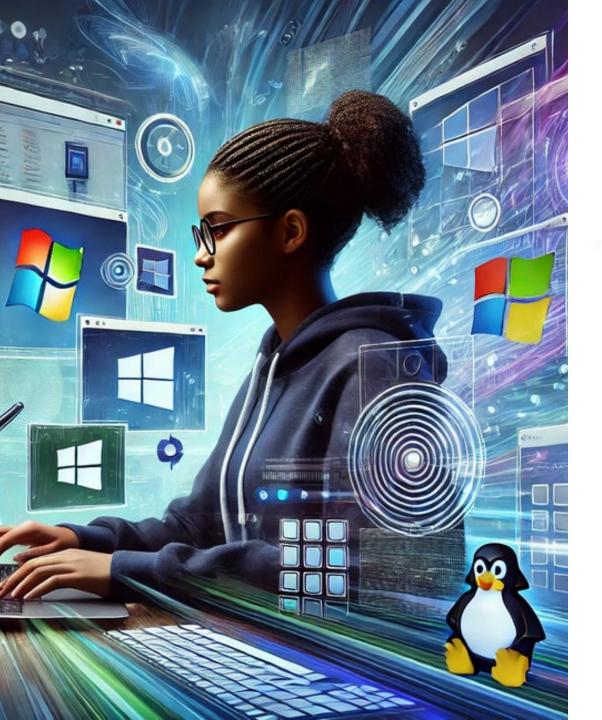
Applications in Learning:

• Project-based learning, collaborative multimedia projects, and digital portfolio creation.

Demo

Productivity and Creative applications.





Navigating Operating Systems

Mastering the Core Functions and Features

- Overview: Navigating an operating system (OS) is a fundamental digital literacy skill, essential for effective interaction with digital devices.
- Purpose: This section provides an in-depth understanding of OS functions, file management, and customization to enhance device usability.



Key Functions of Operating Systems

File Management:

- Definition: The OS's ability to create, organize, and manage files and folders.
- Purpose: Ensures organized storage of files for easy access and a clutter-free environment.
- How It Works: Organizes data into a hierarchy of folders and files for navigation.

Application Management:

- Definition: The OS manages and runs software programs, enabling multitasking.
- Purpose: Crucial for running multiple applications smoothly.
- How It Works: Allocates system resources to applications, managing processes and ensuring smooth operation.



Key Functions of Operating Systems

User Interface (UI):

- Definition: The part of the OS that allows users to interact with the device through graphical elements.
- Purpose: Provides a visual and intuitive way to navigate the OS.
- How It Works: Translates user actions into commands that the device executes.

System Settings:

- Definition: Allows users to customize device operations, manage hardware, and control security.
- Purpose: Personalizes device settings to suit individual needs.
- How It Works: Provides access to settings for display, network, security, and hardware management.



Interacting with Operating Systems

Navigating the Desktop (Windows, macOS, Linux):

 Desktop: The primary screen after logging in, with shortcuts to applications and files.

Using the Start Menu (Windows), Dock (macOS), or App Drawer (Android, iOS):

- Start Menu (Windows): Access to applications, settings, and system features.
- Dock (macOS): Quick access to favourite applications, files, and folders.
- App Drawer (Android): Lists all installed apps, accessible by swiping or tapping an icon.
- Home Screen (iOS): Displays all apps, organized into pages and folders.



Interacting with Operating Systems

Accessing System Settings:

- Windows: Control Panel or Settings app.
- macOS: System Preferences.
- Linux: System settings or command line.

Multitasking and Window Management:

 Key Point: Efficiently switch between, resize, and organize windows for multitasking

Understanding Operating System Differences - File Paths and Navigation

Windows:

- Structure: Hierarchical file system with drive letters (e.g., C:\Documents\Report.docx).
- Navigation: File Explorer for browsing files.

macOS:

- Structure: Similar to Linux, with a user-friendly GUI (e.g., /Users/Name/Documents/Report.docx).
- Navigation: Finder for browsing files and folders.

Linux:

- Structure: Directory structure starting from root / (e.g., /home/user/Documents/Report.docx).
- Navigation: File managers like Nautilus or Dolphin, or terminal commands.

Android:

- Structure: Organized under root (/), with common directories like /Downloads.
- Navigation: Files app or third-party file managers.

iOS:

- Structure: Simplified, app-based file management, typically hidden from users.
- Navigation: Files app for accessing documents and other files.

Understanding Operating System Differences: Software Installation

- Windows: Executable (.exe) files, with installation wizards.
- macOS: .dmg files or Mac App Store, dragand-drop to Applications folder.
- Linux: Package managers (APT, YUM), terminal commands, or graphical software centers.
- Android: Google Play Store or APK files.
- iOS: Exclusively through the Apple App Store.



Operating System Settings

Customizing Display and Appearance:

 Options: Change wallpaper, adjust screen resolution, modify themes.

Network and Connectivity Settings:

Settings: Configure internet, Wi-Fi, Bluetooth, VPN.

User Accounts and Permissions:

- Management: Set up passwords and manage user access and permissions.
- Security and Privacy Settings:
- Protection: Adjust antivirus, firewall, and privacy controls.

Device and Peripheral Settings:

 Configuration: Set up printers, scanners, monitors, and input devices.



Demo

Accessing Settings.



Managing Files and Folders

Creating Files and Folders:

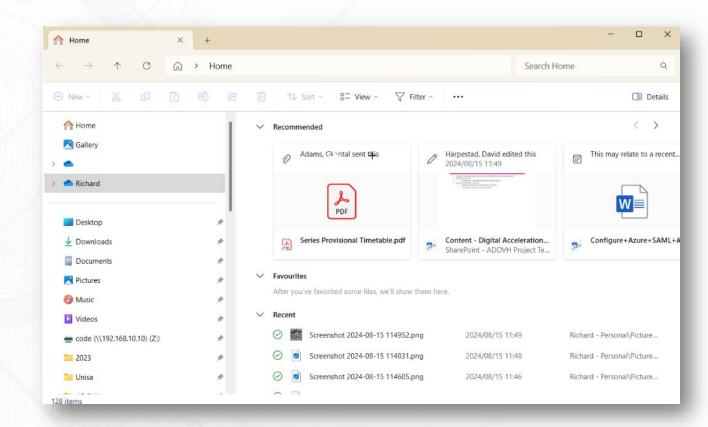
- Windows: Right-click > New > Folder/File.
- macOS/Linux: Use Finder or File Manager.
- Android/iOS: Files app for creating and organizing files.

Naming Files and Folders:

Use descriptive names, and avoid special characters.

Organising Files:

 Group related files, use subfolders and regularly review.



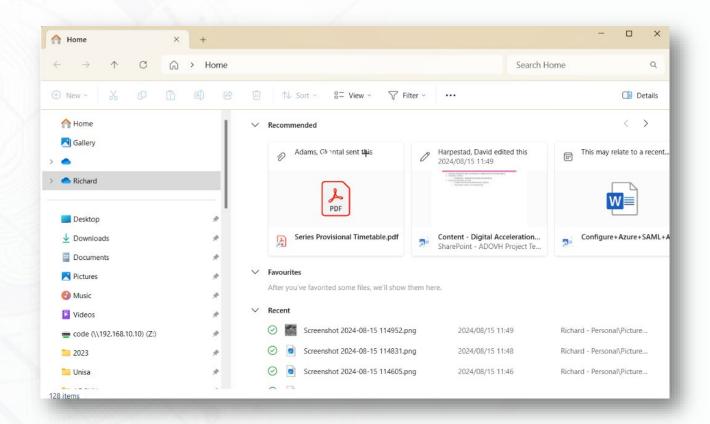
Managing Files and Folders

Backing Up and Storing Files:

- Importance: Prevent data loss through regular backups.
- Methods: Use external drives or cloud storage (OneDrive, Google Drive, Dropbox).

Searching for Files and Folders:

- · Windows: Search bar next to Start menu.
- macOS: Spotlight search.
- Linux: File manager search or terminal commands.
- Android/iOS: Files app or system-wide search.



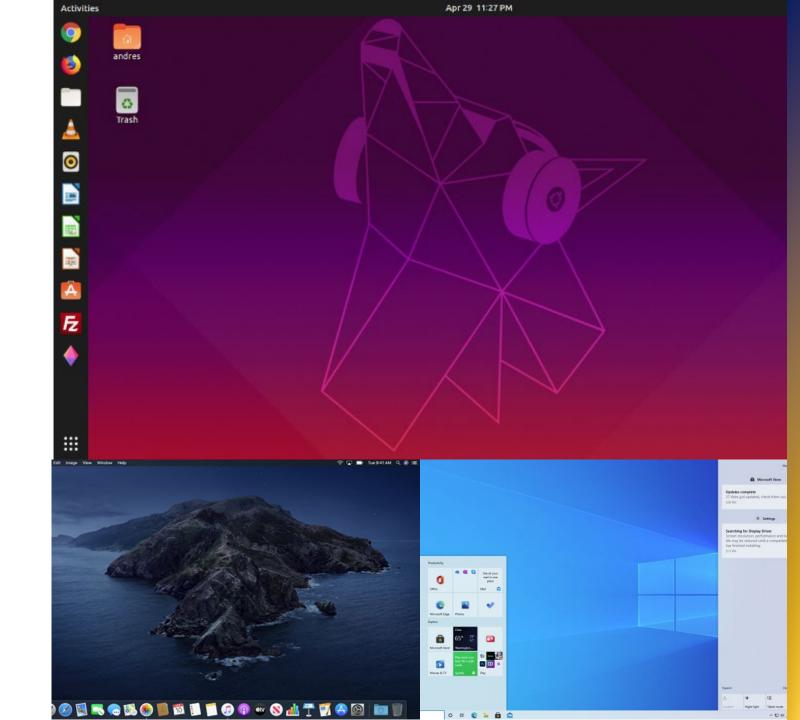
Demo

Creating and organising files.



Navigating Operating Systems

- Mastering OS navigation, file management, and settings customisation improves your digital literacy.
- These skills are essential for efficiently using technology in academic and professional settings.



Activity

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Cloud Computing

Harnessing the Power of the Cloud for Productivity and Collaboration

- Overview: Cloud computing revolutionizes how we use technology by enabling access, storage, and collaboration over the internet.
- Purpose: Understanding cloud computing is essential for maximizing digital tools in academic and professional settings.



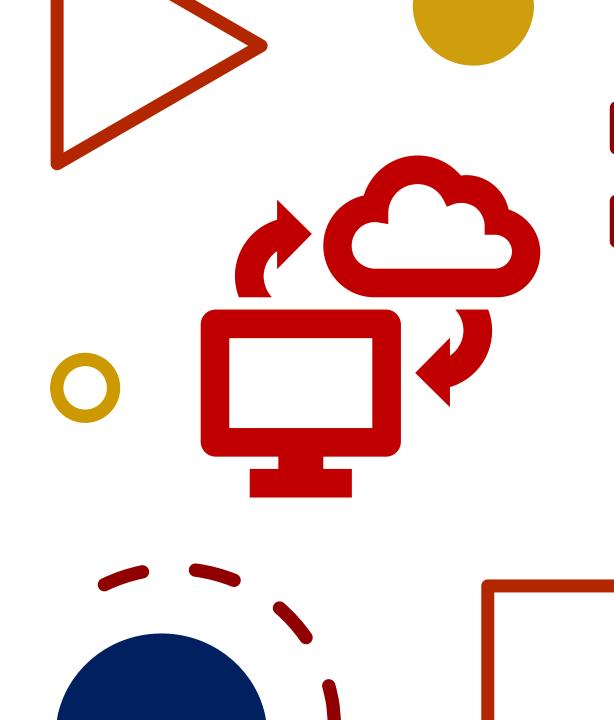
Understanding Cloud Computing

Definition:

Cloud computing delivers computing services like storage, processing, and software over the internet

How It Works:

Services are hosted on servers managed by cloud service providers (CSPs) and accessed via the internet.



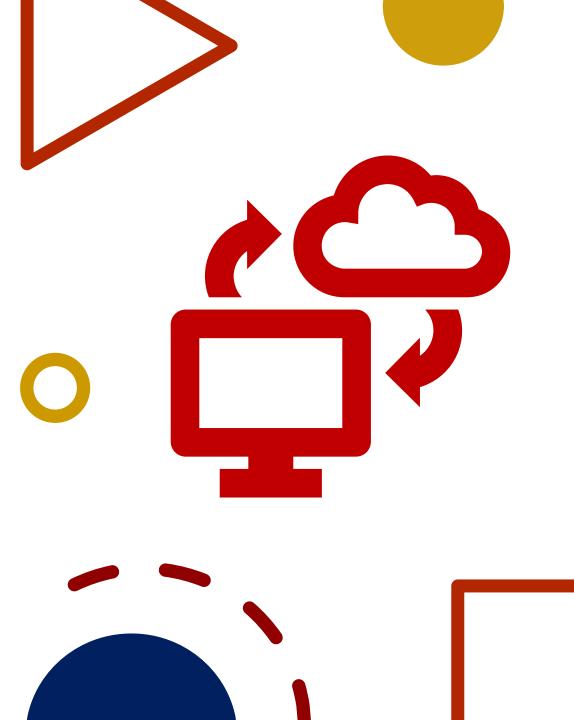
Understanding Cloud Computing

Types of Cloud Services:

- laaS (Infrastructure as a Service): Virtualized computing resources like servers and storage.
- PaaS (Platform as a Service): Platform for building, deploying, and managing applications.
- SaaS (Software as a Service): Software applications delivered over the internet on a subscription basis.

Benefits:

- Accessibility: Work from any device with an internet connection.
- Cost-Effective: Pay only for what you use, reducing the need for expensive hardware.
- Collaboration: Multiple users can work on the same document or project simultaneously.
- Security and Backup: Robust security measures and automatic backups reduce the risk of data loss.



Introduction to Microsoft 365 as a Cloud Computing Platform

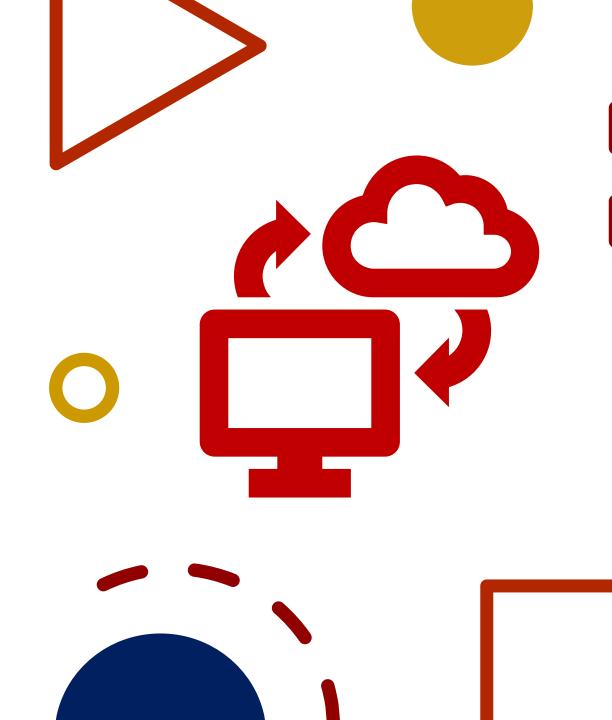
Microsoft 365 integrates productivity applications, cloud services, and security features into a single, accessible package.

Core Applications:

- Word: Word processing tool.
- Excel: Spreadsheet application.
- PowerPoint: Presentation software.
- Outlook: Email client with calendar and task management.
- Teams: Communication and collaboration platform.

Cloud Integration:

- OneDrive: Cloud storage service for secure file storage and access.
- Collaboration Tools: Real-time collaboration on documents, spreadsheets, and presentations.
- Anywhere Access: Access files and applications from any internet-connected device.



Introduction to Microsoft 365 as a Cloud Computing Platform

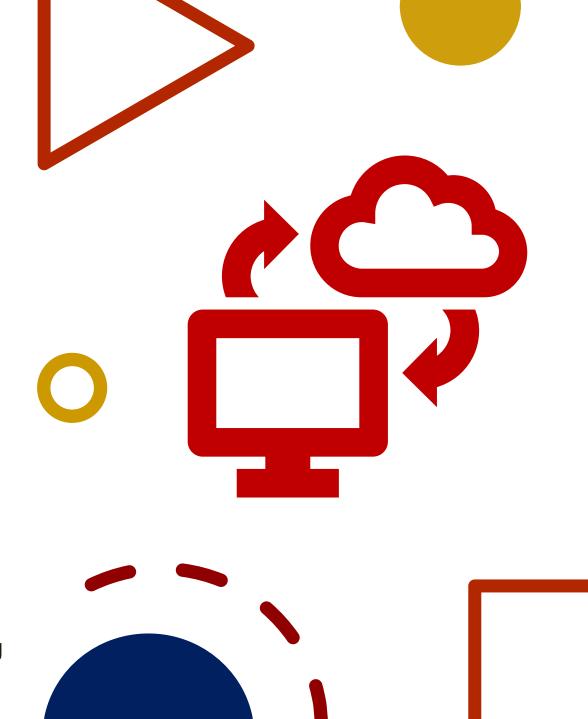


Security and Compliance:

- Data Protection: Encryption, multi-factor authentication, and threat protection.
- Compliance: Supports various compliance standards, suitable for regulated sectors.

Subscription Model:

Available through a monthly or yearly subscription, ensuring access to the latest software versions.



Demo

Accessing Microsoft 365 and exploring the apps available.

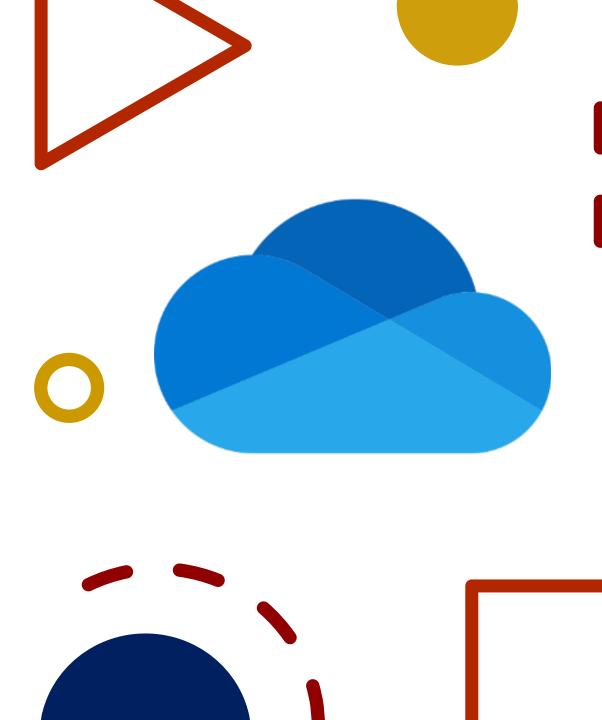


Using OneDrive for File Management

OneDrive is Microsoft's cloud storage service integrated with Microsoft 365, allowing secure file storage and management.

Benefits of Using OneDrive:

- Accessibility: Access, edit, and share files from any device.
- Security: Encryption and file recovery features protect your data.
- Collaboration: Real-time collaboration and flexible sharing options.



Using OneDrive for File Management

How to Use OneDrive:

- Uploading Files: Drag and drop files into OneDrive or use the upload button.
- Organising Files: Create folders and subfolders to organize files.
- Accessing Files Offline: Sync files to your device for offline access.

Practical Applications in Education:

- Group Projects: Collaborate on documents and presentations in real time.
- Resource Sharing: Instructors can share lecture notes and resources with students.



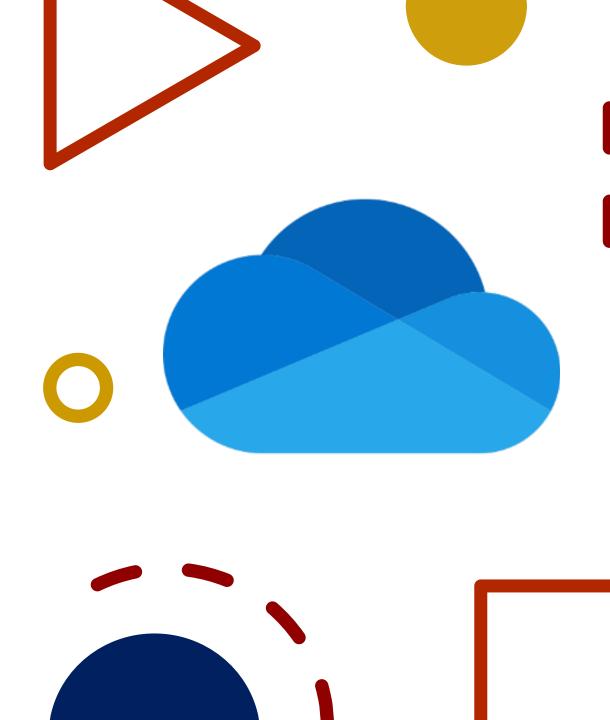
Demo

Accessing OneDrive and managing files.



Cloud Computing

- Cloud computing, particularly through Microsoft 365 and OneDrive, enhances productivity, collaboration, and file management.
- Mastering cloud tools like OneDrive is essential for effective teamwork and productivity in a modern digital environment.



Activity

Visit https://bit.ly/unisadl4 or

scan the QR code below:





Conclusion: Empowering Through Digital Mastery

This unit offers a comprehensive understanding of the digital landscape, equipping students with essential skills and knowledge.

Key Takeaways:

- Challenging Gender Stereotypes: Understanding and overcoming barriers in technology.
- Mastering Digital Devices: Effective use of smartphones, tablets, PCs, and operating systems.
- Harnessing Cloud Computing: Utilizing Microsoft 365 and OneDrive for productivity and collaboration.

Empowerment: This knowledge empowers students, especially women, to confidently navigate and excel in technology-related fields.

Future Preparedness: By applying these skills in academic and personal contexts, students are better prepared to leverage technology for productivity, collaboration, and innovation in their future careers.





Thank You

All the best with your digital journey!





