

Introduction to IT Skills

Computer Software

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Outline

- Software
 - Application Software
 - System Software
- Software License
- Files
 - Data files
 - Program files
 - Installers
 - Executables





Software

- Description

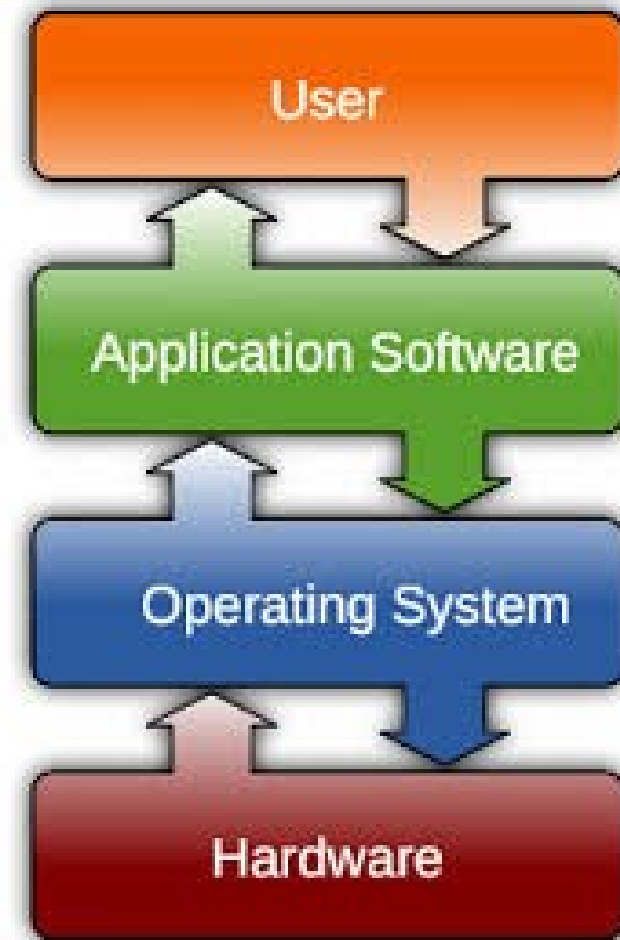
Computer Software

- By definition, software is a computer program that provides instructions and data to execute a user's commands.
- It is an indispensable part of the machine you cannot see, but it allows you to use the computer.
- Some common examples of software include Microsoft Windows, Android Play Store, Microsoft Word, Adobe Photoshop, Adobe Reader, Google Chrome, Gmail, Powerpoint, VLC, and many other similar computer programs that we often use in our daily life.



Software - Types

- Application Software
- System Software



Application Software

- Application software or ‘apps’ are what you, as a common user, engage with the most.
- These types of computer software are productive end-user programs that help you perform tasks.
- Following are some examples of application software that allow you to do specific work:
 - **MS Excel:** It is spreadsheet software that you can use for presenting and analyzing data.
 - **Skype:** It is an online communication app that you can use for video chat, voice calling and instant messaging.
 - **Photoshop:** It is a photo editing application software by Adobe. You can use it to visually enhance, catalogue and share your pictures.



Application Software

- Software applications are also referred to as **non-essential software**.
- They are installed and operated on a computer based on the **user's requirement**.
- There is **plenty of application software** that you can use to perform different tasks.
- The number of such apps keeps increasing with **technological advances** and the **evolving needs** of the users.



Application Software

- You can categorize these software types into different **groups**, as shown in the following table:

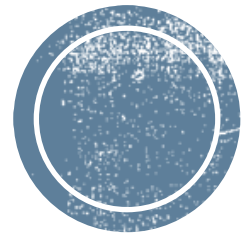
Type/Group	Description	Examples
Word processing software	Tools that are used to create word sheets and type documents etc.	Microsoft Word, WordPad, AppleWorks and Notepad
Spreadsheet software	Software used to compute quantitative data.	Apple Numbers, Microsoft Excel and Quattro Pro
Database software	Used to store data and sort information.	Oracle, MS Access and FileMaker Pro



Application Software

Type/Group	Description	Examples
Application Suites	A collection of related programs sold as a package.	OpenOffice, Microsoft Office
Multimedia software	Tools used for a mixture of audio, video, image and text content.	Media Player, GOM Player, Photoshop, Illustrator, etc.
Communication Software	Tools that connect systems and allow text, audio, and video-based communication.	Skype, MS Team, Zoom, MS NetMeeting, WhatsApp, Viber etc.
Internet Browsers	Used to access and view websites.	Google Chrome, Brave, Firefox, Edge, Opera, Safari
Email Programs	Software used for emailing.	Microsoft Outlook, Gmail, Apple Mail





System Software



System Software

- The system software is a type of computer software that is designed for running the computer hardware parts and the application programs.
- It is the platform provided to the computer system where other computer programs can execute.
- The system software **act as a middle layer** between the user applications and hardware.
- The **operating system** is the type of system software.
- The operating system is used to manage all other programs installed on the computer.
- The system software can be run in the background or can be executed directly by the user.



System Software

- The other purpose of system software is to translate inputs received from other sources and convert them into language so that the machine can understand.
- The **BIOS (basic input/output system)** is another type of system software that works when the computer system starts and is used to manage the data between the hardware devices (video adapter, mouse, keyboard and printer) and the operating system.
- When you first power up your computer, it is the system software that is initially loaded into memory. Unlike application software, the System software is not used by end-users like you.
- It only runs in the background of your device, at the most basic level while you use other application software. This is why system software is also called “low-level software”.
- The boot is the system software program that loads the operating system in the main memory of the computer



System Software

Operating System

- Operating systems are an example of system software.
- All of your computer-like devices run on an operating system, including your desktop, laptop, smartphone, and tablet, etc.
- Here is a list of examples of an operating system. Let's take a look and you might spot some familiar names of system software:
- For desktop computers, laptops and tablets:
 - Microsoft Windows
 - Mac (for Apple devices)
 - Linux
- For smartphones:
 - Apple's iOS
 - Google's Android
 - Windows Phone OS



System Software

Device Drivers

- The system software provides the functionality for the user to use the hardware directly using the **device drivers** program.
- A device driver which is used to control some specific device which is connected to computer systems like mouse or keyboard.
- The device driver software is used to convert input/ output instructions of OS to messages so that the device can read and understand.



System Software

Utility Software

- They manage the performance of your hardware and application software installed on your computer, to ensure they work optimally.
- Some features of utility software include:
 - Antivirus and security software
 - File compressor
 - Disk cleaner
 - Disk defragmentation software
 - Data backup software



System Software

Language Translators

- The other example of system software is **assembler/compiler/interpreter**.
- This kind of software has a functionality to take computer instructions as input and then convert it into bits so that the processor can read that bit and perform computer operations.

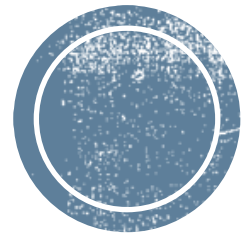


System Software

Examples

- Windows 8
- Windows 10
- Mac oS
- Linux
- Unix
- Android
- Anti virus
- Disk formatting
- Device Drivers
- Computer language translators





Software License Types



Software Licenses Types

- Commercial
- Freeware
- Shareware
- Closed Source Software
- Open Source Software



Commercial Software

- Commercial software is any software or program that is designed and developed for licensing or sale to end users or that serves a commercial purpose.
- They often provide customer support.
- They are paid softwares.
- For examples:
 - Games
 - MS Office
 - MS Windows



Freeware

- Freeware software is any software that is available to use for free.
- They can be downloaded and installed over the internet without any cost.
- Some well-known examples of freeware are:
 - Google Chrome
 - Skype
 - Instagram
 - Snapchat
 - Adobe reader



Shareware

- Shareware, on the other hand, are software applications that are paid programs, but are made available for free for a limited period of time known as ‘trial period’.
- You can use the software without any charges for the trial period but you will be asked to purchase it for use after the trial ends.
- Shareware allows you to test drive the software before you actually invest in purchasing it.
- Some examples of Shareware that you must be familiar with are:
 - Adobe PhotoShop
 - Adobe Illustrator
 - Netflix App
 - Matlab
 - McAfee Antivirus



Open Source Software

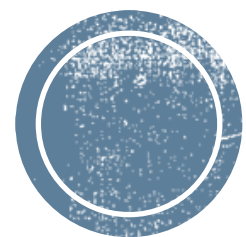
- This is a type of software that has an open-source code that is available to use for all users.
- It can be modified and shared with anyone for any purpose.
- Common examples of open source software used by programmers are:
 - LibreOffice
 - PHP
 - GNU Image Manipulation Program (GIMP)
 - Python
 - Firefox
 - Open Office
 - Android
 - 7-Zip



Closed Source Software

- For this software, the source code is the intellectual property of software publishers.
- It is also called 'proprietary software' since only the original authors can copy, modify and share the software.
- Following are some of the most common examples of closed-source software:
 - .NET
 - Java
 - Microsoft Office
 - Adobe PhotoShop





Computer File

Computer File

- A file is an object on a computer that stores data, information, settings, or commands used with a computer program.
- In a GUI (graphical user interface), such as Microsoft Windows, files display as icons that relate to the program that opens the file.
- Windows file names have two parts; the file's name, then a period followed by the extension (suffix).



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File Extension

- A file extension or file name extension is the ending of a file that helps identify the type of file.
- In Microsoft Windows, the file name extension is a period that is often followed by **three characters** but may also be one, two, or four characters long.
- **As an example**, the file name "myfile.txt" has a file extension of ".txt," which is a file name extension associated with text files.



Computer File Types

- **Data Files**

- Stores the data and information to be used by software programs
- These files can't run independently but need some program to:
 - Create
 - Open
 - Read
 - Write
 - Delete

Program Files

- Contains the program code and can also be executed.
- These files are used to initiate other software sequences such as installation of program, opening program etc.



Computer File Types

Data Files

- **Image**
 - Bmp, gif, ico, jpeg or jpg, png, psd, svg, tiff or tif
- **Internet related**
 - html, css, js, jsp, aspx,
- **Documents**
 - pdf, docx, pptx, xlsx, xlsxm
- **Video**
 - Mp4, mkv etc
- **Audio**
 - mp3, wav, mpa, aif, cda, wma etc



Computer File Types

Data Files

- **Compressed**
 - .7z, .rar, .zip etc
- **Data and database**
 - .csv, .dat, db, .sql, .xml etc
- **Email**
 - .email, .eml, .msg, .oft etc
- **Disc and media**
 - When making an image of a disc or other media, all of the contained files are saved to an image file.
 - .bin, .dmg, iso, .vcd



Computer File Types

Program Files

- Executable Files

- .exe
- .msi

