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1. 5 Definitions of Operating System:

A. It is a software that handles all of the other application programs in a computer after being loaded into it by a boot program. The operating system is accessed by application programs through a specified application program interface, which makes requests for services (API).

   Source: Bigelow, S. J. (2021, June 2). *What is an operating system (OS)? definition, types and examples*. WhatIs.com. Retrieved March 5, 2022, from https://whatis.techtarget.com/definition/operating-system-OS

B. It is a program that controls a computer's resources, particularly how those resources are distributed among other applications. The central processing unit (CPU), computer memory, file storage, input/output (I/O) devices, and network connections are all common resources. Scheduling resource utilization is one of the management activities to minimize conflicts and interference between applications.

   Source: Encyclopædia Britannica, inc. (n.d.). *Operating system*. Encyclopædia Britannica. Retrieved March 5, 2022, from https://www.britannica.com/technology/operating-system

C. An operating system, sometimes known as a "OS," is a piece of software that interacts with the hardware and allows other applications to operate. It is made up of system software, or the files that your computer requires to start up and run. Every desktop computer, tablet, and smartphone has an operating system that provides the device with basic functionality.

   Source: *Operating system*. Operating System Definition. (n.d.). Retrieved March 5, 2022, from https://techterms.com/definition/operating_system

D. An operating system (OS) is a software interface that connects a computer user to computer hardware. An operating system is a piece of software that handles all of the fundamental operations such as file management, memory management, process management, input and output, and managing peripheral devices such as disk drives and printers.

   Source: Operating system - overview. (n.d.). Retrieved March 5, 2022, from https://www.tutorialspoint.com/operating_system/os_overview.htm

E. An operating system is a software program that manages and operates computing devices such as smartphones, tablets, computers, supercomputers, web servers, automobiles, network towers, smartwatches, and so on. It is the operating system that removes the requirement to understand coding languages in order to

communicate with computing equipment. It is a graphical user interface (GUI) layer that serves as a bridge between the user and the computer hardware.

Source: Business Standard. (n.d.). *What is operating system, OS definition, operating system news*. Business Standard. Retrieved March 5, 2022, from https://www.business-standard.com/about/what-is-operating-system

2. 5 Functions of System Software and Application Software:

System Software:
1. It controls the computer's internal functioning through the means of Operating System and also the peripherals like monitors, printers and storage devices.
2. It is designed to run the computers hardware and application programs.
3. It manages computer resources
4. It ensures that the devices and apps perform at their peak
5. It controls the flow of data

Application Software:

1. It allows the users to perform task on their devices such as playing music or games.
2. It is designed to assist the end-users in accomplishing a variety of tasks.
3. It performs specific personal, educational and business function.
4. It allows end-users to manipulate text, images, numbers and data according to their needs.
5. It helps the end-users to do what they wanted to do on their devices giving them many functionalities which enable them to do many things.

3. Operating System:

Specs:
- Windows 10 Home Single Language
- Version 20H2
- Windows Feature Experience Pack 120.2212.3920.0

Hardware Requirements:

- Processor: 1 Gigahertz up
- Ram: At least 1 Gigabyte
- HDD Space: At least 20 GB
- Graphics Card: Direct X9 or latest
- Display: 800x600

4. Application Specs:

A. Adobe Photoshop

Specs:
- 64 bit
- Version: CC 2022

Hardware Specification:

	Minimum	Recommended
Processor	Intel® or AMD processor with 64-bit support; 2 GHz or faster processor with SSE 4.2 or later	
Operating system	Windows 10 64-bit (version 1909) or later; LTSC versions are not supported	
RAM	8 GB	16 GB or more
Graphics card	GPU with DirectX 12 support 1.5 GB of GPU memory	GPU with DirectX 12 support 4 GB of GPU memory for 4k displays and greater
	See the **Photoshop graphics processor (GPU) card FAQ**	
Monitor resolution	1280 x 800 display at 100% UI scaling	1920 x 1080 display or greater at 100% UI scaling
Hard disk space	4 GB of available hard-disk space; additional space is required for installation	16 GB of available hard-disk space; additional space is required for installation

	Minimum	Recommended
	Fast internal SSD for app installation Separate internal drive for [scratch disks](#).	
Internet	Internet connection and registration are necessary for required software activation, validation of subscriptions, and access to online services †	
Processor	ARM processor	
Operating system	Windows 10 ARM device running Windows 10 64-bit (version 1909) or later	
RAM	8 GB	16 GB or more
Graphics card	4 GB of GPU memory	

B. MS WORD

Specs:
- 64 bit
- 2016 edition

Hardware Specification:

- Processor: 1 GHz or faster x86-bit or x64-bit processor with SSE2 instruction set
- Memory: 2GB RAM
- HDD: 3G Available space
- Display: 1024 x 768
- Graphics: DirectX 10 Graphics Card
- Windows 8.1 and up

C. Microsoft Edge Browser

Specs:

- Version 98.0.1108.62 (Official build) (64-bit)

Hardware Specifications:

- Processor: 1 gigahertz (GHz) or faster processor or SoC
  RAM: 1 gigabyte (GB) for 32-bit or 2 GB for 64-bit

5. 5 Operating System:

A. WINDOWS OS

Name: Windows Operating System
Creator: Microsoft
Initial Release: November 20, 1985
Latest Version: 21H2
Description: It is a graphical operating system developed by Microsoft in

1985

B. MAC OS

Name: Macintosh Operating System
Creator: Apple Inc.
Initial Release: March 24, 2001
Latest Version: 12.2.1
Description: It is a graphical operating system developed by Apple Inc. for
its Mac Computers

C. ANDROID OS

Name: Android Operating System

Creator: Google and Open Handset Alliance
Initial Release: September 23, 2001
Latest Version: Android 12
Description: It is a mobile operating system based on a modified version of the Linux kernel designed primarily for touchscreen mobile devices

D. KALI LINUX OS

Name: Kali Linux Operating System
Creator: Offensive Security
Initial Release: March 13, 2013
Latest Version: 2022.1
Description: It is a Debian-derived linux distribution designed for digital forensics and penetration testing

E. PARROT OS

Name: Parrot Operating System
Creator: Lorenzo Paletra, Parrot Dev Team
Initial Release: April 10, 2013
Latest Version: 5.0 Beta 2
Description: It is a Debian-derived linux distribution operating system which mainly focuses on security, privacy and development.

6. 5 Purposes of Operating System:

   A. To provide a platform on which a user can execute programs in a efficient and convenient manner
   B. To helps in managing computer resources as well its hardware and peripherals
   C. To provide a bridge between user and computer through the means of Graphical Interface
   D. To enables software to run efficiently
   E. To facilitate in establishing connection between the hardware and software aspect of a computer

1. Examples of Operating Systems per category:

A. Simple Batch System

    I.   Multiple Virtual Storage

        Name: Multiple Virtual Storage (MVS)
        Creator: IBM
        First Public Release: 1980
        Latest Version: z/OS
        Description: It was the commonly used operating system on the System/370 and System/390 IBM mainframe computers.
        Type of OS: OS 360

B. Desktop System

    I.   Windows OS

        Name: Windows Operating System
        Creator: Microsoft
        Initial Release: November 20, 1985
        Latest Version: 21H2
        Description: It is a graphical operating system developed by Microsoft in
1985
        Type of OS: Windows

C. Realtime Operating System

    I.   Lynx RTOS

        Name: Lynx Real-Time Operating System
        Creator: Lynx Software Technologies Inc
        Initial Release: 1986
        Latest Version: 7.1
        Description: It is a UNIX-like real-time operating system designed for embedded systems, it can be applied to avionics, aerospace and military.
        Type of OS: Unix-like

2. Other Types of Operating System:

Network Operating System

    It is a specialized operating system for a network device such as router, switch or firewall. The network operating system offers a means for integrating all network components and allowing numerous users to use the same resources at the same time, regardless of physical location.

Mobile OS

It is a operating system for mobile phones, tablets, smartwatches and other mobile devices. It combines features of a personal computer operating system with other features useful for mobile or handheld use.

3. 5 Examples of OS per platform:

A. Mobile Platform

1. Android OS

   Name: Android Operating System

   Creator: Google and Open Handset Alliance

   Initial Release: September 23, 2001

   Latest Version: Android 12

   Description: It is a mobile operating system based on a modified version of the Linux kernel designed primarily for touchscreen mobile devices

   Hardware Requirements: Android 5.0 to 11

   Processor: 400Mhz up

   RAM: At least 512 MB

   ROM: At least 416 MB

B. Computing Platform

1. Windows OS

   Name: Windows Operating System

   Creator: Microsoft

   Initial Release: November 20, 1985

   Latest Version: 21H2

   Description: It is a graphical operating system developed by Microsoft in 1985

Hardware Requirements:

Processor: 1 Gigahertz or faster processor

RAM: 1 Gigabyte for 32-bit and 2 GB for 64-bit

HDD Space: 16 GB for 32-bit OS and 32 GB for 64-bit OS

Graphics Card: DirectX 9 or latest

2. MacOS

Name: Macintosh Operating System

Creator: Apple Inc.

Initial Release: 1984

Latest Version: version 12/macOS Monterey

Description: It is a graphical operating system developed by Apple Inc in 1984, it was designed for Macintosh series of personal computer.

Hardware Requirements:

Processor: x86-64 processor, such as Intel Core 2 Duo or later.

Disk Space: 5 GB of disk space available for caching and temporary files.

RAM: At least 8 GB of RAM.

Display: at least 1280 x 1024pixel resolution and 24-bit color.

Graphics Card: at least 512 MB of video memory and driver support for OpenGL 2.0 (minimum requirement).