Computer Applications تطبيقات الحاسوب

Medical Instruments Techniques Engineering

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Outline

- Operating Systems
- Operating System Management Tasks
- How does an operating system work
- Bootstrap Loader (BSL)
- Classification of operating systems
- Common Operating Systems

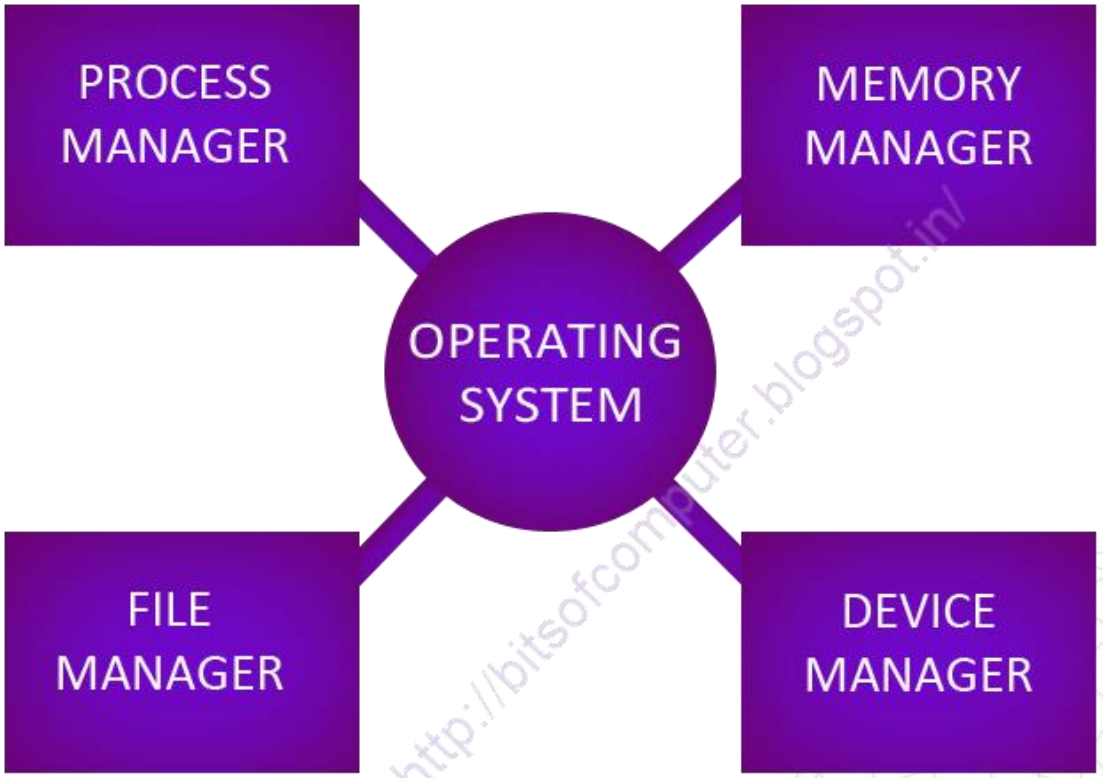
Operating Systems

THE OPERATING SYSTEM (OS): consists of the master system of programs that manage the basic operations of the computer. These programs provide the control and use of hardware resources, including disk space, memory, CPU time allocation, and peripheral devices. They are also the interface between computer hardware and application programs so that end users can concentrate on their own tasks or applications rather than on the complexities of managing the computer

Operating System Management Tasks

The common management tasks that an operating system perform include:

1. Processor management
2. Memory management
3. Device management
4. Storage management
5. Application interface
6. User interface



MANAGEMENT TASK OF OPERATING SYSTEM

How does an operating system work

When a computer is turned on, the first program it runs is usually a set of instructions. This software checks the physical resources (ROM) stored in the computer's read-only memory (ROM). power-on self of the system and makes sure everything is working properly. Where does the self-test central processing unit (CPU) checks the CPU, memory, and input units (test power-on self-test (POST). It detects errors and stores the result in the input-output systems' primary memory location (Sometimes the ROM is called successfully, the program will start loading it into the dedicated POST. Once it is finished or firmware) to activate the computer's drives. Most computers have BIOS Modern, when a computer activates a hard drive, it finds the first piece of the operating system: bootstrap loader

A Bootstrap Loader (BSL)

A Bootstrap Loader (BSL) is a small program which can be activated immediately after a microcontroller has been powered up, in order to load and execute another program in a well defined manner.

When the computer is turned on or restarted, the bootstrap loader first performs the power-on self-test, also known as POST. If the POST is successful and no issues are found, the bootstrap loader loads the operating system for the computer into memory. The computer can then access, load, and run the operating system.

Classification of operating systems

- **Built In Operating System:**

They are the operating systems that are part of the device industry, built in operating system, and cannot be updated or repaired because they are installed on electronic chips placed inside the device, such as operating systems for telephone devices.

- **Built Out Operating System:**

They are the operating systems that are stored on chips or magnetic disks or that are downloaded through local or international networks and can be updated and not repaired because they are like the operating systems of computers.

Operating systems are classified according to the functions of the system into:

- **Single Tasks Operating System**: An operating system that allows a single user to perform only one task at a time is called a Single-User Single-Tasking Operating System. Functions like printing a document, downloading images, etc., can be performed only one at a time. Examples include MS-DOS, Palm OS, etc.
- **Multi Tasks Operating System**: The multitasking OS refers to a logical extension of the multiprogramming operating system, which allows users to run many programs simultaneously. It enables a user to complete multiple computer tasks at the same time.

Common Operating Systems

- **Disk Operating System**

Disk Operating System, which is an abbreviation for the phrase DOS and Text commands. It is one of the single-tasking systems, and it is considered one of the operating systems with a one-line text interface style that requires mental effort to remember the instructions.

- **Windows Operating System**

Microsoft's Windows is by far the most popular microcomputer operating system today with nearly 90 percent of the market. Because its market share is so large, more application programs are developed to run under Windows than any other operating system.

Common Operating Systems

- **Mac OS:**

Apple introduced its Macintosh microcomputer and operating system in 1984. It provided one of the first graphical user interface GUIs, making it easy even for novice computer users to move and delete files. It is a powerful, easy-to-use operating system that is popular with professional graphic designers, desktop publishers, and many home users.

Common Operating Systems

- **UNIX and Linux**:

The UNIX operating system was originally designed to run on minicomputers in network environments. Now, it is also used by powerful microcomputers and by servers on the Web. There are a large number of different versions of UNIX. One receiving a great deal of attention today is Linux. Programs released in this way are called open source. Linux is a popular and powerful alternative to the Windows operating system. Linux has been the basis of several other operating systems. For example, Google's Chrome OS is based on Linux. This operating system is designed for netbook computers and focuses on Internet connectivity through cloud computing

Thank You
Q & A

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