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**Class 9<sup>th</sup> – Information Technology**

**Part A – Employability Skills**

# **Basic Computer Operations**

**Chapter 10**

- **Introduction**
  - **Procedure for Starting & Shutting Down a Computer**
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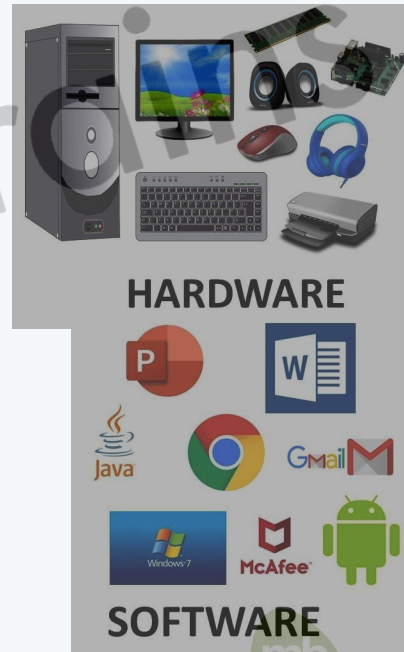
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## Introduction:

- Computer hardware and software are interdependent on each other.
- If any of these is not functioning properly, a computer is of no use.
- In this chapter, we will learn the process to start a computer and know about software and its types.
- This chapter also gives an overview of the commonly used operating systems.

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## Procedure for Starting & Shutting Down a Computer:

- When we start a computer, the booting process begins, which, initially checks whether all the hardware and software installed on the computer are working correctly.
- It also loads all the files needed to run a system.
- The next step in the booting process is called POST (Power On Self Test).
- This test checks the functioning of all the connected hardware, including primary and secondary storage devices.

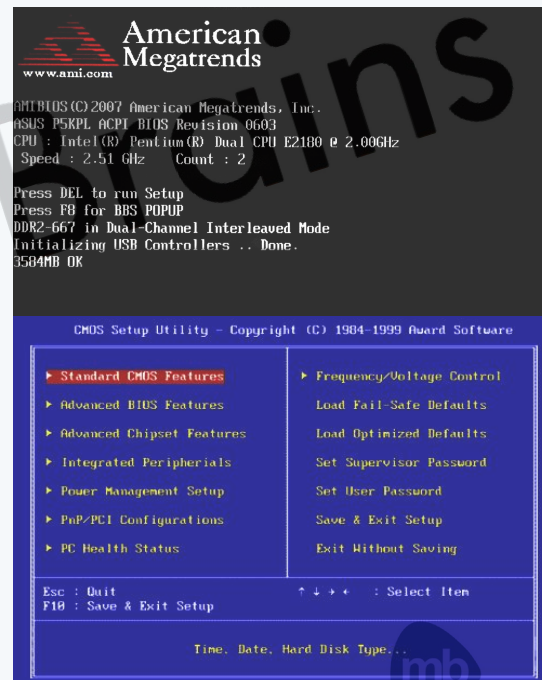
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## Procedure for Starting & Shutting Down a Computer:

- On passing POST, the contents of CMOS (Complementary Metal Oxide Semiconductor) chip are checked.
- It is a small amount of memory on the motherboard that stores BIOS (Basic Input Output System) settings.
- The primary function of BIOS is to boot up an operating system on the computer.
- BIOS includes the instructions to load basic computer hardware.
- It is responsible for accessing and configuring the system settings like password, date, and time.

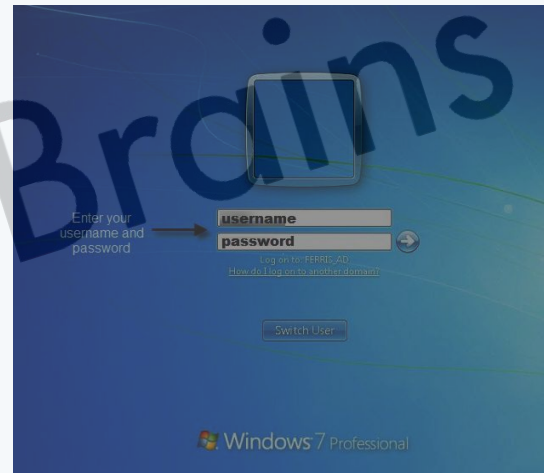
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## Procedure for Starting & Shutting Down a Computer:

- Once all the steps of BIOS gets completed, the operating system is loaded into RAM.
- The OS then executes the pre-configuration startup routines to define user configurations.
- Once the booting process gets over, you can log in to the computer with a username and a password.
- The desktop of the operating system appears, and you can start working on the computer using the required software applications.

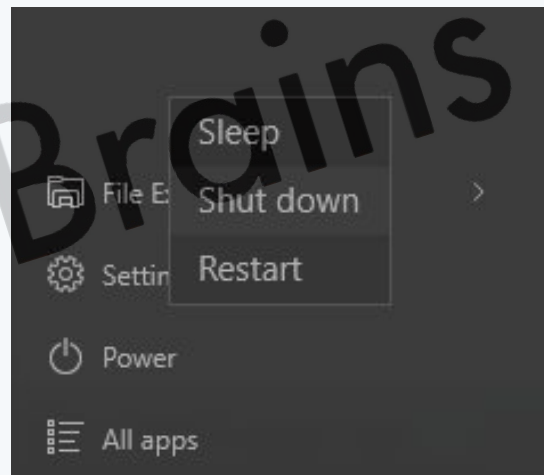
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## Procedure for Starting & Shutting Down a Computer:

- When you shutdown a PC, the following things happen:
  - If a program contains unsaved data, you are prompted to save it.
  - All the open application programs get closed.
  - The operating system shuts down by closing its programs, services and processes.
  - The power management hardware turns off the power.
  - Now, you can turn off the computer's power supply.

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**Part A – Employability Skills**

# **Basic Computer Operations**

**Chapter 10**

**Operating System**

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## Operating System:

- Computer being a machine cannot do anything on its own.
- It requires specific instructions on how to perform each and every task.
- Further, the instructions are to be converted in a language, which a machine understands.
- It means that the user cannot communicate with the computer directly.
- Thus, we require an interface between the user and the hardware.

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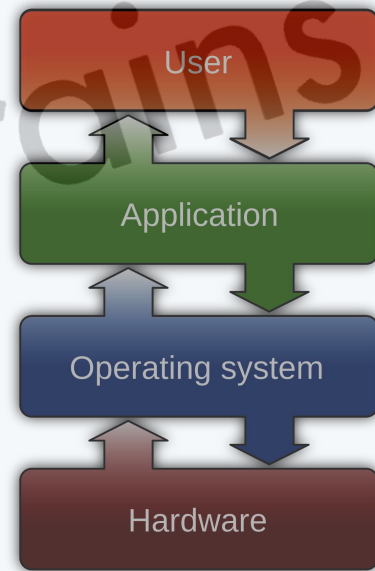




## Operating System:

- The operating system acts like that interface.
- The computer interprets the instructions given by the user with the help of an operating system.
- It is the master program, which makes our PC alive and helps in running different applications.
- The operating system is just like the principal of your school.

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## Operating System:

- The principal has various responsibilities regarding the management of the school, like supervising students, teachers, and workers, maintaining discipline, analysing examination schedules, timetables, curriculum, meeting parents, and visitors.
- In the same way, a number of service are provided by an operating system.
- Imagine, what will happen if there is no principal in a school.
- Everything will become unorganised.

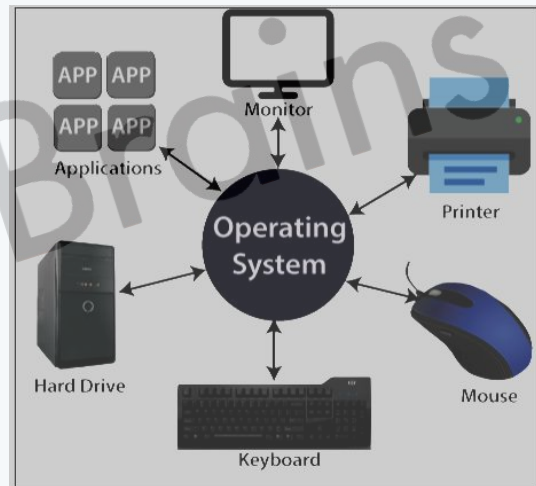
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## Operating System:

- Similarly, if the operating system is not working in a computer, it will not be able to perform any operation.
- The Hardware provides the user with basic physical resources to work upon.
- The application/utility softwares empower the user to perform a variety of functions on the computer, like solving problems, creating documents, playing games, etc.
- Operating system acts as a central coordinator between hardware and software.

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Operating System:

- Some of the popular operating systems are:
  - **WINDOWS**
  - **MAC OS**
  - **LINUX**
  - **DOS**

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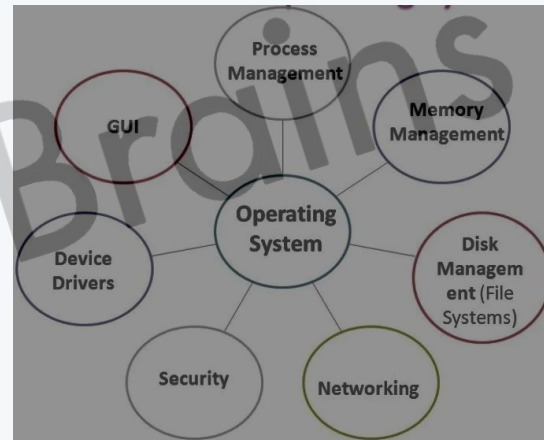
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## Operating System:

### Functions of Operating System:

- To manage and share the hardware/software resources of a computer system.
- To provide an interface to the users to communicate with the computer system.
- To communicate with each application or interactive user (or to a system operator) about the status of operation and any errors that may have occurred.
- To secure the system and block unauthorised access to the system.

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Part A – Employability Skills

# Basic Computer Operations

Chapter 10

Types of Operating System

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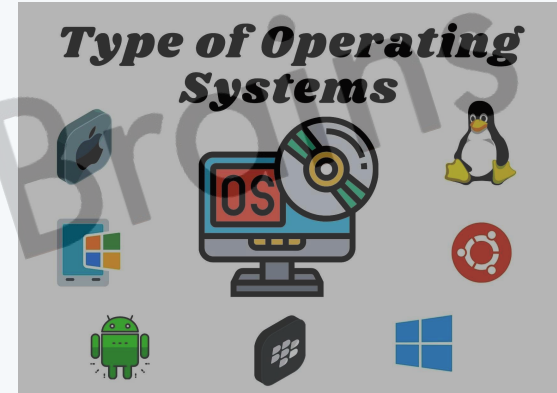
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## Types of Operating System:

- In the past three decades, computers have taken a giant stride towards excellence and high performance.
- This has been possible due to the evolution of operating systems.

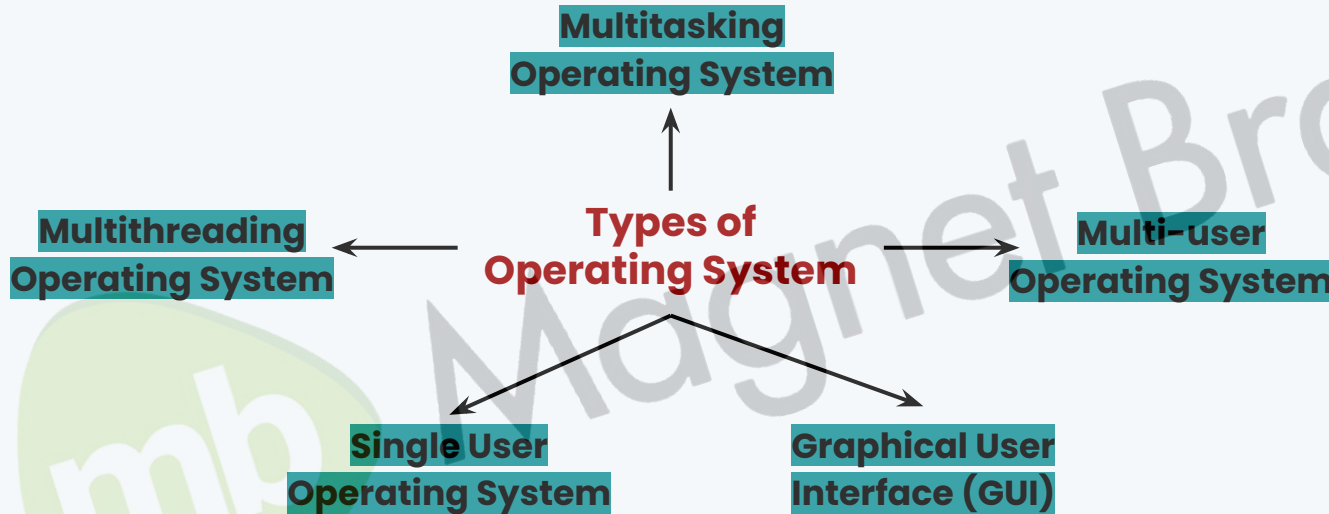
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Types of Operating System:

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## Types of Operating System:

- **Single User Operating System:** These operating systems could support only one user to do one thing at a time, like Microsoft Windows 3.1, Microsoft Windows 95, and Microsoft DOS.
- **Graphical User Interface (GUI):** This operating system is graphic based and interactive in nature, like Windows Operating System, Mac OS, Linux, etc.
- **Multi-user Operating System:** Multi-user operating systems allow more than one user to use the same computer at the same time, like Linux, Unix, and Microsoft Windows 2000 onwards.

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## Types of Operating System:

- **Multitasking Operating System:** The ability to perform more than one task at the same time is called Multitasking, like Microsoft Windows 9x, Windows 2000 onwards, Linux operating systems.
- **Multithreading Operating System:** These are the operating systems which allow different parts of an application or program to run simultaneously, like Microsoft Windows 9x, Windows 2000 onwards, Linux.

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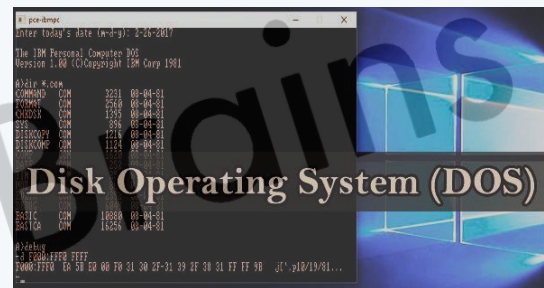


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## Types of Operating System:

- **Disk Operating System**
- Disk Operating System (DOS) is a type of system software that runs from a hard disk drive.
- It is a command line operating system where a user needs to type the commands for every action to be performed on the computer.

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## Types of Operating System:

- DOS can support multiple directories, networking, enhanced memory management, text editing functions, disk compression, and fragmentation.
- However, its command line utility makes it difficult for beginners to use.
- DOS does not support multiple users or multitasking as it can run only one program at a time.
- DOS was most commonly found operating system in IBM PCs that were developed by Microsoft in 1981.

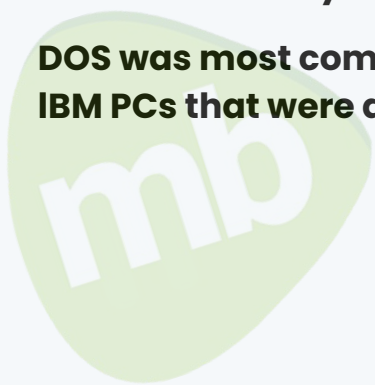
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```
Starting MS-DOS...
HIMEM is testing extended memory...done.
C:\>C:\DOS\SMARTDRV.EXE /X
MODE prepare code page function completed
MODE select code page function completed
C:\>dir

Volume in drive C is MS-DOS 6
Volume Serial Number is 40B4-7F23
Directory of C:\

DOS             <DIR>             12.05.20   15:57
COMMAND.COM    54 645 94.05.31   6:22
HIMEM20.COM    9 349 94.05.31   6:22
CONFIG.SYS     144 12.05.20   15:57
AUTOEXEC.BAT   188 12.05.20   15:57
               5 file(s)          64 326 bytes
               24 760 320 bytes free

C:\>
```



Types of Operating System:

- **LINUX**
- Linux is the operating system that is open source and free.
- It was developed by Linus Torvalds in the year 1991.

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**Linux**  
Operating System



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### Types of Operating System:

- Linux has become the most popular alternative to other costly Linux operating systems due to its amazing features given below:
- Portable
- Open Source and Free
- Multi-User and Multiprogramming
- Hierarchical File System
- Shell
- Security

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## Types of Operating System:

- **WINDOWS**
- Microsoft Windows is a series of Graphical User Interface (GUI) operating systems, which are developed, marketed, and sold by Microsoft.
- Windows OS was the first graphical user interface for IBM-compatible PCs, which soon dominated the PC market.

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**Class 9<sup>th</sup> – Information Technology**

**Part A – Employability Skills**

# **Basic Computer Operations**

**Chapter 10**

**Mobile Operating System**

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### Mobile Operating System:

- **Mobile Operating System is also known as Mobile OS.**
- **It is particularly designed to operate smartphones, PDAs, tablets and other mobile devices.**
- **Mobile Operating System is a software, which provides a platform on which other programs or applications can run on mobile devices.**
- **There are various kind of Mobile Operating System used in smartphones such as, BlackBerry (RIM), Android (Google), iOS (Apple), Symbian (Nokia), and Windows Mobile (Microsoft).**

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## Mobile Operating System:

- **Android Operating System**
- **Android is the world's most popular Mobile Operating System.**
- **It is an open source (Linux based) platform initially developed by Android Inc. in October 2003, and later on purchased by Google Inc. in 2005.**
- **The green robot is the logo for the Android operating system.**
- **Android OS turns your phone into a powerful web browser, game console, and personal assistant all in one.**

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## Mobile Operating System:

- **Symbian Operating System**
- Symbian is a mobile operating system which is specifically created for smartphones.
- Symbian was originally developed by Symbian Ltd and is currently maintained by Accenture.
- Symbian was primarily used by Nokia and was also used by many major mobile phone brands like Samsung, Motorola, and Sony Ericsson.
- Android overtook it in the end of 2010 until then it was the most popular OS for smartphones.

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**symbian**  
OS

## Mobile Operating System:

- **ios**
- **iOS is a mobile operating system developed by Apple.**
- **It is the world's most advanced mobile operating system.**
- **It was originally released in 2007 and is used to run the iPhone, iPad, and iPod Touch.**
- **Formerly, it was known as iPhone OS.**
- **Unlike other Mobile OS such as Android (Google) and Windows (Microsoft), Apple does not authorize iOS for installation on any non-Apple hardware.**

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**Mobile Operating System:**

- Therefore, iOS devices are created exclusively for its hardware.
- Apple designs the iOS devices to maintain a high level of security without compromising the user's experience.
- Due to their exceptionality of apps, games, and features, iOS devices cost more than any other mobile OS gadgets available in the market.

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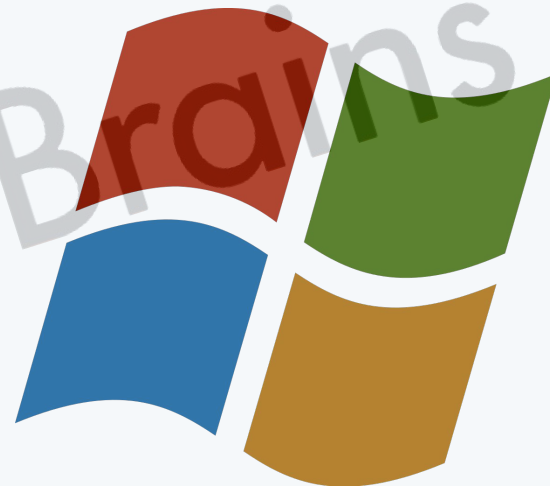
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## Mobile Operating System:

- **WINDOWS Mobile Operating System**
- It is a mobile operating system developed by Microsoft for smartphones and mobile devices based on the Windows .
- It is designed to look and operate similar to desktop versions of Microsoft Windows.
- It has given a whole new dimension to e-mailing and documentation.
- Some of the Windows Mobiles OS are: Nokia Lumia 920, Samsung ATIV S, and Windows Phone 8C by HTC.

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## Mobile Operating System:

- Windows Mobile OS is mainly classified into three main versions for various hardware devices:
- Smartphones with touchscreen are supported with Windows Mobile Professional Version, mobile phones without touchscreen run on Windows Mobile Standard, and the last version of Windows Mobile OS is Windows 10 mobile which runs on mobile phones and tablets.
- Microsoft will stop providing support and updates for Windows 10 mobile by the end of 2019.

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