

F.Y.Bcom <u>Semester -I</u> Computer Concepts and Application –I <u>Unit IV</u> Introduction to Computer and Operating system

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Topics

- Computer Software
- Computer Operating System
- Introduction to Free and Open Source Software
- Computer Viruses
- Use of Antivirus Software



Computer - Software

- Software is a set of programs, which is designed to perform a well-defined function. A program is a sequence of instructions written to solve a particular problem.
- There are two types of software –
- System Software
- Application Software

System Software

- features of a system software –
- Close to the system
- Fast in speed
- Difficult to design
- Difficult to understand
- Less interactive
- Smaller in size
- Difficult to manipulate
- Generally written in low-level language

Application Software

- Examples of Application software are the following -
- Payroll Software
- Student Record Software
- Inventory Management Software
- Income Tax Software
- Railways Reservation Software
- Microsoft Office Suite Software
- Microsoft Word
- Microsoft Excel
- Microsoft PowerPoint



- Features of application software are as follows –
- Close to the user
- Easy to design
- More interactive
- Slow in speed
- Generally written in high-level language
- Easy to understand
- Easy to manipulate and use
- Bigger in size and requires large storage space

Computer - Operating System

•An operating system is a program that acts as an interface between the software and the computer hardware.

•It is an integrated set of specialized programs used to manage overall resources and operations of the computer.

•It is a specialized software that controls and monitors the execution of all other programs that reside in the computer, including application programs and other system software.





Objectives of Operating System

- To make the computer system convenient to use in an efficient manner.
- To hide the details of the hardware resources from the users.
- To provide users a convenient interface to use the computer system.
- To act as an intermediary between the hardware and its users, making it easier for the users to access and use other resources.
- To manage the resources of a computer system.
- To keep track of who is using which resource, granting resource requests, and mediating conflicting requests from different programs and users.
- To provide efficient and fair sharing of resources among users and programs.

Characteristics of Operating System

- Memory Management Keeps track of the primary memory, i.e. what part of it is in use by whom, what part is not in use, etc. and allocates the memory when a process or program requests it.
- **Processor Management** Allocates the processor (CPU) to a process and deallocates the processor when it is no longer required.
- **Device Management** Keeps track of all the devices. This is also called I/O controller that decides which process gets the device, when, and for how much time.

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- File Management Allocates and de-allocates the resources and decides who gets the resources.
- Security Prevents unauthorized access to programs and data by means of passwords and other similar techniques.
- Job Accounting Keeps track of time and resources used by various jobs and/or users.
- **Control Over System Performance** Records delays between the request for a service and from the system.

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- Interaction with the Operators Interaction may take place via the console of the computer in the form of instructions. The Operating System acknowledges the same, does the corresponding action, and informs the operation by a display screen.
- Error-detecting Aids Production of dumps, traces, error messages, and other debugging and error-detecting methods.
- Coordination Between Other Software and Users Coordination and assignment of compilers, interpreters, assemblers, and other software to the various users of the computer systems.

Types of Operating System

- Multi-user
- Multiprocessing
- Multitasking
- Multithreading
- Real-time

Functions

- Process Management
- Memory Management
- File Management
- Device Management
- Protection and Security
- User Interface or Command Interpreter

Introduction to Free and Open Source Software

Free and open-source software (FOSS) allows users and programmers to edit, modify or reuse the software's source code. This gives developers the opportunity to improve program functionality by modifying it.

> Benefits of Free and Open Source Software-

- Fix the software
- Know and control what is going on
- Technical benefits
- Share
- Economic benefits

Computer Viruses

- A computer virus is a malicious software program loaded onto a user's computer without the user's knowledge and performs malicious actions.
- > Types of Viruses
- Trojan Horse
- Worms
- Boot sector virus
- Macro virus
- Memory Resident viruses
- Root kit virus
- Polymorphic Viruses
- Logic Bombs/Time Bombs

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- Direct Action Viruses
- Overwrite Viruses
- Directory Virus
- Metamorphic Virus
- File Infectors
- Companion Viruses
- Script Viruses
- Email Viruses

Use of Antivirus Software

- Antivirus software is a type of program designed and developed to protect computers from malware like viruses, computer worms, spyware etc..
- Antivirus programs function to scan, detect and remove viruses from your computer.

Examples of Computer Antivirus Software's

- Norton Antivirus
- McAfee virus scan plus
- AVG Anti-Virus
- Trend Micro Internet Security
- Bit Defender

