Course Name : CCC/O Level	Date : 09/04/20	Topic: Operating System

Operating Systems are undoubtedly the biggest software programs that run on a computer system. When we talk about a computer system, it does not necessarily mean to a typical Computer with a CPU Cabinet, a Monitor and some sort of I/O devices. Instead, Operating Systems are the kind of software that run on any electronic machine making it operational. Microsoft's Windows is a popular Operating System that runs on a PC. Similarly Linux, OS X, Mac OS etc. are some other popular Operating Systems running on PCs. Considering other electronic machines, the program that runs an Automatic Washing Machine can also be referred to as an OS.

Following two types of OS are available in the world.

1. **Proprietary OS:** These OS are developed by reputed software development companies and are sold in the market. There is a significant license fee that is to be paid for owning these OS.Microsoft Windows is the best example of it.
2. **Open-Source OS:** These OS are developed, supported and engineered by an open community of freelance developers and programmers around the world. Since no one is owner of these OS Open-Source OS are free to everyone. Linux is a best example of this category.

Ubuntu 16.04

Windows 10

Types of Operating Systems:

- **Single User OS**: Single User OS does not allow different user accounts to be created and used. Infact there is nothing like a User Account in these OSes. Since no any user account is facilitated, every file, every data and every resource is accessible for the user that logs in to the PC. MS-DOS is the best examples of this category.
- **Single Tasking OS**: These OSes do not allow multiple tasks to run at the same time. User can run only one program at a time. Palm OS designed to work on PDAs was a best example of single tasking OS.
- **Multi User OS:** A Multi User OS is the one that allows multiple users to log in to the system. Although it does not necessarily mean that all users can log in at the same time. For multiple users, different libraries are configured in the system. UNIX and Windows are best examples of this category.
- **Multi Tasking OS:** Users can run multiple tasks at the same time in these OSes. The processor is timely shared between all the running tasks thereby allowing multiple tasks to run at the same time. Microsoft Windows, OS X and Linux distributions are the best examples of Multi User OS.

Operating Systems, perform the following functions in a PC:

• Providing an Interface: OS Provides an Interface for the users to interact with the system. This interface is nothing but a screen that may contain information for the user. Depending upon interfaces provided, OSes are of two types: GUI OS (Graphical User Interface Operating System) and CUI OS (Character User Interface Operating System). A GUI OS provides an interactive screen design with many graphical objects like icons, bars, wallpapers, dialog-boxes etc. Unlike of that, a CUI OS is the one that provides a command line and nothing else. Users type specific commands on the command line to perform a specific task.

• Managing Files: Every OS provides an explorer that facilitates users to explore files and folders. Folders are very common in an OS as a folder is a kind of basket that collects different files. Even files are of different types. Some are text files, some are image files, some are audio, some are video etc. OSes usually identify a file by its type and provide an application program to open it.

• Managing Memories: A computer system works on a hierarchy of memories deployed inside of it. Depending upon their types, some are used as a small memory while some are used as a very large memory. An OS works here to coordinate among all memory units of a PC thereby enabling the user to access his/her files efficiently.

• Managing devices: OSes come up with an inbuilt interface that enables different devices to interact with the PC. Devices usually need a specific program called device driver. In an OS we need to install these drivers so that our OS can be able to communicate with the device. Modern OSes are equipped with drivers of numerous devices, hence today we do not need a device driver to install specifically on a PC.

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• Managing Processor: Processor is the core part of the PC where actual task is accomplished. Since processor is a hardware chip, it processes the instructions stored in different memory areas. OS here works for the best possible route-map that the processor can follow for effortless processing. Instructions stored in RAM are accessed straight away by the processor while instructions that are stored in HDD are first transferred to the RAM and then accessed by the processor.

Assignment

1. What is Operating System? Define Proprietary and open souse operating system?
2. What are the main functions of operating system in the PC?