Aptitude   Engineering Mathematics   Discrete Mathematics   Operating System   DBMS   Computer

System Programs in Operating System

Last Updated : 21 Mar, 2024

System Programming can be defined as the act of building Systems Software using System Programming Languages. According to Computer Hierarchy, Hardware comes first then is Operating System, System Programs, and finally Application Programs. Program Development and Execution can be done conveniently in System Programs. Some of the System Programs are simply user interfaces, others are complex. It traditionally sits between the user interface and system calls.

In the context of an operating system, system programs are nothing but a special software which give us facility to manage and control the computer's hardware and resources. As we have mentioned earlier these programs are more closely with the operating system so it executes the operation fast and helpful in performing essential operation which can't be handled by application software .
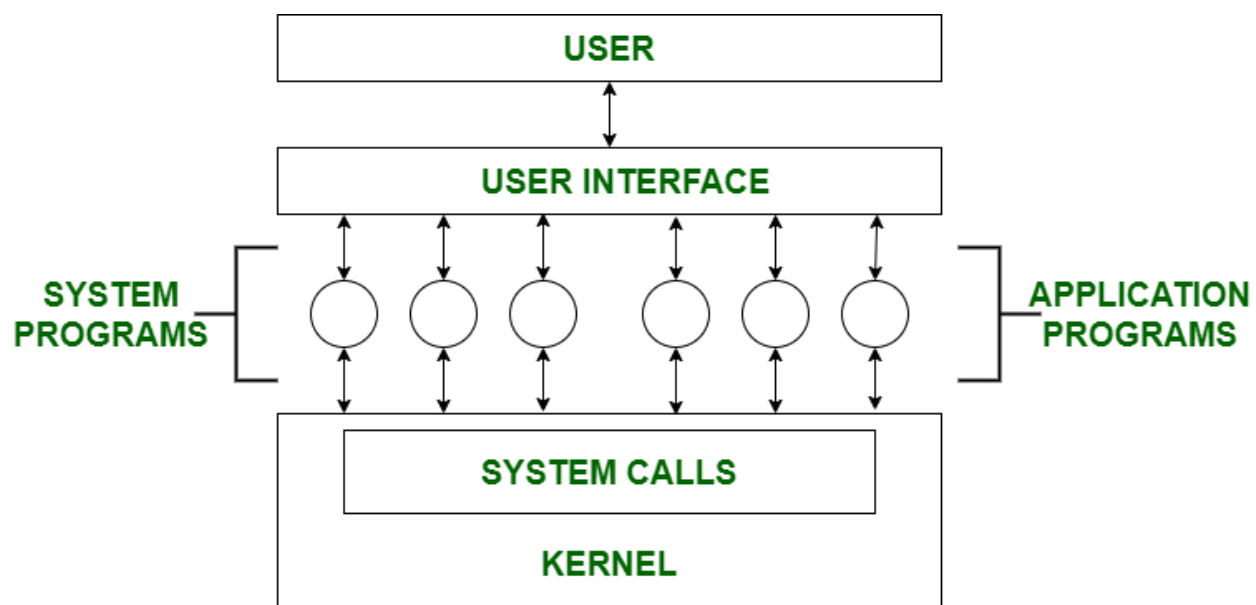
Note : The user can only view up-to-the System Programs he cannot see System Calls.

Here are the examples of System Programs :

1. **File Management** : A file is a collection of specific information stored in the memory of a computer system. File management is defined as the process of manipulating files in the computer system, its management includes the process of creating, modifying and deleting files.

2. **Command Line Interface(CLI's) :** CLIs is the essential tool for user . It provide user facility to write commands directly to the system for performing any operation . It is a text-based way to interact with operating system. CLIs can perform many tasks like file manipulation, system configuration and etc.

3. **Device drivers :** Device drivers work as a simple translator for OS and devices . Basically it act as an intermediatory between the OS and devices and provide facility to both OS and devices to understand each other's language so that they can work together efficiently without interrupt.

4. **Status Information** : Information like date, time amount of available memory, or disk space is asked by some users. Others providing detailed performance, logging, and debugging information which is more complex. All this information is formatted and displayed on output

devices or printed. Terminal or other output devices or files or a window of GUI is used for showing the output of programs.

5. **File Modification :** This is used for modifying the content of files. Files stored on disks or other storage devices, we use different types of editors. For searching contents of files or perform transformations of files we use special commands.

6. **Programming-Language support :** For common programming languages, we use Compilers, Assemblers, Debuggers, and interpreters which are already provided to users. It provides all support to users. We can run any programming language. All important languages are provided.

7. **Program Loading and Execution :** When the program is ready after Assembling and compilation, it must be loaded into memory for execution. A loader is part of an operating system that is responsible for loading programs and libraries. It is one of the essential stages for starting a program. Loaders, relocatable loaders, linkage editors, and Overlay loaders are provided by the system.

8. **Communications :** Connections among processes, users, and computer systems are provided by programs. Users can send messages to another user on their screen, User can send e-mail, browsing on web pages, remote login, the transformation of files from one user to another.

G   **gsuy…**

Previous Article   **Next Article**

Introduction of System Call   Operating Systems Structures

Similar Reads

System Protection in Operating System

Introduction: System protection in an operating system refers to the mechanisms implemented by the operating system to ensure the security and integrity of the system. System protection involves various techniques to prevent unauthorized access, misuse, or modification of the operating system and its resources. There are several ways in which an op

3 min read

User View Vs Hardware View Vs System View of Operating System

User View of Operating System: The Operating System is an interface, hides the details which must be performed and present a virtual machine to the user that makes it easier to use. Operating System provides the following services to the user. Execution of a programAccess to I/O devicesControlled access to filesError detection (Hardware failures, a

1 min read

File System Implementation in Operating System

Prerequisite - File Systems in Operating Systems A file is a collection of related information. The file system resides on secondary storage and provides efficient and convenient access to the disk by allowing data to be stored, located, and retrieved. File system implementation in an operating system refers to how the file system manages the stora

11 min read

Xv6 Operating System -adding a new system call

Prerequisite - Xv6 Operating System -add a user program In last post we got to know how to add user program in Xv6 Operating System. Now here you will see how to add new system call in Xv6 Operating System. Adding new system call to xv6: A system call is way for programs to interact with operating system. A computer program makes system call when

6 min read

Traps and System Calls in Operating System (OS)

Traps and system calls are two mechanisms used by an operating system (OS) to perform privileged operations and interact with user-level programs. Here is an overview of each mechanism: Traps: A trap is an interrupt generated by the CPU when a user-level program attempts to execute a privileged instruction or encounters an error. When a trap occurs

3 min read

(View More Articles)

Article Tags :   Operating Systems   Functions   JP Morgan   PrimeNG-DragDrop

(+5 More)

Practice Tags :   Functions