

features like password protection/ controlled access to specific files/ encryption of data.

Architecture

The following illustration shows the architecture of a Linux system –

Linux Operating System Architecture

The architecture of a Linux System consists of the following layers –

Hardware layer – Hardware consists of all peripheral devices (RAM/ HDD/ CPU etc).

Kernel – It is the core component of Operating System, interacts directly with hardware, provides low level services to upper layer components.

Shell – An interface to kernel, hiding complexity of kernel's functions from users. The shell takes commands from the user and executes kernel's functions.

Utilities – Utility programs that provide the user most of the functionalities of an operating systems.

A program is a piece of code which may be a single line or millions of lines. A computer program is usually written by a computer programmer in a programming language. For example, here is a simple program written in C programming language –

```
#include <stdio.h>
```

```
int main() {  
    printf("Hello, World!  
");  
    return 0;  
}
```

A computer program is a collection of instructions that performs a specific task when executed by a computer. When we compare a program with a process, we can conclude that a process is a dynamic instance