**Shell:**

* Users communicate with OS (kernel) through a program known as the shell.
* It is a command line interpreter.
* It translates commands provided by the user and converts it into a language that is understood by OS (kernel).

**Kernel:**

* It interacts with the hardware.
* It responsible for memory management, task scheduling and file management.
* It checks the Process is running or Process is waiting for the request of the user. And it provides the Memory for the Processes those are running on the System.
* It is the software that interfaces directly with the Hardware.
* It is also called Heart of the Operating System.

**Flow Of Execution:**

* Both the Shell and the Kernel are the parts of the OS. These both parts are used for performing any Operation in the System.
* When a user gives his command for performing any operation, then the **request will goes to the Shell parts**.
* The shell part is also called the interpreter **which translates the Human program into the Machine Language.**
* Then the Request will transfer to the Kernel.
* After receiving the Request from Shell then this will process the Request and display Results on the Screen.

**Linux Distributions and Their Specialties**

* **Puppy Linux:**

It is a lightweight Linux distro, intended to be run from **removable media**. (e.g. DVDs and USB drives).

* **SUSE Linux**

Includes openSUSE, a community distribution. SUSE Linux Enterprise, a commercial distribution designed for **enterprise use.**

* **Kali Linux**

Kali provides users with what amounts to a **hacker’s toolkit** and is widely used for **penetration testing** by information security professionals.

* **Linux Mint**

It is one of the most popular desktop Linux Distributions. It **works out of the box, with full multimedia support and is extremely easy to use**.

* **TAILS**

**The Amnesic Incognito Live System** (TAILS) is a live bootable Linux distribution that not only allows users to work on the internet in complete anonymity, but also erases every last trace of all activities each time the system is shutdown. **If you want to invisible on the internet this is how you do it.**

* **Fedora**

It is called as **bleeding edge** Linux distribution because it is always rolling out with the latest software, driver updates, and Linux features. It ships with the latest stable kernel along with all its benefits. Fedora provides advanced security features within the distro via the **Security-Enhanced Linux (SELinux)** module.