

❖ **Linux** is an open-source operating system.

❖ **Linux Architecture:**

- **The user** is the person interacting with a computer.
- **An application** is a program that performs a specific task
- **The shell** is the command-line interpreter.
 - **Bash**: The default shell in most Linux distributions
- **The Filesystem Hierarchy Standard (FHS)** is the component of the Linux OS that organizes data. It specifies the location where data is stored in the operating system.
- **The kernel** is the component of the Linux OS that manages processes and memory.
- **The hardware** is the physical components of a computer.

❖ **Linux Distributions Examples:**

- **KALI LINUX** is a Debian-based open-source Linux distribution, widely used in the security industry. Pre-installed with many useful tools for penetration testing and digital forensics.
- **Ubuntu**: An open-source, user-friendly distribution that is widely used in security and other industries
- **Parrot** is an open-source distribution that is commonly used for security. Similar to KALI LINUX.
- **Red Hat Enterprise Linux** is a subscription-based distribution of Linux built for enterprise use.
- **CentOS** is an open-source distribution that is closely related to Red Hat. It uses source code published by Red Hat to provide a similar platform.

- ❖ **Package** is a piece of software that can be combined with other packages to form an application.
- ❖ **A package manager** is a tool that helps users install, manage, and remove packages or applications.
- ❖ **Advanced Package Tool (APT):** is a tool used with Debian-derived distributions. It is run from the command-line interface to manage, search, and install packages.
- ❖ **Yellowdog Updater Modified (YUM):** is a tool used with Red Hat-derived distributions. It is run from the command-line interface to manage, search, and install packages. YUM works with .rpm files.