Lecture 2 Introduction to Linux Notes

Important concepts:

- **Operating System:** The basic software that runs on a computer, enabling other software and managing hardware.
- **Kernel:** The core part of an operating system, managing system resources and hardware.
- **Components of an operating system:** Kernel, system libraries, utilities, and application software.
- **Linux :** A free, open-source operating system based on Unix, known for its stability and security.
- **Linux Characteristics:** Secure, stable, free, open-source, supports multitasking and multiple users.
- **GNU Toolchain:** A collection of software development tools from the GNU Project.
- **Linux Distribution:** A version of Linux with the kernel and other software for a complete system.
- **What is Ubuntu:** A user-friendly Linux distribution with pre-installed software, based on Debian.
- **Ubuntu Release cycles:** New versions every six months, with LTS versions every two years, supported for five years.
- **What is Debian:** A stable and reliable Linux distribution, serving as the basis for many others, including Ubuntu.
- **Different software licensing models (open source vs closed source):** Open source allows users to modify and share the software freely, while closed source restricts these actions.
- **The 4 Freedoms of Free Software:** The freedom to run, study, redistribute, and modify the software.
- **Virtualization:** Creating virtual versions of hardware, storage, and networks.
- **Hypervisor and types:** Software for running virtual machines. Type 1 runs directly on hardware, Type 2 runs on a host operating system.
- **VirtualBox:** A free, open-source Type 2 hypervisor for running multiple operating systems on a single host.

List of the main Linux distributions

- Debian
- Fedora
- CentOS
- openSUSE
- Arch Linux
- Ubuntu

List of some of the Debian Based Linux distributions

- Ubuntu
- Mint
- Kali Linux
- Raspbian

List of some of the Red Hat-based Linux distributions

- Fedora

- CentOS (now transitioning to CentOS Stream)
- Red Hat Enterprise Linux (RHEL)

List of some of the Ubuntu Based Linux Distributions

- Linux Mint
- Pop!_OS
- Elementary OS
- Zorin OS