**4ITRC2 Operating System Lab**

**Lab Assignment 1**

Aim: To install and study Ubuntu OS.

To perform: Install VMware or Virtual Box and Ubuntu over Windows OS.

To Submit: Study of Ubuntu OS.

1. Introduction (in brief about linux and ubuntu, its versions + some history)

2. Features of Ubuntu

3. Difference between ubuntu and windows OS.

**1. Introduction**

Ubuntu is a popular operating system based on **Linux**. Linux is an open-source OS, which means anyone can use, modify, and distribute it for free. Ubuntu was first introduced in **2004** by a company called **Canonical Ltd.** and has since become one of the most widely used Linux distributions.

Ubuntu comes in different versions. Some of the major ones are:

* **Ubuntu 20.04 LTS (Focal Fossa)** – Released in 2020
* **Ubuntu 22.04 LTS (Jammy Jellyfish)** – Released in 2022
* **Ubuntu 23.10 (Mantic Minotaur)** – Released in 2023

There are two types of Ubuntu releases: **regular updates** and **Long-Term Support (LTS)** versions. LTS versions are more stable and receive updates for five years, making them ideal for long-term use.

**2. Features of Ubuntu**

Ubuntu has many features that make it unique and useful:

* **Free to Use** – Unlike Windows, which requires a license, Ubuntu is completely free to download and install.
* **User-Friendly Interface** – Although different from Windows, Ubuntu has a simple and clean design that makes it easy to use.
* **Highly Secure** – Ubuntu is much safer compared to Windows because it is less likely to be affected by viruses or malware.
* **Fast and Efficient** – It runs smoothly even on older computers without slowing down.
* **Built-in Software Center** – Ubuntu has its own **Software Center**, where users can find and install apps easily.
* **Customizable** – Users can change the look and feel of Ubuntu according to their preferences.
* **Great for Developers** – Ubuntu comes pre-installed with important programming tools like **Python, Git, and GCC**, making it a favorite among developers.

**3. Difference Between Ubuntu and Windows OS**

Ubuntu and Windows are quite different in several ways. First, Ubuntu is **completely free**, whereas Windows requires a paid license. Ubuntu is also **more secure** because it is less vulnerable to viruses, while Windows often requires antivirus protection.

Another key difference is that Ubuntu is **highly customizable**, allowing users to modify the desktop environment and settings, whereas Windows has limited customization options. In terms of software compatibility, Windows supports **more commercial applications and games**, while Ubuntu is better suited for Linux-based apps.

When it comes to performance, Ubuntu is **faster and more efficient**, as it uses fewer system resources. Windows, on the other hand, can become slow over time, especially on older hardware. Ubuntu also uses a different file system called **EXT4**, while Windows uses **NTFS** or **FAT32**. Lastly, Ubuntu relies heavily on the **Terminal (Bash) for commands**, whereas Windows users typically use the **Command Prompt or PowerShell**.