# 4ITRC2 Operating System Lab

## Lab Assignment 1

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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 to Ubuntu

Ubuntu is a free and open-source operating system based on Debian Linux. It was first released in 2004 by Canonical Ltd. Ubuntu is widely used for personal, server, and cloud computing due to its stability and security features. It provides Long-Term Support (LTS) versions that receive updates for five years.

Ubuntu has different editions:  
- Ubuntu Desktop: For personal and office use.  
- Ubuntu Server: Optimized for server-based applications.  
- Ubuntu Core: Designed for IoT and embedded systems.

## 2. Features of Ubuntu

Some key features of Ubuntu include:

1. Free and Open-Source: Available for free with open-source development.

2. Security: Linux-based architecture makes it less vulnerable to malware.

3. Regular Updates: Canonical releases updates and security patches frequently.

4. Customization: Users can customize the desktop environment (GNOME, KDE, XFCE, etc.).

5. Software Availability: Access to thousands of applications via APT and Snap packages.

## 3. Differences Between Ubuntu and Windows OS

1. Cost: Ubuntu is free, while Windows requires a paid license.

2. Security: Ubuntu is more secure with fewer malware threats compared to Windows.

3. Software Management: Ubuntu uses package managers like APT and Snap, while Windows relies on EXE/MSI files.

4. Customization: Ubuntu allows deeper customization of UI and system settings, whereas Windows has restrictions.

5. Command Line Support: Ubuntu provides strong command-line tools with Bash, while Windows mainly uses CMD and PowerShell.