# **Assignment 1**

**1. Introduction**

Linux is an open-source, Unix-like operating system kernel that serves as the foundation for various distributions, including Ubuntu. Ubuntu, developed by Canonical Ltd., is one of the most popular Linux distributions, known for its user-friendly interface and robust security. It was first released in 2004 and is based on Debian. Ubuntu has several versions, including Desktop, Server, and Core for IoT devices. Canonical releases new Ubuntu versions every six months, with Long-Term Support (LTS) versions available every two years.

**2. Features of Ubuntu**

* **Open Source**: Ubuntu is free to use and modify.
* **Secure**: Built-in firewall and virus protection.
* **User-Friendly Interface**: Modern GNOME desktop environment.
* **Software Availability**: Supports a vast range of applications via APT package manager and Snap Store.
* **Regular Updates**: Frequent security patches and software updates.
* **Lightweight & Fast**: Runs efficiently on older hardware.
* **Customization**: Extensive theming and personalization options.
* **Strong Community Support**: Large user community and active forums.

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| **Features** | **Ubuntu** | **Windows OS** |
| ***cost*** | Free and open source | Paid |
| ***security*** | More secure, less prone to viruses | Requires antivirus software |
| ***customization*** | Highly customizable | Limited customization options |
| ***Software support*** | |  |  | | --- | --- | | Supports Linux-based applications |  | | Wide range of commercial applications |
| ***Performance*** | Faster on low-end hardware | May require more resources |
| ***File system*** | Uses ext4, Btrfs, etc. | Uses NTFS, FAT32, etc. |
| ***Updates*** | Frequent updates with community contributions | Controlled updates from Microsoft |

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