**Operating Systems**

Lab assignment 1

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

Ans. **Linux** is a free and open-source operating system based on the Unix architecture. It was initially developed by **Linus Torvalds** in 1991. Linux is well-known for its stability, security, and flexibility, making it widely used in servers, desktops, and embedded systems.

**Ubuntu** is one of the most popular distributions (distros) of Linux, developed and maintained by **Canonical Ltd.** It was first released in **2004**. Ubuntu is based on **Debian Linux** and is known for being user-friendly, stable, and suitable for beginners as well as advanced users.

------------------------------------------------------------------

### **2. Features of Ubuntu**

Ans. Some key features of Ubuntu include:

1. **Open Source:** Ubuntu is free and its source code is available to everyone.
2. **User-Friendly Interface:** Ubuntu provides the **GNOME** desktop environment, which is easy to use, especially for beginners.
3. **Security:** Ubuntu comes with built-in security features like **UFW (Uncomplicated Firewall)**, regular security patches, and minimal vulnerability to viruses.
4. **Software Center:** It has an inbuilt software center to easily install applications.
5. **Customization:** Ubuntu can be highly customized to suit user needs.
6. **Regular Updates:** It receives continuous updates, bug fixes, and enhancements.
7. **Pre-installed Tools:** Ubuntu includes productivity tools like LibreOffice, Firefox, and Terminal by default.
8. **Strong Community Support:** A large active community offers help through forums and documentation.
9. **Compatibility:** Compatible with a wide range of hardware, including older machines.
10. **Multiple Flavors:** Ubuntu comes in different flavors like **Kubuntu**, **Xubuntu**, and **Lubuntu**, offering lightweight or specialized desktop environments.

------------------------------------------------------------------

**3. Difference between ubuntu and windows OS.**  
Ans.

|  |  |
| --- | --- |
| **WINDOWS** | **UBUNTU** |
| Windows operating system is developed by Microsoft. | Ubuntu operating system is developed by Canonical Ltd. |
| Windows is developed in November 1985 and Windows 10 released on July 2015. | Ubuntu is developed in October 2004. |
| Windows operating system belongs to Windows NT family. | Ubuntu operating system belongs to Linux family. |
| It is a closed source software. | It is an open source software. |
| Users need to have a valid and authenticated license to use it. | Users need not to have a license to use it. |
| Users can go through Ubuntu’s source code to learn and modify it. | Users can’t go through window’s source code to learn and modify it. |
| Kernel type of Windows is Hybrid. | Kernel type of Ubuntu is Monolithic. |
| Windows uses more resources than Ubuntu. | Ubuntu uses less resources than Windows. |
| For gaming purpose windows is better than Ubuntu. | For gaming purpose ubuntu is not so good like Windows. |