Name: Ronit Sahoo
Class: D10C
Roll No: 62
Batch: C

CVT PRACTICAL NO: 1

Aim:

- Creating and Running a Virtual Machine on a Hosted Hypervisor.

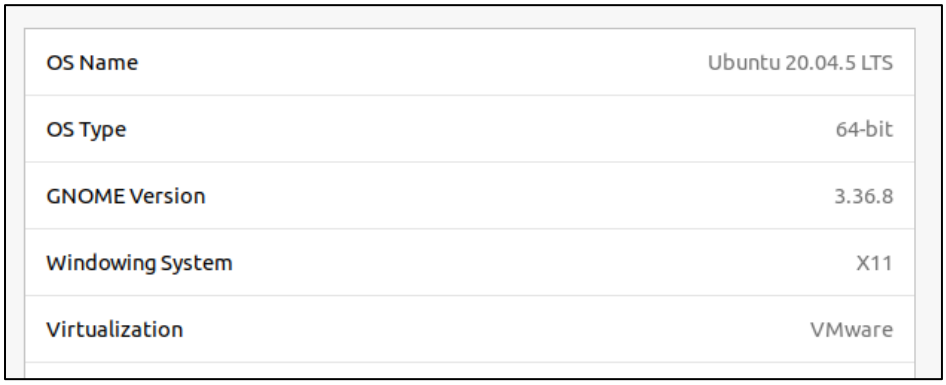
Theory:

- ## Linux OS:

  - **Linux OS** is an open-source operating system based on the Linux kernel, first created by Linus Torvalds in 1991. It is known for its flexibility, security, and scalability. It is widely used for everything from servers and desktops to mobile devices and embedded systems. Unlike proprietary operating systems like Windows or macOS, Linux is free to use and modify, with a strong community of developers supporting it.

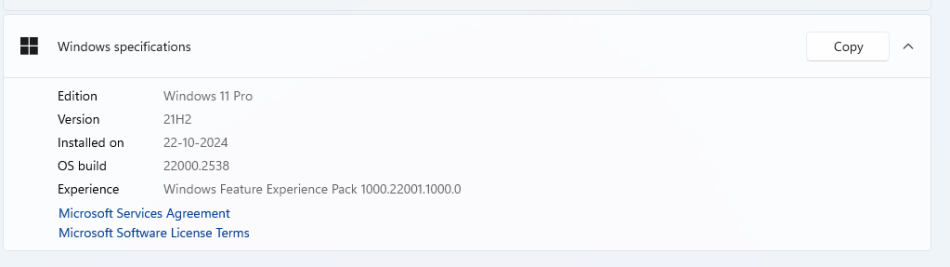
  - **Ubuntu** is one of the most popular distributions (distros) of Linux. It is based on Debian, another popular Linux distribution, and is developed and maintained by **Canonical Ltd.** Ubuntu aims to be user-friendly, accessible to beginners, and provide a stable platform for both personal use and enterprise applications.

- **Key Features:**
    - **Open Source & Free**: Anyone can view, modify, and distribute the code.
    - **Security**: Strong security features like permissions, SELinux, and frequent updates.
    - **Multitasking & Performance**: Efficient at handling multiple tasks, even on low-end hardware.
    - **Customizable**: Highly flexible for users to modify the OS.
    - **Software Repository**: Large selection of free software available through package management systems.
    - **Ease of Use**: Beginner-friendly with a simple, modern interface.
    - **Regular Updates**: Stable updates and LTS versions with 5 years of support.
    - **Large Software Repository**: Access to thousands of free apps through the Ubuntu Software Center.
    - **Dual Boot with Windows**: Easy to set up alongside Windows.



- **Windows OS:**
    - **Windows OS** is a proprietary operating system developed by **Microsoft**. It is one of the most widely used OSes, particularly on personal computers, with versions spanning desktops, laptops, and tablets. Windows is known for its graphical user interface (GUI) and its compatibility with a vast array of software and hardware.
    - **Key Features:**
        - **User-Friendly Interface**: Windows offers an intuitive and familiar graphical user interface (GUI) with features like the Start Menu, Taskbar, and Windows Explorer, making it easy for users to navigate and interact with the system.
        - **Wide Software Compatibility:** It supports a vast range of third-party software, including productivity tools (Microsoft Office), entertainment (games, media players), and business applications.

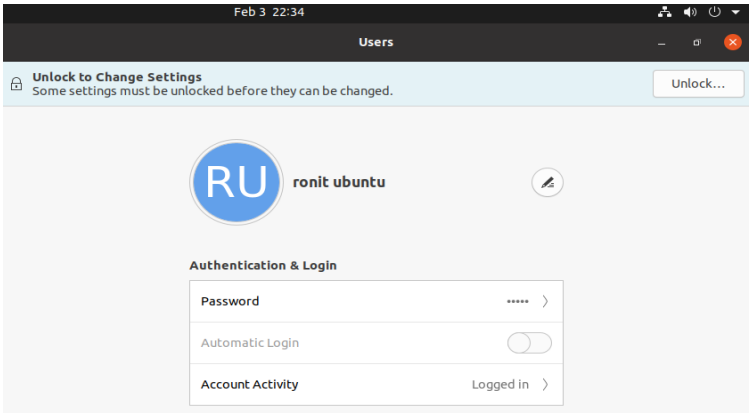
- **Hardware Compatibility:** Windows supports a wide variety of hardware, including peripherals, graphics cards, and printers, making it highly compatible with different devices.
- **Multitasking:** Windows allows users to run multiple applications simultaneously with features like Snap for arranging windows and Task View for switching between open applications.
- **Security:** Built-in security tools like Windows Defender (antivirus), Windows Firewall, and BitLocker (disk encryption) help protect against malware and unauthorized access.



• Windows VS Linux:

• User Management:

- Ubuntu supports local user accounts and online accounts (e.g., Google, Microsoft) for syncing email and data across services.



- Windows supports Microsoft accounts for synchronization across devices, or local user accounts for offline use.

- **Terminal:**
  - Ubuntu comes with GNOME Terminal by default, though you can use other terminals like Konsole (for KDE), Terminator, XTerm, and more. The terminal is deeply integrated into the Linux ecosystem and is a core tool for interacting with the system, especially for advanced users. It can access and manage almost every aspect of the system. Most Linux distributions (including Ubuntu) emphasize the use of the terminal for tasks like installing software, managing processes, and troubleshooting.

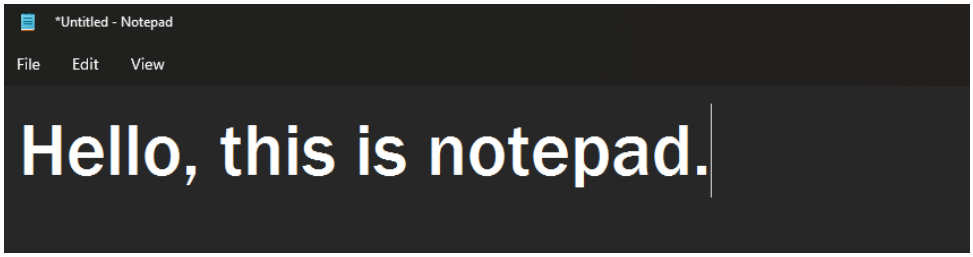
```
ronit@Ronit:~$ echo "hello"
hello
ronit@Ronit:~$
```

  - Traditionally, Windows has a Command Prompt (CMD), which is a basic terminal for executing DOS-like commands. PowerShell is a more advanced terminal for system administration, providing better integration with Windows' system components, and supports object-oriented scripting. In recent years, Windows Terminal has been introduced as a more modern terminal application that supports multiple tabs, customizations, and can run CMD, PowerShell, and Linux-based shell environments.

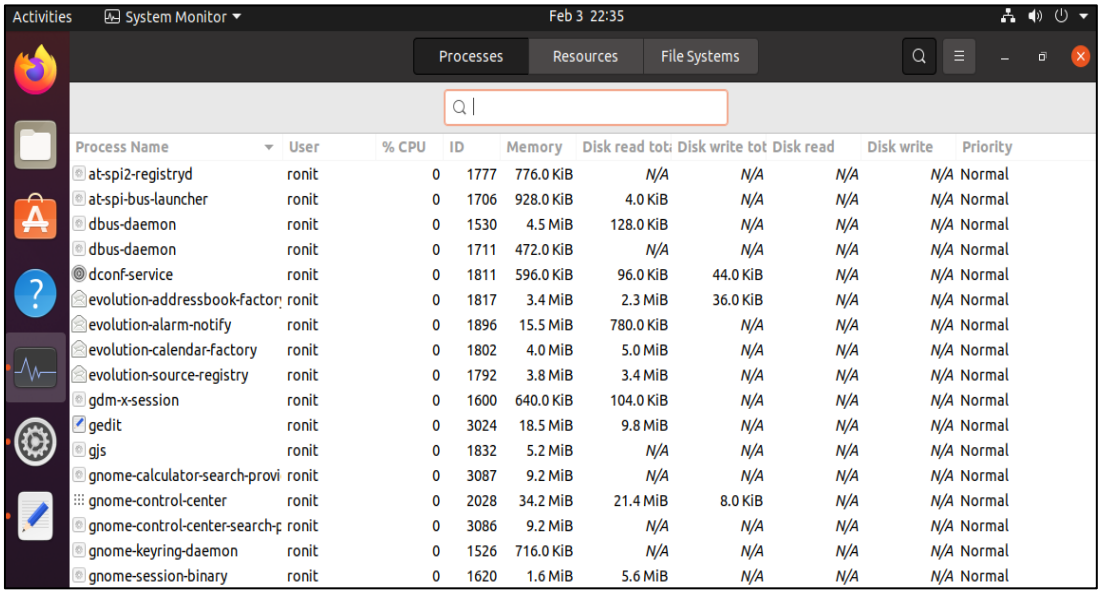
```
C:\Users\ronit>echo hello
hello

C:\Users\ronit>
```

- **Default Text Editor**
  - Gedit is a simple and user-friendly graphical text editor designed for general-purpose text editing. It is part of the GNOME desktop environment, and its straightforward interface makes it ideal for both beginners and advanced users for everyday tasks, such as writing documents, coding, and editing configuration files.

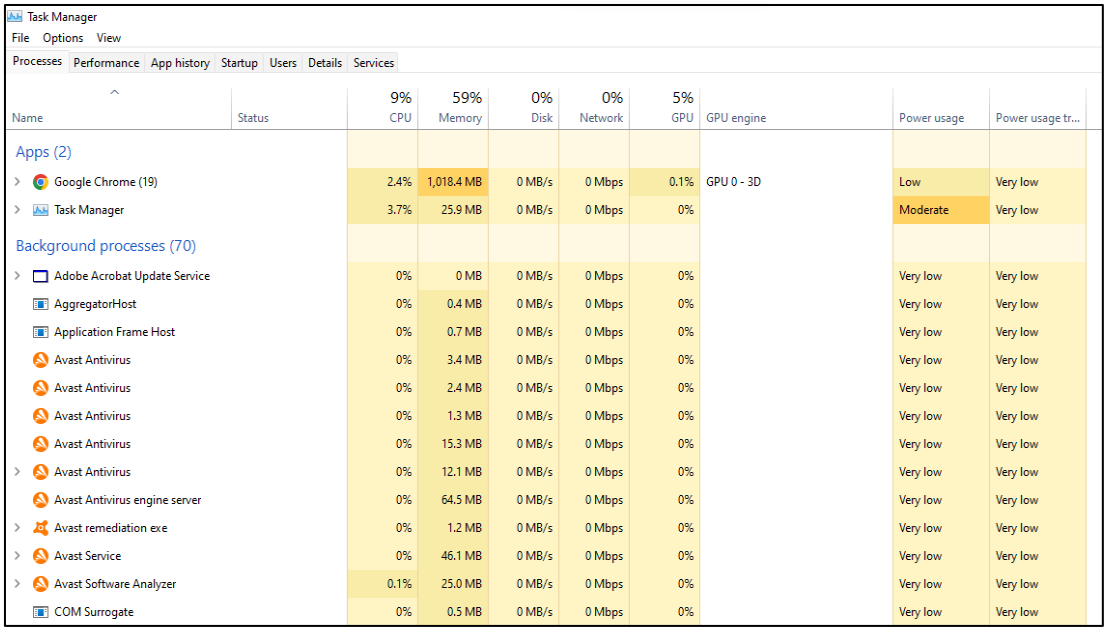
- Notepad is the default text editor in Windows and is one of the simplest and most widely used tools for basic text editing. It has been part of Windows since the earliest versions and continues to be a go-to app for users needing quick, no-frills text editing.



- **System Info VS Task Manager:**
  - System Information provides a comprehensive snapshot of your computer's hardware, software, and configuration. It's mainly used to view detailed system specs and diagnose potential hardware or software issues.



  - Task Manager in Windows is used to monitor and manage the processes, applications, and performance of your computer in real time. It is primarily a tool for managing system tasks and resources.



- **Conclusion:**
  - Ubuntu and Windows 11 each excel in different areas. Ubuntu, as an open-source operating system, prioritizes security, customization, and user control, making it a great choice for those who enjoy flexibility and command-line functionality. Meanwhile, Windows 11 offers a sleek, intuitive interface with smooth performance, making it ideal for gaming, productivity, and general use. The choice between them comes down to whether you prefer the adaptability and transparency of Ubuntu or the polished, ready-to-use experience of Windows 11.