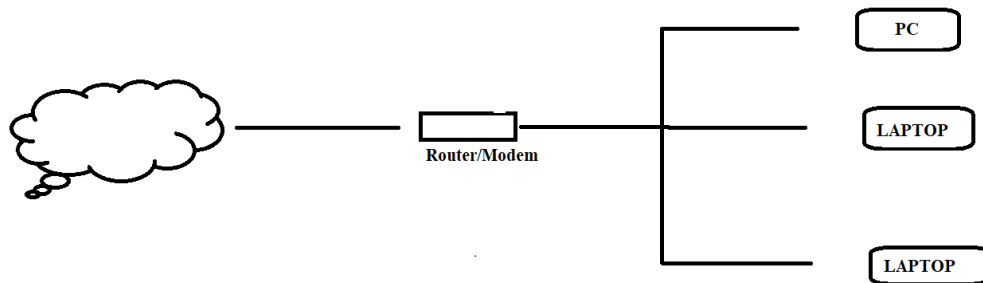1.Draw your Home Network Topology and explain how you are accessing the RPS Lab environment.

1. Connection Initiation: From your computer at home, you start by connecting to your local

internet through your router.

2.VPN Use: You initiate a VPN connection using client software configured on your computer. This VPN software establishes a secure and encrypted connection to the remote lab's network. This ensures that all data transmitted between your home and the lab is secure from eavesdropping or interception.

3. Authentication: As part of the VPN connection, you must authenticate yourself using credentials provided by your college or office. This might include a username, password, and possibly a second factor like a secure token or a mobile app notification.

4. Network Access: Once the VPN connection is established and authenticated, your computer acts as if it is directly on the lab's network. You can access resources such as servers, printers, and stored files as if you were physically present in the lab.

5. Work as Usual: You can operate on the lab's network, use its resources, run experiments, and access restricted databases securely from your home.

This setup is essential for professionals and students who need to access sensitive or large computational resources remotely, ensuring productivity and resource access regardless of physical location.

2.Identify a real-world application for both parallel computing and networked systems. Explain how these technologies are used and why they are important in that context.

- In financial trading, speed and accuracy are critical factors for executing trades effectively and capitalizing on market opportunities.
- Parallel computing is employed to process large volumes of financial data, such as stock prices, market trends, and trading algorithms, in real-time.
- By utilizing parallel processing techniques, trading platforms can analyze market data, execute trades, and manage risk factors simultaneously across multiple computational units, such as servers, CPUs, or GPUs.
- This enables traders to make informed decisions quickly and execute trades with minimal latency.

- Networked systems play a vital role in financial trading platforms by connecting traders to various financial exchanges, brokerage firms, and market data providers worldwide.
- These networked systems enable traders to access real-time market data, execute trades, and communicate with trading partners efficiently.
- High-speed network connections, low-latency trading protocols, and co-location services are essential components of networked systems in financial trading, allowing traders to receive market updates instantaneously and execute trades with minimal delay.