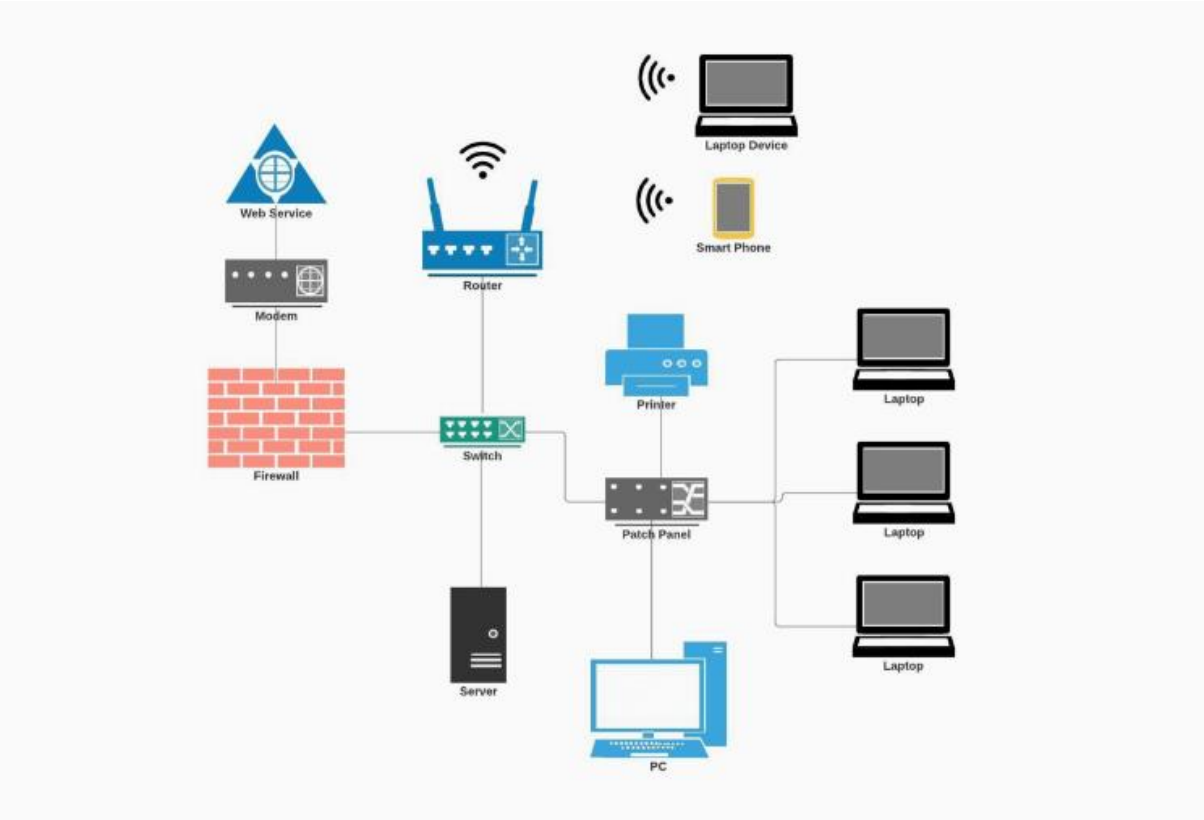
Assignment 1- Draw your Home Network Topology and explain how you are accessing the RPS Lab environment

NETWORK TOPOLOGY

Network topology refers to the structural arrangement of a network. The topological structure of a network may be depicted physically or logically. The network devices are depicted as nodes and the connections between the devices as lines to build a graphical model. In other words, a network topology means the manner in which a network is arranged, how the nodes are set up and connect to each other.

The need to understand network topologies comes because it is found in your local area network (LAN). Your network can be arranged in a number of different ways, and each of the arrangements or topologies has its pros and cons. The choice of a topology for your business network is influenced by a number of factors, the most important being the size and scale of the network as well as cost. However, long-term factors including configuration management, monitoring, and general performance also need to be considered.



A network node is an endpoint or redistribution point of the network, which can receive, create, store, or send data along the network routes to other network nodes. In your network topology, the nodes are usually the devices that are connected by the links. The common nodes used in building a computer network are as follows

TYPES OF NETWORK TOPOLOGIES

1. Point-to-point topology
2. Daisy chain topology
3. Bus topology
4. Start topology
5. Ring topology
6. Mesh topology
7. Hybrid topology
8. Tree topology

For example, if I need to access the RPS Lab environment for programming tasks, I would first establish a VPN connection to the lab's network using VPN client software provided by the lab. Once connected, I can then use SSH to access specific servers or machines within the lab environment. This allows me to work on projects, run experiments, or perform tasks remotely as if I were physically present in the lab.

Security measures such as encryption and authentication protocols are usually in place to ensure the confidentiality and integrity of the data being transmitted between my home network and the RPS Lab environment.