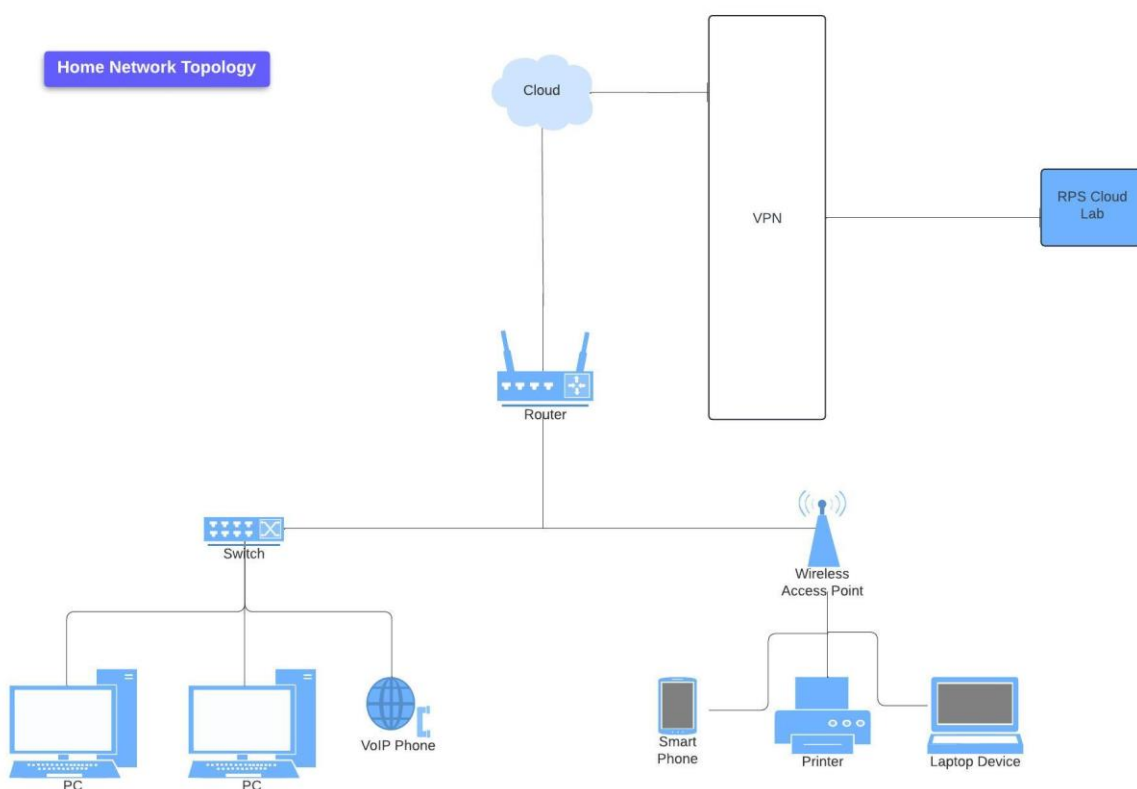**Assignment1:**

Draw Your home network topology and explain how you are accessing the RPS lab environment.

Ans:

Home Network Topology:

In a home network topology we have a router as central point. Basically what the router does is it routes the data packets from source to destination and it is responsible for the interconnection of all the devices in the network. These devices can be PC, mobile device, or desktop is connected to router either wirelessly through WI-FI or wired connection by ethernet cable.There are some little helper as access points and switch that make sure there is connection going on between devices. They can share information, talk to each other and access the internet. This central device ie, router make communication between different devices, enable data exchange also allow to share resources between network devices. And finally it is the final gateway to the internet as it allows browsing the web, streaming content and access online services like youtube, facebook, linkedin and so on. So it is backbone of home network.

Below is the simple diagram for home network topology and how we are accessing RPS cloud lab.

Assignement 2:

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

Ans:

Real world application for both parallel computing and network system we can say a search engine work like that. In parallel computing what happens is a very complex task is first converted to small tasks and then parallelly those little tasks are executed. Those complex task usually come in the category of big data having vast amount of data to be handled. These chunks are distributed across interconnected servers and then computation tasks is done.

Coming on network systems they play an important role in communication and data exchange between the interconnected servers. Thus they help in collaborating with parallel computing and also help in fault analysis, tolerance and scalablity of a system.

In context to large scale web services like search engine a lot of data needs to be handled and indexing, ranking etc need to be done and for these much complex task parallel computing and network system came into picture and resolve such issues effectively and efficiently.