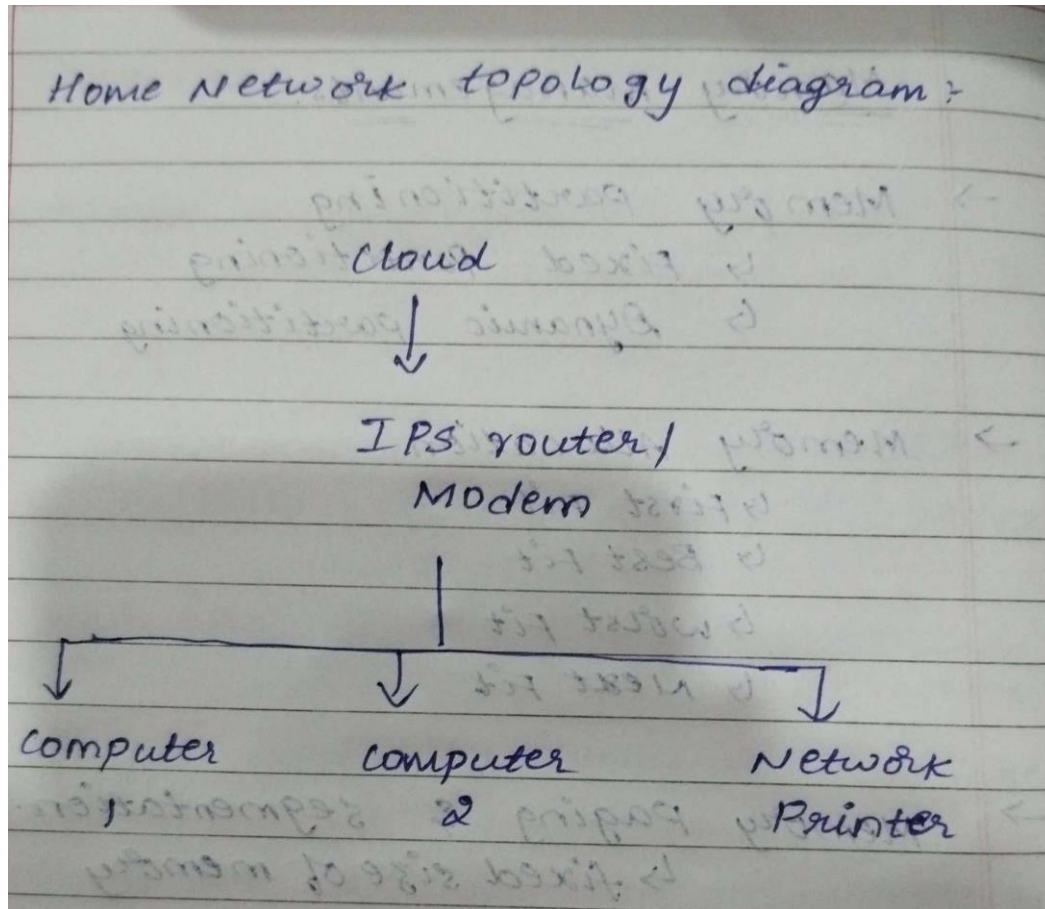# Assignment-1

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



This is the most basic home network diagram . We have a router with a built-in modem and an access point that we got from our ISP (Internet Service Provider).

Could connect one computer to a modem with a UTP cable and you would have internet. But to use the internet connection with multiple devices, we will need a router. Most routers have a WAN port which you can use to connect a modem to it, still leaving three network ports free for our computers and printer.

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.

**Parallel Computing :  Accurate Medical Imaging**

Another field where parallel computing has made a profound impact is in the field of medical imaging. Techniques such as Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) scans generate a large amount of data that needs to be processed quickly and accurately.

Parallel computing allows for faster image processing, enhancing the accuracy and efficiency of these imaging techniques. The simultaneous processing of image data enables radiologists to obtain high-resolution 3D images in real-time, aiding in more accurate diagnosis and treatment. Parallel computing also powers advanced imaging techniques like functional MRI (fMRI), which captures and processes dynamic data about the brain's functioning.

By improving the speed and accuracy of medical imaging, parallel computing plays a crucial role in advancing healthcare outcomes, enabling clinicians to detect and treat illnesses more effectively.

**Networking systems : Online retail**

In online retail, networked systems play a vital role in managing various aspects of the business, including inventory management, order processing, customer relationship management (CRM), and website hosting. These systems rely on networked infrastructure to communicate and exchange data in real-time. For example, when a customer places an order on an e-commerce website, networked systems handle the transaction processing, inventory updates, and shipping logistics seamlessly across multiple interconnected servers and databases.

Importance: Networked systems enable online retailers to provide a seamless and responsive shopping experience to customers, regardless of the scale of operations. These systems facilitate efficient order processing, inventory tracking, and customer support, leading to increased customer satisfaction and loyalty. Additionally, networked systems allow retailers to scale their operations dynamically to meet changing demand, ensuring optimal performance during peak shopping seasons or promotional events.