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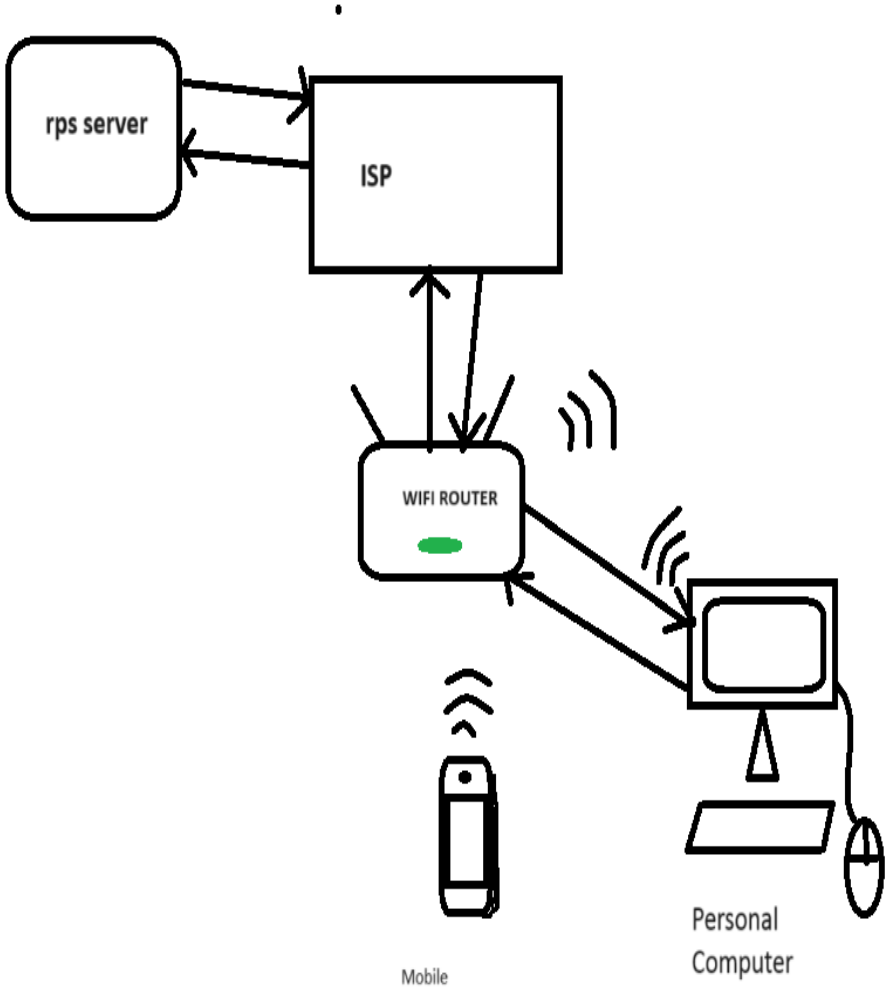
**Assignment 1:** Draw your Home Network Topology and explain how you are accessing the RPS Lab environment.

**Solution:**




1.laptop sends a request to connect to your Wi-Fi network.
2.The Wi-Fi signal carries the request to your router.
3.The router verifies your device's credentials (password) and grants access to the network.
4.Your device then sends a request to access rps through the router.
5.The router translates the request and sends it out to the internet via the modem.
6.The request travels through your ISP's network and reaches rps servers.
7.rps servers send back the requested data .
8.The data travels back through your ISP's network and reaches your router.
The router forwards the data to your device.
Your device receives the data and displays the rps content

**Assignment 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.

**Solution:**

A real-world application that seamlessly integrates parallel computing and networked systems is distributed video streaming platforms like Netflix or YouTube.

**Parallel Computing:**

- Doing Many Things at Once: Imagine watching a video. Instead of one computer doing all the work to send you the video, several computers work together. Each computer handles a different part of the video, making things faster.

- Sharing the Work: These computers share the load evenly. This means no single computer gets too overwhelmed, and you get to watch your video without annoying pauses or delays, even when lots of people are watching at the same time.

- Growing When Needed: If more people start watching videos, more computers can join in to help out. This way, the system can handle lots of people watching without slowing down.

**Importance of Parallel Computing:**

- Faster Videos: By working together, the computers make sure you get your videos quickly, without having to wait too long for them to load.

- Handling More People: When lots of people are watching, the system can keep up because it's designed to add more computers when needed, so everyone can enjoy their videos without problems.

- Not Stopping if One Computer Breaks: If one computer stops working, the others can step in to keep things going smoothly. So, you won't notice any interruptions in your video even if something goes wrong with one of the computers.

**Networked Systems:**

- Bringing Videos Closer to You: There are special networks that help deliver videos to you faster. They have copies of the videos stored in different places around the world. When you want to watch a video, it comes from the closest copy, so it arrives faster.

- Smart Ways to Send Videos: These networks are like smart GPS systems for data. They find the best and fastest route for the videos to travel from the storage to your device. This means less waiting and better quality.

- Always Ready to Help: The networks have backup plans in case something goes wrong. If one place where a video is stored isn't working, it can quickly switch to another one so your video keeps playing without any hiccups.

**Importance of Networked Systems:**

- Videos Reach You Faster: With these networks, videos arrive quickly because they come from the nearest place storing them, reducing the time it takes for you to start watching.

- No Interruptions: The networks make sure your videos keep playing smoothly by finding the best paths for them to travel, avoiding traffic jams on the internet.

- Always Available: Even if one place storing a video has a problem, the networks are ready with backups, so you don't even notice anything went wrong. Your videos just keep playing like normal.