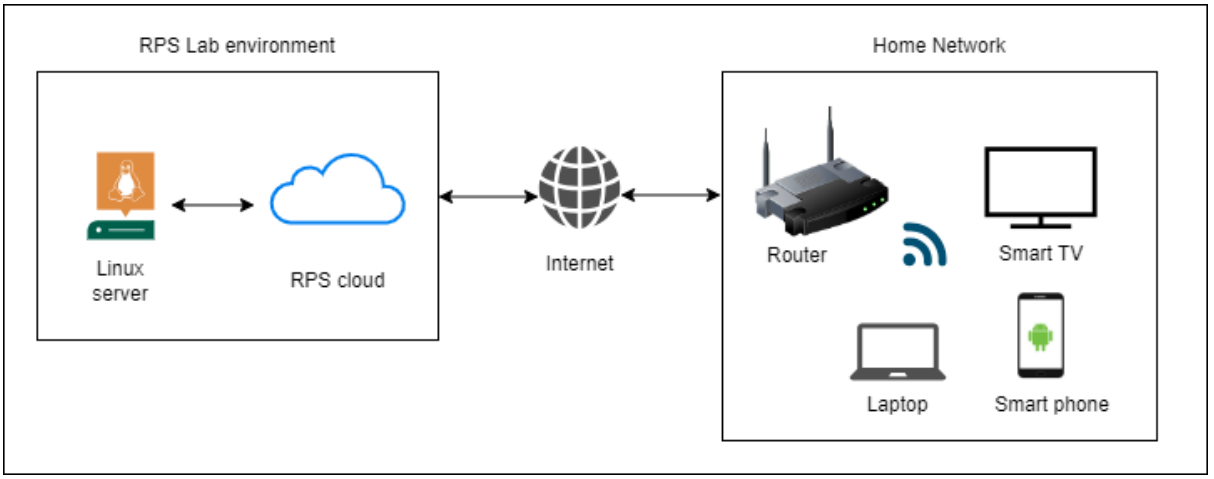
1. Draw your Home Network Topology and explain how you are accessing the RPS Lab environment.

   Home network topology and connection to RPS cloud



   Open the RPS cloud login page in the web browser from laptop connected to wireless internet through wifi router. Enter the username and password for RPS cloud and click login. Once the cloud is authenticated the Linux server will be connected.

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:

   Parallel computing refers to the process of breaking down larger problems into smaller, independent, often similar parts that can be executed simultaneously by multiple processors communicating via shared memory.

   Real-World Applications:

   - **Web Search Engines:**

     Search engines like Google use parallel computing to process search queries across multiple servers simultaneously. Each server handles a portion of the search query, enabling quicker search results retrieval.

   - **Video Streaming Services:**

     Platforms like Netflix use parallel computing to deliver high-quality streaming to users worldwide. Video files are split into smaller chunks and processed concurrently on servers, ensuring smooth playback and reducing buffering time.

- **Gaming:**

  Video game developers utilize parallel computing to enhance gaming experiences. Tasks such as rendering graphics, simulating physics, and handling AI computations are distributed across multiple CPU cores or GPUs, improving performance and realism.

Networked Systems:

Network systems are computational systems that implement connectivity among networks or between a network and an end system. In general, a network system is a system attached to two or more communication links, wired or wireless.

Real-World Applications:

- **Social Media:**

  Social media platforms, such as Facebook and Twitter, use networked systems to enable users to connect, share content, and communicate with each other globally in real-time.

- **Online Shopping:**

  E-commerce websites like Amazon rely on networked systems to facilitate online shopping. Users can browse products, place orders, and make payments securely over the internet, thanks to networked systems.

- **Remote Work:**

  With the rise of remote work, networked systems have become essential for collaboration and communication. Tools like Zoom and Slack enable teams to work together effectively, regardless of their physical location, by leveraging networked systems for video conferencing and messaging.

In everyday life, parallel computing and networked systems are behind many modern conveniences, from fast web searches and seamless video streaming to social networking and online shopping. These technologies work behind the scenes to make our digital experiences smoother and more efficient.