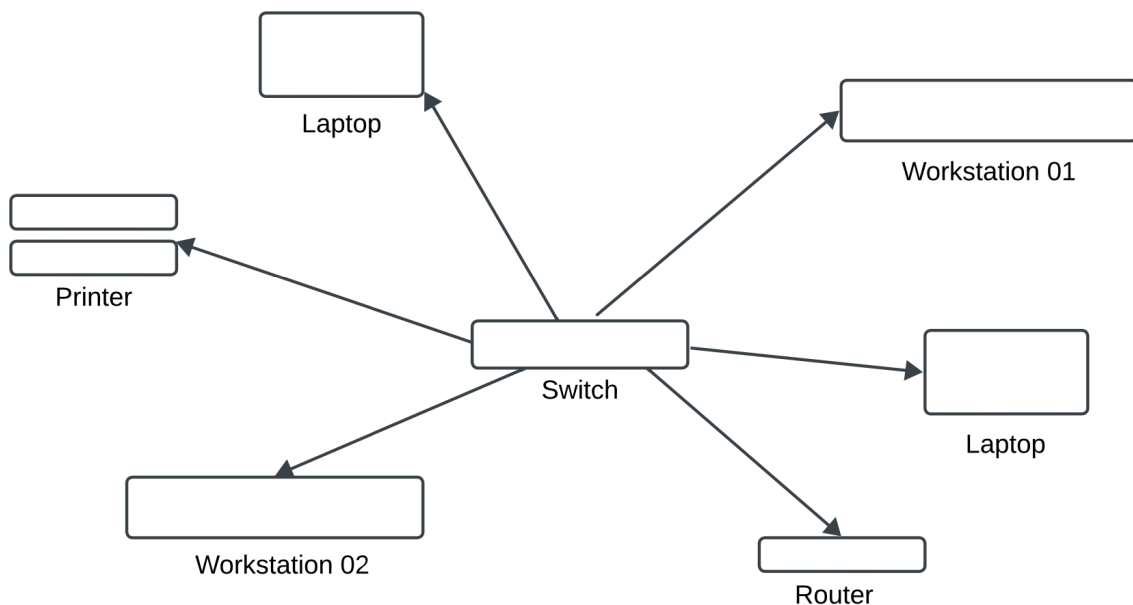


## Day 01

**Assignment 01 :-** Draw your Home Network Topology and explain how you are accessing the RPS Lab environment.

**Solution:-** Network topology refers to the arrangements of various devices such as computers, routers, switches and connections on a computer network. A network topology diagram describes the physical or logical arrangements of these components and how they communicate with each other within the network.



**Assignment 02 :-** 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:**

**Parallel computing :-**

- Parallel computing is a technique for solving problems by using multiple processors or computers at the same time.
- It involves breaking down a large problem into smaller, independent parts that can be tackled concurrently.
- Ex :- Weather forecasting.  
Weather patterns are complex and require a massive amount of data processing to predict accurately. By dividing the data and calculations across multiple preprocessors, parallel computing can significantly speed up the process of generating weather forecasts. This allows meteorologists to create

more detailed and accurate models, leading to better predictions for everything from daily commutes to large-scale weather events.

- Parallel computing is important for a few key reasons.
  1. It has high speed.
  2. The amount of data being generated is constantly growing.
  3. It is used to resolve complex programs.
  4. Parallel computing helps us utilise computing resource more effectively.

### **Networked Systems :-**

- A networked system is a connection of computers or devices that are connected to each other to allow them to communicate and share resources.
- Ex :- The Internet.

The internet is the most prominent example. The internet is the massive network of interconnected networks that allows communication and data sharing across the globe. We use it for everything from browsing websites and social media to online banking and video calls.
- Networked system is important because:
  1. It allows resource sharing.
  2. It allows communication and collaboration.
  3. Networks make it possible to store data centrally.
  4. It provide access to the vast resource of the internet.
  5. Networks improve efficiency and productivity in business and organisations.