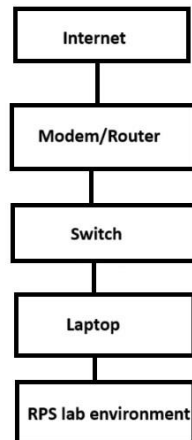


Day1 03-06-2024

Assignment –1: Write the network terminologies with example.

1. **Network:** A collection of interconnected devices (computers, printers, servers) that can communicate with each other.
Example: Your home Wi-Fi network connects laptops, smartphones, and smart TVs.
2. **Node:** Any device connected to a network (e.g., computer, printer, router).
Example: Each computer in an office LAN is a network node.
3. **Protocol:** A set of rules defining how devices on a network communicate.
Example: TCP/IP (Transmission Control Protocol/Internet Protocol) governs internet communication.
4. **IP Address:** A unique numerical identifier assigned to each device on a network.
Example: 192.168.1.10 is an IPv4 address for a computer.
5. **Router:** Connects multiple networks and forwards data packets between them.
Example: Your home router connects your local network to the internet.
6. **Switch:** Connects devices within a network and forwards data between them.
Example: An Ethernet switch connects computers in an office LAN.
7. **Firewall:** Monitors and controls incoming/outgoing network traffic based on security rules.
Example: A corporate firewall blocks unauthorized access to internal servers.
8. **DNS (Domain Name System):** Translates domain names into IP addresses.
Example: DNS resolves website names to IP addresses for browsing.
9. **LAN (Local Area Network):** Connects devices within a limited geographical area (e.g., home, office).
Example: Your home Wi-Fi network is a LAN.
10. **WAN (Wide Area Network):** Connects devices over a large geographical area (e.g., multiple offices in different cities).
Example: The internet is a global WAN.

Assignment –2: Draw your Home Network Topology and explain how you are accessing the RPS Lab environment



Accessing the RPS Lab environment:

To access the RPS Lab environment from my home network, follow these steps:

- 1.I ensure the internet connectivity in my home through my modem/router.
- 2.I will connect my laptop to the home network to access the internet.
- 3.Once connected, I can connect to my RPS lab environment through the link provided by Wipro.
- 4.Then I will pass the authentication process by providing credentials given by Wipro.

The network topology diagram above shows the physical and logical connections between devices in my home network. The router connects to the internet and provides a gateway for devices on the network to access the internet. The switch connects multiple devices to the router, allowing them to communicate with each other and access the internet. My laptop connects to the switch and uses a VPN client to establish a secure connection to the RPS Lab environment.

Assignment-3: 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

Real-World Application for Networked Systems: Online Banking

How Networked Systems are Used

Online banking systems allow customers to conduct financial transactions via the internet. This involves the integration of various networked systems to ensure secure and efficient processing of transactions.

1. Customers access banking services through the web or mobile applications, which communicate with bank servers.
2. Banks use data centers to host their applications, databases, and services. These data centers are interconnected and often distributed geographically.
3. Networked systems use encryption, firewalls, and intrusion detection systems to secure transactions and protect sensitive data.
4. Networked systems handle transaction processing in real-time, ensuring that debits and credits are accurately recorded and updated.
5. Banks use APIs to integrate with other financial institutions, payment gateways, and services such as ATMs and POS systems.

Importance of Networked Systems in Online Banking

1. Customers can access banking services 24/7 from anywhere in the world, facilitating modern banking convenience.
2. Networked systems streamline operations, reduce manual processing, and enhance the speed of financial transactions.
3. Robust networked systems protect against fraud and cyber threats, ensuring the integrity and confidentiality of financial data.
4. Networked systems allow seamless integration with various financial services and platforms, enabling a wide range of banking functions and interoperability.