Activity 1 Notes

1. Need for protocols: Protocols are essential for network communication because they provide a set of rules, conventions, and standards that enable computer devices to exchange information in a structured and reliable manner. They play a crucial role in facilitating effective and seamless communication across various networks and technologies.
The 5 layers in the Internet Protocol stack are Application, Transport, Network, Data-Link and Physical.

2. Key responsibilities:
   a. Application Layer: Responsible for providing network services directly to user applications.
   b. Transport Layer: Manages end-to-end communication between applications on different devices. Also provides reliable data delivery and error checking.
   c. Network Layer: Handles the addressing, routing, and forwarding of data packets between networks. It uses IP addresses to uniquely identify sender/receiver devices on the network.
   d. Data Link Layer: It is responsible for the physical transmission of data over the local network medium. It frames data packets for transmission and ensures error detection and correction at the link level.
   e. Physical Layer: Transfers the data packet frames as electrical signals over the physical connection.