

Assignment 1 - LAN Setup

Definitions of LAN, NIC, Switch, Router, RJ45, Cables, Straight vs Cross, IP, Subnet mask.

Sample Viva:

1. What is LAN? → Local Area Network.
2. Hub vs Switch → hub broadcasts; switch sends to correct port.
3. Cable type between PC-switch → Straight cable.

Assignment 2 - Packet Tracer

Use Packet Tracer to simulate network.

Terms: Simulation, Wired LAN, Wireless LAN, Topology.

Viva sample: What is Packet Tracer? → Network simulation tool.

Assignment 3 - CRC & Hamming

Error detection & correction.

CRC detects, Hamming corrects.

Formula: $2^r \geq m+r+1$.

Viva: CRC divisor \rightarrow Generator polynomial.

Assignment 4 - Sliding Window

Stop & wait, Go-Back-N, Selective Repeat.

Viva: Go-Back-N retransmits all frames after error; Selective Repeat only retransmits lost frame.

Assignment 5 - Subnetting

Subnet mask, CIDR, Network ID, Broadcast ID.

Hosts formula: $2^h - 2$.

Viva: /26 → 62 hosts.

Assignment 6 - TCP Socket Program

Terms: TCP, ServerSocket, Socket, Streams.

Viva: TCP is reliable, connection-oriented.

Assignment 7 - UDP File Transfer

UDP is fast but unreliable. DatagramSocket, DatagramPacket.

Viva: No handshake; packets may be lost.

Assignment 8 - TCP Chat Program

Peer-to-peer chat using TCP & threads.

Viva: Full duplex allowed.

Assignment 9 - UDP Chat Program

No connection, fast. Used in broadcast chat.

Viva: No ACK, no retransmission.

Assignment 10 - Web Server (XAMPP)

Apache host website locally.

htdocs is document root.

Viva: HTTP runs on port 80.

Assignment 11 - HTML Website

HTML structure, tags, CSS types.

Viva: HTML = markup, not programming language.