

## **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 → 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.