**Aim: Socket programming for Transport Layer packets(TCP Server)**

**tcp\_echo\_server.c**

#include <stdio.h>

#include <string.h>

#include <stdlib.h>

#include <unistd.h>

#include <netinet/in.h>

#define PORT 10000+prn (for example if prn is 55 then 10000+55=10055 port)

#define BUF\_SIZE 1024

int main() {

int server\_fd, new\_socket;

struct sockaddr\_in address;

char buffer[BUF\_SIZE];

int addrlen = sizeof(address);

// Create TCP socket

server\_fd = socket(AF\_INET, SOCK\_STREAM, 0);

// Prepare server address

address.sin\_family = AF\_INET;

address.sin\_addr.s\_addr = INADDR\_ANY;

address.sin\_port = htons(PORT);

// Bind

bind(server\_fd, (struct sockaddr \*)&address, sizeof(address));

// Listen

listen(server\_fd, 3);

printf("TCP Echo Server listening on port %d...\n", PORT);

// Accept

new\_socket = accept(server\_fd, (struct sockaddr \*)&address, (socklen\_t\*)&addrlen);

while (1) {

memset(buffer, 0, BUF\_SIZE);

int bytes = read(new\_socket, buffer, BUF\_SIZE);

if (bytes <= 0) break;

printf("Received: %s", buffer);

send(new\_socket, buffer, bytes, 0); // echo back

}

close(new\_socket);

close(server\_fd);

return 0;

}

**How to Compile & Run:**

**Compile TCP:**

gcc tcp\_echo\_server.c -o tcp\_server

./tcp\_server # in one terminal