PROGRAM-3

Implement client-server communication using socket programming and TCP as transport layer protocol

AIM: To implement client server program using TCP as transport layer protocol

Algorithm:

TCP Server –

1. using create(), Create TCP socket.
2. using bind(), Bind the socket to server address.
3. using listen(), put the server socket in a passive mode, where it waits for the client to approach the server to make a connection
4. using accept(), At this point, connection is established between client and server, and they are ready to transfer data.
5. Go back to Step 3.

TCP Client –

1. Create TCP socket.
2. connect newly created client socket to server.

CLIENT PROGRAM

```
#include<stdio.h>
#include<sys/types.h>
#include<sys/socket.h>
#include<netinet/in.h>
#include<string.h>

int main()
{
      int sockfd;
      char buffer[256];
      struct sockaddr_in serv_addr;
      int n;
      sockfd = socket(AF_INET,SOCK_STREAM,0);
      serv_addr.sin_family = AF_INET;
      serv_addr.sin_port = htons(3000);
```

```
      serv_addr.sin_addr.s_addr=INADDR_ANY;
      connect(sockfd,(struct sockaddr*)&serv_addr,sizeof(serv_addr));
      printf("Please enter the message: \n");
      scanf("%s",buffer);
      write(sockfd,buffer,strlen(buffer));
}
```

SERVER PROGRAM

```
#include<stdio.h>
#include<sys/types.h>
#include<sys/socket.h>
#include<netinet/in.h>
#include<string.h>
int main()
{
      int sockfd,newsockfd,clilen;
      char buffer[256];
      struct sockaddr_in serv_addr,cli_addr;
      int n;
      sockfd = socket(AF_INET,SOCK_STREAM,0);
      serv_addr.sin_family = AF_INET;
      serv_addr.sin_port = htons(3000);
      serv_addr.sin_addr.s_addr=INADDR_ANY;
      bind(sockfd,(struct sockaddr*)&serv_addr,sizeof(serv_addr));
      listen(sockfd,5);
      clilen = sizeof(cli_addr);
      newsockfd = accept(sockfd,(struct sockaddr*)&cli_addr,&clilen);
      n=read(newsockfd,buffer,255);
      printf("here is the message : %s \n",buffer);
}
```