Subject: CHAT SOCKET QUES4
SERVER

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

int main()
{
    int s,r,recb,sntb,x,ns,a=0;
    printf("INPUT port number: ");
    scanf("%d", &x);
    socklen_t len;
    struct sockaddr_in server,client;
    char buff[50],buff2[50];

    s=socket(AF_INET,SOCK_STREAM,0);
    if(s==-1)
    {
        printf("\nSocket creation error.");
        exit(0);
    }
    printf("\nSocket created.");

    server.sin_family=AF_INET;
    server.sin_port=htons(x);
    server.sin_addr.s_addr=htonl(INADDR_ANY);

    r=bind(s,(struct sockaddr*)&server,sizeof(server));
    if(r==-1)
    {
        printf("\nBinding error.");
        exit(0);
    }
    printf("\nSocket binded.");

    r=listen(s,1);
    if(r==-1)
    {
        close(s);
        exit(0);
    }
    printf("\nSocket listening.");
```

```c
    len=sizeof(client);

    ns=accept(s,(struct sockaddr*)&client, &len);
    if(ns==-1)
    {
        close(s);
        exit(0);
    }
    printf("\nSocket accepting.\n");
    int pid=fork();
    while(1){
    if(pid>0){
        //parent
        printf("\n\nParent - Type message: ");
    scanf("%s", buff2);

    sntb=send(ns,buff2,sizeof(buff2),0);
    if(sntb==-1)
    {
        printf("\nMessage Sending Failed");
        close(s);
        close(ns);
        exit(0);
    }
    if(strcmp(buff2,"BYE")==0)
        break;
    }
    else{
        //child
        recb=recv(ns,buff,sizeof(buff),0);
    if(recb==-1)
    {
        printf("\nMessage Recieving Failed");
        close(s);
        close(ns);
        exit(0);
    }
    if(strcmp(buff,"BYE")==0)
        break;
    printf("\nChild - Message Recieved: ");
    printf("%s\n", buff);

    }
}


    close(ns);
```

```c
        close(s);
}


CLIENT


#include<string.h>
#include<arpa/inet.h>
#include<stdlib.h>
#include<stdio.h>
#include<unistd.h>
#include<sys/socket.h>
#include<sys/types.h>
#include<netinet/in.h>
#include<fcntl.h>
#include<sys/stat.h>
int main()
{
    int s,r,recb,sntb,x;
    printf("INPUT port number: ");
    scanf("%d", &x);
    struct sockaddr_in server;
    char buff[50],buff2[50];
    s=socket(AF_INET,SOCK_STREAM,0);
    if(s==-1)
    {
        printf("\nSocket creation error.");
        exit(0);
    }
    printf("\nSocket created.");

    server.sin_family=AF_INET;
    server.sin_port=htons(x);
    server.sin_addr.s_addr=inet_addr("127.0.0.1");

    r=connect(s,(struct sockaddr*)&server,sizeof(server));
    if(r==-1)
    {
        printf("\nConnection error.");
        exit(0);
    }
    printf("\nSocket connected.");

    printf("\n\n");
    int pid;
    pid=fork();
    while(1){
```

```c
        if(pid>0)
        {
            //parent
            recb=recv(s,buff,sizeof(buff),0);
            if(recb==-1)
            {
            printf("\nMessage Recieving Failed");
            close(s);
            exit(0);
            }
        if(strcmp(buff,"BYE")==0)
            break;
        printf("\nParent - Message Recieved: ");
        printf("%s\n", buff);
        }
        else
        {
            //child
            printf("\nChild - Type Message: ");
        scanf("%s", buff2);

        sntb=send(s,buff2,sizeof(buff2),0);
        if(sntb==-1)
        {
            close(s);
            printf("\nMessage Sending Failed");
            exit(0);
        }
        if(strcmp(buff2,"BYE")==0)
            break;
        }
    }

    close(s);

}
```