

CONNECTING MULTIPLE CLIENTS WITH A SINGLE SERVER USING SOCKETS

SERVER.C

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

#define PORT 3554
#define SIZE 256

int main()
{
    int serverSocket,newSocket;
    struct sockaddr_in server_address,new_address;
    pid_t childpid;

    socklen_t serverLen = sizeof(server_address);
    socklen_t clientLen = sizeof(new_address);
    char msg[SIZE],buf[SIZE];
    serverSocket = socket(AF_INET,SOCK_STREAM,0);

    if(serverSocket<0)
    {
        perror("Can't create Socket..\n");
        return 1;
    }

    printf("Server socket created..\n");
    memset(&server_address,'\0',sizeof(server_address));

    server_address.sin_family = AF_INET;
    server_address.sin_port = htons(PORT);
    server_address.sin_addr.s_addr = INADDR_ANY;

    int b = bind(serverSocket,(struct sockaddr *)&server_address,serverLen);

    if(b<0)
    {
        perror("Binding error..\n");
        return 1;
    }
    if(listen(serverSocket,2)==0)
    {
        printf("Listening..\n");
    }
    else
    {
        perror("Can't listen to requests..\n");
        return 1;
    }

    while(1)
    {
        newSocket = accept(serverSocket,(struct sockaddr*)&new_address,&clientLen);
        if(newSocket<0)
        {
            perror("Can't accept requests..\n");
            return 1;
        }
        printf("Connection accepted %d:%d",inet_ntoa(new_address.sin_addr),ntohs(new_address.sin_port));
```

```

        if((childpid=fork())==0)
        {
            close(serverSocket);

            while(1)
            {
                recv(newSocket,msg,sizeof(msg),0);
                if(strcmp(msg,"exit")==0)
                {
                    printf("Client %d disconnected from server..\n",inet_ntoa(new_address.sin_addr));
                    return 1;
                }
                else
                {
                    printf("Client %d: %s\n",ntohs(new_address.sin_port),msg);
                    sprintf(buf,"Server: %s\n",msg);
                    send(newSocket, buf, strlen(buf), 0);
                    bzero(buf,sizeof(buf));
                }
            }
        }
    }
    return 0;
}

```

CLIENT.C

```

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

#define PORT 3554
#define SIZE 256

int main()
{
    int clientSocket;
    struct sockaddr_in server_address;
    char msg[SIZE],buf[SIZE];
    clientSocket = socket(AF_INET,SOCK_STREAM,0);

    if(clientSocket<0)
    {
        perror("Can't create Socket..\n");
        return 1;
    }

    printf("Client socket created..\n");
    memset(&server_address,'\0',sizeof(server_address));

    server_address.sin_family = AF_INET;
    server_address.sin_port = htons(PORT);
    server_address.sin_addr.s_addr = INADDR_ANY;
    int c = connect(clientSocket,(struct sockaddr*)&server_address,sizeof(server_address));

    if(c<0)
    {
        perror("Can't connect to the server..\n");
        return 1;
    }

    printf("Connected to the server..\n");
}

```

```

while(1)
{
    printf("Enter your message and press enter..\n");
    scanf("%s",buf);
    send(clientSocket,buf,sizeof(buf),0);
    if(strcmp(buf,"exit")==0)
    {
        close(clientSocket);
        printf("Disconnected from the server..\n");
        return 1;
    }
    if(recv(clientSocket,msg,sizeof(msg),0)<0)
    {
        perror("Can't receive message..\n");
        return 1;
    }
    printf("%s\n",msg);
    bzero(msg,sizeof(msg));
}
return 0;
}

```

OUTPUT

CLIENT 1 :-

```

[s2019103573@centos8-linux Wed Sep 22 06:31 PM lab3]$ ./client
Client socket created..
Connected to the server..
Enter your message and press enter..
Sachin
Server: Sachin

Enter your message and press enter..
Hey
Server: Hey

Enter your message and press enter..
Cheers!
Server: Cheers!

Enter your message and press enter..
Bye
Server: Bye

Enter your message and press enter..
exit
Disconnected from the server..
[s2019103573@centos8-linux Wed Sep 22 06:35 PM lab3]$ 

```

CLIENT 2 :-

```
[s2019103573@centos8-linux Wed Sep 22 06:31 PM lab3]$ ./client
Client socket created..
Connected to the server..
Enter your message and press enter..
Rohit
Server: Rohit

Enter your message and press enter..
Hii
Server: Hii

Enter your message and press enter..
Uhhhhh
Server: Uhhhhh

Enter your message and press enter..
Byeee
Server: Byeee

Enter your message and press enter..
exit
Disconnected from the server..
[s2019103573@centos8-linux Wed Sep 22 06:35 PM lab3]$
```

CLIENT 3 :-

```
[s2019103573@centos8-linux Wed Sep 22 06:32 PM lab3]$ ./client
Client socket created..
Connected to the server..
Enter your message and press enter..
Virat
Server: Virat

Enter your message and press enter..
Hello
Server: Hello

Enter your message and press enter..
Finee!!
Server: Finee!!

Enter your message and press enter..
Ooops!
Server: Ooops!

Enter your message and press enter..
exit
Disconnected from the server..
[s2019103573@centos8-linux Wed Sep 22 06:35 PM lab3]$
```

SERVER :-

```
[s2019103573@centos8-linux Wed Sep 22 06:30 PM lab3]$ ./server
Server socket created..
Listening..
Connection accepted from -145550128:42182
Connection accepted from -145550128:42204
Connection accepted from -145550128:42248
Client 42182: Sachin
Client 42182: Hey
Client 42204: Rohit
Client 42204: Hii
Client 42248: Virat
Client 42248: Hello
Client 42182: Cheers!
Client 42204: Uhhhhh
Client 42248: Finee!!
Client 42182: Bye
Client 42204: Byeee
Client 42248: Ooops!
Client -145550128 disconnected from server..
Client -145550128 disconnected from server..
Client -145550128 disconnected from server..
```