**Echo Server and Client using TCP/IP**

**client.c**

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

int main()
{
        int sockfd,len,n;
        long port;
        char buff[200];
        struct sockaddr_in cliaddr;
        len=sizeof(cliaddr);

        printf("Enter the port number you got from Server side:");
        scanf("%ld" ,&port);

        cliaddr.sin_family=AF_INET;
        cliaddr.sin_addr.s_addr=inet_addr("127.0.0.1");
        cliaddr.sin_port=htons(port);
        sockfd=socket(AF_INET,SOCK_STREAM,0);
        connect(sockfd,(struct sockaddr *)&cliaddr,len);
        printf("Enter a string for server: ");
        scanf("%s", buff);
        write(sockfd, buff ,sizeof(buff));
        n=read(sockfd,buff ,sizeof(buff));

        buff[n]=0;

        printf("Client received the message= %s\n" , buff);
        return 0;
}

// Code by
// Subham Sagar Paira (www.subhamsagarpaira.com)
```

**server.c**

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

int main()
{
        int listenfd,connfd,len,n;
        char buff[200];

        struct sockaddr_in servaddr,cliaddr;
        len=sizeof(servaddr);
        servaddr.sin_family=AF_INET;

        servaddr.sin_addr.s_addr=htons( INADDR_ANY);

        servaddr.sin_port=htons(0);
        listenfd=socket(AF_INET,SOCK_STREAM,0);
        bind(listenfd, (struct sockaddr *)&servaddr,len);
        getsockname(listenfd,(struct sockaddr *)&servaddr ,&len);
        printf("Port for client=%ld\n",(long)ntohs(servaddr.sin_port));
        listen(listenfd,5);
        connfd=accept(listenfd,(struct sockaddr *)&cliaddr ,&len);
        n=read(connfd , buff ,sizeof(buff));

        buff[n]=0;

        write(connfd, buff ,sizeof(buff));

        return 0;

}

// Code by
// Subham Sagar Paira (www.subhamsagarpaira.com)
```

**Execution**

1. Run the server file.
     ./server
     Port for client=55399

2. Run the client file with client's IP address.
     ./client 192.168.1.101
     Enter the port number you got from Server side:55399
     Enter a string for server: this_is_client
     Client received the message: this_is_client


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