Computer Networks Lab
Week-4
Aug 13, 2021

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L2 - SWE

Aim: To create simple udp client server communication

Procedure:
STEP 1: CREATE A FOLDER (Regno)
STEP 2: CREATE a filename server.c
STEP 3: open or click server.c
STEP4: WRITE THE PROGRAM IN server.c
STEP5: CREATE a filename client.c
STEP6: open or click client.c
STEP7: Write the program for client.c
STEP8: OPEN A NEW TERMINAL
STEP9: Type cd foldername
STEP10: Type cc server.c
STEP11: Type ./a.out
STEP12: Open one more terminal
STEP13: Type cc client.c
STEP14: Type ./a.out 127.0.0.1
STEP15: Type any message, say hello in the client terminal
STEP16: Verify its received in the server

Code:
Server.c
```
#include<sys/socket.h>
#include<stdio.h>
#include<unistd.h>
#include<string.h>
#include<stdlib.h>
#include<netinet/in.h>
#include<netdb.h>
```

```
#include<arpa/inet.h>
#include<sys/types.h>
int main(int argc,char *argv[])
{
int sd;
char buff[1024];
struct sockaddr_in cliaddr,servaddr;
socklen_t clilen;
clilen=sizeof(cliaddr);
/*UDP socket is created, an Internet socket address structure is filled with wildcard
address & server's well known port*/
sd=socket(AF_INET,SOCK_DGRAM,0);
if (sd<0)
{
perror ("Cannot open Socket");
exit(1);
}
bzero(&servaddr,sizeof(servaddr));
/*Socket address structure*/
servaddr.sin_family=AF_INET;
servaddr.sin_addr.s_addr=htonl(INADDR_ANY);
servaddr.sin_port=htons(1504);
 /*Bind function assigns a local protocol address to the socket*/
if(bind(sd,(struct sockaddr*)&servaddr,sizeof(servaddr))<0)
{
perror("error in binding the port");
exit(1);
}
printf("%s","Server is Running…\n");
while(1)
{
bzero(&buff,sizeof(buff));
 /*Read the message from the client*/
if(recvfrom(sd,buff,sizeof(buff),0,(struct sockaddr*)&cliaddr,&clilen)<0)
{
```

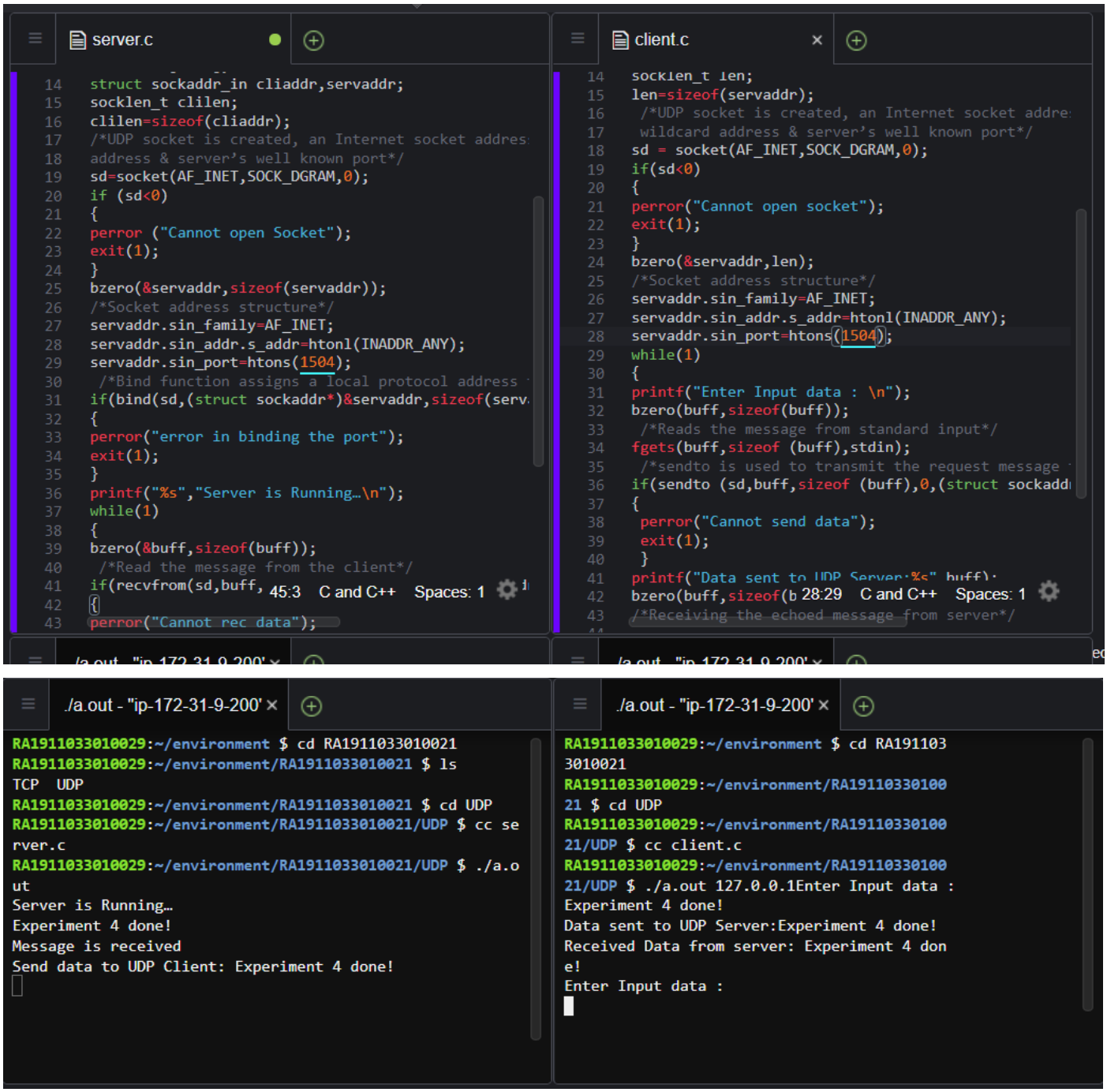
```
perror("Cannot rec data");
exit(1);
 }
printf("%sMessage is received \n",buff);
/*Sendto function is used to echo the message from server to client side*/
if(sendto(sd,buff,sizeof(buff),0,(struct sockaddr*)&cliaddr,clilen)<0)
 {
perror("Cannot send data to client");
exit(1);
 }
 printf("Send data to UDP Client: %s",buff);
}
close(sd);
return 0;
}
```

Client.c

```
#include<sys/types.h>
#include<sys/socket.h>
#include<stdio.h>
#include<stdlib.h>
#include<unistd.h>
#include<string.h>
#include<netinet/in.h>
#include<netdb.h>
int main(int argc,char*argv[])
{
int sd;
char buff[1024];
struct sockaddr_in servaddr;
socklen_t len;
len=sizeof(servaddr);
 /*UDP socket is created, an Internet socket address structure is filled with
 wildcard address & server's well known port*/
sd = socket(AF_INET,SOCK_DGRAM,0);
if(sd<0)
```

```
{
perror("Cannot open socket");
exit(1);
}
bzero(&servaddr,len);
/*Socket address structure*/
servaddr.sin_family=AF_INET;
servaddr.sin_addr.s_addr=htonl(INADDR_ANY);
servaddr.sin_port=htons(4000);
while(1)
{
printf("Enter Input data : \n");
bzero(buff,sizeof(buff));
 /*Reads the message from standard input*/
fgets(buff,sizeof (buff),stdin);
 /*sendto is used to transmit the request message to the server*/
if(sendto (sd,buff,sizeof (buff),0,(struct sockaddr*)&servaddr,len)<0)
{
 perror("Cannot send data");
 exit(1);
 }
printf("Data sent to UDP Server:%s",buff);
bzero(buff,sizeof(buff));
/*Receiving the echoed message from server*/
if(recvfrom (sd,buff,sizeof(buff),0,(struct sockaddr*)&servaddr,&len)<0)
 {
 perror("Cannot receive data");
 exit(1);
 }
printf("Received Data from server: %s",buff);
 }
close(sd);
return 0;
}
```

Screenshot:


server.c
client.c
./a.out - "ip-172-31-9-200'
RA1911033010029:~/environment $ cd RA1911033010021
RA1911033010029:~/environment/RA1911033010021 $ ls
TCP UDP
RA1911033010029:~/environment/RA1911033010021 $ cd UDP
RA1911033010029:~/environment/RA1911033010021/UDP $ cc server.c
RA1911033010029:~/environment/RA1911033010021/UDP $ ./a.out
Server is Running…
Experiment 4 done!
Message is received
Send data to UDP Client: Experiment 4 done!
RA1911033010029:~/environment $ cd RA1911033010021
RA1911033010029:~/environment/RA19110330100
21 $ cd UDP
RA1911033010029:~/environment/RA19110330100
21/UDP $ cc client.c
RA1911033010029:~/environment/RA19110330100
21/UDP $ ./a.out 127.0.0.1Enter Input data :
Experiment 4 done!
Data sent to UDP Server:Experiment 4 done!
Received Data from server: Experiment 4 done!
Enter Input data :