

NETWORK AND COMMUNICATION

LAB 5

Develop an ATM application to update the withdrawn amount in the account before any transaction from the account.

SERVER SIDE CODE

```
#include <stdio.h>
#include <string.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include <time.h>
int main()
{
    time_t send_time,current_time;
    int PORT=1809,count=0,n,flag;
    char *token;
    char account_no[40];
    char withdraw[40];
    char msg[1024],msg_old[1024],msg1[1];
    struct sockaddr_in addr;
    int s = socket(AF_INET, SOCK_STREAM, 0);
    if(s<0)
    {
        printf(" Socket not created\n");
    }
    else
    {
        printf("Socket created\n");
    }

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

    int bind_var = bind(s, (struct sockaddr *)&addr,sizeof(struct sockaddr_in) );
    if(bind_var <0)
    {
        printf("Error binding socket\n");
    }
    else
    {
        printf("Successfully bound to port %u\n", PORT);
    }

    int ls = listen(s,5);
    if(ls<0)
    {
        printf("Listening Failed\n");
    }
```

```

}
else
{
    printf("Listening to socket \n");
}

int length = sizeof(struct sockaddr_in);
int accept_var = accept(s, (struct sockaddr *)&addr,&length);
if(accept_var == -1)
{
    printf("Accept Failed\n");
}
else
{
    printf("Accepted the socket \n");
}
printf("Client Address = %s\n\n",inet_ntoa(addr.sin_addr));
while(1)
{
    if(recv(accept_var , msg , 1024 , 0)){
        if(strcmp(msg,msg_old))
        {
            send(accept_var, msg1, 1 , 0);
            strcpy(msg_old,msg);
        }
        else
        {
            printf("ATM Sent : %s\n",msg);
            token=strtok(msg,"-");
            strcpy(account_no,token);
            token=strtok(NULL,"-");
            strcpy(withdraw,token);
            printf("Account no. %s\n",account_no);
            printf("withdraw %s\n",withdraw);
            printf("Enter next frame either 0 or 1 : ");
            scanf(" %c",msg1);
            send(accept_var , msg1, 1 , 0);
            strcpy(msg_old,msg);
        }
    }
}
}
}

```

SCREENSHOT – SERVER SIDE

```

dhruv@dhruv-Inspiron-5559: ~
dhruv@dhruv-Inspiron-5559:~$ gcc -o atmServer atmServer.c
dhruv@dhruv-Inspiron-5559:~$ ./atmServer
Socket created
Successfully bound to port 1809
Listening to socket
Accepted the socket
Client Address = 127.0.0.1

ATM Sent : 1190-3900
Account no. 1190
withdraw 3900
Enter next frame either 0 or 1 : 1
ATM Sent : 5387-950
Account no. 5387
withdraw 950
Enter next frame either 0 or 1 : 1
ATM Sent : 5387-950
Account no. 5387
withdraw 950
Enter next frame either 0 or 1 : 0
ATM Sent : 7438-8000
Account no. 7438
withdraw 8000
Enter next frame either 0 or 1 : 1
^C
dhruv@dhruv-Inspiron-5559:~$

```

CLIENT SIDE CODE

```

#include <stdio.h>
#include <string.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <time.h>
int main()
{
    int PORT=1809,n,flag=0;
    int count=0;
    time_t send_time,current_time;
    char msg[1024],msg1[1];
    char msg2[40];
    strcpy(msg,"");
    struct sockaddr_in addr;
    int s = socket(AF_INET, SOCK_STREAM, 0);
    if(s<0)
    {
        printf("Error, Port not created\n");
    }
    else
    {

```

```

    printf("Port created\n");
}

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

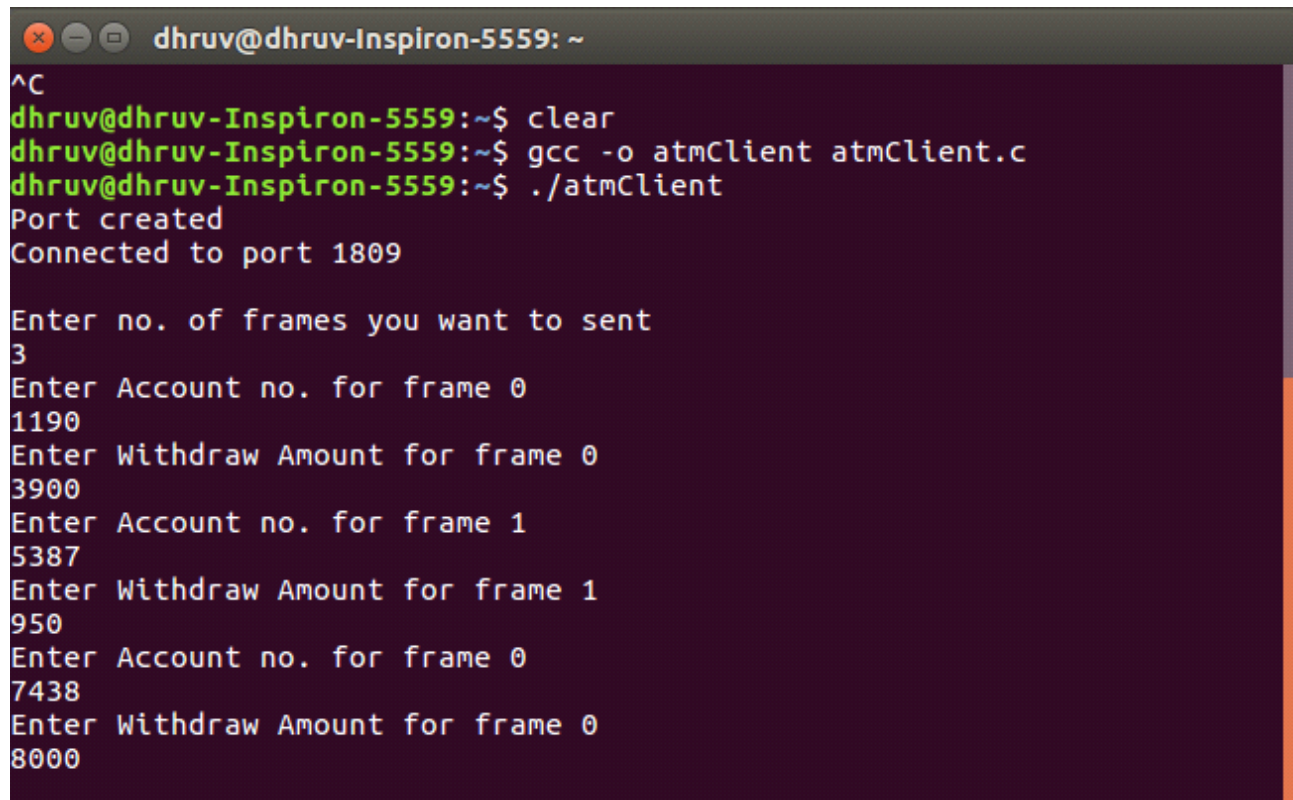
int con=connect(s, (struct sockaddr *) &addr, sizeof(struct sockaddr_in));
if(con<0)
{
    printf("Connection failed\n");
}
else
{
    printf("Connected to port %d\n\n",PORT);
}

printf("Enter no. of frames you want to sent\n");
scanf("%d",&n);
while(n!=0)
{
    strcpy(msg,"");
    printf("Enter Account no. for frame %d\n",count);
    scanf("%s",msg2);
    strcat(msg,msg2);
    strcat(msg,"-");
    strcpy(msg2,"");
    printf("Enter Withdraw Amount for frame %d\n",count);
    scanf("%s",msg2);
    strcat(msg,msg2);
    flag=0;
    while(flag!=1)
    {
        send(s, msg, 1024, 0);
        send_time=time(NULL);
        current_time=time(NULL);
        while(send_time-current_time<7200)
        {
            if(recv(s, msg1, 1, 0))
            {
                break;
            }
            current_time=time(NULL);
        }
        if(count==0&&msg1[0]=='1')
        {
            flag=1;
            count=1;
        }
        if(count==1&&msg1[0]=='0')
        {

```

```
        flag=1;
        count=0;
    }
}
n--;
}
printf("\nFinished transmitting\n");
}
```

SCREENSHOT – CLIENT SIDE



```
dhruv@dhruv-Inspiron-5559: ~
^C
dhruv@dhruv-Inspiron-5559:~$ clear
dhruv@dhruv-Inspiron-5559:~$ gcc -o atmClient atmClient.c
dhruv@dhruv-Inspiron-5559:~$ ./atmClient
Port created
Connected to port 1809

Enter no. of frames you want to sent
3
Enter Account no. for frame 0
1190
Enter Withdraw Amount for frame 0
3900
Enter Account no. for frame 1
5387
Enter Withdraw Amount for frame 1
950
Enter Account no. for frame 0
7438
Enter Withdraw Amount for frame 0
8000
```