## **NETWORK AND COMMUNICATION**

# LAB 5

# **SERVER SIDE CODE**

```
#include <arpa/inet.h>
#include <stdio.h>
#include <string.h>
#include <sys/socket.h>
#include <unistd.h>
#include <stdlib.h>
#include <math.h>
int main()
  const char* server name = "localhost";
  const int server_port = 8080;
  struct sockaddr in server address;
  memset(&server_address, 0, sizeof(server_address));
  server address.sin family = AF INET;
  inet_pton(AF_INET, server_name, &server_address.sin_addr);
  server_address.sin_port = htons(server_port);
  int sock;
  if ((sock = socket(PF INET, SOCK STREAM, 0)) < 0)
    printf("could not create socket\n");
    return 1;
  if (connect(sock, (struct sockaddr*)&server address,
         sizeof(server_address)) < 0)</pre>
  {
    printf("could not connect to server\n");
    return 1;
  const char* data to send = "Hello world!";
  send(sock, data_to_send, strlen(data_to_send), 0);
  int n = 0;
  int len = 0, maxlen = 2000;
  char buffer[maxlen];
  char* pbuffer = buffer;
  while ((n = recv(sock, pbuffer, maxlen, 0)) > 0)
  {
    pbuffer += n;
    maxlen -= n;
    len += n;
    buffer[len]='\0';
    printf("\n %s \n",buffer);
    int n=8,sum=0,tsum=0,i,k,v; //length of recieved message
       //sum for each character and tsum for all character ascii total
```

```
v=len/8; // each ascii can be put in max 8 bit
  printf("\n Recieved Message is: \n");
  for(i=0; i<len; i++)
    if(buffer[i]=='1') // 2 power position if its 1
       sum=sum+pow(2,n-1);
      tsum=tsum+pow(2,n-1);
    }
    n--;
    if(n==0) // when bits are done 8 bits
      if(v>1)
       {
         printf("%c",sum);
         V--;
       }
       sum=0;
       n=8;
    }
  }
  if(tsum%256==0) //check sum correctness
    printf("\n Correct ");
  else
    printf("\n Incorrect");
  close(sock);
}
return 0;
```

# **CLIENT SIDE CODE**

}

```
#include <arpa/inet.h>
#include <stdio.h>
#include <string.h>
#include <sys/socket.h>
#include <unistd.h>
#include <stdlib.h>
#include <math.h>

int main()
{
    const char* server_name = "localhost";
    const int server_port = 8080;
```

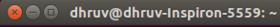
```
struct sockaddr_in server_address;
  memset(&server address, 0, sizeof(server address));
  server address.sin family = AF INET;
  inet pton(AF INET, server name, & server address.sin addr);
  server address.sin port = htons(server port);
  int sock;
  if ((sock = socket(PF INET, SOCK STREAM, 0)) < 0)
    printf("could not create socket\n");
    return 1;
  if (connect(sock, (struct sockaddr*)&server address,
         sizeof(server_address)) < 0)</pre>
  {
    printf("could not connect to server\n");
    return 1;
  }
  const char* data_to_send = "Hello world!";
  send(sock, data_to_send, strlen(data_to_send), 0);
  int n = 0;
  int len = 0, maxlen = 2000;
  char buffer[maxlen];
  char* pbuffer = buffer;
  while ((n = recv(sock, pbuffer, maxlen, 0)) > 0)
    pbuffer += n;
    maxlen -= n;
    len += n;
    buffer[len]='\0';
    printf("\n %s \n",buffer);
    int n=8,sum=0,tsum=0,i,k,v; //length of recieved message //sum for each character and tsum
for all character ascii total
    v=len/8; // each ascii can be put in max 8 bit
    printf("\n Recieved Message is: \n");
    for(i=0; i<len; i++)
      if(buffer[i]=='1') // 2 power position if its 1
         sum=sum+pow(2,n-1);
        tsum=tsum+pow(2,n-1);
      }
      if(n==0) // when bits are done 8 bits
         if(v>1)
           printf("%c",sum);
         }
```

```
sum=0;
    n=8;
}
if(tsum%256==0) //check sum correctness
{
    printf("\n Correct ");
}
else
{
    printf("\n Incorrect");
}
close(sock);
}
return 0;
}
```

## SCREENSHOT - SERVER SIDE

```
🔊 🖃 🗊 dhruv@dhruv-Inspiron-5559: ~
dhruv@dhruv-Inspiron-5559:~$ ./serverTicket
Port created
Successfully bound to port 8080
Listening to socket
Client Address = 127.0.0.1
Length to message :156
Message to be sent:
Customer Name: Mr. Client
Movie name: C.I.D
Theatrename: Super Cinemas
Show data and time: 05th Jan 2018 6pm
No. of tickets:2
Seat Number: A9, A10
Message to be sent included checksum is
Check sum value that is appended is 45
Sent bits are :
Data received : Customer Name: Mr. Client
Movie name: C.I.D
Theatre name: SuperCinemas
Show data and time: 05th Jan 2018 6pm
No. of tickets:2
Seat Number: A9,A10
dhruv@dhruv-Inspiron-5559:~$
```

# **SCREENSHOT – CLIENT SIDE**



dhruv@dhruv-Inspiron-5559:~\$ ./clientTicket

Recieved Message is: Customer Name: Mr. Client

Movie name: C.I.D

Theatre name: SuperCinemas

Show data and time: 05th Jan 2018 6pm

No. of tickets:2 Seat Number: A9,A10

Correct dhruv@dhruv-Inspiron-5559:~\$