

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)
    {
        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

```

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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)
{
    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;
}

```

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 :
00100000010000110111010101110011011101000110111101101101011001010111001000100000
01001110011000010110110101100101001110100010000001001101011100100010111000100000
01000011011011000110100101100101011011100111010000100000000010100010000001001101
01101111011101100110100101100101001000000110111001100001011011010110010100111010
00100000010000110010111001001001001011100100010000100000000010100010000001010100
011010000110010101110000101110100011100100110010100100000011011100110000101101101
01100101001110100010000001010011011101010111000001100101011100100100001101101001
0110111001100101011011011100001011100110010000000001010001000000101001101101000
01101111011101110010000001100100011000010111010001100001001000000110000101101110
01100100001000000111010001101001011011010110010100111010001000000011000000110101
01110100011010000010000001001010011000010110111000100000001100100011000000110001
00111000001000000011011001110000011011010010000000001010001000000100111001101111
00101110001000000110111101100110001000000111010001101001011000110110101101100101
01110100011100110011101000110010001000000000101000100000010100110110010101100001
01110100001000000100111001110101011011010110001001100101011100100011101000100000
01000001001110010010110001000001001100010011000000101101
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: ~  
dhruv@dhruv-Inspiron-5559:~$ ./clientTicket  
  
00100000010000110111010101110011011101000110111101101100101011100100010000  
00100111001100001011011010110010100111010001000000100110101110010001011100010000  
00100001101101100011010010110010101101110011101000010000000001010001000000100110  
10110111101110110011010010110010100100000011011100110000101101101011001010011101  
00010000001000011001011100100100100101110010001000010000000001010001000000101010  
00110100001100101011000010111010001110010011001010010000001101110011000010110110  
10110010100111010001000000101001101110101011100000110010101110010010000110110100  
10110111001100101011011010110000101110011001000000000101000100000010100110110100  
00110111101110111001000000110010001100001011101000110000100100000011000010110111  
00110010000100000011101000110100101101101011001010011101000100000001100000011010  
10111010001101000001000000100101001100001011011100010000000110010001100000011000  
10011100000100000001101100111000001101101001000000000101000100000010011100110111  
10010111000100000011011110110011000100000011101000110100101100011011010110110010  
10111010001110011001110100011001000100000000010100010000001010011011001010110000  
10111010000100000010011100111010101101101011000100110010101110010001110100010000  
00100000100111001001011100010000010011100010011000000101101  
  
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:~$
```