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Div : SY-IT-A Batch : B1

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Computer Network – Lab Assignment 8

Question :

Implement Selective Repeat flow control protocol using C sockets

Server.c

```
#include<stdio.h>
#include<stdlib.h>
#include<string.h>
#include<sys/socket.h>
#include<sys/types.h>
#include<netinet/in.h>
#include<unistd.h>
int main()
{

printf("\nserver");
int n;

    int client_socket,server_socket;
    client_socket=socket(AF_INET,SOCK_STREAM,0);
    struct sockaddr_in client_addr,server_addr;
    client_addr.sin_addr.s_addr=INADDR_ANY;
    client_addr.sin_family=AF_INET;
    client_addr.sin_port=htons(9000);
    int con=bind(client_socket,(struct
sockaddr*)&client_addr,sizeof(client_addr));
    if(con<0) printf("\n Falied to bind");
    listen(client_socket,5);
    int clength=sizeof(server_addr);
    client_socket=accept(client_socket,(struct
sockaddr*)&server_addr,&clength);
       int j=0,f,ack=0,count=1,c=1;
       read(client_socket,&n,sizeof(n));
        read(client_socket,&f,sizeof(n));
      for(int i=0;i<n+f;i++)
      {
         if(i<f)
         {
            read(client_socket,&j,sizeof(j));
            printf("\nbit recieved:%d",j);
         }
```

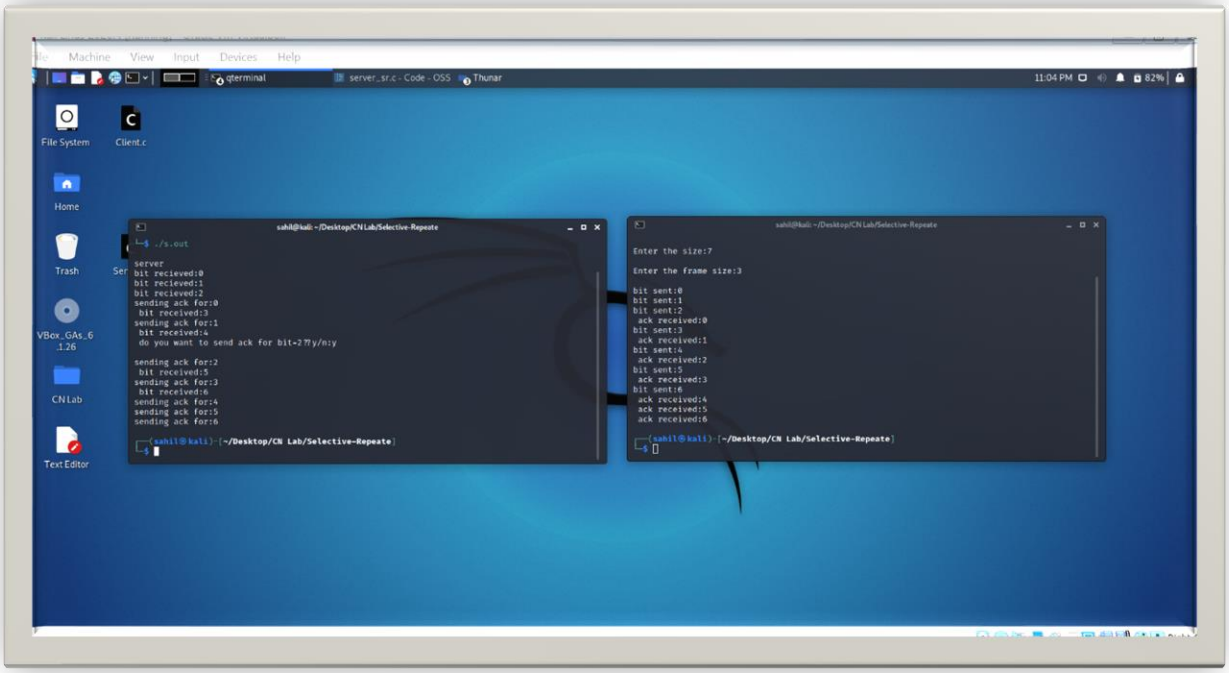
```
        else
        {
            c=1;
            if(i==f+2&&count!=2)
            {
               printf("\n do you want to send ack for bit=%d??y/n:",ack);
               char ans;
               scanf("%c",&ans);
               if(ans=='n'&&count!=2)
               {

                 ack-=1;
                count=2;
                c=2;
                 write(client_socket,&ack,sizeof(ack));
                 ack++;
                printf("\n sending ack for :%d",ack);

                  read(client_socket,&j,sizeof(j));
                   printf("\nbit received:%d",j);




               }
            }
           write(client_socket,&ack,sizeof(ack));
           if(c!=2&&ack<n)
           printf("\nsending ack for:%d",ack);
           if(i<n){
           read(client_socket,&j,sizeof(j));
           printf("\n bit received:%d",j);
           }

           ack++;
        }
      }
}
```

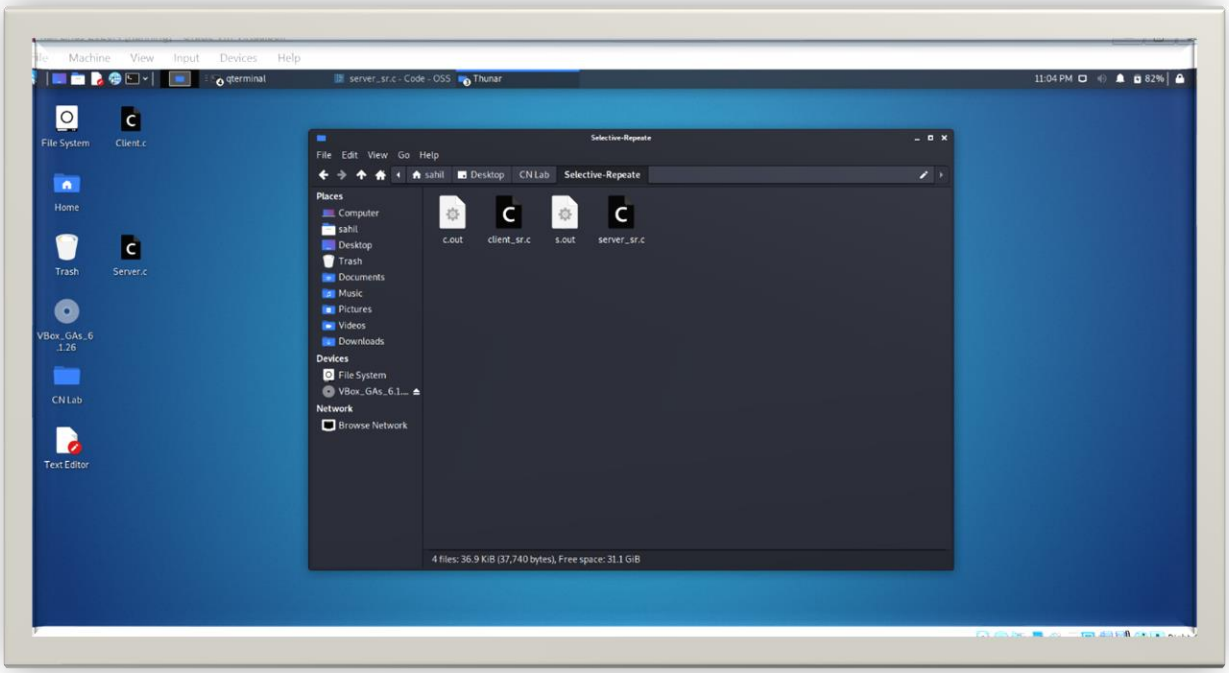
Client.c

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

```c
#include<unistd.h>
int main()
{;
    printf("\nEnter the size:");
int n;
    scanf("%d",&n);
    printf("\nEnter the frame size:");
    int f;
    scanf("%d",&f);
    int client_socket;
    client_socket=socket(AF_INET,SOCK_STREAM,0);
    struct sockaddr_in client_addr;
    client_addr.sin_addr.s_addr=INADDR_ANY;
    client_addr.sin_family=AF_INET;
    client_addr.sin_port=htons(9000);
    int con=connect(client_socket,(struct
sockaddr*)&client_addr,sizeof(client_addr));
    if(con<0) printf("\n Falied to connect");
   write(client_socket,&n,sizeof(n));
    write(client_socket,&f,sizeof(f));

       int j=0,ack=0,pre=-1,count=1,c=1;

      for(int i=0;i<n+f;i++)
      {
         if(i<f)
         {
            write(client_socket,&i,sizeof(j));
            printf("\nbit sent:%d",i);
         }
         else
         {


            read(client_socket,&ack,sizeof(j));
           c=1;
            if(ack!=pre+1&&count!=2)
             {
               count=2;
                 c=2;
                 ack+=1;

                 printf("\n ack not received for the bit  =%d",ack);
                 write(client_socket,&ack,sizeof(ack));
                 printf("\nbit sent=%d",ack);
                   read(client_socket,&ack,sizeof(j));
                 printf("\nack received :%d",ack);
```

```
            }
            if(c!=2&&ack<=n)
          printf("\n ack received:%d",ack);
          if(i<n){
          write(client_socket,&i,sizeof(ack));
          printf("\nbit sent:%d",i);
          }
          pre++;
        }
      }
}
```




Machine View Input Devices Help
qterminal
server_sr.c - Code - OSS
Thunar
11:04 PM
82%
File System
Client.c
Home
Trash
Server.c
VBox_GAs_6.1.26
CN Lab
Text Editor
Selective-Repeate
File Edit View Go Help
sahil
Desktop
CN Lab
Selective-Repeate
Places
Computer
sahil
Desktop
Trash
Documents
Music
Pictures
Videos
Downloads
Devices
File System
VBox_GAs_6.1...
Network
Browse Network
c.out
client_sr.c
s.out
server_sr.c
4 files: 36.9 KiB (37,740 bytes), Free space: 31.1 GiB