

Name : Sahil Dattatray Mohite

Div : SY-IT-A Batch : B1

Roll No. 30 PRN : 12010501

Computer Network – Lab Assignment 7

Question :

Implement Go-Back -N Sliding Window to recover the lost frames 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()
{
    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)
            {
                i=ack;
                ack-=1;
                count=2;
                c=2;
            }
        }
        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>
#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)
            {

                i=pre+1;
                count=2;
                c=2;

                printf("\n ack not received for the bit  =%d",ack+1);
            }
            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++;
        }
    }
}

```

