

Experiment No. 04

Write a program to demonstrate subletting and find the subnet masks.

Program for GO Back Nin C++:

```
#include<bits/stdc++.h>
#include<ctime>

#define ll long long int
using namespace std;

void transmission(ll & i, ll & N, ll & tf, ll & tt) {
    while (i <= tf) {
        int z = 0;
        for (int k = i; k < i + N && k <= tf; k++) {
            cout << "Sending Frame " << k << "..." << endl;
            tt++;
        }
        for (int k = i; k < i + N && k <= tf; k++) {
            int f = rand() % 2;
            if (!f) {
                cout << "Acknowledgment for Frame " << k << "..." << endl;
                z++;
            } else {
                cout << "Timeout!! Frame Number : " << k << " Not Received" << endl;
                cout << "Retransmitting Window..." << endl;
                break;
            }
        }
        cout << "\n";
        i = i + z;
    }
}

int main() {
    ll tf, N, tt = 0;
    srand(time(NULL));
    cout << "Enter the Total number of frames : ";
    cin >> tf;
    cout << "Enter the Window Size : ";
    cin >> N;
    ll i = 1;
    transmission(i, N, tf, tt);
    cout << "Total number of frames which were sent and resent are : " << tt <<
        endl;
    return 0;
}
```

Output:

C:\Users\NIS\Documents\gobackn.exe
Enter the Total number of frames : 7
Enter the Window Size : 3
Sending Frame 1...
Sending Frame 2...
Sending Frame 3...
Acknowledgment for Frame 1...
Timeout!! Frame Number : 2 Not Received
Retransmitting Window...

Sending Frame 2...
Sending Frame 3...
Sending Frame 4...
Acknowledgment for Frame 2...
Timeout!! Frame Number : 3 Not Received
Retransmitting Window...

Sending Frame 3...
Sending Frame 4...
Sending Frame 5...
Timeout!! Frame Number : 3 Not Received
Retransmitting Window...

Sending Frame 3...
Sending Frame 4...
Sending Frame 5...
Acknowledgment for Frame 3...
Timeout!! Frame Number : 4 Not Received
Retransmitting Window...

Sending Frame 4...
Sending Frame 5...
Sending Frame 6...
Timeout!! Frame Number : 4 Not Received
Retransmitting Window...

Sending Frame 4...
Sending Frame 5...
Sending Frame 6...
Timeout!! Frame Number : 4 Not Received
Retransmitting Window...

Sending Frame 4...
Sending Frame 5...
Sending Frame 6...
Acknowledgment for Frame 4...
Timeout!! Frame Number : 5 Not Received
Retransmitting Window...

Sending Frame 5...
Sending Frame 6...
Sending Frame 7...

Program for Selective Repeat:

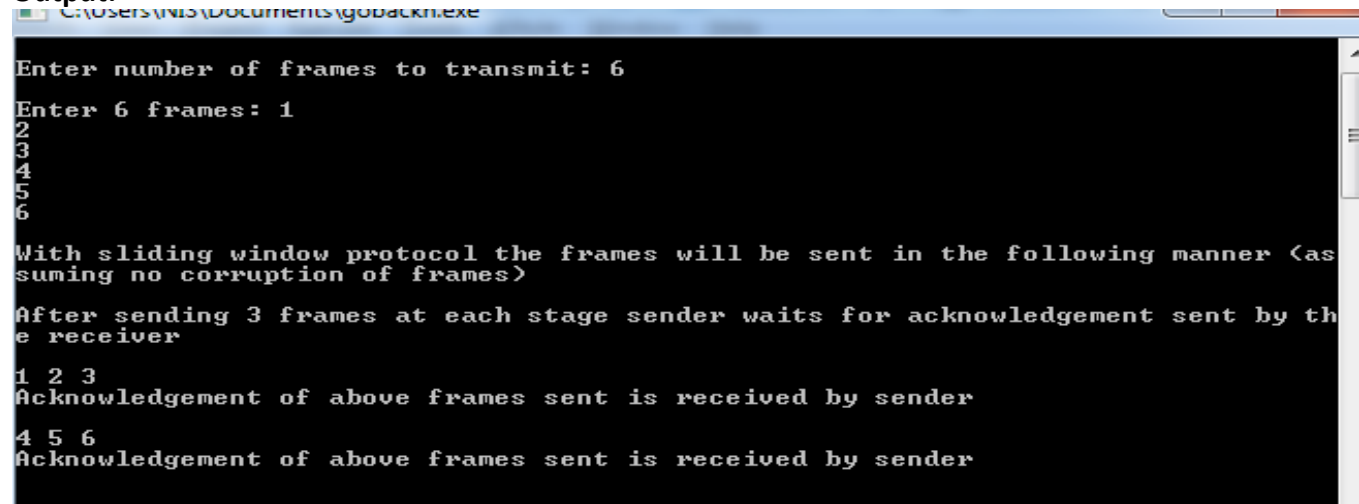
```
#include<stdio.h>
int main()
{
    int w,i,f,frames[50];
    printf("Enter window size: ");
    scanf("%d",&w);

    printf("\nEnter number of frames to transmit: ");
    scanf("%d",&f);
    printf("\nEnter %d frames: ",f);

    for(i=1;i<=f;i++)
        scanf("%d",&frames[i]);
    printf("\nWith sliding window protocol the frames will be sent in the following manner\n\n");
    printf("After sending %d frames at each stage sender waits for acknowledgement sent by\n\nthe receiver\n\n",w);

    for(i=1;i<=f;i++)
    {
        if(i%w==0)
        {
            printf("%d\n",frames[i]);
            printf("Acknowledgement of above frames sent is received by sender\n\n");
        }
        else
            printf("%d ",frames[i]);
    }
    if(f%w!=0)
        printf("\nAcknowledgement of above frames sent is received by sender\n\n");
    return 0;
}
```

Output:



```
C:\Users\win13\Documents\gobackn.exe
Enter number of frames to transmit: 6
Enter 6 frames: 1
2
3
4
5
6

With sliding window protocol the frames will be sent in the following manner <assuming no corruption of frames>

After sending 3 frames at each stage sender waits for acknowledgement sent by the receiver

1 2 3
Acknowledgement of above frames sent is received by sender

4 5 6
Acknowledgement of above frames sent is received by sender
```