

EXPERIMENT – 7

AIM: - Write a program to implement flow control at data link layer using SLIDING WINDOW PROTOCOL. Simulate the flow of frames from one node to another.

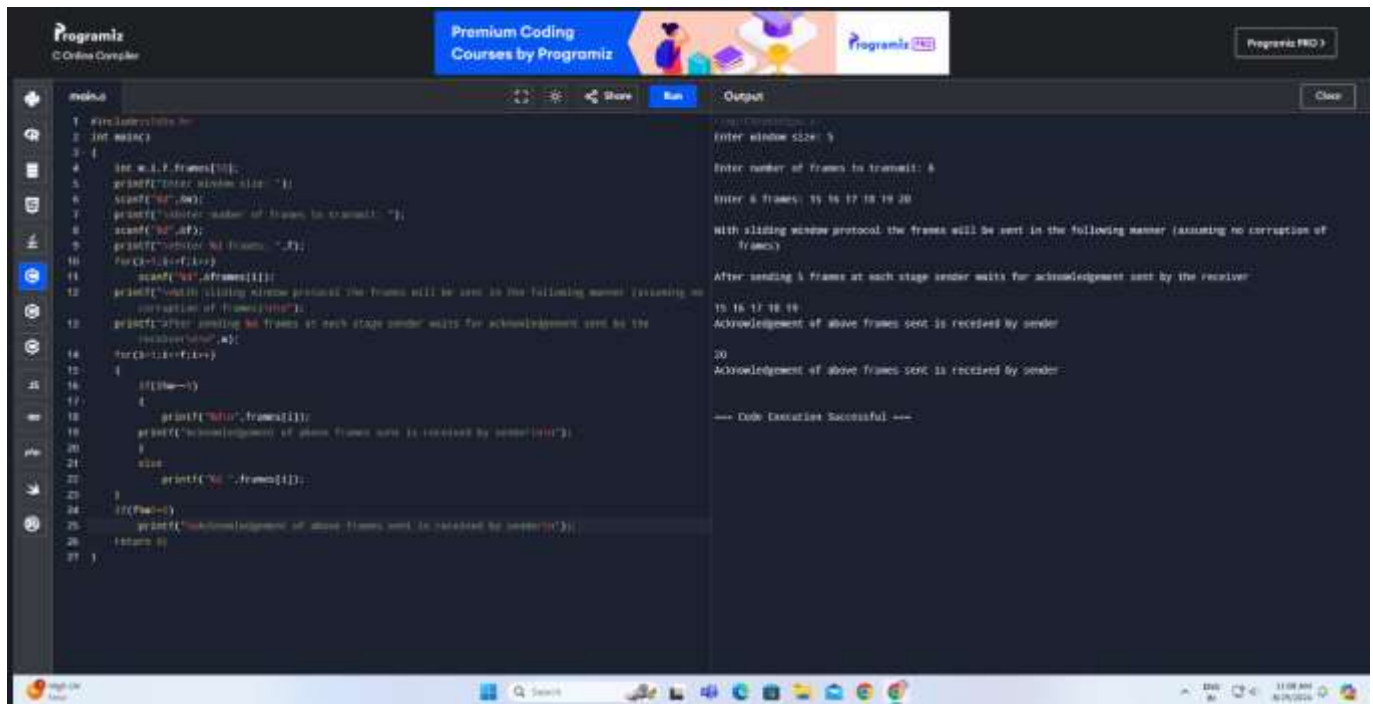
CODE: -

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

    for (i=1; i<=f; i++)
        scanf("%d", &frames[i]);
    printf("\n With sliding window protocol the frames will be sent
in the following manner (assuming no corruption of frames)\n\n");
    printf("After sending %d frames at each frames at each stage
sender waits for acknowledgement sent by the receiver \n\n", w);

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

OUTPUT: -



The screenshot shows a C program in the Programiz Online Compiler. The code implements a sliding window protocol for frame transmission. It starts by defining a window size of 5 and a total of 20 frames. It then simulates the transmission of frames in a sliding window, showing how the window moves forward as frames are acknowledged. The output shows the sequence of frames sent and received, and the final acknowledgment of all frames.

```
1 #include<stdio.h>
2 int main()
3 {
4     int w,i,f,frames[20];
5     printf("Enter window size: ");
6     scanf("%d",&w);
7     printf("Enter number of frames to transmit: ");
8     scanf("%d",&f);
9     printf("Sender side frame: ");
10    for(i=0;i<f;i++)
11    {
12        scanf("%d",&frames[i]);
13        printf("With sliding window protocol the frames will be sent in the following manner (assuming no corruption of frames)\n");
14        printf("After sending %d frames at each stage sender waits for acknowledgement sent by the receiver\n",w);
15        for(i=0;i<f;i++)
16        {
17            if(i%w==0)
18            {
19                printf("\n\n",frames[i]);
20                printf("Acknowledgement of above frames sent is received by sender\n");
21                i++;
22                printf("%d ",frames[i]);
23            }
24            if(i%w==0)
25                printf("\n\nAcknowledgement of above frames sent is received by sender\n");
26        }
27    }
```

Output:

```
Enter window size: 5
Enter number of frames to transmit: 20
Enter 5 frames: 15 16 17 18 19 20
With sliding window protocol the frames will be sent in the following manner (assuming no corruption of frames)
After sending 5 frames at each stage sender waits for acknowledgement sent by the receiver
15 16 17 18 19
Acknowledgement of above frames sent is received by sender
20
Acknowledgement of above frames sent is received by sender
--- Code Execution Successful ---
```

RESULT: -

The code for SLIDING WINDOW have been executed successfully and the output is verified.