Ex: 04

Date: 11.09.24

AIM:

Write a program to implement flow control at data link layer using sliding window protocol.

Stimulate the flow of frames from one node to another.

Code:

```
import java.util.Scanner;
public class Main {
    public static void sender(String message, int windowSize) {
        int numFrames = message.length();
        char[] frames = message.toCharArray();
        int SentFrame = 0;
        while (SentFrame < numFrames) {
            System.out.println("In Sender: Sending frames from
                position" + (SentFrame+1) + "to" + Math.min(
                SentFrame + windowSize, numFrames));
            for (int i = SentFrame; i < Math.min(SentFrame +
                windowSize, numFrames); i++) {
                System.out.println("Frame" + (i+1) + ":" +
                    frames[i] + "' Sent.");
            }
            System.out.println("Receiver: Acknowledgement
                received for frame" + (SentFrame+1));
            SentFrame++;
        }
        System.out.println("In All Frames are Sent Successfully");
    }
```

```
Public static void receiver (String message, int windowsize)
{
}
Public static void main (String[] args){
    Scanner a = new Scanner (System.in);
    System.out.print("Enter the message to send:");
    String message = a.nextline();
    System.out.print("Enter the window size:");
    int windowsize = a.nextInt();
    Sender (message, windowsize);
    Receiver (message, windowsize);
}
}
```

Output:

```
Enter the message to send : Cat
Enter the window size : 3

Sender : Sending frames from position 1 to 3
Frame 1 : 'C' sent.
Frame 2 : 'a' Sent
Frame 3 : 't' sent.
Receiver : *Acknowdgement received for frame 1
Sender : Sending frames from position 2 to 3
Frame 2 : 'a' Sent
Frame 3 : 't' Sent
Receiver : Acknowledgement received for frame 2.
Sender : Sending frames from position 3 to 3.
Frame 3 : 't' sent.
Receiver : Acknowledgement received for frame 3.
All frames Sent Successfully.
```

Result:

Thus the sliding window protocol is executed and verified.

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