practical - 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:

```
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("\n 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 ("Frames" + (i+1) + ":"
            + "frames [i] + " 'sent." );
}

system.out.println ("Receiver : Acknowledge
                received for frame " +
                (sentFrame + 1 ));

sentFrame ++ ;

}
system.out.println ("~~Receiver : Acknowledge~~
                ~~received for frame~~
                "\n All frames sent successfully
                " );
}
public static void main (String [] args) {
    Scanner s = new scanner (system.in);

    System.out.print ("Enter the message to
                send : ");
    String message = s.nextLine ( );
```

```
System.out.print("Enter the message to send:");
                                    window size.
Int window size = S.nextline()
int window size = S.nextInt();

sender (message , window size );

receiver (message , window size );
}
}
```

OUTPUT:

Enter the message to send: Hello run

Enter the window size : 3.

---

sender : sending frames from position 1 to 3

Frame 1 : 'H' sent.

Frame 2 : 'U' sent

Frame 3 : 'n' sent.

Receiver : Acknowledgement received for frame1

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sender : sending frames from pos 2 to 3.

Frame 2 : 'u' sent.

Frame 3 : 'n' sent.

Receiver : Acknowledgment received for frame 2.

Sender : Sending frames from pos 3 to 3.

Frame 3 : 'n' sent.

Receiver : Acknowledgement received for frame 3.

Finally,
All frames sent successfully.

Result :

The output have been verified successfully.

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