

## **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.

Program should achieve at least below given requirements. You can make it a bidirectional program wherein receiver is sending its data frames with acknowledgement (Piggybacking).

**Create a sender program with following features:-**

1. Input Window size from the user.
2. Input a Text message from the user.
3. Consider 1 character per frame.
4. Create a frame with following fields [Frame no., DATA].
5. Send the frames. [Print the output on screen and save it in a file called Sender\_Buffer.]
6. Wait for the acknowledgement from the Receiver. [Induce delay in the program]
7. Reader a file called Receiver\_Buffer.
8. Check ACK field for the Acknowledgement number.
9. If the Acknowledgement number is as expected, send new set of frames accordingly, [overwrite the Sender\_Buffer file with new frames] Else if NACK is received, resend the frames accordingly. [Overwrite the Sender\_Buffer with old frame].

**Create a receiver file with following features**

1. Reader a file called Sender\_Buffer.
2. Check the Frame no.
3. If the Fame no. are as expected, write the appropriate ACK no. in the Receiver\_Buffer file. Else write NACK no. in the Receiver\_Buffer file.

**NOTE: Induce error and verify the behaviour of the program. Manually Change the Frame no and Ack no in the files].**

### **Student observation:**

Write the code here:

Input:

Output: