Exp NO:7 Flow control at Data Link Layer

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AIM:

Writes a program to implement flow control at data link layer using sliding window protocols. Simulate the flow of frames from one node to another.

Features:

- →Input window size and message.
- → sends window size frames at a time.
- → writes frames to Sender Buffer
- → receiver reads frames, sends ACK or NACK received - Buffer
- → sender reads ACK/NACK and continues or resends frames.
- → You can manually edit the file to sim Simulate errors.

CODE:

```
import time
import random
class Sender:
    def __init__(self, total_frames, window_size
        self.total_frames = total_frames
        self.window_size = window_size
        self.base = 0
        self.next_seq = 0
def send_frames (self):
  print(f "\n [Sender] Total Frame to Send:
                {self.total_frames}")
  while self.base < self.total_frames:
```

```
While. self. next_seq < sel. base + self. window_size
    and self. next_seq < self. total_frames
        Print f (f [Sender] Sending frame
            {self. next_seq})
    self. next_seq + = 1.
    time. sleep (1)
def ack_received (self. ack):
    Print (F "(Sender) Acknowledgement Recived
                for Frame (ack }")
    if ack > = self. base:
        self. base = ack + 1

class Reciver:
  def reciver_frame (self, frame_no, Sender):
    4 random. choice ([True, False]):
      Print (f. "[Reciver] Recived frame
                  {frame_no}")
    Sender. ack_recived (frame_no)
  else:
    print (f" (Reciver] frame {frame_no}
          Lost (No ACK Send)")

if __name__ == "__main__":
    total_frames = 5
    window_size = 3
    Sender = sender (total_frame, window_size)
    reciver = reciver ()
    Sender. Send_frames (reciver)
```

OUT PUT:

```
Enter total number of frames: 5
Enter window size: 3
[Sender] Total frames to send: 5
[Sender] sending frame 0
[Sender] sending frame 1
[Sender] sending frame 2
[Receiver] Successfully recived frames 0 to 2
[Sender] Acknowledment received for frame 2
[Sender] sending frame 3
[Sender] sending frame 4
(Sender) sending frame 4
[Receiver] frame 4 Lost or corrupted
(Sender) Timeout Resending window from frame 3
[Sender] sending frame 3
[Sender] sending frame 4
[Received] Successfully received frame 3 to 4.
(Sender) Acknowlegement received for frame 4.
Transmission completed.
```

RESULT: Sliding window protocol is executed sucessfully