EXPERIMENT 6

6. Write a Program to implement Sliding window protocol for Go back N.

PROGRAM:

SENDER SIDE:

```
import socket
import random
import time

s = socket.socket()
s.bind(("localhost", 1450))
s.listen(5)
c, adr = s.accept()
print(str(adr))
n = int(input("Enter number of frames: "))
N = int(input("Enter window size: "))
seq = 1 # is used to keep track of the window starting
frame = 1 # frame to send starts with 1
# send first N window size frames
for i in range(N):
      print('Frames sent ->', frame)
      c.send(str(frame).encode())
      frame += 1
      time.sleep(2)
 timer = 5

# will start with acknowledgement frame of 1
while frame <= n:
 t = random.randint(1, 7)

 msg = c.recv(1).decode()

 msg = int(msg)


if (msg != seq):

# here we try to discard the already sent frames after
failed frame

      continue

if (timer > t):

# if the timer is greater than random number be consider
it as ack

      print("acknowledgement received")

      print('Frames sent ->', str(frame))

      # we will send next frame

      c.send(str(frame).encode())

      seq += 1

      frame += 1

      time.sleep(2)

else:

# if timer is less than the random number we consider as
not received ack

      print('acknowledgement not received')

      frame = seq

       # we will again send the frames from window
       starting i.e. seq

      for i in range(N):

           print('Frames sent ->', frame)

           c.send(str(frame).encode())

           frame += 1

           time.sleep(2)
```

RECEIVER SIDE:

```
import socket
import time
s=socket.socket()
s.connect(("localhost", 1450))
while 1:
      msg=s.recv(2).decode()
      print("Received --> ",int(msg))
      s.send(str(msg).encode())
      time.sleep(1)
```

OUTPUT:

```
SENDER SIDE:                                      RECEIVER SIDE:

Enter number of frames: 8                              Received --> 1
Enter window size: 4                                   Received --> 2
Frames sent -> 1                                       Received --> 3
Frames sent -> 2                                       Received --> 4
Frames sent -> 3                                       Received --> 5
Frames sent -> 4                                       Received --> 6
acknowledgement received                               Received --> 3
Frames sent -> 5                                       Received --> 4
acknowledgement received                               Received --> 5
Frames sent -> 6                                       Received --> 6
acknowledgement not received                           Received --> 3
```

```
Frames sent -> 3                                        Received --> 4

Frames sent -> 4                                        Received --> 5

Frames sent -> 5                                        Received --> 6

Frames sent -> 6                                        Received --> 7

acknowledgement not received                            Received --> 8

Frames sent -> 3

Frames sent -> 4

Frames sent -> 5

Frames sent -> 6

acknowledgement received

Frames sent -> 7

acknowledgement received

Frames sent -> 8
```