DCN Lab Exam   Prashanth.S (19MID0020)

Over-view of the program

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m_selective_repeat.py ×   *REPL* [python] ×   *REPL* [python] ×

```python
13  def send(y, sv): ...
18
19  def receiver(z, sv): ...
33
34  window = que([0, 1, 2, 3])
35  frames = [4, 5, 6, -1, -1, -1, -1]
36  rn = que([])
37  s = 0
38  finalreceive = [0] * 7
39  frn = 0
40
41  while(sum(window) > -4): ...
66  print(f"Receiver received : {finalreceive}")
67
```
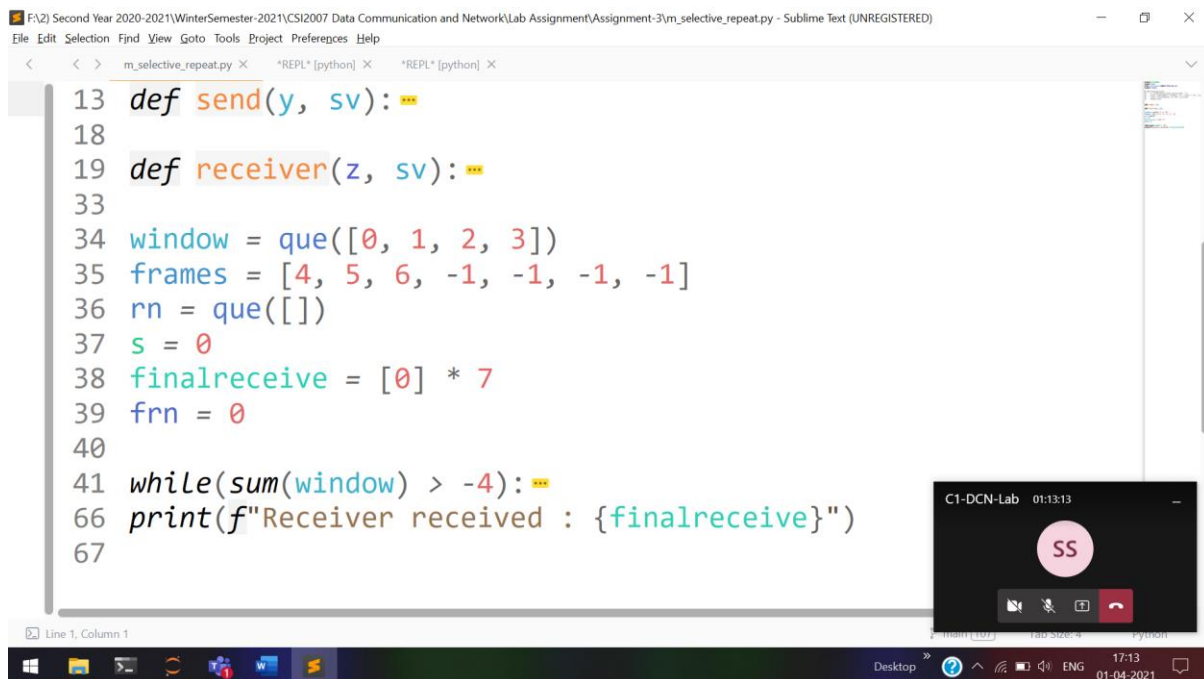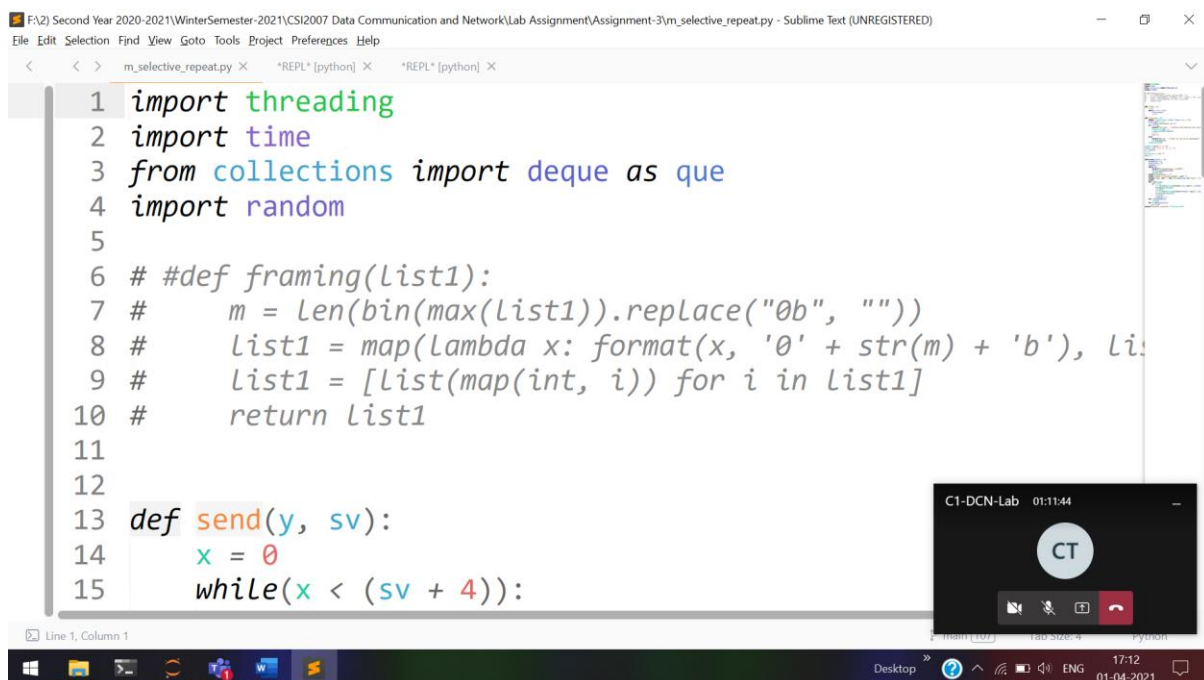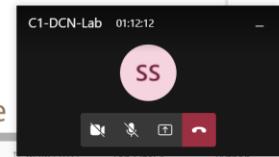
Line 1, Column 1

Actual Code

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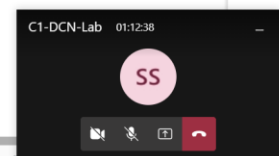m_selective_repeat.py ×   *REPL* [python] ×   *REPL* [python] ×

```python
1  import threading
2  import time
3  from collections import deque as que
4  import random
5
6  # #def framing(list1):
7  #      m = len(bin(max(list1)).replace("0b", ""))
8  #      list1 = map(lambda x: format(x, '0' + str(m) + 'b'), lis
9  #      list1 = [list(map(int, i)) for i in list1]
10 #      return list1
11
12
13 def send(y, sv):
14     x = 0
15     while(x < (sv + 4)):
```

Line 1, Column 1

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m_selective_repeat.py ×   *REPL* [python] ×   *REPL* [python] ×

```python
16              time.sleep(1)
17              x += 1
18
19 def receiver(z, sv):
20      global finalreceive, window, frames, rn, s, frn
21      time.sleep(sv + 2)
22      y = random.randrange(0, 14) % 3
23      if (y != 0):
24          print(f"Ack {z+1}  -->confirms the frame-{z} has rece
25          finalreceive[z] = z
26          window.append(frames[s])
27          s += 1
28          frn += 1
29      else:
30          print(f"NAK {z}  -->frame- {z} has to be
```

Line 1, Column 1

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m_selective_repeat.py ×   *REPL* [python] ×   *REPL* [python] ×

```python
31          rn.appendleft(z)
32      window.popleft()
33
34 window = que([0, 1, 2, 3])
35 frames = [4, 5, 6, -1, -1, -1, -1]
36 rn = que([])
37 s = 0
38 finalreceive = [0] * 7
39 frn = 0
40
41 while(sum(window) > -4):
42      threadList = []
43      ReceiveList = []
44      sleepvar = 0
45      while(rn):
```

Line 1, Column 1

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m_selective_repeat.py ×   *REPL* [python] ×   *REPL* [python] ×

```python
46              print(f"Retransmitting....{rn[0]}")
47              window.appendleft(rn[0])
48              rn.popleft()
49          print("Transmitting.....")
50          print("frames in current window:", end=" ")
51          [print(frame, end=" ") for frame in window if frame != -1
52          print()
53          for i in window:
54              if i >= 0:
55                  t = threading.Thread(target=send, args=(i, sleepva
56                  threadList.append(t)
57                  t.start()
58                  r = threading.Thread(target=receiver,
59                  ReceiveList.append(r)
60                  r.start()
```

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m_selective_repeat.py ×   *REPL* [python] ×   *REPL* [python] ×

```python
61                  sleepvar += 1
62          for i in threadList:
63              i.join()
64          for r1 in ReceiveList:
65              r1.join()
66  print(f"Receiver received : {finalreceive}")
67
```

```
Transmitting.....
frames in current window: 0 1 2 3
NAK 0  -->frame- 0 has to be send again
Ack 2  -->confirms the frame-1 has received
Ack 3  -->confirms the frame-2 has received
Ack 4  -->confirms the frame-3 has received
Retransmitting....0
Transmitting.....
frames in current window: 0 4 5 6
Ack 1  -->confirms the frame-0 has received
Ack 5  -->confirms the frame-4 has received
Ack 6  -->confirms the frame-5 has received
Ack 7  -->confirms the frame-6 has received
Receiver received : [0, 1, 2, 3, 4, 5, 6]

***Repl Closed***
```

```
Transmitting.....
frames in current window: 0 1 2 3
NAK 0  -->frame- 0 has to be send again
NAK 1  -->frame- 1 has to be send again
Ack 3  -->confirms the frame-2 has received
Ack 4  -->confirms the frame-3 has received
Retransmitting....1
Retransmitting....0
Transmitting.....
frames in current window: 0 1 4 5
NAK 0  -->frame- 0 has to be send again
Ack 2  -->confirms the frame-1 has received
NAK 4  -->frame- 4 has to be send again
Ack 6  -->confirms the frame-5 has received
Retransmitting....4
Retransmitting....0
```

```
Retransmitting....0
Transmitting.....
frames in current window: 0 4 6
Ack 1  -->confirms the frame-0 has received
NAK 4  -->frame- 4 has to be send again
NAK 6  -->frame- 6 has to be send again
Retransmitting....6
Retransmitting....4
Transmitting.....
frames in current window: 4 6
Ack 5  -->confirms the frame-4 has received
NAK 6  -->frame- 6 has to be send again
Retransmitting....6
Transmitting.....
frames in current window: 6
```

```
frames in current window: 6
Ack 7  -->confirms the frame-6 has received
Receiver received : [0, 1, 2, 3, 4, 5, 6]

***Repl Closed***
```