Report

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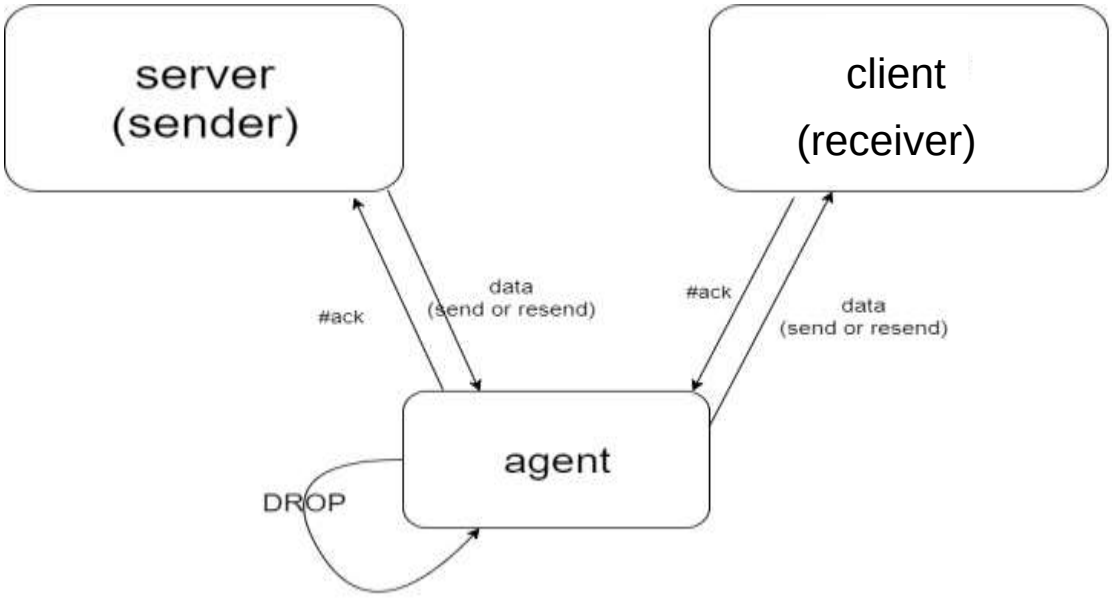
- How to execute my program
  1. Run the agent.py, client.py first.

     ex: **python agent.py**

  2. Then run the server.py, and add the file behind.

     ex: **python server.py test.txt**

  3. Observe the status and check the result file.
- Explain my program structure



  1. Server:
     Send the file name, send pockets according to the window, receive ack, when finding some acks < # of sent, resend the packets.
     Send the finish signal to the client.
  2. Client:
     Receive filename, packets of file from the server, when finding some packets lost, send acks to tell server resend some data.
     When the buffer is full, flush and write data into a new file called result.filename.
     Receive finish signal and stop.
  3. Agent:
     Drop some data pockets from server to client.
     Record the loss rate and transmit the message.

- Difficulty and solutions
  1. Combined congestion control and GBN
     => spend much time to handle both
  2. Debug with 3 terminals and 3 programs
     => stop 3 programs immediately when bug appears
  3. Sometimes ack may > # of sent
     =>delete trash when moving the window
     ex:

1	2	3	4	5	6	7	8	9	10

Right shift = 3

4	5	6	7	8	9	10	8	9	10

(should be erased)