

tags: CN2018FALL

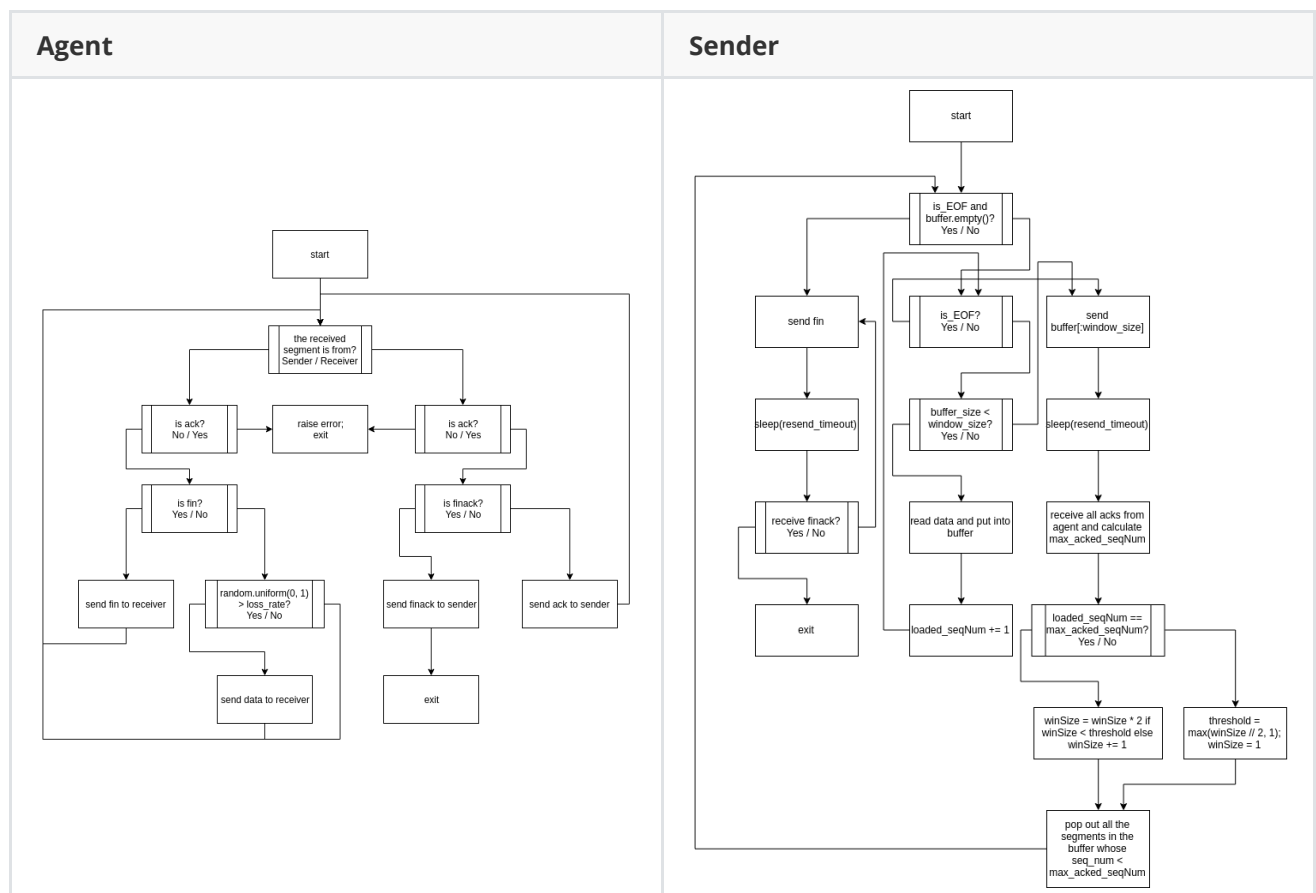
Computer Network HW2 Report

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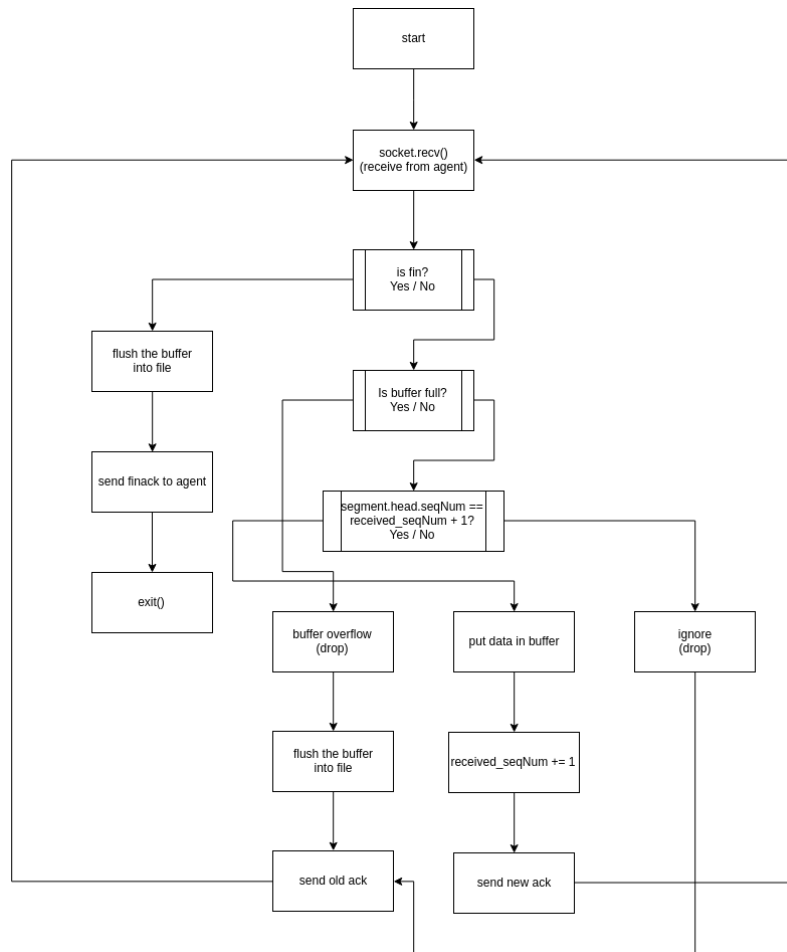
How to execute the program

- To run the agent, first compile `agent.c` with the command `gcc agent.c -o agent`, then run with `./agent <sender IP> <recv IP> <sender port> <agent port> <recv port> <loss_rate>`
- To run the sender, we need the environment `python 3.6+`, run with `python sender.py -f <filename> -si <sender_ip> -sp <sender_port> -ai <agent_ip> -ap <agent_port>`
- To run the receiver, we need the environment `python 3.6+`, run with `python receiver.py -f <filename> -ri <receiver_ip> -rp <receiver_port> -ai <agent_ip> -ap <agent_port>`

Explain program structure



Receiver



If the images are too small, these are their source URL:

- Agent: <https://i.imgur.com/oywk8uM.png>
- Sender: <https://i.imgur.com/YeTw9hU.png>
- Receiver: <https://i.imgur.com/O84jQM2.png>

Difficulties and Solutions

- It is troublesome to enable sender to be invoked instantly when receiving any acks.
 - Solution: Since it is one-to-one, after sender sending the segments, it will sleep a few seconds and then receive all acks from the socket.
- It is a bit complicated to send c-type structure with python script.
 - Solution: The `unpack` and `pack` functions in `struct` module can handle the translation between c-type struct and python variables.