CN HW2 Report

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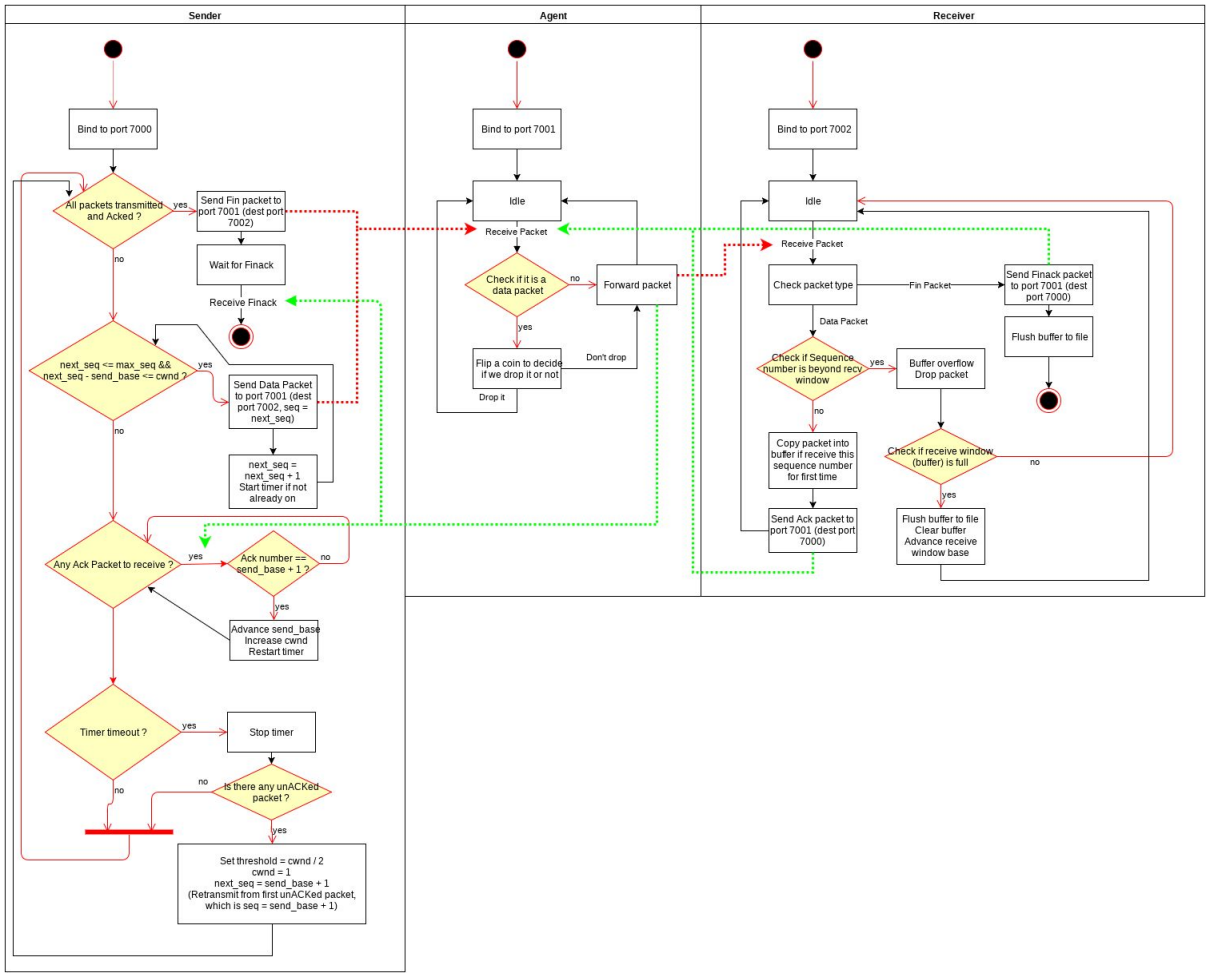
Execution environment

Linux and GNU make and g++ that supports 'c++11' required.

Design



I include the destination ip address, destination port, packet type (DATA/ACK/FIN/FINACK), sequence number, ack number, payload size in my TCP header.
When the Sender wants to send a packet to the Receiver, the Sender should include the Receiver's port and address in the header and send the packet to the Agent. And when the Agent receives a packet, the Agent can determine if this is a data packet and where to forward the packet if the Agent decides not to drop the packet.

The Agent uses an uniform distribution random number ranging from [0, 1) and a predefined loss-rate (probability of packet loss) to decide if a data packet is to be dropped.

Multipath TCP

My Sender can be configured to send to multiple Agents (multiple IP/port pair). By executing many Agents in the same time while binding to different ports, I can do multipath TCP. When the Sender wants to send some packet, it chooses an Agent to send to. The Agents are chosen in a Round-Robin way. That is, the first packet will be send to Agent 1 and the second packet will send to Agent 2 and so on.