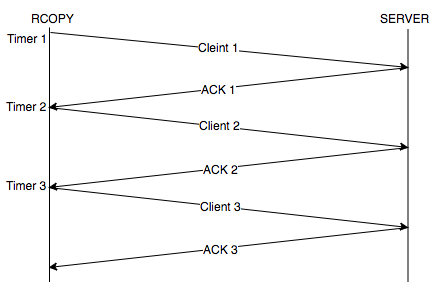
**Stop and Wait Program Design**

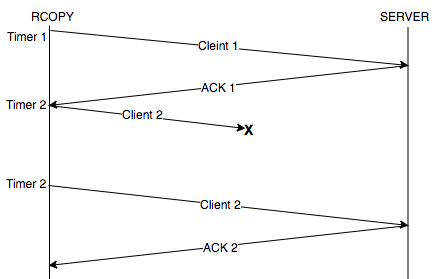
*Part 1: Design Questions*

1. Server/Client Packet Flow Diagrams
   1. No packets lost



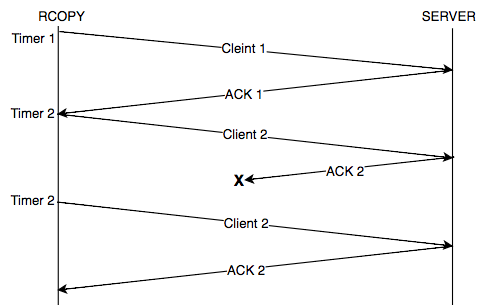
Select is called as each client packet is sent. Server ACKs each packet received. Client does not send another packet until the ACK is received.

* 1. Data packet lost



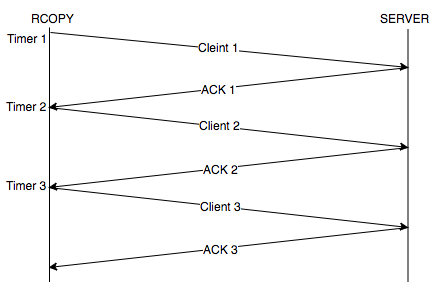
2nd packet is lost (either data is lost or corrupted). As such, the server will not ACK, and timer 2 will timeout – causing the client to send the same packet again. Upon successful transmission, the server ACKs the 2nd packet.

* 1. ACK lost



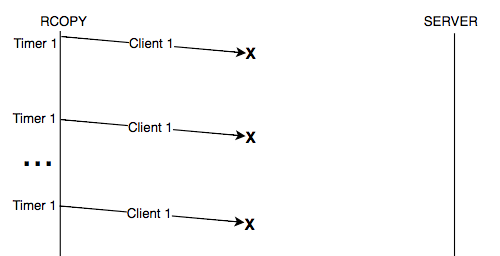
Server receives 2nd packet, but ACK 2 gets lost on the way back. Client’s Timer 2 times out, and sends the packet again. Server ignores this data and sends another ACK 2.

1. Filename Packet Flow Diagrams
   1. No packets lost



Filename established with First client packet. No packets are lost, so the data transmission continues smoothly.

* 1. First packet sent by rcopy is lost



Client tries to send the first packet up to 10 times, and then infers that the server is unreachable. Client terminates.

* 1. First two packets sent by rcopy are lost
  2. Second packet sent by rcopy is lost
  3. First packet sent by the server is lost
  4. First two packets sent by the server are lost
  5. First data packet sent by the server is lost

1. Select timeouts:
2. Receive Data Use Cases
3. Last Packet Flow Diagram

*Part 2: State Diagram*