CS 6378: Advanced Operating Systems

Programming Assignment 1

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1. **The number of messages delivered at each process:**
   - From the three other processes involved, each process receives 100 messages, for a total of 300 messages per process.

2. **How did you verify that messages were delivered in the correct causal order?**
   - Every time a message reached its destination, it was first examined to see if it was eligible for delivery based on causal predecessors. If so, it was either sent or added to the buffer. The messages were transmitted in the format *NodeId|CountofMsg|VectorClock*. However, upon message delivery, the sender's **NodeID**, the **message number**, and the **VectorClock** current process clock was written in a synchronized manner. This allowed me to confirm that the messages were sent in the correct order by looking at the printing sequence.

3. **Is there any difference in the message delivery sequence at the four processes? If so, how do you explain such a difference? If all processes delivered all messages in the same sequence, why is it so?**
   - Yes, there is a variation in the way messages are sent because we employed a random wait before sending them and we also delayed initiating each operation. Each thus handles messages that are given and received in a different sequence. Delivery at each process also varies based on which message was sent when and in what causal sequence. Simulating a fluctuating packet loss Other than making certain messages wait in the buffer until their causal predecessors got here, the change message delivery. However, every message was sent in a causal order.