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QUESTION 8

Not yet answered Marked out of 5.00

Berkeley's algorithm is as follows:

- A manager server periodically _____ .
- The _____ records the round trip times.
- It _____ the values obtained from all nodes.
- It instructs the nodes to alter their clocks based upon this calculation.
- If the manager fails a new manager is elected using a manager election algorithm.

The Berkeley algorithm is an example of _____ synchronization as _____ .

QUESTION 9

Not yet answered Marked out of 5.00

Suppose there are ten nodes in an internal network number from 0 - 9. The network uses Berkeley's algorithm and the bully algorithm is used to determine the manager. Node 7, 8 and 3 fail. Node 4 notices these failures. What happens in the network?

a. Node 4 starts an election and becomes the new manager.
b. Node 4 starts an election and node 9 becomes the new coordinator.
c. Nothing.
d. Node 9 starts an election and becomes the new coordinator.

You are given the following Lamport Timestamps which perform arithmetic operations on two variables a and b. They are in the format (operation, timestamp, Process ID). The Lamport Times are as follows:

- (a=a+1,1,1)
- (a=a+2,2,1)
- (b=a*b,2,3)
- (b=b-1,3,3)
- (a=a-2,4,4)
- (b=a*b,4,3)

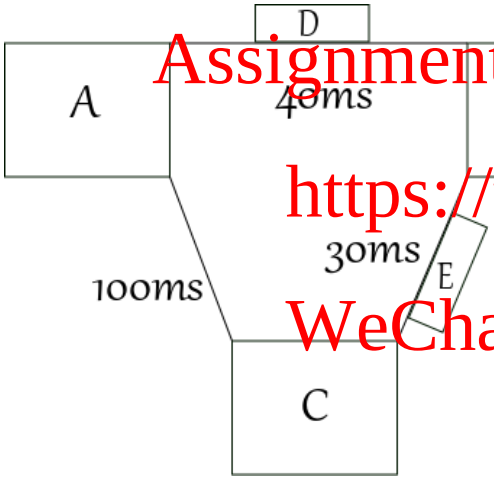
Suppose a is initialised with the value of 3 and b is initialised with the value 1. What are the values of a multiplied by b after the events in the Lamport Timestamps have been executed.

Answer:

QUESTION 11

Answer saved Marked out of 5.00

Consider the following diagram of a network:



A, B and C are computer nodes on the network. D and E are messages in transit on the network. The latency between A and B is 40ms. The latency between A and C is 100ms and the latency between B and C is 20ms. D and E are halfway along the path. Message E will arrive at node C in 10ms. Message D is delayed by a queuing issue so it will not arrive for 120ms. You can assume that all messsage sent apart from this will not be subject to queuing issues and will arrive at the time indicated by the latency. Saving a state takes 5ms on all nodes. Node A initiates a snapshot using the Chandy Lamport algorithm. Put the events in the correct order:

- Message D arrives and is forwarded to Node A.
- Node C sends its saved state to Node A.
- Message E arrives and is processed by Node C.
- Node B sends its saved state to Node A.
- Node A saves its own state.
- Node A send a snapshot request to Nodes B and C.

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