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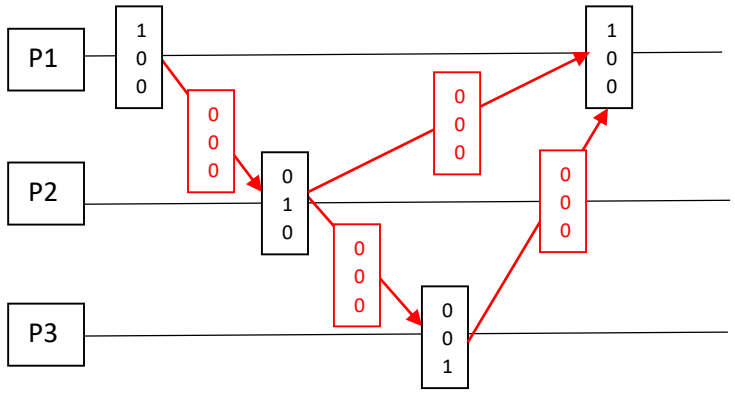
4. Mini-Test

1. With Vector Clocks you can differentiate between events which may occur in different processes and thus you obtain the strong clock consistency condition: $a<b \leftrightarrow C(a) < C(b)$

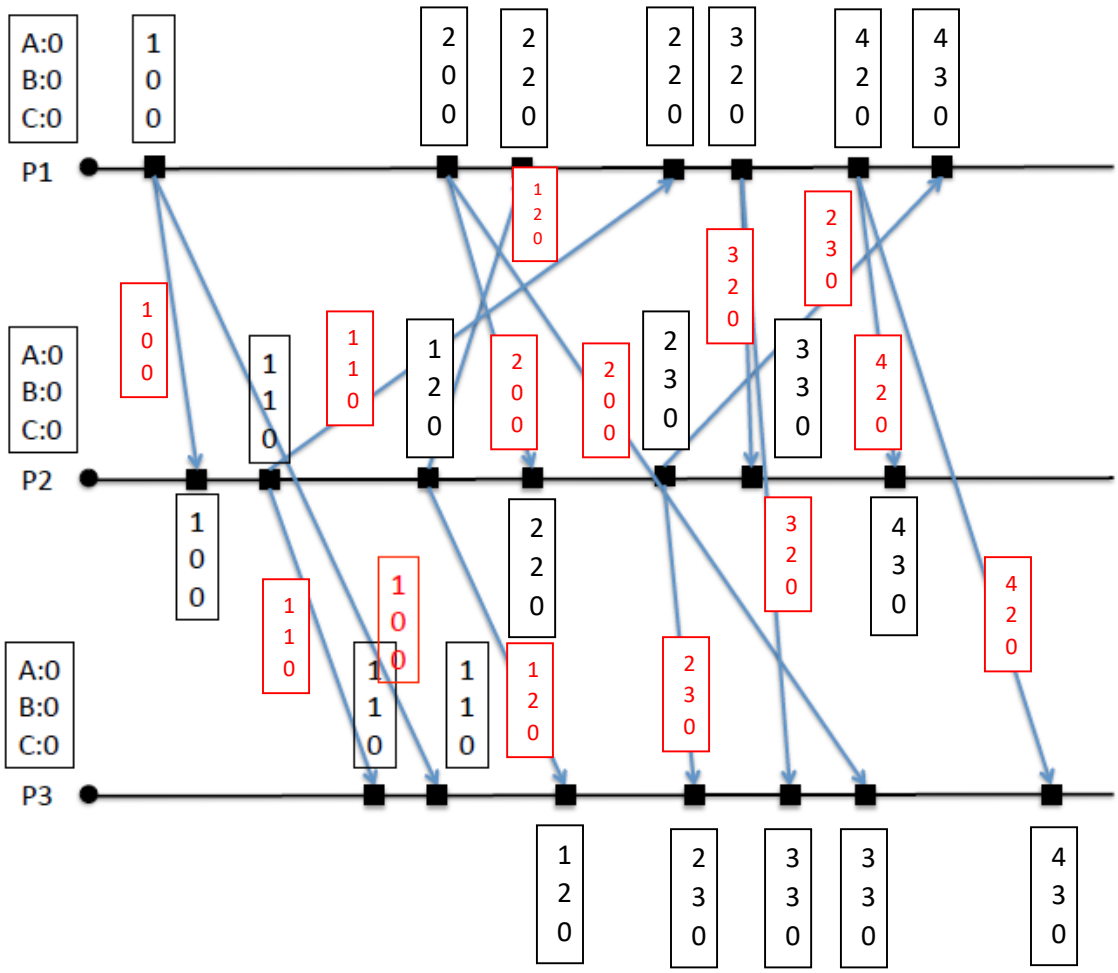
2. Two Vector Clocks are casually dependent if
   1. The corresponding events are all different and
   2. All events of one Vector Clock are smaller or equal than the corresponding events of the second one.

3. The tick happens before sending the message.
   If we let the tick happens after sending an event, we couldn't different if an event occurs earlier. For example:



   Here P1 can't different if P2 or P3 events first occur, although it is clear that P3 casually depends on P2.

4.



5. The paper proposes a concept of “Dynamic Vector Clocks”, an extension of vector clocks, which can be used in a System with changing numbers of processes.