HW1: Vector Timestamps Report

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My application creates one separate log file for each process and also one log file (called Timestamp.log), which keeps all of the log in one place.

I'd like to separate the process of propagating the timestamps in two stages:

1. **Before having any outbreak alerts:**
   My observation is that the whole system is divided into several groups of processes. Each group knows only about the processes in the group:
   - EMR P_0 , EMR P_1 and HDS P_9
   - EMR P_2 , EMR P_3, EMR P_4, EMR P_5 and HDS P_{10}
   - EMR P_6 , EMR P_7, EMR P_8 and HDS P_{11}
   - HDS P_9 and DOA P_{12}
   - HDS P_{10} and DOA P_{13}
   - HDS P_{11} and DOA P_{14}

   In the last three groups, the DOA process is also aware of the timestamps of the EMR processes, which are in the same group with the corresponding HDS of the DOA process. For example, DOA P_{12} receives the timestamps of EMR P_0, EMR P_1. But EMR P_0 and EMR P_1 do not know about the timestamp of DOA P_{12}.

   Plus, the DOA processes do not know about each other. The same thing goes for HDS processes.

2. **After an outbreak alert sent:**
   The timestamp of the DOA, which sent the alert, is propagated to all HDSs, other DOAs, and EMRs. If an DOA process does not send an outbreak alert, the other process will not know about it timestamp.

The HDS processes (P_9, P_{10}, P_{11}) have significantly higher timestamps. For instance, P_9 : 00911, P_{10} : 04684, and P_{11} : 01010. I guess since they communicate with both of EMRs and DOAs by sending and receiving messages. They increment their timestamp each time they send or receive a message. Therefore, they reach higher timestamps than other processes.