COL331: Operating Systems **Date: March 22, 2019**

Assignment 2 Report

Name: Manish Tanwar **Entry Number: 2016CS10363**

Part 1 - Jacob:

Plot - Time Vs the number of processes:

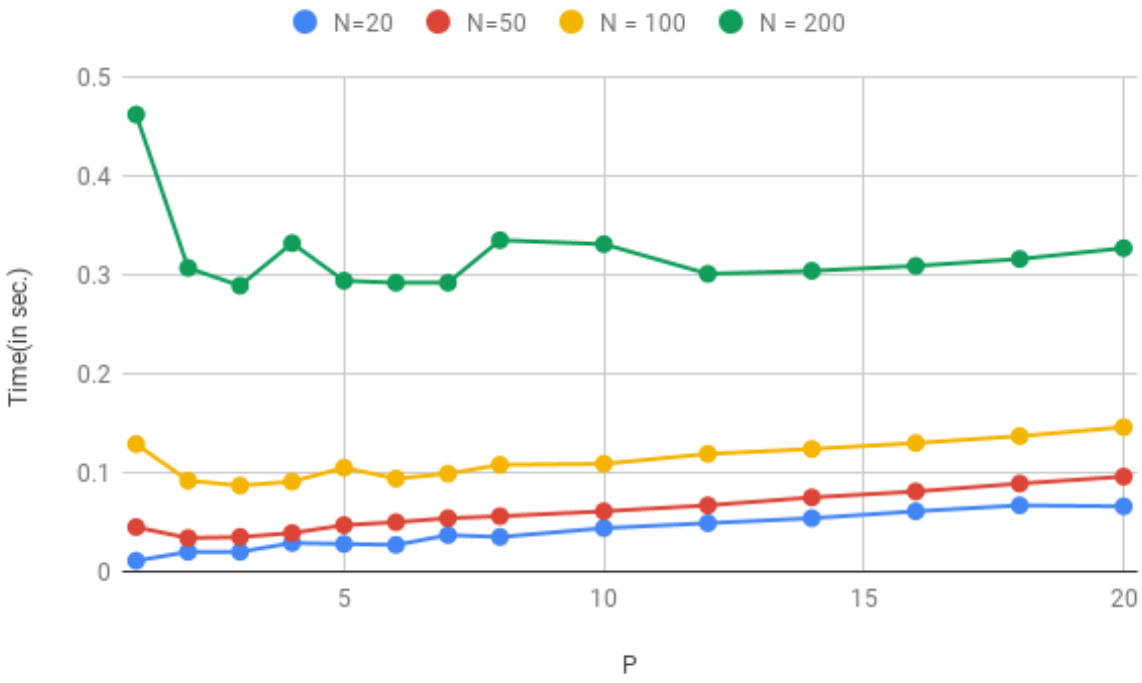

Figure 1: Time Vs the number of processes

Plot - Speedup Vs the number of processes:

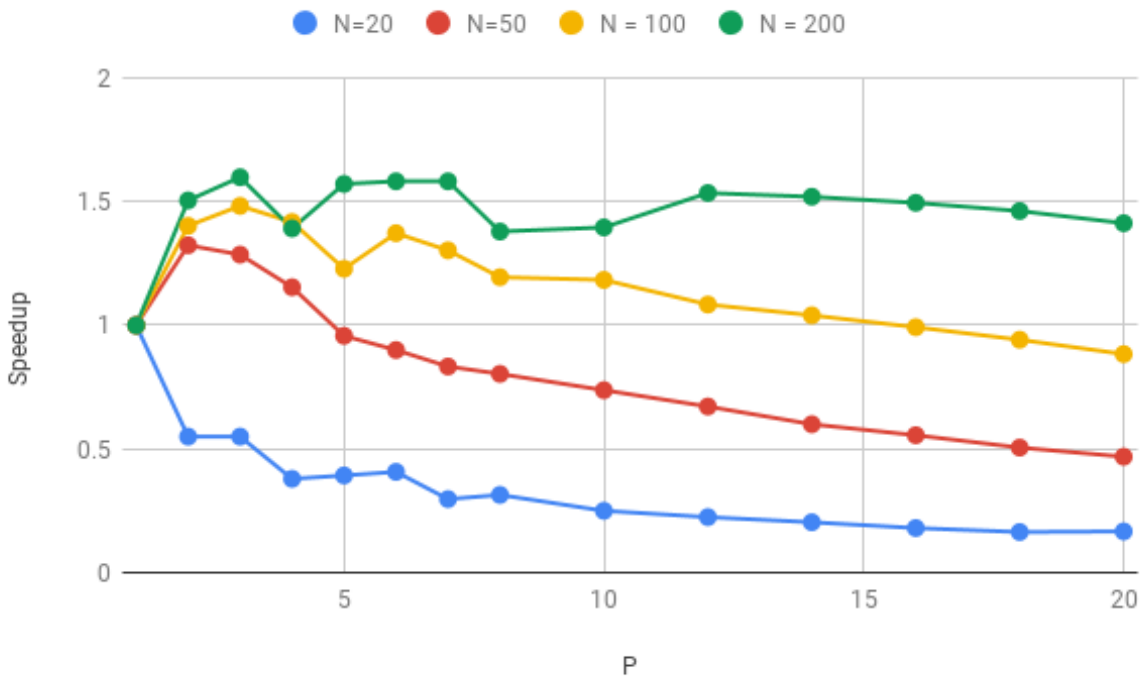

Figure 2: Speedup Vs the number of processes

Observations:

- As we increase the number of process first computation increases and then decreases. Decrease is the result of overhead of IPC communication.
- The algorithm is scalable as the speedup increases in a better trend for large value of N.

Part 2 - Maekawa:

Plot - Time Vs the number of processes:

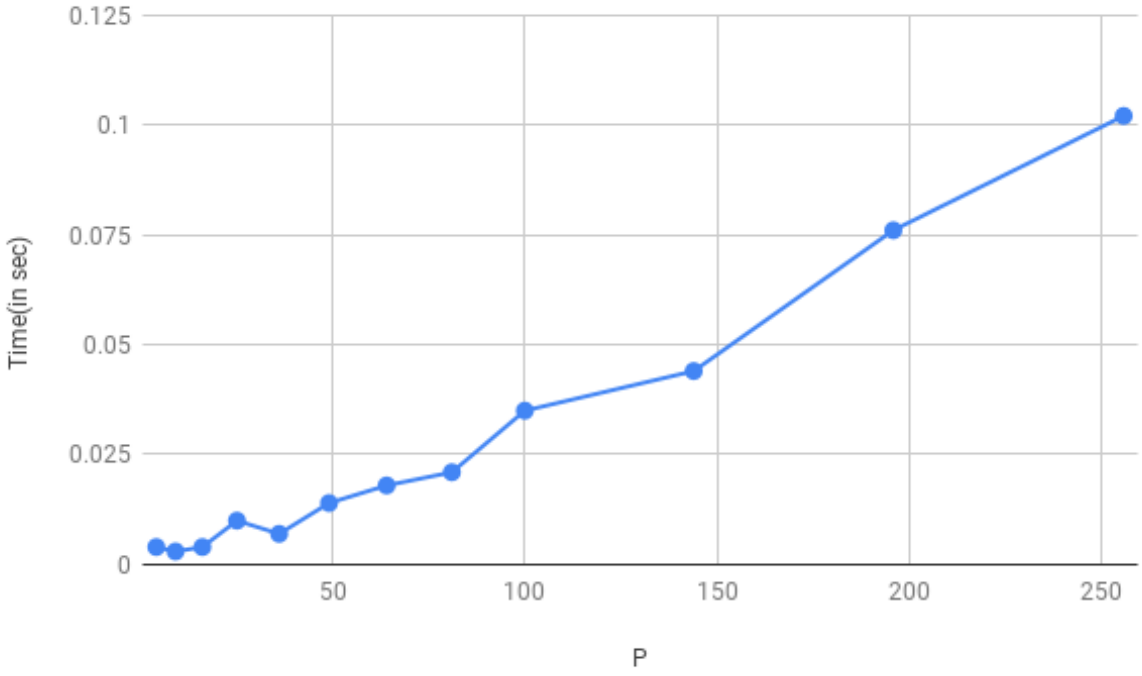

Figure 3: Time Vs the number of processes(P = P3, P1 = P2 = 0)

Observations:

- As we increase the number of processes the time increases.
- Maekawa algorithm requires $O(\sqrt{n})$ messages for implementing mutual exclusion.
- $O(\sqrt{n})$ trend can be observerd in the plot for small values of P, but as P further increases due to more overhead time is more than $O(\sqrt{n})$.

Correctness:

- For Jacob algorithm, ran the parallel version against the provided serial code for several testcases.