OS-Assignment2

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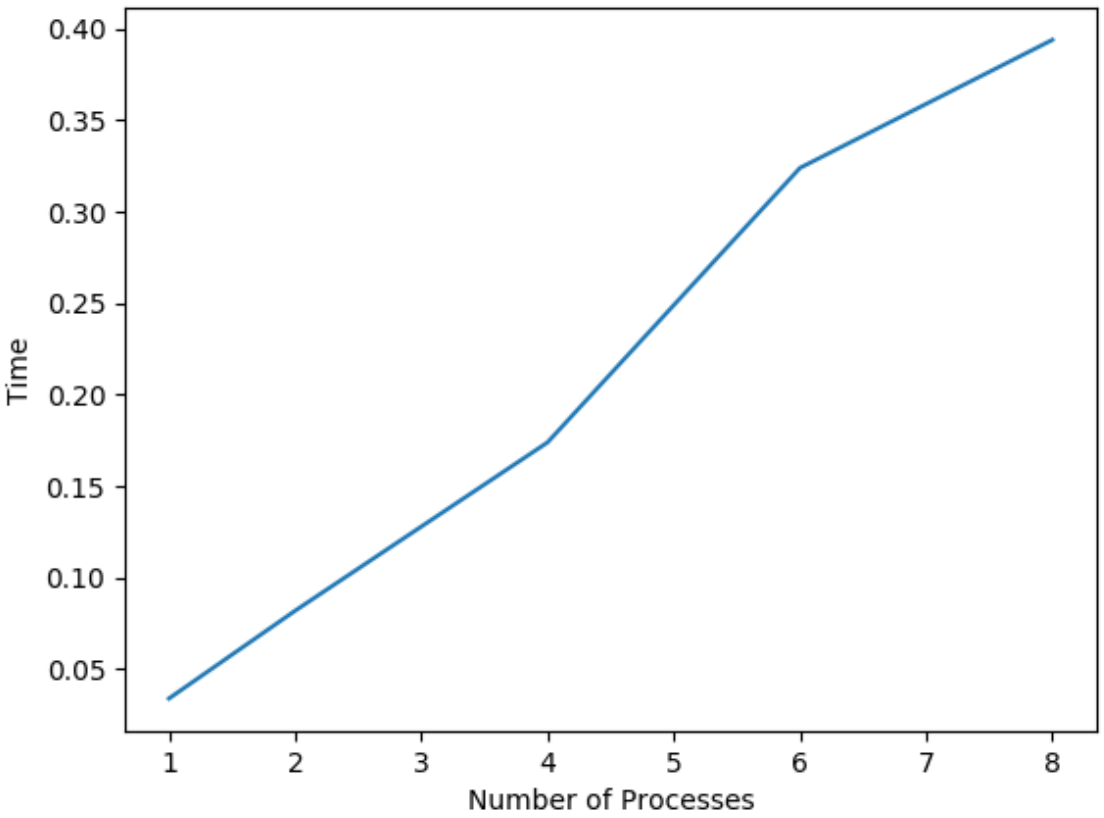
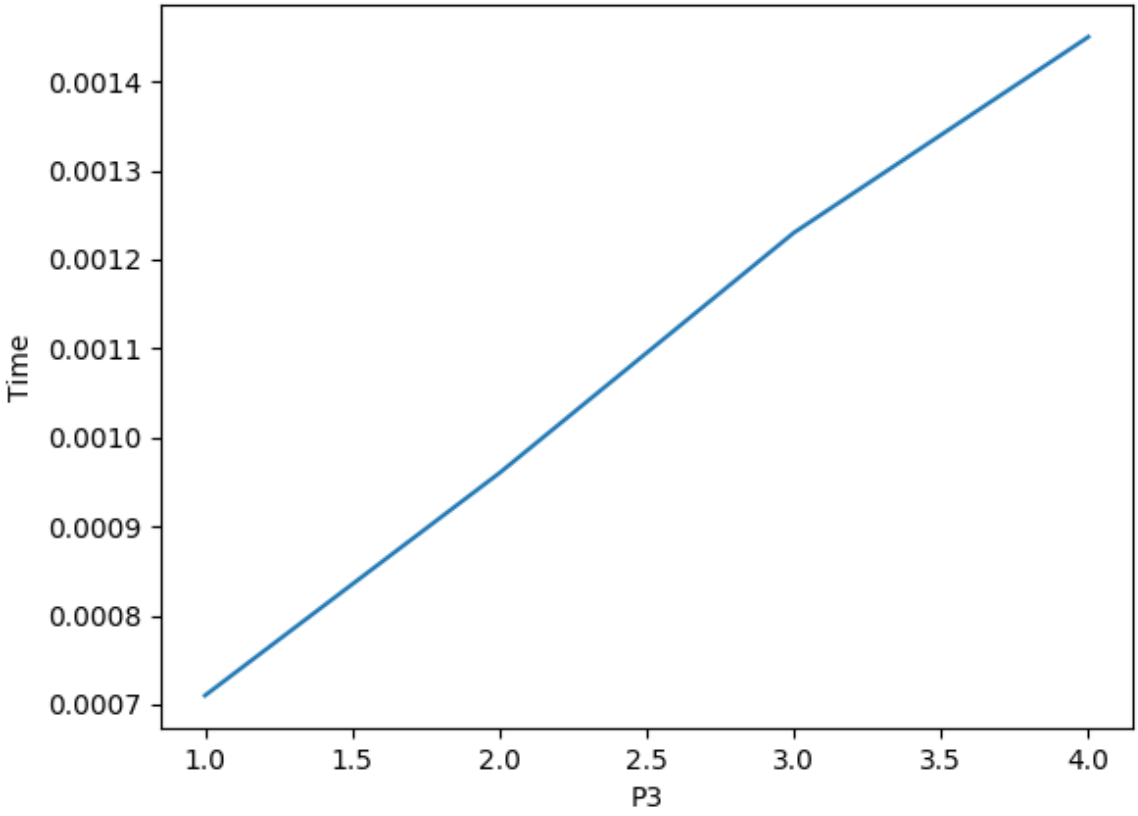
March 2019

1 Jacobi Alogrithm

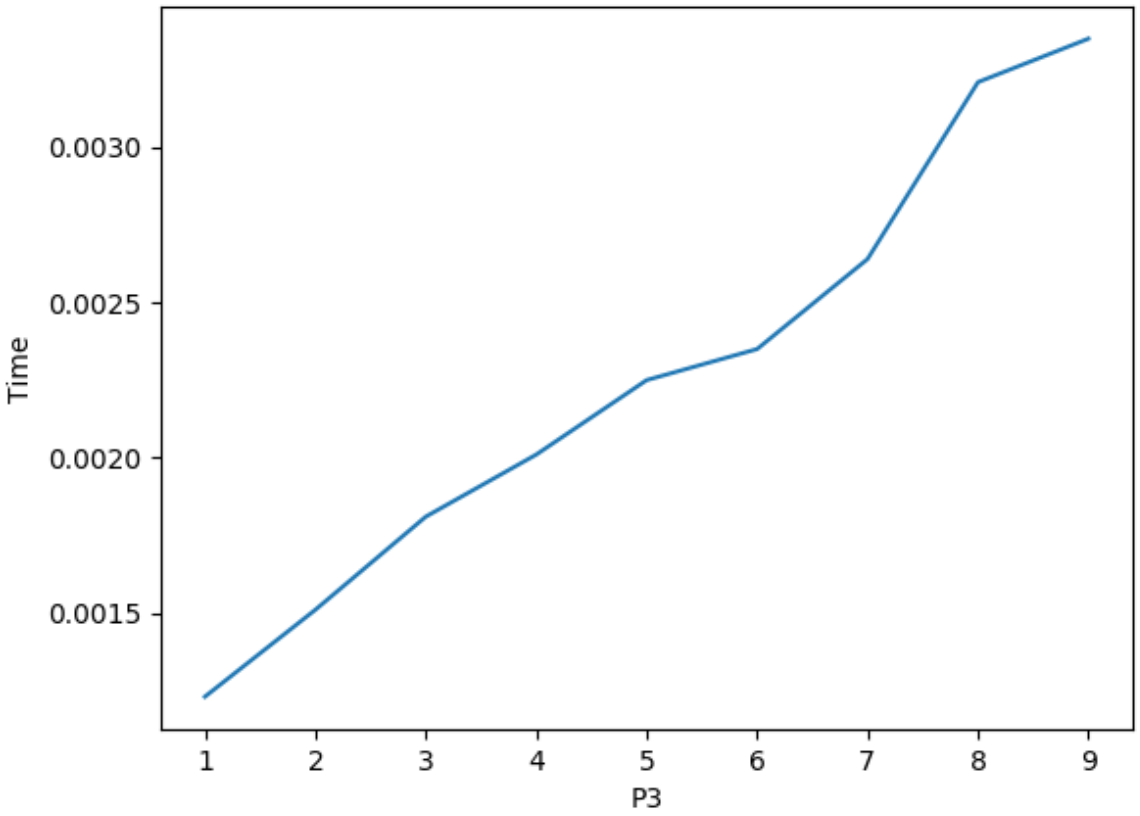


2 Maekawa Algorithm

2.1 For P = 4



2.2 For P = 9



3 Observations

- In case multiple processes, total time taken should be less than that of single process. But here, we are observing the that the time has increased.
- This is because the communication overheads between the processes is much higher than the gains of parallelisation. This is one of the majors drawbacks of parallelisation.
- Parallelisation might be beneficial for us if we increase the matrix size in case of jacobi algorithm.
- Similarly, in maekawa algorithm we observe a increase in time with higher number of processes. This is also because of the communication overheads. All the processes try to get into its critical section, but then it needs to wait for other process to finish its critical section. Eventually increasing the total time.

4 Correctness

- Verified the code using some test case for different values of parameters. Compared the result with output from the sequential code provided.
- Maekawa algorithm is verified by lookin at the mutual exclusion that print statements in the critical section are not interleaved with other processes.