Cyclomatic Complexity - Report

The Master-Worker system is implemented with the work-stealing architecture and is implemented using RESTful websevices in python.

There are mainly two components. Master and Worker.

The following are the stages:

The master will be up and waiting for the workers to approach for jobs. Workers approach master and ask for the work.

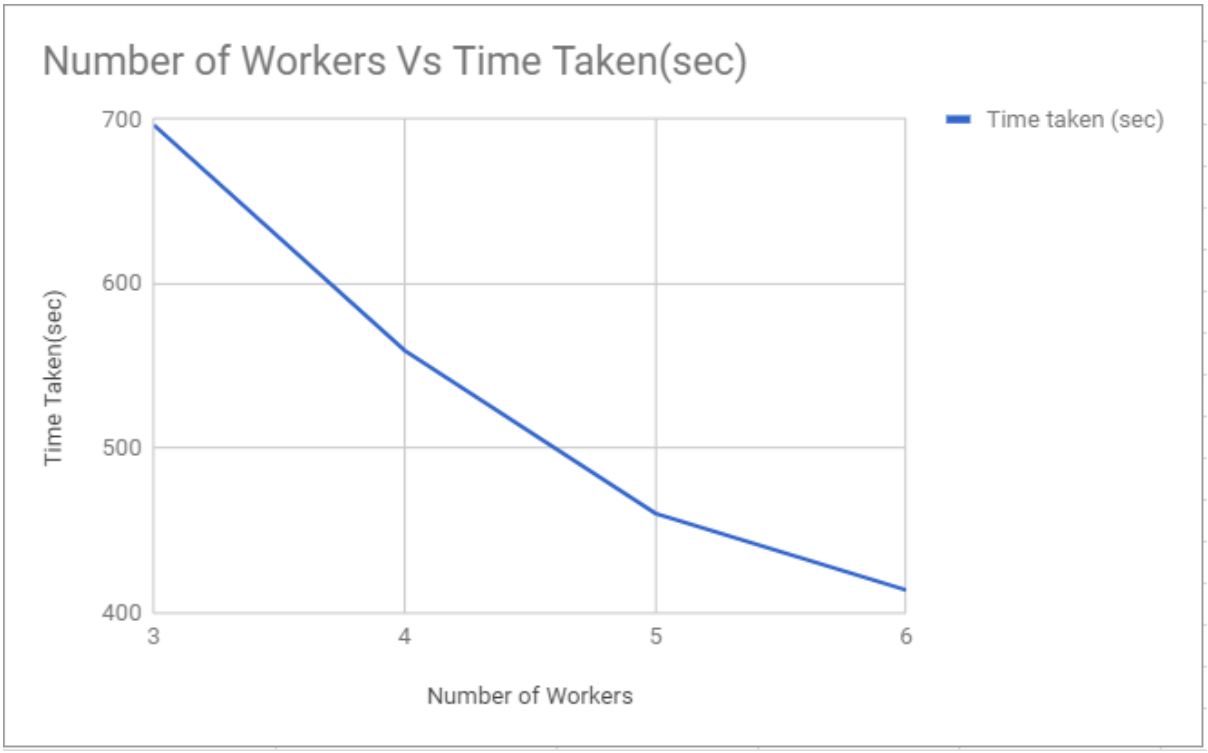
Master takes each file in each of the commits from cloned git repository and distributes it to the worker who joins. When a new worker joins and asks master for work, master assigns the next available task to it if any.

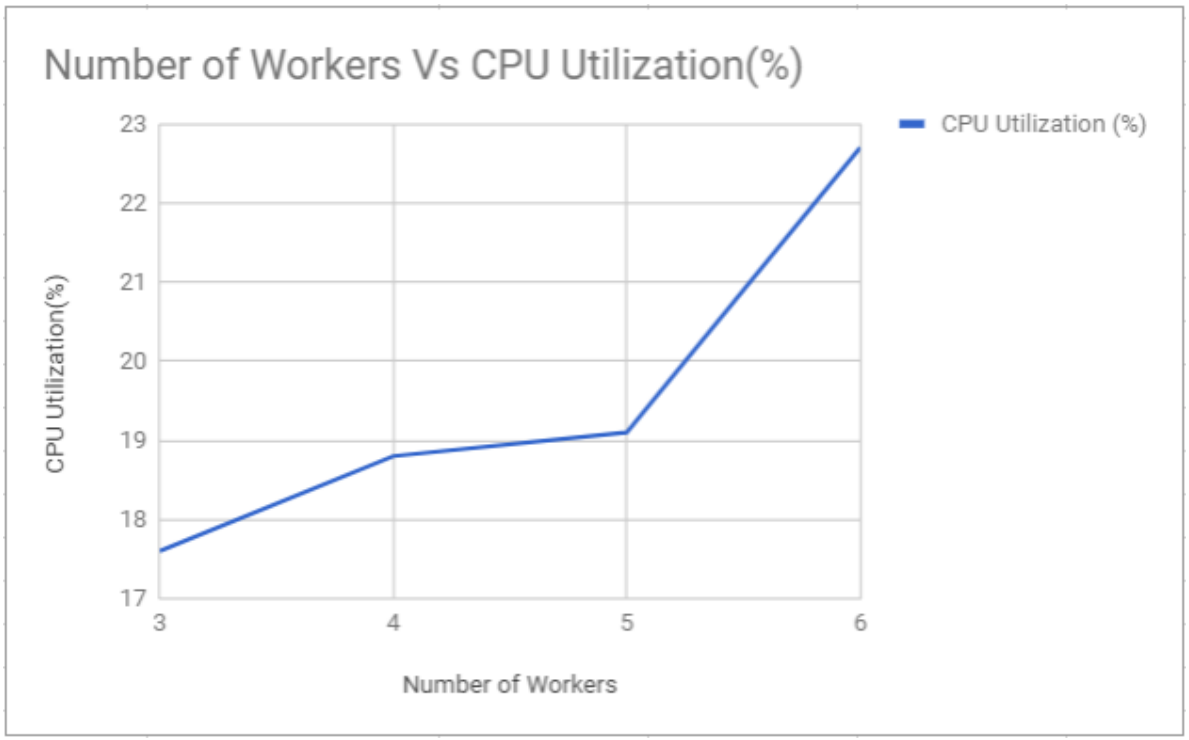
Workers calculate the cyclomatic complexity of each of the files received from master and return the result to Master. After completing one work, worker again approaches master for more work and the process continues till master doesnot have any more work to distribute.

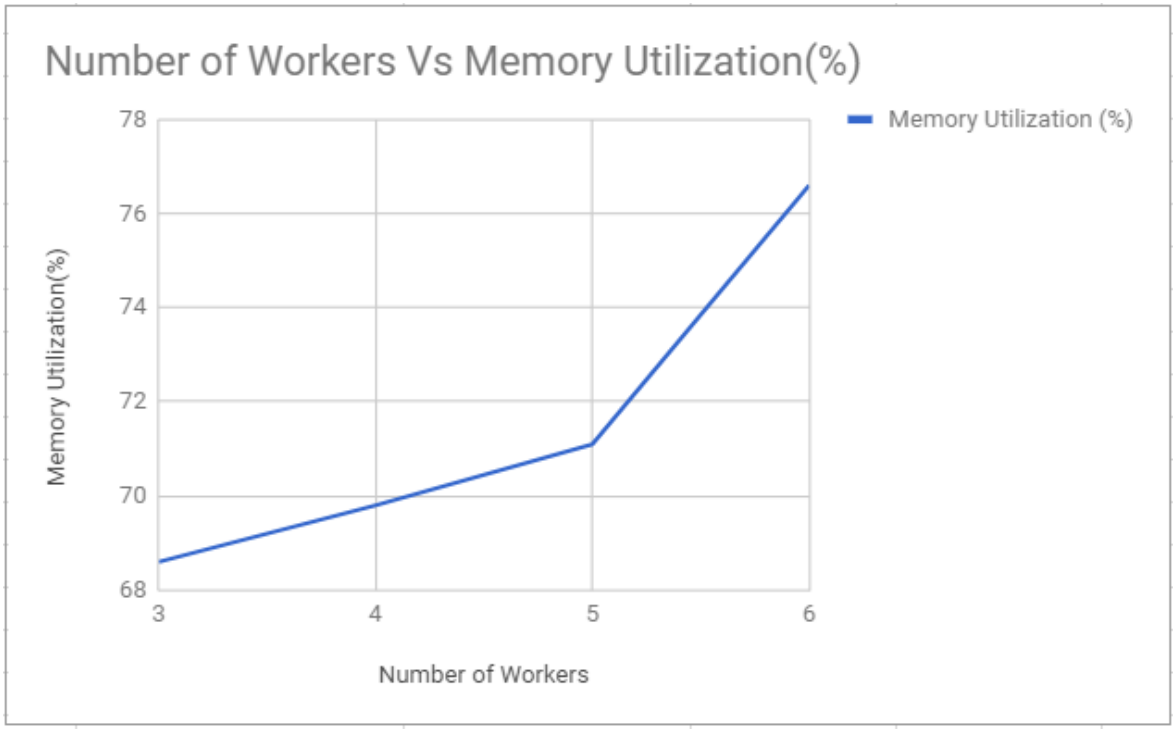
Master confirms that all the works are completed and calculates the average cyclomatic complexity and the time taken for the entire work to complete.

The following plots are created to understand the effect of number of workers working parallel.

1. Number of workers Vs Time taken to complete the task
2. Number of workers Vs CPU Utilization
3. Number of workers Vs Memory Utilization







No: of Workers	CPU Utilization (%)	Memory Utilization (%)	Time taken (sec)
6	22.7	76.6	413.9562063
5	19.1	71.1	460.4913275
4	18.8	69.8	559.5292125
3	17.6	68.6	696.5254614