TWO PHASE MERGE SORT ANALYSIS

Configuration

Processor : Intel(R) Core(TM) i5-8250U CPU @ 1.60GHz
RAM : 8GB
OS : Ubuntu 20.04

Observations

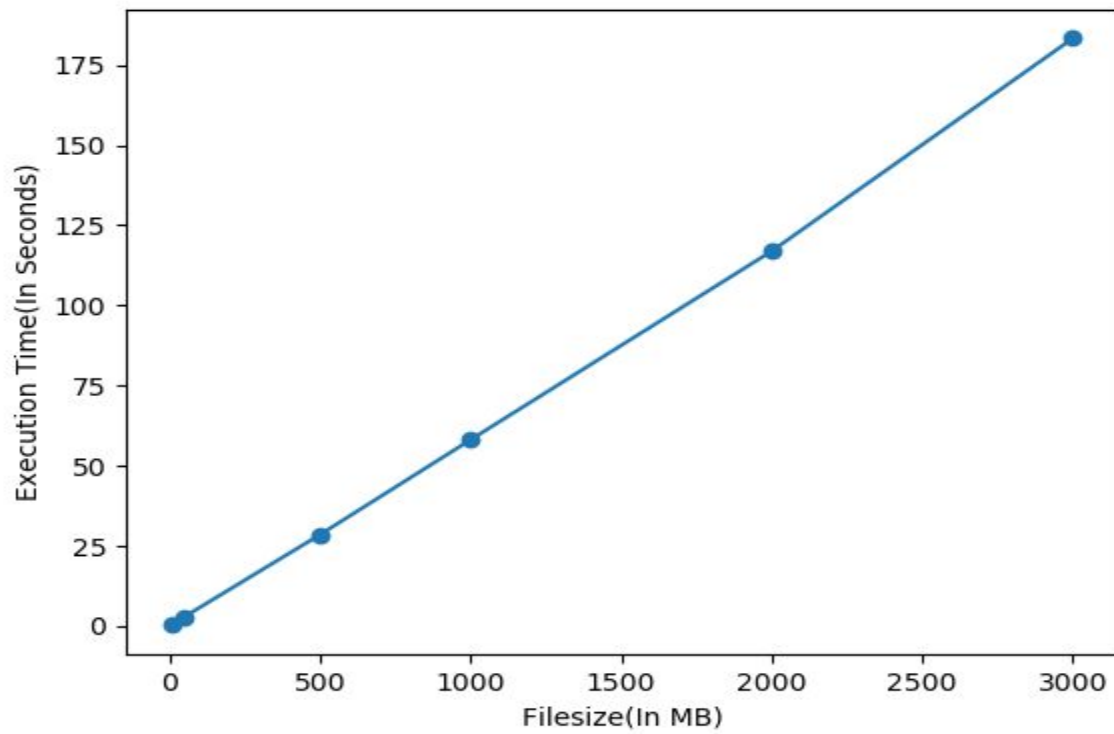Main memory fixed at 100 MB :
(All the reported runtimes are real times)

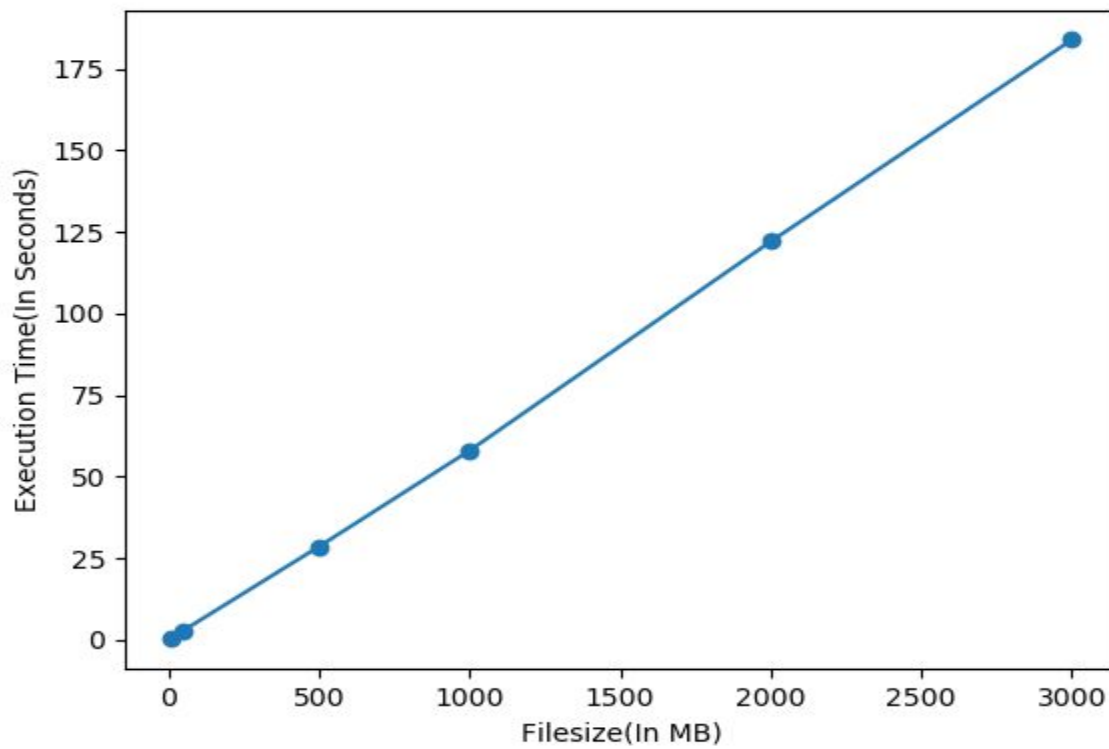| File size	Sequential Runtime	Parallel Runtime (4)
5 MB	0m0.307s	0m0.307s
50 MB	0m2.927s	0m2.949s
500 MB	0m28.554s	0m28.647s
1 GB	0m58.150s	0m58.046s
2 GB	1m56.981s	2m2.118s
3 GB	3m3.337s	3m3.921s

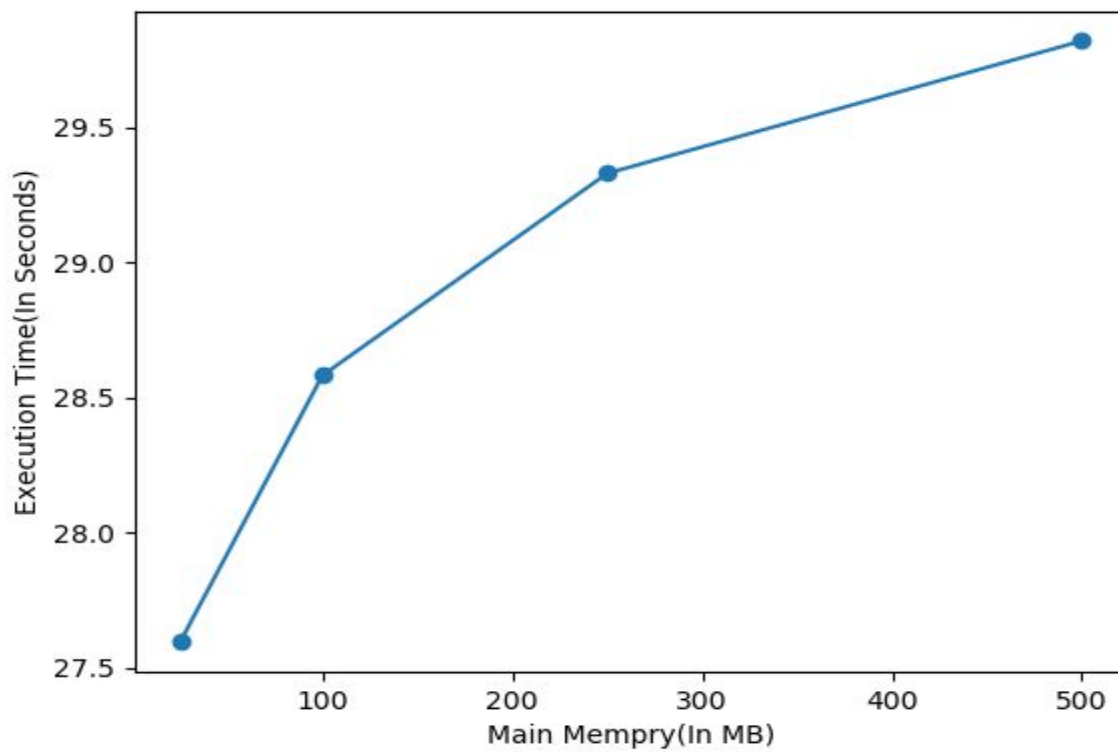File size fixed at 500 MB :
(All the reported runtimes are real times)

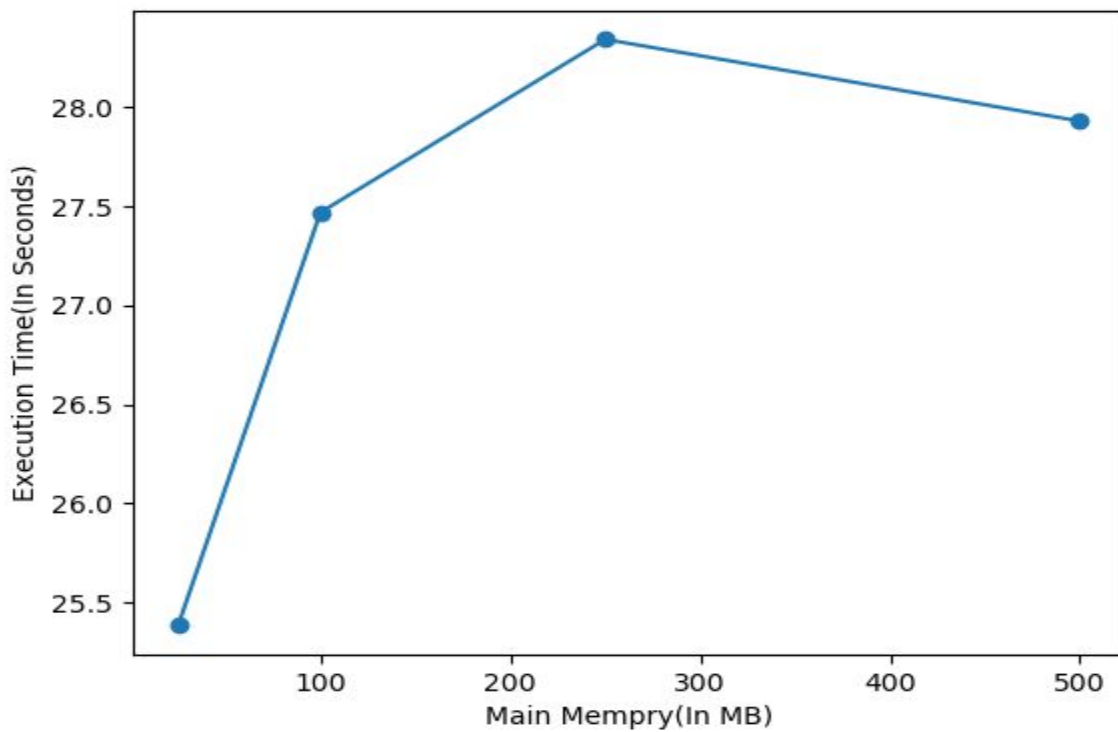| Main Memory	Sequential Runtime	Parallel Runtime (4)
25 MB	0m27.596s	0m25.383s
100 MB	0m28.582s	0m27.470s
250 MB	0m29.329s	0m28.344s
500 MB	0m29.819s	0m27.931s

Sequential runtimes , keeping memory fixed and varying file size

Parallel runtimes , keeping memory fixed and varying file size

Sequential runtimes keeping the file size same and varying the main memory

Parallel runtimes keeping the file size same and varying the main memory