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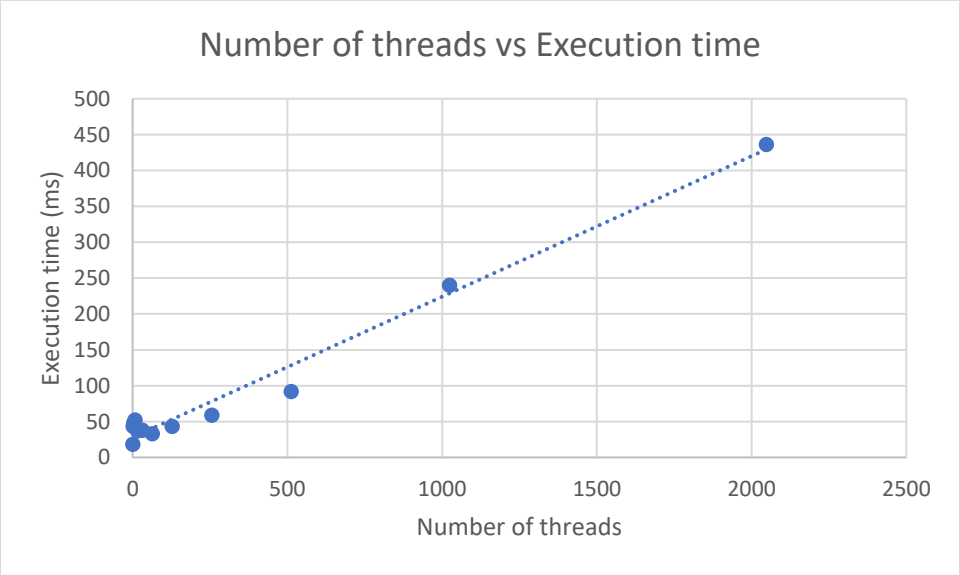
Week 3: Lab 2

Task 1: Find Mean of an Array Using Multi-thread in Java (15 marks)

Instructions:

1) In the shell interface, change directory to the directory with MeanThread.java
2) Type in "javac MeanThread.java"
3) Type in "java MeanThread input.txt N", where N is the number of threads

Number of threads	1	2	4	8	16	32	64	128	256	512	1024	2048
Execution time (ms)	18	43	48	52	37	38	33	43	59	92	240	436



Conclusion: Execution time increases as number of thread increases

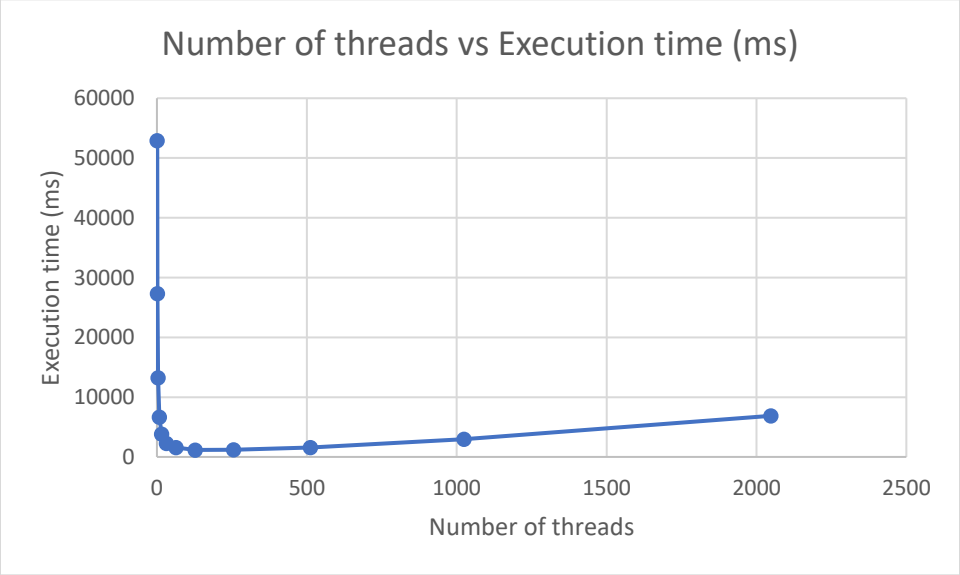
Task 2: Find Median of an Array Using Multi-thread in Java (25 marks)

Instructions:

1) In the shell interface, change directory to the directory with MedianThread.java
2) Type in “javac MedianThread.java”
3) Type in “java MedianThread input.txt N”, where N is the number of threads

Note: For N =1, it will take quite long (almost a minute)

Number of threads	1	2	4	8	16	32	64	128	256	512	1024	2048
Execution time (ms)	52887	27314	13226	6675	3826	2284	1558	1167	1220	1559	2958	6901



Conclusion: Execution time decreases as number of thread increases until a certain point (from 128 threads to 256 threads). From this point onwards, execution time increases as number of thread increases