Data Systems Assignment 2
Two phase merge sort

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System specifications:

Asus vivo book
Intel Core i7 8th Gen 8250U
RAM: 8gb
ROM: 1TB

Without threading:

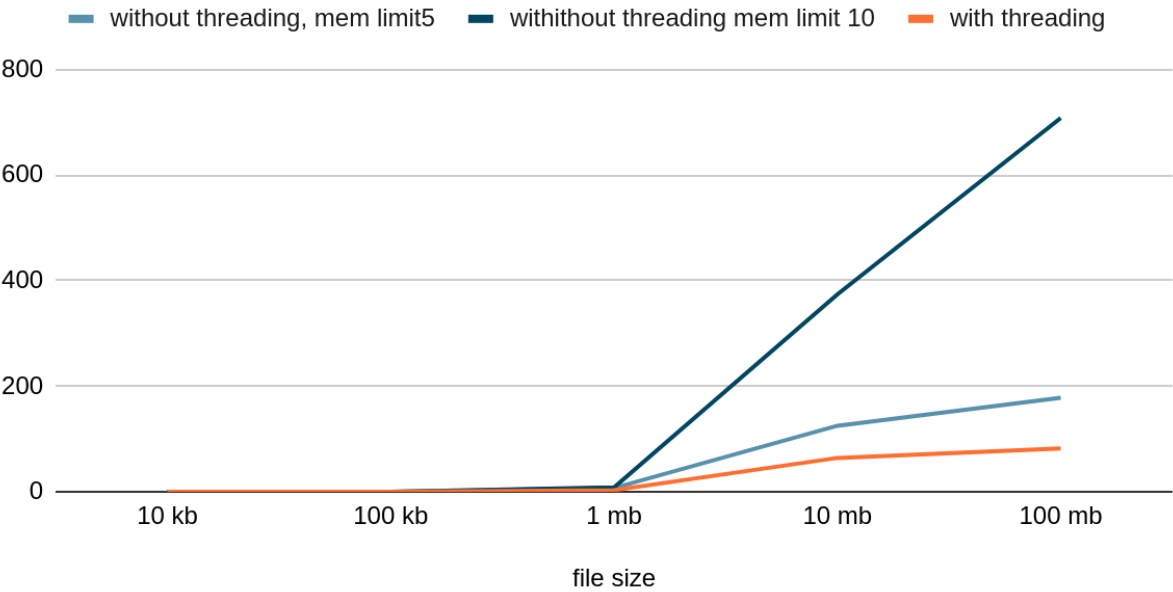| SIze of the file	Time taken with main memory limit 5 mb	Time taken with main memory 10 mb
10 kb	0 mins 0 secs	0 mins 0 secs
100 kb	0 mins 0 secs	0 mins 0 secs
1 mb	0 mins 7 secs	0 mins 8 secs
10 mb	2 mins 5 secs	6 mins 14 secs
100 mb	3 mins 18 secs	11 mins 48 secs

As we are increasing the main memory size and code size, the working of the code is becoming slow.

Hence i kept the limit of 5 mb for main memory for the threading part.

With threading and with a memory limit of 5 mb.
No of threads= 3

SIze of the file	Time taken with main memory limit 5 mb
10 kb	0 mins 0 secs
100 kb	0 mins 0 secs
1 mb	0 mins 3 secs
10 mb	1 mins 4 secs
100 mb	1 mins 22 secs

without threading, mem limit5, withithout threading mem limit 10 and with threading

Analysis:

- I have observed that increasing the memory size greater than 5 mb without threading is causing more time to run because it is using so much space in the main memory.
- And also using threads is saving a lot of time.
- For small files which size is less than 1 mb. It its taking very less time. Less than a second.
- We can see the graph, with treading of 5 mb limit is the best.