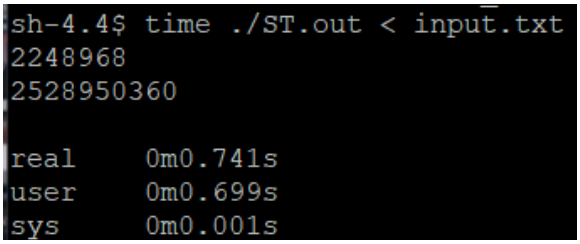
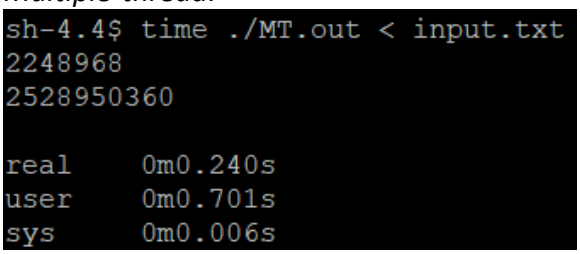
2022 NYCU OS HW2 report

Question	Answer
Q1. (5pts) Briefly describe your design for the add, multiple function of matrix, the thread management. Also, describe the number of threads in the Multi-thread program.	把 matrix 分成小塊來計算。每個 thread 會負責自己的倍數 row。用 loop 來創建所需要使用的 thread 和取出最後的 matrix 結果來計算 total。 程式中使用 20 個 threads，每個 thread 負責 25 個 rows。

Q2. (15pts)
Try at least 3 kinds of number of threads, and compare the difference in time.(Take screenshots of the time of each case)
Also, explain the results.
	T = 5:
	`sh-4.4$ time ./MT.out < input.txt`
	`2248968`
	`2528950360`
	
	`real 0m0.310s`
	`user 0m0.806s`
	`sys 0m0.009s`
	T = 10:
	`sh-4.4$ time ./MT.out < input.txt`
	`2248968`
	`2528950360`
	
	`real 0m0.270s`
	`user 0m0.719s`
	`sys 0m0.006s`
	T = 12:
	`sh-4.4$ time ./MT.out < input.txt`
	`2248968`
	`2528950360`
	
	`real 0m0.267s`
	`user 0m0.746s`
	`sys 0m0.010s`
	T = 20:
	`sh-4.4$ time ./MT.out < input.txt`
	`2248968`
	`2528950360`
	
	`real 0m0.240s`
	`user 0m0.701s`
	`sys 0m0.006s`
	Thread 越多，執行的指令被分成越小塊，需要執行的時間減短。

Q3. (10pts) Show the best speedup between multi-thread and single-thread. (Take screenshots	*Single-thread:*

of the time of single-thread and multi-thread) Also, explain why multi-thread is faster.	 *Multiple-thread:*  Multi-thread 比較快是因為 Multi-thread 會把需要執行的任務分成小塊，同時間可以執行多條線，減少執行時間。