CENG 322 HW3 Report

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When i run my code with 1 thread, it takes 22 seconds. Then i tried it with 2 threads and the result was nearly half of the first, it was 11 secons. With 4 threads the execution time was again nearly 11 seconds but it was a bit higher than 2 threads' result. Finally, i run the program with 8 threads but execution time increased to 18 second. I can say that my program run with 2 threads most efficiently. Multi thread programming better than single thread programming but if the thread number increases more than 4, the performance will decrease. Algorithm of problem dividing or processor facilities may cause this situation.

Some Outputs:

```
edip@ubuntu:~/322/hw3$ ./frequencyFinder 1

Frequency calculation started..
Frequency calculation ended..

frequency of the word "reasonably" in all books:
0-0-0-0-0-3-0-0-2-0

frequency of the word "throug" in all books:
84-16-11-3-14-3-21-12-37-16

Total time spent 22.019585 s, for 1 threads
```

```
edip@ubuntu:~/322/hw3$ ./frequencyFinder 2

Frequency calculation started..
Frequency calculation ended..

frequency of the word "uses" in all books:
8-1-0-0-1-2-2-3-4-3

frequency of the word "widely" in all books:
0-0-0-0-2-0-0-0-2-0

Total time spent 11.051568 s, for 2 threads
```

```
edip@ubuntu:~/322/hw3$ ./frequencyFinder 4

Frequency calculation started..
Frequency calculation ended..

frequency of the word "sorry" in all books:
2-0-1-0-0-3-15-0-0-5

frequency of the word "often" in all books:
0-0-0-0-0-0-0-0-0-0

Total time spent 11.969081 s, for 4 threads
```

```
edip@ubuntu:~/322/hw3$ ./frequencyFinder 8

Frequency calculation started..
Frequency calculation ended..

frequency of the word "ran" in all books:
286-29-24-14-25-61-59-34-111-78

frequency of the word "ed" in all books:
3933-491-358-267-471-806-1415-655-1162-1465

Total time spent 18.057482 s, for 8 threads
```