

MAP REDUCE

This project was a little complicated since I didn't understand how to use locks. I liked the fact that the program is efficient for a person trying to map words because it does it in a faster way.

To run the program:

In the terminal type "python3 mapReduce.py"

How much time did it take?

I didn't track time because throughout the day I was working on my Computer Security homework, too, but

it took me about 6 hours to finish since I didn't understand the lock at all.

Problems:

I didn't have problems using pypm like in past assignment, but now, as mentioned, the fact that we had to use lock, acquire, confused me first. I overcame the problem by researching a little on how to do the mapping function. The easiest part was the appendingFiles, since it is something I have done in my OS class. In the main function, I just had to put everything together and put a monotonic clock in order to track the time it took to count words and the time it took to traverse files.

Outputs:

1 thread:

```
student@linux-4oae:~/Desktop/Parallel Computing> python3 mapreduce.py
```

```
{'you': 23304, 'hamlet': 475, 'king': 4545, 'henry': 661, 'love': 3070, 'macbeth': 288, 'night': 1402, 'time': 1806, 'my': 14203, 'blood': 1009, 'death': 1016, 'hate': 332, 'heart': 1458, 'honest': 434, 'sleep': 470, 'poison': 139}
```

Time took to count words: 32.16618608600038 secs.

Jonathan Martinez

Assignment 3

Parallel Computing

Time took to read files: 0.2517036019999068 secs.

2 threads (took screenshots to save time):

```
{'you': 23304, 'hamlet': 475, 'king': 4545, 'henry': 661, 'love': 3070, 'macbeth': 288, 'night': 1402, 'time': 1806, 'my': 14203, 'blood': 1009, 'death': 1016, 'hate': 332, 'heart': 1458, 'sleep': 470, 'poison': 139, 'honest': 434}
Time took to count words: 59.7978077079988 secs.
Time took to read files: 0.42957758699958504 secs
```

For any strange reason, doing it with 2 threads took the most, but I assume that is because my computer turned slow when compiling it.

4 threads:

```
{'you': 23304, 'king': 4545, 'hamlet': 475, 'henry': 661, 'my': 14203, 'death': 1016, 'time': 1806, 'love': 3070, 'macbeth': 288, 'night': 1402, 'blood': 1009, 'honest': 434, 'heart': 1458, 'sleep': 470, 'hate': 332, 'poison': 139}
Time took to count words: 48.30744382299963 secs.
Time took to read files: 0.2711253420002322 secs.
```

8 threads:

```
{'you': 23304, 'hamlet': 475, 'king': 4545, 'henry': 661, 'love': 3070, 'macbeth': 288, 'night': 1402, 'time': 1806, 'my': 14203, 'blood': 1009, 'death': 1016, 'hate': 332, 'heart': 1458, 'honest': 434, 'sleep': 470, 'poison': 139}
Time took to count words: 36.396009866000895 secs.
Time took to read files: 0.6414201389998198 secs.
```