

Will Townsend

COSC 420

Homework 2

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Summary: We were assigned to mess around with the multithreading capabilities in Java. This was a simple assignment that I was able to complete in about an hour. Relearning Java was not quite as bad as I thought it would be and reminding myself about multithreading in general will be helpful for the remainder of this course. Sample output of the threadingEx1.java file is below.

```
hw02 — -zsh — 80x24
(base) williamtownsend@Wills-MacBook hw02 % javac threadingEx1.java
(base) williamtownsend@Wills-MacBook hw02 % java threadingEx1
Creating Thread1
Starting Thread1
Running Thread1
Thread1 Exiting...
Creating Thread2
Starting Thread2
Running Thread2
Thread2 Exiting...

Final Sum: 55
(base) williamtownsend@Wills-MacBook hw02 % java threadingEx1
Creating Thread1
Starting Thread1
Running Thread1
Thread1 Exiting...
Creating Thread2
Starting Thread2
Running Thread2
Thread2 Exiting...

Final Sum: 55
(base) williamtownsend@Wills-MacBook hw02 %
```

The second attached file showcases the speed of the functions as the number of threads increases in this example, we add up all the numbers from 1 – 1,000,000 using 2 threads 5 threads and then serially. Below is the example output. As you can see two threads doesn't speed up our program quite as much but with 5 threads, we are able to speed up the program.

```
hw02 — -zsh — 80x24
(base) williamtownsend@Wills-MacBook hw02 % javac threadingEx2.java
(base) williamtownsend@Wills-MacBook hw02 % java threadingEx2

Final Sum: 1784293664
2 Thread Runtime: 0.034537653 sec

Final Sum: 1784293664
5 Thread Runtime: 0.001986448 sec

Final Sum: 1783293664
Serial Runtime: 0.012790530000000001 sec
(base) williamtownsend@Wills-MacBook hw02 % java threadingEx2

Final Sum: 1784293664
2 Thread Runtime: 0.024824992 sec

Final Sum: 1784293664
5 Thread Runtime: 0.003767438 sec

Final Sum: 1783293664
Serial Runtime: 0.009460703 sec
(base) williamtownsend@Wills-MacBook hw02 %
```