Q2

Sample Output:

Input n= 311

java q2 311 1
Picked up _JAVA_OPTIONS: -Dawt.useSystemAAFontSettings=on -Dswing.aatext=true
11 ms
false false

java q2 311 2
Picked up _JAVA_OPTIONS: -Dawt.useSystemAAFontSettings=on -Dswing.aatext=true
8 ms
false false

java q2 311 3
Picked up _JAVA_OPTIONS: -Dawt.useSystemAAFontSettings=on -Dswing.aatext=true
7 ms
true true

java q2 311 4
Picked up _JAVA_OPTIONS: -Dawt.useSystemAAFontSettings=on -Dswing.aatext=true
8 ms
true true

java q2 311 5
Picked up _JAVA_OPTIONS: -Dawt.useSystemAAFontSettings=on -Dswing.aatext=true
6 ms
true true

Input n=3110

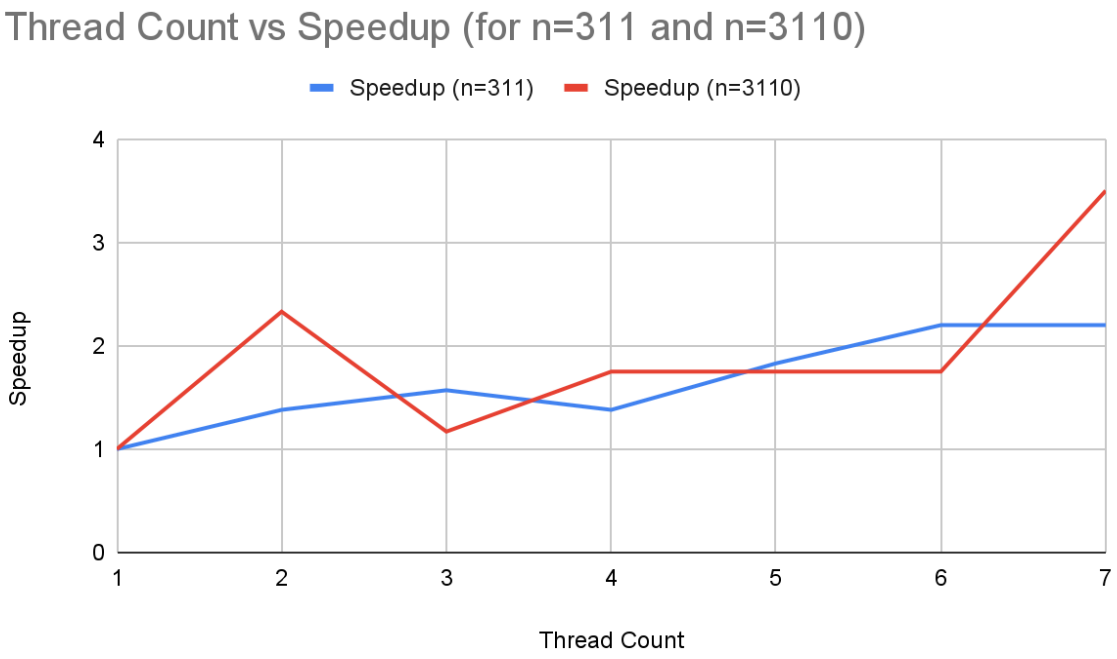
java q2 3110 1
Picked up _JAVA_OPTIONS: -Dawt.useSystemAAFontSettings=on -Dswing.aatext=true
7 ms
true true

java q2 3110 2
Picked up _JAVA_OPTIONS: -Dawt.useSystemAAFontSettings=on -Dswing.aatext=true
3 ms
true true

java q2 3110 3

```
Picked up _JAVA_OPTIONS: -Dawt.useSystemAAFontSettings=on -Dswing.aatext=true
6 ms
false false

java q2 3110 4
Picked up _JAVA_OPTIONS: -Dawt.useSystemAAFontSettings=on -Dswing.aatext=true
4 ms
false false

java q2 3110 5
Picked up _JAVA_OPTIONS: -Dawt.useSystemAAFontSettings=on -Dswing.aatext=true
4 ms
true true

java q2 3110 6
Picked up _JAVA_OPTIONS: -Dawt.useSystemAAFontSettings=on -Dswing.aatext=true
4 ms
true true

java q2 3110 7
Picked up _JAVA_OPTIONS: -Dawt.useSystemAAFontSettings=on -Dswing.aatext=true
2 ms
true true
```

Speedup Curves for two sample sizes of n:
Relative to single threaded (x1, default), multithreaded shows relative speedup for t >1



Analysis:

There is consistent speedup (relatively more or less) depending on the number of threads consistent throughout the two sample sizes of n. This demonstrates the benefit in multithreading.

Logic is based on dividing and conquering the task by setting a baseline sequence length which is to be computed sequentially. For single threaded, the task will always run with just one thread regardless of size. For larger inputs, workload is divided among threads of the thread pool until each thread is computing sequentially a part of the task that is of baseline size.

If division of the tasks among threads based on the baseline value determined is not evenly distributed, there may be inaccurate thread computations.