A3

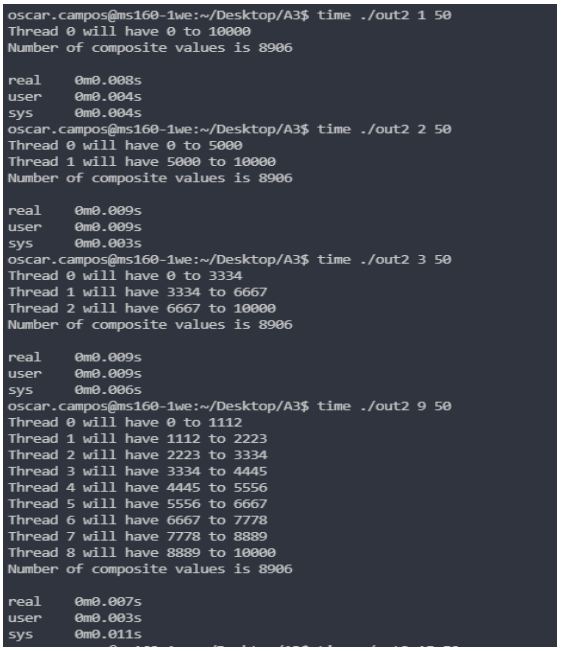
CPSC 457

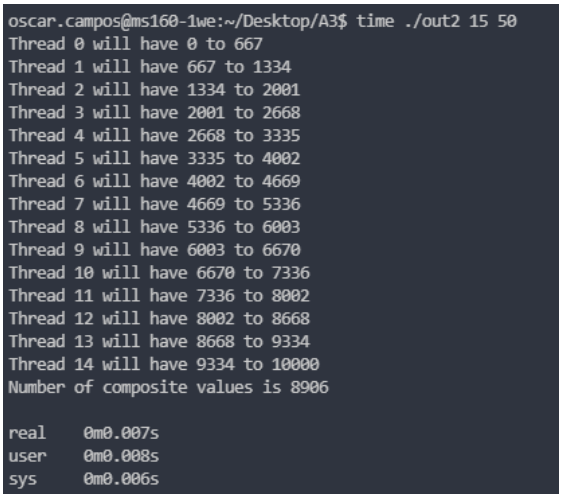
Part 1, chart, time will be in seconds

Chopsticks	5	6	7	8	9	10
Run 1	4.2667s	1.00s	1.066s	0.1333s	0.133s	0.00s
Run 2	3.9333s	0.533s	0.866s	0.200s	0.133s	0.00s
Run 3	4.2000s	1.066s	0.600s	0.333s	0.200s	0.00s
Run 4	4.1333s	0.866s	0.800s	0.0666s	0.200s	0.00s
Run 5	3.9333s	0.866s	0.666s	0.0666s	0.066s	0.00s

Part2, brief report of time with multithreading

Looking at the time stamps by each run of the program increasing the number of threads that it should use we see that the time real decreases according to how many threads we have running. In my program not until we have more than 10 threads running we can see that the real time < user time. From my understanding and a couple of readings on the internet this is the effect that we should have in a multithreading program. The program therefor runs faster because the work is being spread out. The sys time seams to very according to how many threads we declare. In conclusion I can definitely see a increase of performance when looking at the real and user time, the user time seams to be a couple of seconds slower than the real time. That being said this varies according to how many thread we invoke and the random seed.





```
oscar.campos@ms160-1we:~/Desktop/A3$ time ./out2 25 50
Thread 0 will have 0 to 400
Thread 1 will have 400 to 800
Thread 2 will have 800 to 1200
Thread 3 will have 1200 to 1600
Thread 4 will have 1600 to 2000
Thread 5 will have 2000 to 2400
Thread 6 will have 2400 to 2800
Thread 7 will have 2800 to 3200
Thread 8 will have 3200 to 3600
Thread 9 will have 3600 to 4000
Thread 10 will have 4000 to 4400
Thread 11 will have 4400 to 4800
Thread 12 will have 4800 to 5200
Thread 13 will have 5200 to 5600
Thread 14 will have 5600 to 6000
Thread 15 will have 6000 to 6400
Thread 16 will have 6400 to 6800
Thread 17 will have 6800 to 7200
Thread 18 will have 7200 to 7600
Thread 19 will have 7600 to 8000
Thread 20 will have 8000 to 8400
Thread 21 will have 8400 to 8800
Thread 22 will have 8800 to 9200
Thread 23 will have 9200 to 9600
Thread 24 will have 9600 to 10000
Number of composite values is 8906

real    0m0.007s
user    0m0.009s
sys     0m0.006s
oscar.campos@ms160-1we:~/Desktop/A3$ time ./out2 35 50
```

```
oscar.campos@ms160-1we:~/Desktop/A3$ time ./out2 35 50
Thread 0 will have 0 to 286
Thread 1 will have 286 to 572
Thread 2 will have 572 to 858
Thread 3 will have 858 to 1144
Thread 4 will have 1144 to 1430
Thread 5 will have 1430 to 1716
Thread 6 will have 1716 to 2002
Thread 7 will have 2002 to 2288
Thread 8 will have 2288 to 2574
Thread 9 will have 2574 to 2860
Thread 10 will have 2860 to 3146
Thread 11 will have 3146 to 3432
Thread 12 will have 3432 to 3718
Thread 13 will have 3718 to 4004
Thread 14 will have 4004 to 4290
Thread 15 will have 4290 to 4576
Thread 16 will have 4576 to 4862
Thread 17 will have 4862 to 5148
Thread 18 will have 5148 to 5434
Thread 19 will have 5434 to 5720
Thread 20 will have 5720 to 6006
Thread 21 will have 6006 to 6292
Thread 22 will have 6292 to 6578
Thread 23 will have 6578 to 6864
Thread 24 will have 6864 to 7150
Thread 25 will have 7150 to 7435
Thread 26 will have 7435 to 7720
Thread 27 will have 7720 to 8005
Thread 28 will have 8005 to 8290
Thread 29 will have 8290 to 8575
Thread 30 will have 8575 to 8860
Thread 31 will have 8860 to 9145
Thread 32 will have 9145 to 9430
Thread 33 will have 9430 to 9715
Thread 34 will have 9715 to 10000
Number of composite values is 8906

real    0m0.007s
user    0m0.009s
sys     0m0.004s
```