Wator Project

By Marcel Zama(C00260146)

	1 Thread	2 Threads	4 Threads	8 Threads	16 Threads
1 Run	699930	753741	669988	718457	520749
2 Run	690784	773831	674803	691257	511319
3 Run	758214	596033	706789	676476	507091
4 Run	690068	732567	699580	733612	497649
5 Run	695433	681425	613036	693173	504220
Average	706,885.8	707,519.4	672,839.2	702,595	508,205.6

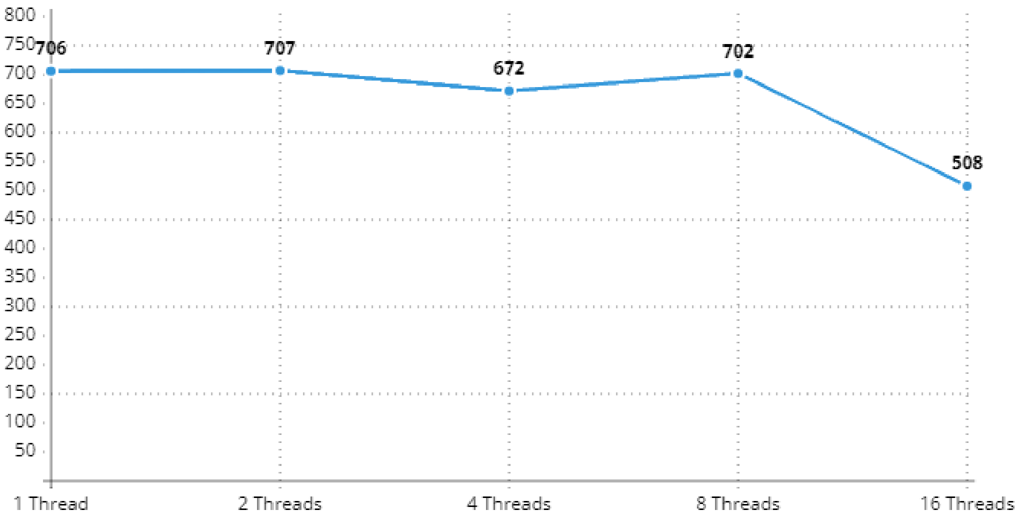
These iterations were taken with given variables:

```
const int NumShark = 10000;   // Initial number of sharks
const int NumFish = 15000;    // Initial number of fishes

const int FishBreed = 2;    // Fish breeding age
const int FishEnergyValue = 2; // Amount of energy fish gives to a shark when eaten

const int SharkBreed = 8;   // Shark breeding age // number of cells shark needs to move before it multiplies.
const int Starve = 6;       // Shark starvation time // number of times the shark is accesed before it dies // initiated to 6
const int GridSize = 1000;    // Size of the grid (GridSize x GridSize)
```

Graph



Conclusion

In this 1000*1000 graph from 1 Thread to 8 Threads, either the number of threads had little to 0 effect, or more likely my application of parallelism was done incorrectly. The execution time as observed varies, so the difference between 2 and 8 threads is not that great and could easily be interpreted as 0,but the difference between 8 Threads and 16 Threads is quite substantial, I've heard that some of this confusion may be caused by the fact that the function I've been using for decision taking, rand(), is not multithreaded friendly. This has been a very interesting and challenging Project which taught me and sharpened my programming skills for sure.