Computer Organization II

Benchmarking Project

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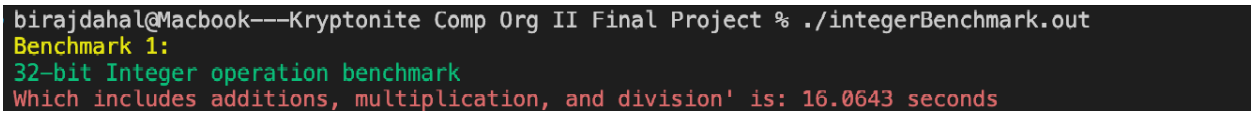
COMPUTER SPECIFICATIONS

1. The brand of CPU (Intel or AMD): **Apple Silicon**
2. The model of CPU: **Apple M1**
3. The number of cores on CPU: **8 (4 performance cores and 4 efficiency cores)**
4. The clock rate of CPU in GHz: **3.2 GHz**
5. The amount of memory in GB: **8 GB**
6. The speed of memory: **128-bit LPDDR4X SDRAM**
7. The capacity of hard drive: **256 GB**
8. The type of hard drive: **SSD**
    a. Max sequential read speed: **2900 MB/s**
    b. Max sequential write speed: **2215 MB/s**
    c. Max random read speed: **3400 MB/s**
    d. Max random write speed: **2715 MB/s**

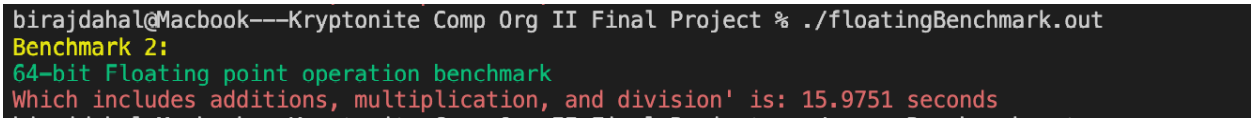
* The official Apple website didn't mention any data for Max Sequential Read/Write, and Max Random Read/Write, therefore I had to find this data through other sources.

SCREENSHOTS FOR BENCHMARK TIMES

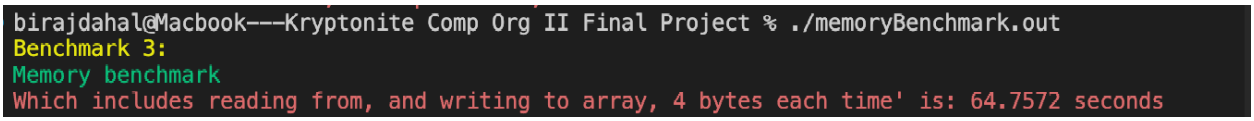
1) First Benchmark (32-bit Integer operation benchmark):



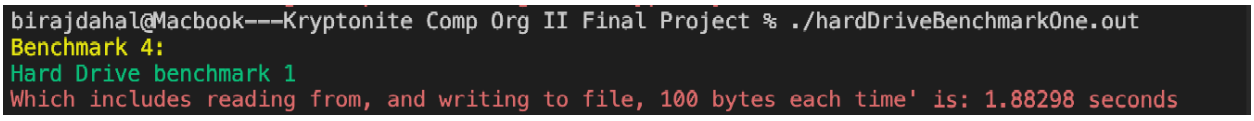
2) Second Benchmark (64-bit Floating point operation benchmark):



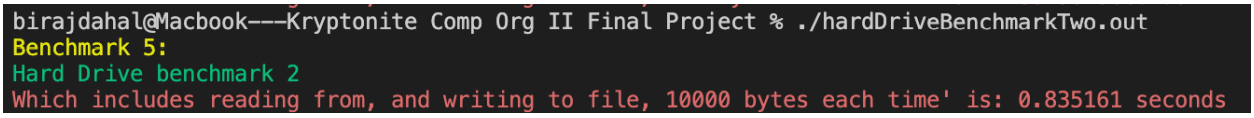
3) Third Benchmark (Memory benchmark):



4) Fourth Benchmark (Hard drive benchmark 1):



5) Fifth Benchmark (Hard drive benchmark 2):



RESULTS FOR BENCHMARKS

Benchmark	Benchmark Recorded Time	Benchmark Ratio (Reference Time/Benchmark Recorded Time)
First Benchmark	16.0643	6.22498
Second Benchmark	15.9751	6.25974
Third Benchmark	64.7572	1.54423
Fourth Benchmark	1.88298	132.768
Fifth Benchmark	0.835161	11.9737

FINAL BENCHMARK (Combined)

Geometric mean of all the benchmarks

$$= \sqrt[5]{(Benchmark\ 1 * Benchmark\ 2 * Benchmark\ 3 * Benchmark\ 4 * Benchmark\ 5)}$$

$$= \sqrt[5]{(16.0643\ *\ 15.9751\ *\ 64.7572\ *\ 1.88298\ *\ 0.835161)}$$

$$= 7.646133$$