

## Benchmark Project Report

### Computer Specifications

1. Brand of CPU (Intel or AMD) - Intel
2. Model of CPU - Dual-Core Intel Core i7
3. Number of cores on CPU - 2
4. Clock rate of CPU in GHz – 2.9 GHz
5. Amount of memory in GB - 16 GB
6. Speed of memory - 2133 MHz LPDDR3
7. Capacity of hard drive - 500.28 GB
8. Type of hard drive – SSD
9. SSD Specifications
  - i. Max sequential read speed - 1539.5 MB/s
  - ii. Max sequential write speed - 1353.2 MB/s
  - iii. Max random read speed - 9.92 MB/s
  - iv. Max random write speed - 10.74 MB/s

### Screen Shots

#### 32-bit Integer operation benchmark

```
nicolesullivan@Nicoles-MacBook-Pro corg_benchmark % g++ main.cpp benchmark.cpp
nicolesullivan@Nicoles-MacBook-Pro corg_benchmark % ./a.out
Integer Operation Benchmark Execution Time: 201.477 seconds
nicolesullivan@Nicoles-MacBook-Pro corg_benchmark % █
```

#### 32-bit Floating Point operation benchmark

```
nicolesullivan@Nicoles-MacBook-Pro corg_benchmark % g++ main.cpp benchmark.cpp
nicolesullivan@Nicoles-MacBook-Pro corg_benchmark % ./a.out
Floating Point Operation Benchmark Execution Time: 383.028 seconds
nicolesullivan@Nicoles-MacBook-Pro corg_benchmark % █
```

### Memory benchmark

```
nicolesullivan@Nicoles-MacBook-Pro corg_benchmark % g++ main.cpp benchmark.cpp
nicolesullivan@Nicoles-MacBook-Pro corg_benchmark % ./a.out
Memory Benchmark Execution Time: 37.5136 seconds
nicolesullivan@Nicoles-MacBook-Pro corg_benchmark %
```

### Hard drive benchmark

```
nicolesullivan@Nicoles-MacBook-Pro corg_benchmark % g++ main.cpp benchmark.cpp
nicolesullivan@Nicoles-MacBook-Pro corg_benchmark % ./a.out
Hard Drive Benchmark Execution Time: 10.0479 seconds
nicolesullivan@Nicoles-MacBook-Pro corg_benchmark %
```

### Results

Description	Execution Time (seconds)	Reference Time (seconds)	Ratio
32-bit Integer operation benchmark	201.477 seconds	100 seconds	0.5
32-bit Floating Point operation benchmark	383.028 seconds	500 seconds	1.3
Memory benchmark	37.5136 seconds	100 seconds	2.7
Hard drive benchmark	10.0479 seconds	1000 seconds	99.5
<b>Total execution time</b>	<b>632.0665 seconds</b>	-	-
<b>Geometric mean</b>	-	-	<b>3.6</b>

**Number to Summarize Results: 3.6**