

Benchmarking Project

- The brand of CPU: Apple
- The model of CPU: M2
- The number of cores on CPU: 8 core
- The clock rate of CPU in GHz: 3.49 GHz
- The amount of memory in GB: 16GB
- The speed of memory: 6400 MegaTransfers/seconds LPDDR5 SDRAM
- The capacity of hard drive: 512GB
- The type of hard drive: magnetic or SSD: SSD
- Max sequential read speed: 2,973.4 MBps
- Max sequential write speed: 3154.4 MBps
- Max random read speed: 470,000 IOPS
- Max random write speed: 470,000 IOPS

32-bit Integer operation benchmark

```
• (base) saujanyathapaliya@Saujanya-MacBook-Pro benchmarking % ./int
Int Operations take ~ 15.5605s
```

64-bit Floating point operation benchmark

```
clang: error: no input files
• (base) saujanyathapaliya@Saujanya-MacBook-Pro benchmarking % g++ floatPointBenchmark.cpp -o flobench
• (base) saujanyathapaliya@Saujanya-MacBook-Pro benchmarking % ./flobench
Double Operations take ~ 15.582s
```

Memory Benchmark

```
1 error generated.
• (base) saujanyathapaliya@Saujanya-MacBook-Pro benchmarking % g++ -std=c++17 memoryBenchmark.cpp -o mem
• (base) saujanyathapaliya@Saujanya-MacBook-Pro benchmarking % ./mem
Memory Operations take ~ 6.74498s
```

Harddrive Benchmark 1

```
• (base) saujanyathapaliya@Saujanya-MacBook-Pro benchmarking % ./hard
Drive Operations(100 Bytes Each) take ~ 13.6677s
```

Harddrive Benchmark 2

```
• (base) saujanyathapaliya@Saujanya-MacBook-Pro benchmarking % ./hard2
Drive Operations(10000 Bytes Each) take ~ 0.692887s
```

Table Recording all Benchmark

Benchmark	Time in Seconds
32-bit Integer operation benchmark	15.5605s
64-bit Floating point operation benchmark	15.582s
Memory Benchmark	6.74498s
Hard Drive Benchmark 1	13.667s
Hard Drive Benchmark 2	0.692882s

Geometric Mean - 6.886s