

HPC-Homework3

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Q2.

Before the change:

```
(base) zelin@MAGI:~/Homework3/Code$ ./fast-sin-org
Reference time: 0.2597
Taylor time:    1.6455      Error: 6.928125e-12
Intrin time:   0.0022      Error: 2.454130e-03
Vector time:   0.0021      Error: 2.454130e-03
```

After the change:

```
(base) zelin@MAGI:~/Homework3/Code$ ./fast-sin
Reference time: 0.2588
Taylor time:    1.6497      Error: 6.928125e-12
Intrin time:   0.0020      Error: 6.928125e-12
Vector time:   0.0020      Error: 6.928125e-12
```

Q3.

The Processor: Intel Core I7 8570H

6 Core, 12 Thread, 2.20 GHz-4.40GHz, 9MB Intel Smart Cache (L3)

Coffee Lake Architecture, support AVX2 SSE4.2 extended instruction set, with 32 GFLOPs/cycle maximum.

The result are shown as follow:

Parallel time:

Thread_Num	Time Consume
1	0.338101s
2	0.206232s
4	0.159567s
8	0.172565s
12	0.180939s
16 (more than logic cores)	0.179134s

Sequential time: 0.262552s