

High Performance Computing

Assignment 3

Sripranav Suresh Kumar
ss14432

The code for all the questions can be found at

<https://github.com/SripranavSureshKumar/HPCSpring2022/tree/main/homework3>

System Specifications:

```
Architecture:      x86_64
CPU op-mode(s):    32-bit, 64-bit
Byte Order:        Little Endian
CPU(s):            4
On-line CPU(s) list: 0-3
Thread(s) per core: 1
Core(s) per socket: 1
Socket(s):         4
NUMA node(s):      1
Vendor ID:         AuthenticAMD
CPU family:        23
Model:             1
Model name:        AMD EPYC Processor (with IBPB)
Stepping:          2
CPU MHz:           2894.560
BogoMIPS:          5789.12
Hypervisor vendor: KVM
Virtualization type: full
L1d cache:         32K
L1i cache:         64K
L2 cache:          512K
L3 cache:          8192K
NUMA node0 CPU(s): 0-3
```

Question 2

```
[ss14432@access2 homework3]$ ./fast-sin
Reference time: 16.9509
Taylor time:    2.3929      Error: 6.928125e-12
Intrin time:    0.4758      Error: 2.454130e-03
Vector time:    0.6287      Error: 6.928125e-12
```

Question 3

Number of Threads	Time (sec)
Serial	0.763236
2	0.274995
4	0.220448
6	0.173411
8	0.195655
12	0.192629