

1. This program can be run on OSU's flip server, and I use Mac OS's terminal to access OSU's server and run it on.
To run my program, be sure to put all my code in same directory, and type `./script.sh`
If you encounter permission problem, do this before running the script:
`chmod +x script.sh`.
Since I did not declare variable NUMT in project_0.cpp, it would not be able to run by running the cpp file itself because I set this variable in the script file. But if the script is not working on your machine, you can remove the `///
" before the define keyword in cpp file.
By the way, the script will clear the object file and exe file when everything is finished.`

```
[[linxinw@flip2 ~/CS475]$ ./script.sh
Using 1 threads
Peak Performance = 329.22 MegaMults/Sec
Using 4 threads
Peak Performance = 1092.82 MegaMults/Sec
```

2. The performance for using 1 thread is 329.22 megamults/sec and 1092.82 megamults/sec for 4 threads.
3. $S = 1092.82 / 329.22 = 3.12806$
4. 3.12806 is definitely smaller than 4. I think it is because more threads may cause more pressure on the processor, and they may wait for others to do some certain tasks. It is a bit of like a road that more cars on the road causes worse traffic.
5. $F_p = (4./3.)*(1. - (1./3.12806)) = 0.90708$