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CS 475
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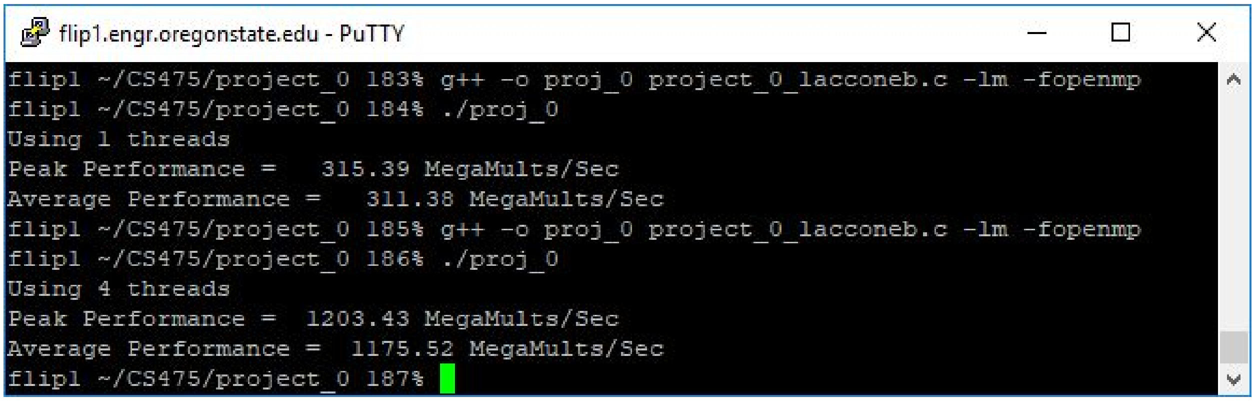
Project 0

1. I ran my program for this project on the OSU server (Flip1).

2. The peak performance time for 1 thread was 315.39 Mega-Multiplies per Second and the peak performance time for 4 threads was 1203.43 Mega-Multiplies per Second.



```
flip1 ~/CS475/project_0 183% g++ -o proj_0 project_0_lacconeb.c -lm -fopenmp
flip1 ~/CS475/project_0 184% ./proj_0
Using 1 threads
Peak Performance =   315.39 MegaMults/Sec
Average Performance =   311.38 MegaMults/Sec
flip1 ~/CS475/project_0 185% g++ -o proj_0 project_0_lacconeb.c -lm -fopenmp
flip1 ~/CS475/project_0 186% ./proj_0
Using 4 threads
Peak Performance =  1203.43 MegaMults/Sec
Average Performance =  1175.52 MegaMults/Sec
flip1 ~/CS475/project_0 187%
```

3. The 4-thread-to-one-thread speedup was calculated by using this formula: S = (Performance of 4 threads)/(Performance of 1 thread).
   S= 1203.43 / 315.39 = 3.8

4. The 4-thread-to-one-thread speedup for my program was 3.8 which is a little less than 4. I would guess that the speedup is a little less than 4 because of overhead when using multiple threads. Another guess could be that the server is a little more crowded and some memory is being used while certain threads are running.

5. The Parallel Fraction was calculated manually by using this formula: Fp = (4/3) * (1-(1/S)). The Parallel Fraction of the program I ran was Fp = (4/3) * (1-(1/3.8)) = 0.98