

## Assignment3: pthreads

Section 2.2 Task scheduler:

Q3:

For Thread number 16 and Ratio 1: 5 speedup is as follow:

Parallel	Operation Intensity	Sequential	Speedup
0.007252	10	0.000015	0.00206
0.005504	100	0.000044	0.00799
0.023840	10000	0.003348	0.14043
5.671019	10000000	3.580097	0.63129

As shown above for very small operational intensity the speedup is very low. As we increase the operational intensity the speedup has also increased.

Q4:

For Thread number 16 and Varying Ratio the speedup is as follow:

Thread = 16 Operation Intensity ratio 1:3

Parallel	Operation Intensity	Sequential	Speedup
0.005517	10	0.000014	0.00253
0.006925	100	0.000034	0.004909
0.021003	10000	0.003892	0.185306
3.832027	10000000	2.732195	0.712989

Thread = 16 Operation Intensity ratio 1:1

Parallel	Operation Intensity	Sequential	Speedup
0.004672	10	0.000012	0.002568
0.005089	100	0.000026	0.005109
0.018223	10000	0.006022	0.3304615
1.984998	10000000	2.399286	1.2087095

Thread = 16 Operation Intensity ratio 4:5

Parallel	Operation Intensity	Sequential	Speedup
0.019460	10	0.000054	0.0027749
0.011543	100	0.000072	0.0062375
0.022881	10000	0.007240	0.3164197
10.420533	10000000	7.205610	0.6914819

- As seen above for ratio 1:3 we see the speedup is increasing at much faster rate (0.712989) than previously for 1:5 (0.63129).
- The trend can also be seen in speedup chart for 1:1 where our speed up increases to 1.2087095.
- For ratio 4:5 the speedup worsen and the final speedup we are able to reach is 0.6914819
- For all of above the tread count is 16.