CSS 534 Program 5 Report

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Table 1: Comparison of Computation for Graph with 3000 Nodes

# Nodes	Avg # Cores per Node	Total # Cores	Time (s)	Performance Improvement
1	1	1	456.881	N/A
1	2	2	380.085	1.202
1	3	3	277.384	1.647
2	1	1	335.501	1.362
2	1	2	221.359	2.064
2	2	3	217.415	2.101
2	2	4	224.488	2.035
2	3	5	225.650	2.025
2	3	6	215.631	2.119
4	1	1	333.074	1.372
4	1	2	217.588	2.010
4	1	3	242.032	1.888
4	1	4	243.394	1.877
4	2	5	192.871	2.369
4	2	6	229.702	1.989
4	2	7	246.297	1.855
4	2	8	204.443	2.235
4	3	9	218.794	2.088
4	3	10	228.823	1.997
4	3	11	220.272	2.072
4	3	12	219.813	2.078

4 Source Code

4.1 Program 5

The source code for Program 5 can also be found in the included src.zip folder.

4.2 Laboratory 5

The source code for laboratory 5 #TODO

5 Output

This section provides the output generated by program 5 #TODO

5.1 Program 5

Performance: 1 compute node, 1 core: 457 seconds.
$\qquad$ 4 compute nodes, 5 cores: 193 seconds.
Improvement: $\frac{457}{193} \approx 2.368$ times.

```
/** Sequential Program **/
Best solution found:path: 21 -> 27 -> 24 -> 25 -> 7 -> 31 -> 2 -> 22 -> 18 -> 12 -> 15 -> 28 -> 26
    -> 4 -> 20 -> 9 -> 32 -> 14 -> 8 -> 34 -> 30 -> 19 -> 13 -> 23 -> 6 -> 10 -> 35 -> 5 -> 0 ->
    11 -> 33 -> 17 -> 29 -> 3 -> 1 -> 16 | distance: 447.38786463942176
Elapsed time:11409
```

5.2 Laboratory 5