Distributed Operating Systems COP 5615
Project 1: BitCoins Mining

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1) Size of the work unit that you determined results in best performance for your implementation and an explanation on how you determined it. Size of the work unit refers to the number of sub-problems that a worker gets in a single request from the boss.

Size of work	Time taken Avg	Number of Task	Number of Workers	Number of Cores	Core Used	Coins
1,000,000	54.8	10,000,000	16	4	6.6	165
100,000	36	10,000,000	16	4	6	147
10,000	35	10,000,000	16	4	6.25	149
1000	35	10,000,000	16	4	6.44	159

The Best Performance was achieved when size of work was to 10000 Strings for one worker. It Is best since it produced maximum Number of Coins / Time Ratio.

2) The result of running your program for Scala project1.scala 4

Total Coins Found: 147
Performance: real time 0m40.550s
User time 2m6.174s
The Coin along with String are present in Output.txt file

3) The running time for the above as reported by time for the above, i.e. run time scala project1.scala 5 and report the time. The ratio of CPU time to REAL TIME tells you how many cores were effectively used in the computation. If your are close to 1 you have almost no parallelism

Performance: Real time 0m42.653s
User / cpu time 2m28.528s
Sys time 0m0.844s
CPU / Real Time Ratio = 3.48

4) The coin with the most 0s you managed to find.
Maximum Number of Leading Zeroes: 7
Input String: prateek.j1;ryAflg1zrpv4hm92801551600
Bitcoin: 0000000ffbd475d8e451218217df9608dcb89c175609300a3042de40089469b3

5) The largest number of working machines you were able to run your code with.
Largest Number of Machines: 3