Project 1: Bitcoin Mining

Program run directions

- Unzip 'Project1'
- For Server:
    - cd into 'Project1_Server'
    - run the following command
      sbt "run 4" –vm –Dakka.loglevel=WARNING
- For Client(s):
    - cd into 'Project1_Remote'
    - run the following command
      sbt "run 127.0.0.1" –vm –Dakka.loglevel=WARNING

Note: start server before starting the client

Size of Work Unit

The work range is not specified by the master when a worker starts mining bitcoins. A worker creates a string at random, pushes it into sha256 hash and checks for leading zeroes for the returned string. It reports back to the master after collecting a chunk of bitcoins. After the timer expires the workers and master automatically stop.

Result of running program for k = 4

araiutAqpVS"H=	03948318f1d98e73d1fabf38eb2b1148fedce722bbed18a98fdf0ad555602373
arait"RVxjZv}8	00a14cf79d54773e467a50fda14aa52251b2d928d02672fc3315c1eb7efc7cd9
arai:q/h\O\(:s	000adba9d349cbd4504407cc4d94b885f48d92207a2d1172060b008ee769c512
araiROw'\c(UTd	0000b3a9d5eea97ea2de4eea929631670fde608828db1feaa8f3fcd4f44860af
araicb(tU6mMsK	00000bc956cffe9a1aede9d462019fc94b4790539e51f1523a6068763a67b319
araiQF5f7pK8Fb	00000021991c3daa97474c46d7f58761dd5c3eedb592b9ac1131283f1dc2f146

CPU time versus real time for the above input

User CPU time: 918.119 secs
System CPU time: 11.819 secs
Real Time: 2:08 mins
Performance: 724.5%

Coin with most zeros found : 6
Largest number of working machines : 3