Jun Luo (junluo2) Xiang Li (xiangl14)

Midterm Project Part 4 Report

1. We set difficulties (number of leading zero bits) to be 20 and lambda as 10ms in the experiments. We recorded the delay time. During the experiment, there are 21 blocks mined by 3 processes in total. The average size of blocks is 228 bytes as we generate random strings as transaction content.

Process (Number of Mined Blocks)	1 (9)	2 (5)	3 (7)
Avg Block Delay(ms)	33.18	23.93	43.09

2. (1) The delay of our result is reasonable, 10 ~ 20 ms for most direct connections). We exclude the very first block which takes a bit longer (> 100ms) to propagate. (2) Our result proves that the delay of process 2 is the smallest. because it's only 1-hop away from 1&3. (3) Yes, since it takes double message transmission times for process 1/3 to route to the other side. Given a stable connection, the average delay from process 2 to process 1/3 will be around half than from the indirect process.

3. We talked about the solution, implemented the code together and did the experiment together.