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Midterm Project Part3 Report

1. In our experiment, difficulties (number of leading zero bits) are set to 20, 21, 22. We count the number of mined blocks and length of the longest chain for each working miner after 1 minute. We set lambda as 0 in the experiments.

Trial (Difficulty)	1(# of leading zero: 21)			2(# of leading zero: 22)			3(# of leading zero: 20)		
Process	1	2	3	1	2	3	1	2	3
# Blocks mined	20	15	23	12	10	9	52	49	48
# Blocks in longest chain	58	58	58	31	31	31	143	143	143

2. Result

When the mining rate is high enough (trail 3), the total number of mined blocks (149) is greater than the length of the longest chain (143). It's because branching occurs due to propagation delay during the gossip process.

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