

CS 765 : Report - Assignment 3

Building a layer-2 DAPP on top of Blockchain

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November 20, 2021

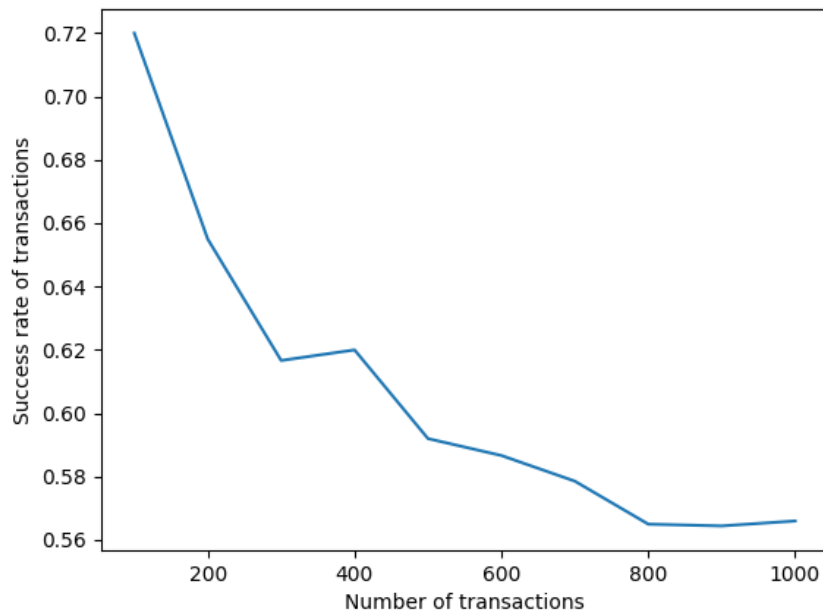


Figure 1: Success Rate versus Number of Transactions

Number of transactions	Ratio
100	0.72
200	0.655
300	0.617
400	0.62
500	0.592
600	0.587
700	0.5785
800	0.565
900	0.5644
1000	0.566

The function `sendAmount(user_id_1, user_id_2)` function is used to transfer 1 coin from `user_id_1` to `user_id_2`. The transaction fails in case every path from `user_id_1` to `user_id_2` contains at least one node unable to furnish the required number of coins from its joint account for co-extending the path. Thus, the path gets blocked despite the graph being connected. With each transaction a set of balances over the contributing edges, drops. Thus, the number of blocking nodes increases with the increasing total number of transactions, thereby causing a decline in the success rate of transactions.