Day 3

Advance Blockchain

Answer 1:

I tested the code for 5 zeroes because for 10 zeroes system was not responding.

Nonce: 34535

Time Taken: 2 minutes 21 seconds

Answer 2:

In a PoW system, transactions are verified by “miners”, who use their computer hardware to solve complex mathematical equations for the right to add new groups of transactions (blocks) to the blockchain (record of all blocks and the transactions in them).

It’s only by solving these problems that a new block can be added to the last block of the blockchain. By being the first to solve one of these mathematical puzzles and add new transactions to the blockchain, a miner is rewarded with a block reward and transaction fees in the form of cryptocurrency, such as BTC.

Proof of Stake works a bit differently. Instead of miners, there are “validators” (also called other names, such as “bakers” on Tezos). These validators don’t use hardware to solve complex mathematical puzzles. Instead, they lock up or “stake” their crypto as collateral for the right to verify transactions.

Factors like the size of the stake and how long the crypto has been staked help determine who gets the right to verify transactions, whereas mining or hashing power of hardware would generally determine verification rights in PoW systems. If you’re lucky enough to validate a new block of transactions, you are rewarded with new cryptocurrency and/or transaction fees, similar to PoW.

Answer 3:

There are two types of accounts in Ethereum

- Externally Owned Accounts
- Contracts Accounts

Externally owned accounts (EOAs): An externally controlled account

1. has an ether balance,
2. can send transactions (ether transfer or trigger contract code),
3. is controlled by private keys,
4. has no associated code.

Contract accounts: A contract

1. has an ether balance,
2. has associated code,
3. code execution is triggered by transactions or messages (calls) received from other contracts.
4. when executed - perform operations of arbitrary complexity (Turing completeness) - manipulate its own persistent storage, i.e., can have its own permanent state - can call other contracts