BlockChain

Block chain is based on the principle of enabling information to be distributed to many users without being replicated. There are three different types of block chain, public, consortium and private. The reason block chain is trusted is due to its compatibility with businesses. As it is open source, everyone can see the ledger making it a public security for online transactions. There are two types of records that are present in the block chain data base. Those are block records and transactional records. How does blockchain work? The first block in labeled the genesis block. The data is stored with in the blocks and the hash is the fingerprint for a specific block. The second block uses the hash of the previous block to complete the sequence.

Bitcoin- A cryptocurrency that uses the Algorithm SHA-256. The blocktime for this cryptocurrency is 10 minutes. Bitcoins lightning network is not very scalable and this was made with the off chain approach and multisignature address.

Ethereum- A smart contract, that uses the Algorithm Ethash, this block time is listed between 12-14 seconds. Ethereum is the largest smart contract, the language it is written in is Solidity.

Cryptographic Algorithms

RSA- Public Key Encryption Algorithm

Triple DES – Uses three individual keys with 56 bits. (3 * 56 = 168 bits)

Blowfish- Fast, splits blocks into 64 bits & encrypts them individually. This is a symmetric algorithm

TwoFish- Symmetric Algorithm with 256 bits.

Advanced Encryption Standard (AES) – Uses keys of 192 & 256 bits for heavy duty encryption purposes.

Consensus Algorithms:

1) **Proof of work- This is where the algorithm comes up with a very specific mathematical challenge and the proofer needs to come up with a proof response.**
   In proof of work how can a tampered block be accepted. Tampered blocks will be rejected unless all blocks are changed or you take over 51% of the network.

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2) **Proof of stake- In this consensus there are no miners, it had validators… How are the validated.**

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