Maintaining the bitcoin blockchain

**Blockchain**
- Record of every single Bitcoin exchange
- Fully visible to anyone who wants to see

**Block**
- Digital receipt of transactions
- Every block has a digital fingerprint that marks each block and the information carried by each block

**Genesis Block**
- First ever "genesis block" was added to the Bitcoin blockchain by mystery inventor Satoshi Nakamoto and a friend

**New Block**
- New transactions initiated
- New transactions grouped into a block
- New block is broadcast to the entire mining network for validation
- Bitcoin miners compete to validate each new block using brute computational force in a race to solve the very difficult math associated with the block's digital fingerprint
- The fastest miner adds the next block to the chain
- Slower miners lose the race and do not add their blocks
- Solving the math and validating the block earns a bitcoin reward
- Each validated block is broadcast to everyone in the network
- The mining network continues building on the updated blockchain
- All miners always build on the longest chain, which carries the most up-to-date validated blocks
- All updates are fully transparent

The blockchain resists fraud.
- If a hacker tampers with the transaction record in one block, every subsequent block breaks

- Built into the Bitcoin blockchain design are incentives that keep miners honest.
- Miners get bitcoin payouts for accurately validating new blocks.
- Attempts to hack a long blockchain take too much time and computer power to be worthwhile.
- Long chains are extremely secure and hack resistant to date.
- The more blocks in the chain, the more work it takes to fake transactions.
- Easy for other miners in the network to spot the broken blocks.
- Easy to reject a broken blockchain.

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