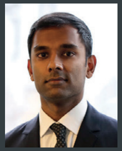
Bird & Bird & How it works?



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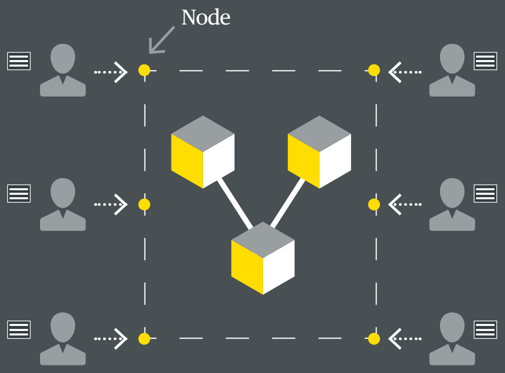

- Blockchain software installed and running by user on a machine is called a node.
- Each node stores a copy of the database (list of transactions).
- Nodes used to set up accounts (used by users to participate in the blockchain: create and send new transactions).
- Private keys (a secret number generated for an account) are used to operate accounts.
- Public keys (a public number generated for an account) identify each account on the blockchain.

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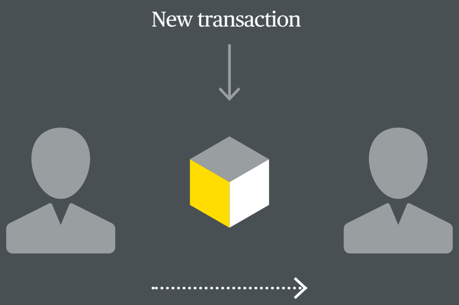

- X and Y users want to send a new transaction to the blockchain (X user transfers Z digital currency to Y).
- X and Y broadcast cryptographically secured digital signatures (combination of their public and private keys) and the details of their transaction to nearby nodes in the network.

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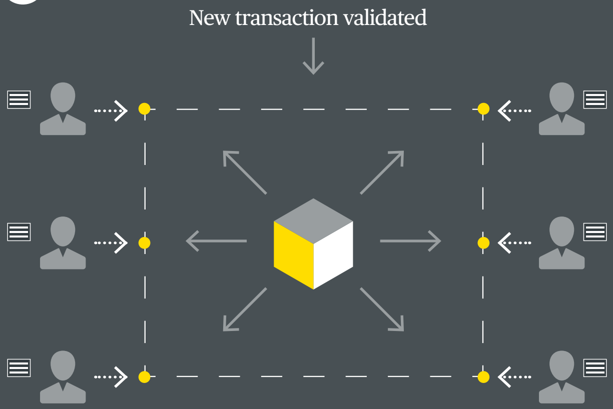

- Transactions are sent by accounts and validated in accordance with the consensus protocol (process embedded in the blockchain software used by nodes to reach agreement on whether a transaction can be validated).
- There are different consensus protocols used by different blockchain networks. "Proof of work" is used for the Bitcoin blockchain. Proof of work involves mining.

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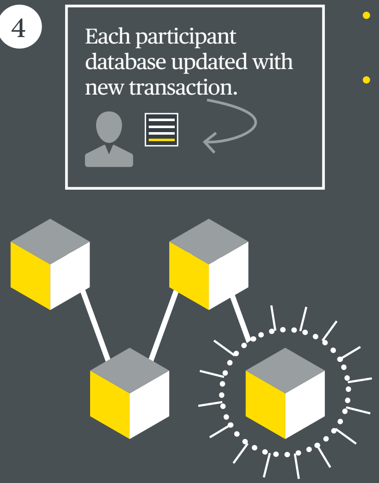

Each participant database updated with new transaction.

- Once a transaction is validated it is recorded on the blockchain.
- Assuming nodes follow the proof of work consensus protocol:
  - Nearby nodes invest compute power to solve a mathematical puzzle required to produce the next block within which the proposed transaction is recorded (this is mining)
  - When the first node solves the mathematical puzzle they win a fee and the pending transaction is recorded in a new block of data
  - That new block is double checked by other members of the network until a majority agrees it is correct and then its added to the blockchain and becomes part of the database

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