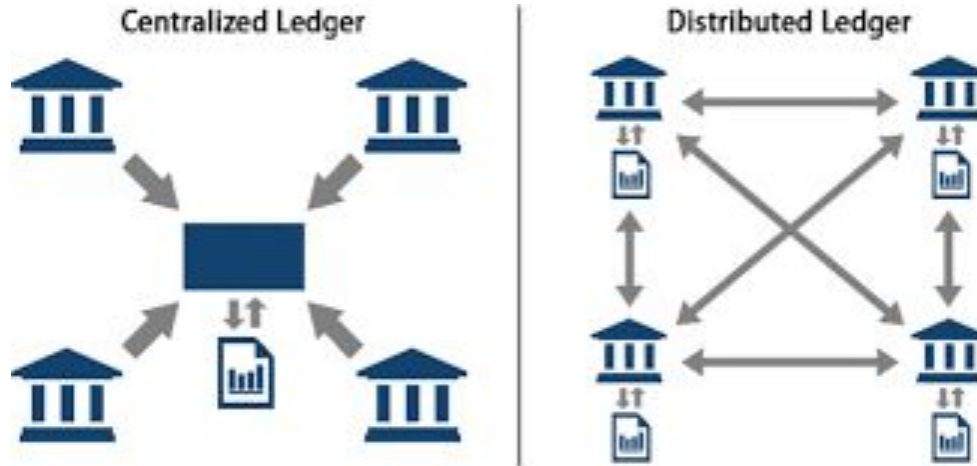# What is Blockchain

Agenda

1. Problem (with traditional transactions)
2. What is Blockchain
3. Classification
4. Blockchain architecture
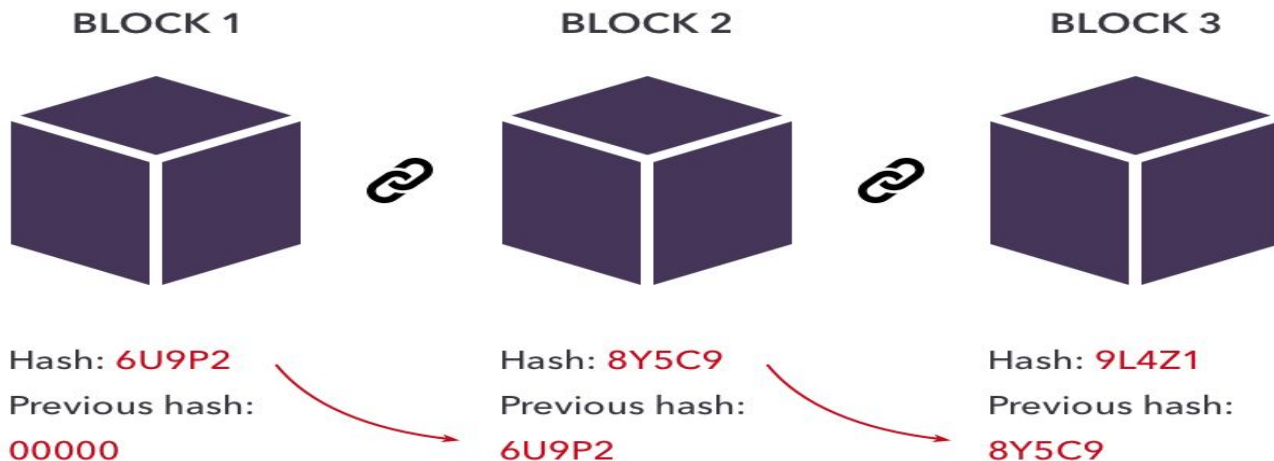5. Basic Knowledge
6. Q&A

1. Problems

- In traditional approach, we need to trust a third party with following rules. Sometime, the rules are broken

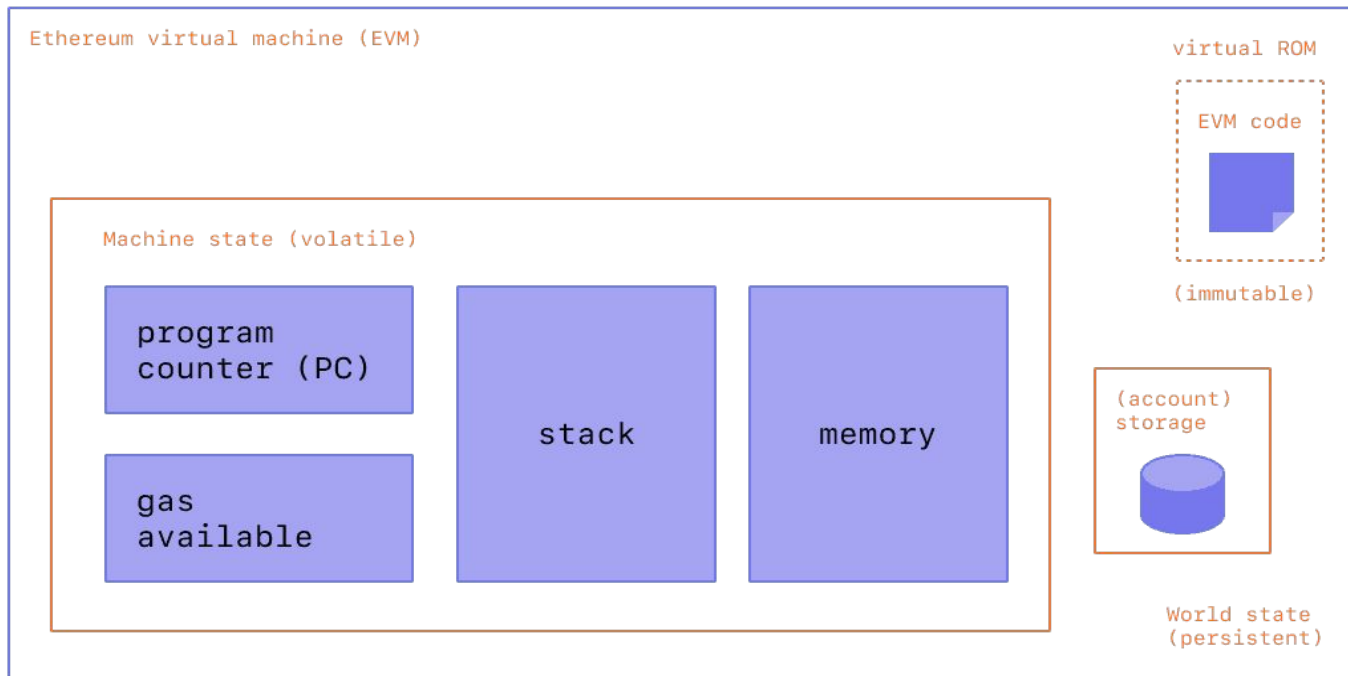Centralized Ledger   Distributed Ledger

2. What is Blockchain

- Chain of blocks. Block contains information about transactions
- Virtual Machine: run Smart Contract
- Smart contract: A computer's program in Blockchain.

BLOCK 1

BLOCK 2

BLOCK 3

Hash: **6U9P2**
Previous hash:
00000

Hash: **8Y5C9**
Previous hash:
6U9P2

Hash: **9L4Z1**
Previous hash:
8Y5C9

Virtual Machine

Ethereum virtual machine (EVM)

virtual ROM

EVM code

(immutable)

Machine state (volatile)

program counter (PC)

gas available

stack

memory

(account) storage

World state (persistent)

3. Classification

- Account Model (Each account is indicated private key and public key)
    - UTXO
    - Account Base
- Network type
    - Public blockchain
    - Private Blockchain
    - Hybrid Blockchain
    - Side chain

UTXO vs Account-Based Model
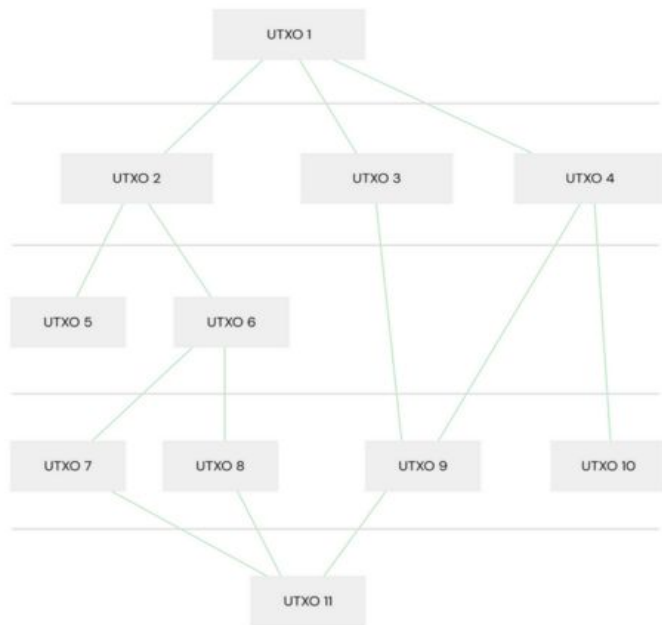
4 Blockchain architecture

- Fullnode: contain blockchain data, virtual machine
- Miner node, Validator Node
- Client: can be BE and FE, wallet. Clients interact with Blockchain by using Rest API or any RPC.
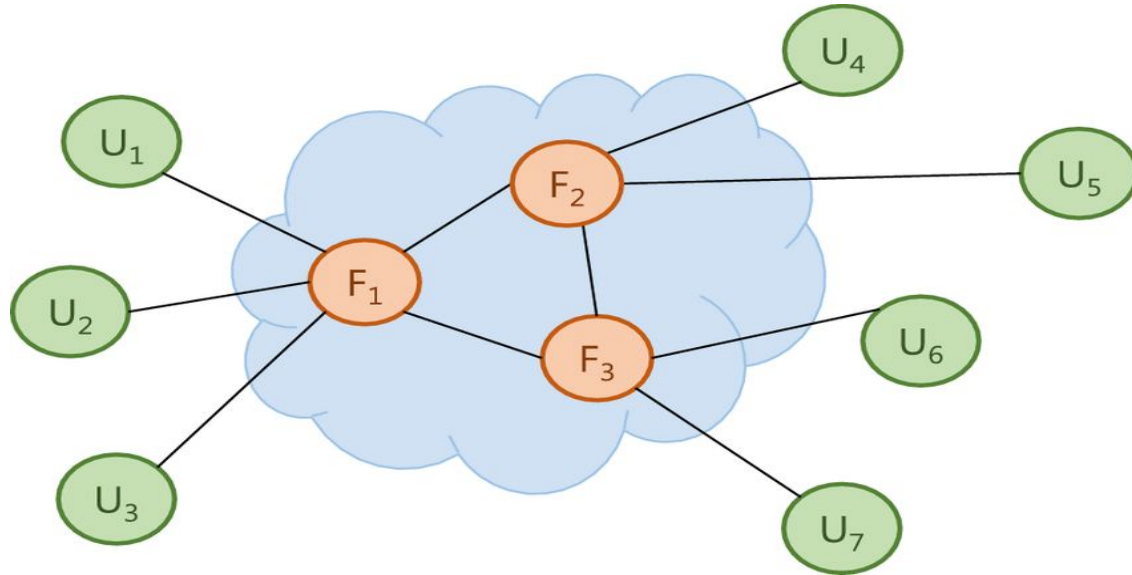
Wallet

- Account: private key and public key
- Wallet: manage accounts
- Functions:
  - Send transactions
  - Query balance data

5 Basic Knowledge

- Programming
  - Understanding how to write smart contract or interact with blockchain
  - Design Blockchain protocols
- Cryptography
  - Public-key cryptography
  - Private-key cryptography

Q&A