**Public Block Chain**

Etherium(ether), Polygon(metix), Binance(bnb), Avax(avax)

Etherium Block Chain

* Decentralized
* Open Source – anybody can access across the globe.
* Block Chain
* Own Crypto Currency - Ether

Etherium explorer - <https://etherscan.io/>

EVM (Etherium Virtual Machine) base (to execute the code) chain are similar

Binance Explorer - <https://bscscan.com/>

Avax Explorer - <https://snowtrace.io/>

Demo Link  
<https://andersbrownworth.com/blockchain/block>  
<https://andersbrownworth.com/blockchain/>

In a block chain whenever we add some data to any block then hash value would also chain and to add that data into block hash initial 4 place value should be 0

What is Etherium?

Application of Blockchain

* Product Tracking
* Healthcare System
* International Wire Transfer(NEFT, IMPS, RTGS)
* Smart Contracts

**Metamask**

It is a software crypto currency wallet used to interact with the Etherium (EVM based) Blockchain. It allows user to access their Etherium wallet through a browser extension or mobile app, which can then be used to interact with decentralized applications.

Etherium Flow

**Etherium vs. Etherium 2.0**

**Etherium**:  
 Works on proof of work (consensus mechanism), miners pick the transaction and accordingly they are rewarded after validation and add it to Blockchain.  
Heavy computers were needed  
Multiple miners used to work on single transaction but only gets validated and rewarded

**Etherium 2.0:**Works on proof of stack (consensus mechanism),   
Heavy computers are not necessarily required to be a miner  
Coin base process, whoever stacks has 32 Ether can validate

**Etherium Accounts**

It represents identification of a user on Blockchain.   
Each account has following

* address (symbolic to user id in database)
* public key (used to create address)
* private key (symbolic to password)

Type of accounts

* externally owned accounts
* contract account (not present in Blockchain like bit coin, since they do not support smart contract)

**Proof of work**

* proof of work is the original consensus algorithm in Blockchain network
* the algorithm is used to confirm the transaction and creates a new block to the chain
* miners solve the algorithm problem and add this transaction to Blockchain
* as soon as miners successfully create a valid block, he gets rewarded

**Consensus mechanism**

Consensus is an algorithm that makes decentralized record keeping more similar to a centralized database. It’s an automated process to ensure that there exists only one single valid copy of records shared by all the nodes.

**Two consensus mechanisms are very popular**

* proof of work
* proof of stack

Smart contracts

* Executable Code
* Turing
* Functions like and external account
  + Hold Funds
  + Can interact with other accounts and smart contract
  + Contain code
* Can called through transaction