

2021/2022(2)
IF184605 Framework-Based Programming

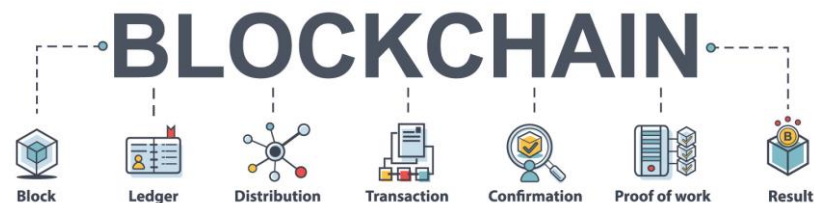
Lecture #12b

Blockchain: Ethereum 2.0 (ETH2)

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Blockchain: Basic & advanced concepts

- Link: <https://www.javatpoint.com/blockchain-tutorial>



Ethereum 2.0 (ETH2)

- Eth2 pertains to a series of updates that will improve Ethereum's scalability, security, and long-term viability. Numerous teams from around the Ethereum network are working on these enhancements.
- Ethereum 2.0 (ETH2) is a system update that attempts to enhance the safety and manageability of the Ethereum blockchain. A holding mechanism will replace Ethereum's existing mining process as part of this development.
- What we have to do? You do not have to do something if you're a digital asset customer or have ETH. If you're a programmer or would like to initiate mining, several options are available nowadays.

Ethereum (ETH) & Ethereum 2.0 (ETH2)

- ETH2 denotes ETH that has been staked.
- Our users can earn incentives by staking their ETH with Coinbase.
- The ETH is converted to ETH2 when you stake it.
- The cost of ETH2 is the same as the cost of ETH.
- The ETH2 will regress to ETH that once Ethereum system advancement is comprehensive.

Staking: The process

- On a PoS (proof-of-stake) blockchain, staking is the act of intentionally engaging in purchasing guidelines (equivalent to extraction).
- Anyone with a minimum needed crypto value can conduct transactions and gain Protecting payments on these blockchain systems.

Staking on Coinbase

- When a network node budget range is reached, it spends that currency in the chain like a security deposit.
- The probability of a node being selected to generate the next transaction is directly proportional to the volume of the stake.
- The validation earns a payment if the network properly generates a log, analogous to how a miner is compensated in proof-of-work networks.
- If super nodes dual or seek to assault the platform, they forfeit a portion of their investment.

Inflation: What is it?

- ALGO (Algorand) is a cryptocurrency that earns benefits through inflation and social benefits.
- Inflation occurs when new coins are connected to the system at a price fixed by the system, and those assets are then dispersed as incentives to owners.

Ethereum staking: Reward

- As an incentive to safeguard the infrastructure, you can receive an additional 5% APR on each ETH of your deposit. Staking pay-outs for ETH2 are calculated based on how much ETH confirms and what incentives the system is paying over the period.
- When a small amount of ETH is pledged, the protocol pay-outs grow to encourage additional ETH to be staked. When a large amount of ETH has already been staked, however, the pay-out is lowered.

Ethereum staking: Risk

- Terms of agreement and any amendments made when the stake applies to the ETH staking facility may be proffered. Staking with ETH is investigational and comes with some risks, such as the possibility of the system failing. Whenever you decide to stake, be ensure you individually examine, comprehend, and embrace the associated risks.
- The chance of sacrificing your staked resources (sometimes referred to as your "main money") owing to slashing is an obvious concern to be wary of. Slashing is a protocol-level punishment imposed in response to a connection or validator error.

Ethereum staking: Risk (continued)

- Coinbase has taken precautions to reduce the possibility of a hack.
- On the other hand, slashing can be affected by things beyond our influence, leading to the loss of pledged ETH.
- If you have a slashing incident, Coinbase will instantly restore the cut principle at no further charge.
- If you began staking after August 30, 2021, Coinbase would only reimburse slashing fines if they are the consequence of an act or omission within our immediate control.

Initial & final staking amount

- On Coinbase, there are no minimal stakes.
- To help regulate system restrictions, each client can deposit a maximum amount of ETH.
- This max amount is subject to fluctuate over the period and is not unique to the account.

Ethereum staking: Prerequisite

- To be authorised to stake ETH, users must meet the following requirements:
 1. Maintain an ETH balance in the Coinbase account.
 2. Be a citizen of a nation that allows ETH staking.
 3. Verify your identification completely.
 4. Verify all of your identification documents.
 5. Check the ETH staking terms of service and clarify them.

ETH Staking: Countries

- Below are the following countries that allow stacking ETH, such as:
 - Europe
 - Asia
 - Africa
 - South America
 - North America
 - Middle east

ETH Staking: Coinbase

- On the browser or the smartphone, go to the Ethereum asset section inside the Portfolio and follow the instructions. You may indeed be able to transfer the Ethereum to Ethereum2 and begin mining right away if you're clogged up and approved.
- If you're on the queue, you'll have to wait for the name to be eliminated until you can begin staking Ethereum. We're trying to expand the availability of this option to more users, and it will let you know when you're no longer in the queue.
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- Important Note: The Coinbase Assistance is unable to confirm whether or whether you are in the queue. Where you are in a queue, or when you will be allowed access to the functionality.

Receiving reward: Prerequisite

- It would help if you had the following prerequisites for receiving rewards, such as:
 - Your identification must be confirmed.
 - You must have the minimum threshold amount for that specific currency. You can either buy or keep the required minimum amount on Cryptocurrencies, or you can send the Bitcoin from another account or marketplace. You can also see the support page for more information on transferring cryptocurrency to Coinbase.
 - On Coinbase.com, you must have the relevant bitcoin, but the reward points are not available on Coinbase Pro.

Opt-out: Is it possible?

- You can opt-out, but you won't get any benefits until you re-opt in. To opt-out of benefits, Follow the steps mentioned below:
- **On the World Wide Web:** Click on Financial Services from the Settings menu. To opt-out, flip the Awards symbol off from there.
- **On a mobile device:** Click on Financial Services in the iOS or Android application's Settings. To opt-out, flip the Awards symbol off from there.

Working on reward

- The appropriate resource is used to determine benefits. Coinbase will accept the benefits from the platform on the side and send them to the cryptocurrency wallet instantly.
 - Rewards are computed depending on the value of the crypto you have in that wallet-the higher you have, the more Coinbase can invest on your behalf and the higher the expected rewards.
 - The regularity of transactions created by a cryptocurrency's system affects bonuses as well.

Benefit percentage & increment

- The reward value is controlled by many elements, the most important of which is the platform's protocol.
- It's impacted by verifier efficiency, staked quantities or stakes, inflation expectations and/or investment returns established by the system, and so on.
- Depending on these conditions, the rate may rise or fall.

Reward: Expected & actual

- The statistical activities under Incentive waiting are the best approximation of the rewards you could receive once the system distributes them.
- Coinbase's previous staking achievement for that crypto is the basis for the estimate.

Receiving reward: Tax

- In USA, staking bonuses gains must be reported by US clients who are liable to US income taxes.
- Coinbase will issue a 1099-MISC to United States users that gain more than \$600 in Staking bonuses.
- The IRS's official site has more information about the 1099-MISC.
- In Indonesia, the finance ministry has set a 0.1% value-added tax on crypto asset purchases, while earnings and capital gains from such transactions will be subject to a 0.1% final income tax, according to a rule that has been effective on 1 May 2022.