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# Tokenomics Workshop

<LEARN/> ALL JUNE . <HACK/> JULY-MID AUGUST . <CELEBRATE/> REST OF AUGUST

# What is a Token?

- A token is a digital asset built on an existing blockchain. They are commonly used as incentive tools in applications and help create more user-centric business models.
- Token incentives are used to manage behavior and reward positive actions.



# Why Do Companies Use Tokens?

- Unlike centralized apps where there is more active governance ie. a manager telling you to do something, in **decentralized systems have passive tokenomics incentivization.**
- In an application like Facebook every eyeball is monetized but the earnings are fully controlled by a central company. On the other hand, Incentivized Social Medias like Steemit use tokens to give users back the value of their time and likes using a token. Essentially creating an **internal user economy based on their use case.**



# What are Tokenomics?

The topic of understanding the supply and demand characteristics of cryptocurrency in relation to the technical design.

## TOKEN ECONOMICS FRAMEWORK

MARKET  
DESIGN

Thickness

No  
Congestion

Safety

MECHANISM  
DESIGN

Governance

Non-  
Financial  
Incentives

Structure

TOKEN  
DESIGN

Token Policy

Financial  
Incentives

Architecture

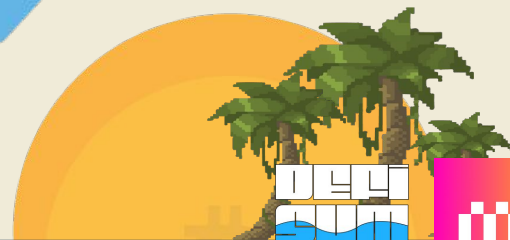


# Economics vs. Tokenomics

	Economics	Tokenomics
Main Goals	Predictive Goals	Design Goals
General Approach	Given these rules, what outcomes can we expect?	Given this desired outcome, what rules should we create?
Answers Questions Like	"If the price of oil increases, will electricity prices go up or down?"	"Given our desired user adoption for the network, should we give our coin supply a fixed cap?"

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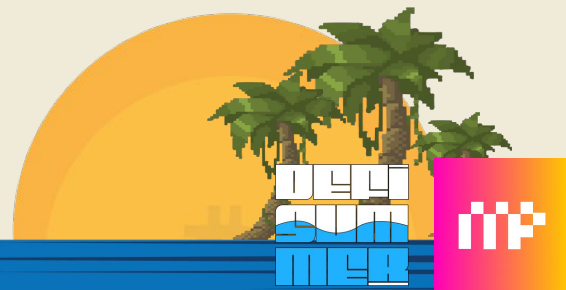
# Understanding Stakeholders

- Users
- Contributors (Investors & Workers)
  - Miners, Major Investors (Whales), Community Developers, and Users
- Initial Developers (Founders)
  - Obtain cash from investors by issuing tokens
  - Typically hold a fraction of token supply which appreciates with the adoption of platform



# What are the Tokenomics of the Dollar?

- Total Supply?
- Burning/Minting
- How is allocation of monetary supply determined?
- What is the governance system?
- Context of its creation
  - US Dollar: Backed by Gold
  - US PetroDollar: Backed by Oil Trade



# What are the Tokenomics of the Dollar?

Total Supply	"Infinite" - Print as much as needed without collapsing the entire system.
Burning/Mining	Dev team can mint at will. Anyone can burn but can't prove.
How is allocation of monetary supply determined?	Newly minted coins are distributed to major whales (ex; banks) who have significant stake in the system.
What is the governance system?	Federal Reserve made of 3 government officials and 6 community whales (ex; bankers) control the rate and amount of coins minted.
Context of its creation	US Dollar is a World Reserve Currency and the US's National Currency  US Dollar: Backed by Gold  US PetroDollar: Backed by Oil Trade  US DigitalDollar: ???





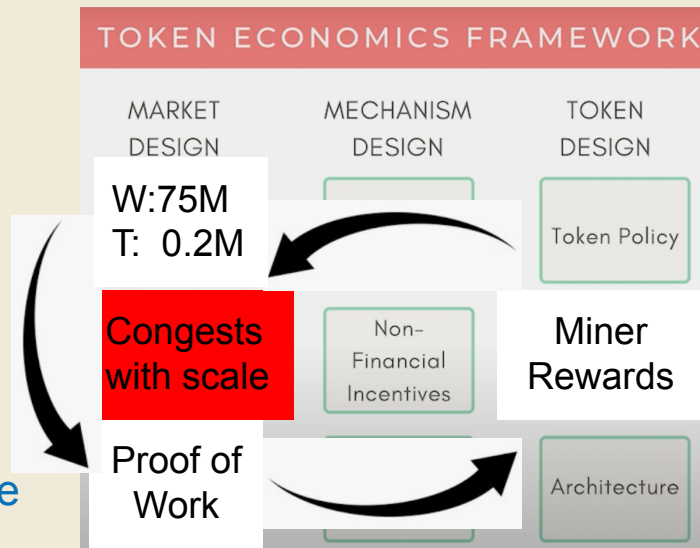
# Tokenomics Questions to Consider

- How many coins or tokens currently exist?
- How many will exist in the future and when will they be created?
- Who owns the coins? Are there some set aside to be released in the future to developers? How will you incentivize the engagement in an ecosystem?
- Is there any information to suggest that a large number of coins has been lost, burned, or are somehow unusable?
- What is the utility of the token? What does it do?
- ...



# Case Study: Bitcoin - Payment Rails?

- Both the platform and incentive.
- Bitcoin's limited adoption/change is due to its tokenomic structure.
  - As more people use the network it costs more money and takes more time to transact.
- Global decentralized payments → “Digital Gold”
  - Visa 1700TPS, 150M TPD
  - BTC 5TPS, 0.2M TPD
- Even though Ethereum is smart contract based, we are still seeing severe congestion problems.



# Tokenomics Case Study: PlutoPepe

## Incentives to Buy and Hold:

PLUTO incentivizes holding while stabilizing the price through a 10% token tax.

## Burn Mechanism:

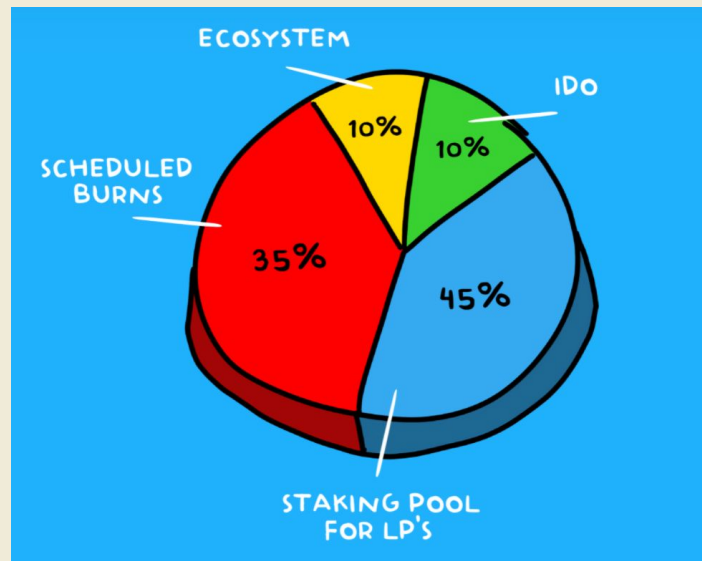
Out of the 10% token tax on every transaction 1.25% is burnt

## Auto Liquidity:

Out of the 10% token tax on every transaction 5% is burnt

## Automatic Yield:

Out of the 10% token tax on every transaction 3.75% is given back to all token holders

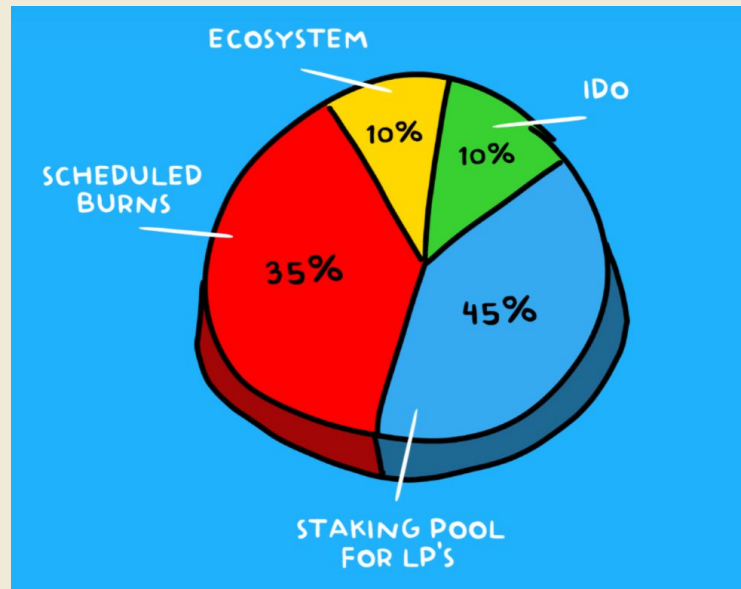


# Tokenomics Case Study: PlutoPepe

## Token Utility

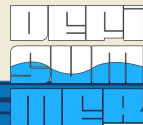
Tokens cannot survive simply through economic incentives. Like any app or product it needs to solve a problem or add value for a user.

PlutoPepe is utilizing their tokens as the basis for PepeSwap. A dex that has farming, pools, gaming, and governance.



# DEVxDAO: Engineering Guild Governance

- Centralized vs Decentralized governance?
  - If Decentralized, how do you prevent the Tragedy of the Commons from the the Idiocy and Tyranny of the Mob while eliciting the Wisdom of the Crowd and its experts?
    - How do you want/not want people to behave?
      - Hold coins long-term?
      - Volunteer more?
        - How do you enforce it?
          - Reputation
          - Monitoring
          - Sanctioning
          - Incentivization
          - Agency/Responsibility
- Hybrid Centralized-Decentralized Governance?
  - US Constitution: Overall Decentralized
    - Legislative | Decentralized
    - Judicial | Decentralized
    - Executive | Centralized
  - US Industry:
    - Stimulated and maintained by a combination of capitalism and socialism.
  - 1P1V voting system can be problematic



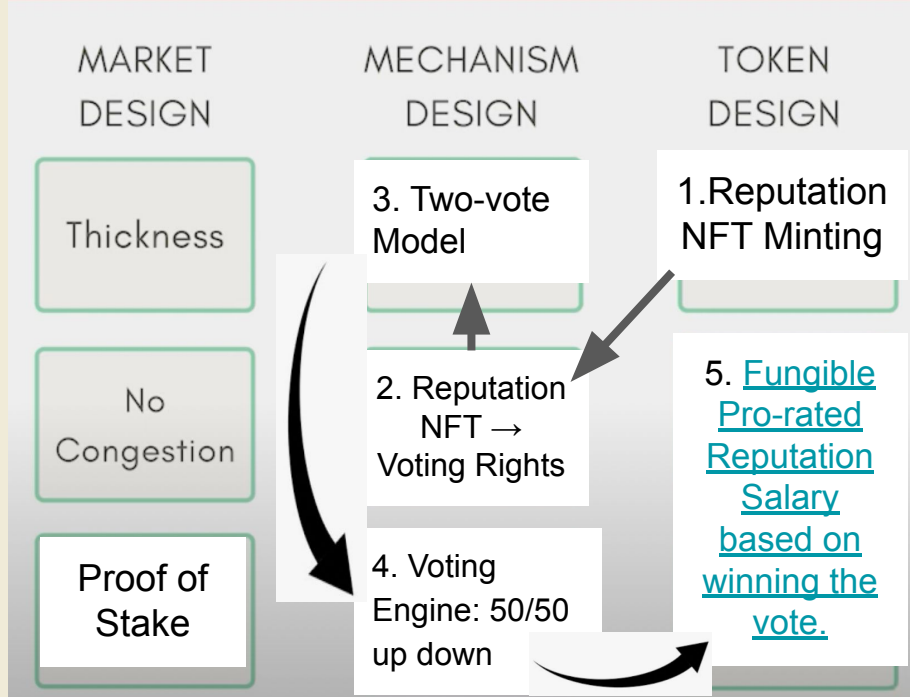
# DEVxDAO: Engineering Guild Governance

## Hybrid Centralized-Decentralized Governance

1. **Reputation generated** ONLY for long term valuable work and policing of work NOT for business development work
2. NFT or weighted keys as accounting for reputation score  
**NOT fungible token.**
3. **Two vote model** a) loosely coupled vote (no reputation at stake), b) tightly coupled vote (reputation at stake)  
See Figure
4. Calculation of reputation **voting engine with 50/50 up down**
5. **Reputation salary using pro-rated fungible token** proportional to reputation score at point of payment.
6. **Full voting record transparency**



## TOKEN ECONOMICS FRAMEWORK



# Tokenomics Mistakes

- Pump and dumps
  - Big marketing pushes, often influencer led, with no substantial product, team, or backing
    - YUMMY
    - BONFIRE
    - ElonGate
- Exploits
  - Iron.Finance
    - IRON Stable Coin worth \$1
      - Redeemable for \$0.70 of ETH and mints \$0.30 of TITAN
      - TITAN crashes - IRON loses peg - now only worth \$0.80
      - Still redeemable for \$0.70 of ETH and mints \$0.30 of new TITAN
      - Whales “Bank Run” the difference into oblivion



# Summary

- What are you trying to do?
  - US Dollar: Traditional Fiat
  - Bitcoin: Internet of Value
  - PlutoPepe: Value through utility
  - DEVxDAO: Governance token

## TOKEN ECONOMICS FRAMEWORK

MARKET DESIGN	MECHANISM DESIGN	TOKEN DESIGN
Thickness	Governance	Token Policy
No Congestion	Non- Financial Incentives	Financial Incentives
Safety	Structure	Architecture





# Resources

- Theory:

- <https://101blockchains.com/tokenomics/>
- <https://mitsloan.mit.edu/cryptoeconomics-lab/welcome-mit-cryptoeconomics-lab>
- Economics Design Channel:
  - Token Design: [https://www.youtube.com/watch?v=cLYDWPuOi\\_k](https://www.youtube.com/watch?v=cLYDWPuOi_k)
  - Ponzinomics: <https://www.youtube.com/watch?v=dH5mostDrv4>
- Toulouse School of Economics' 2nd Tokenomics Conference
  - [The Blockchain breakthrough through the lens of Game Theory](#)
  - [When Do Smart Contracts and IoT Improve Efficiency?](#)
  - [The Structure of Cryptocurrency Returns](#)
  - [Getting Blockchain Incentives Right](#)
  - [Proof of Behavior: Design of LEMobiCoin](#)
  - [Bitcoin's Fatal Flaw: The Limited Adoption Problem](#)
  - ...

- Coding Walkthroughs

- [Decentology's Dappstarter](#)



# No Code Token Builders

- <https://dxsale.app/>
- <https://vittominacori.github.io/erc20-generator/>
  - For erc20 tokens on ethereum
  - Certain features are locked
- <https://tokenmint.io/app/#/token>
  - Ico generator
  - Planning timeline
- <https://www.thetokenlauncher.com/>
  - Token manager
  - Ico presale
- [Cardano Blockchain Token Creation with Marlowe](#)



# Appendix



# Microtokenomics and Macrotokenomics

	Microtokenomics	Macrotokenomics
<b>Studies</b>	Individual properties of the network.	Aggregate properties of the network.
<b>Driven By</b>	Economic forces dependent directly on parameters and rules within a blockchain or DLT system.	Economic forces dependent on third parties, investors, or other members of a single network's ecosystem.
<b>Answers Questions Like</b>	"How much reward should miners receive to keep them supporting the network without excessive inflation?"	"How will the addition of retail acceptance affect the coin price?"



# Microtokenomics Consideration

- Mining difficulty or similar consensus algorithm settings
- Mining rewards. (How much should a miner get?)
  - Change in rewards over time
- Supernodes or other privileges for special status holders
- Mechanics to adjust supply, demand, velocity
  - Inflation rate
  - Lockups
  - Vesting
  - Utility of the token
- Utility as a currency (transaction speed, transaction fees, privacy features)
- Utility as a claim to rights or services
- DLT Security
  - Hashing, sybil resistance, consensus algorithm
  - Distributed vs centralized network
  - Understood and proven or obscure and experimental?



# Macrotokenomics Consideration

- Initial distribution plan - ICO or variant
  - Fundraising goals (valuation and market cap, issue price)
  - Securities compliance
  - ICO road map
  - Permissions on who can buy or use
- External factors in coin price growth and volatility
  - Value drivers
  - Liquidity on exchanges
  - Conversion to another asset or future airdrops
- Ecosystem Growth
  - Corporate or individual usage/adoption (demand for goods/services, how to exchange for goods/services, and cost savings or other advantages over current tech)
  - Network effect of retail acceptance or other ecosystem growth
  - Wallets and apps needed
- Governance and voting (how are decisions about all the above made?)
  - Centralized or decentralized control of development and tuning
  - Road map ownership - who decides what features happen next?



# Token Launching Tutorials by a 13 yr old

- We love you Gajesh
- <https://www.youtube.com/watch?v=3-uwAikEZdo> (MATIC)



# Hoge Finance

## Hoge Finance

2 percent tax on all transactions to prevent price manipulation

The 2 percent tax is then split as a weighted distribution between all holders and the burn address

Hoge is a deflationary crypto, a small fraction is burned from the total supply every transaction,

As a result, this increases the scarcity, this as a result encourages people to hold as with every transaction that is made, their HOGE is inherently going up in value little by little.

HOGE was created as the DeFi version of DOGE.

