

CryptoCurious

Ethereum and Smart Contracts



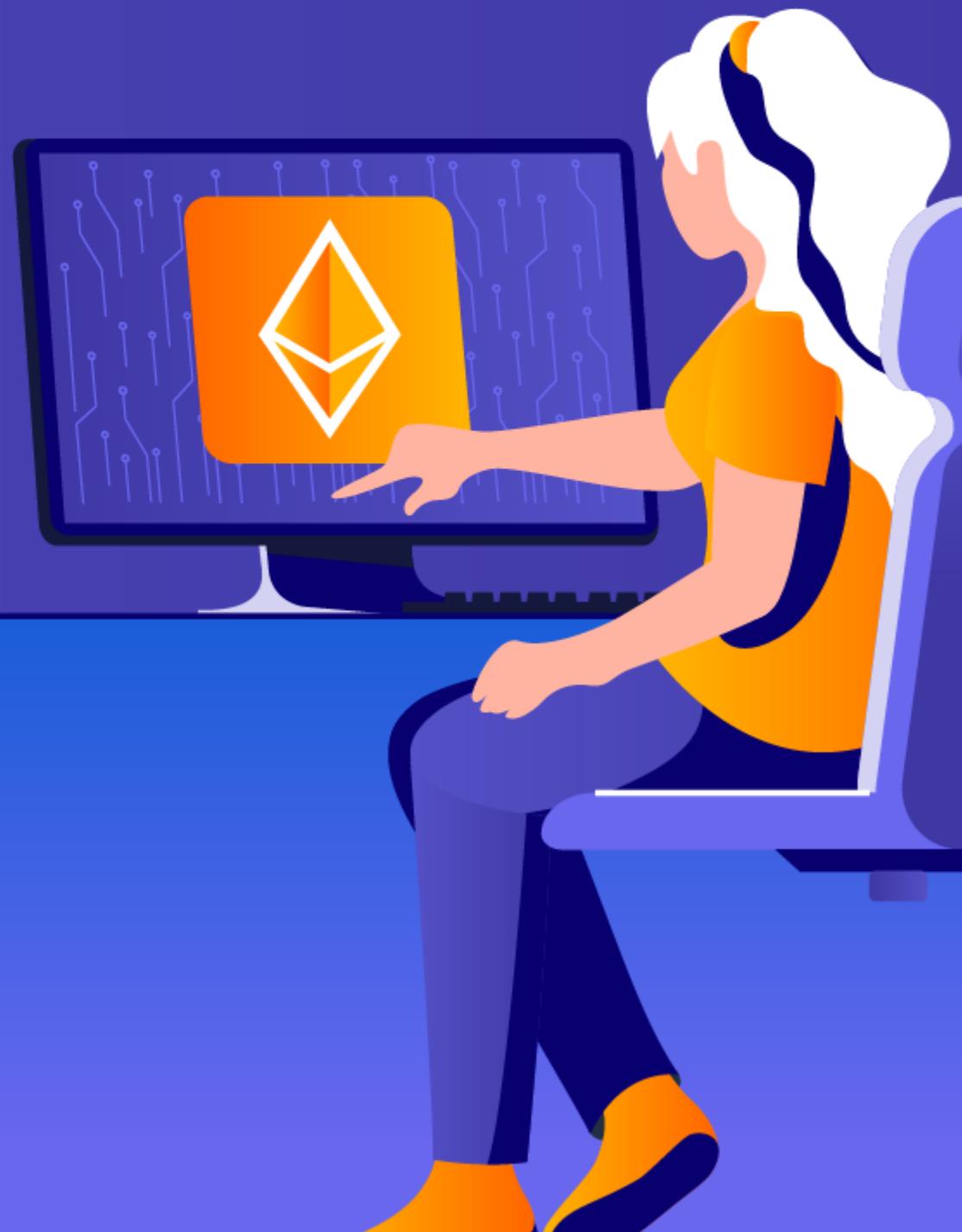
Presented by:

Shirley McPhaul Castro

Director of Crypto Curious

Sponsored by:

DLT X



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Crypto 101

- Introduction to blockchain and crypto
- Bitcoin: the Beginning
- Ethereum and Smart Contracts
- What are NFTs?



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Today's Objective:

- Demystify Ethereum
 - Make sense of what it is, what it isn't and why it matters.
- Learn about its origins
- Think about the possibilities



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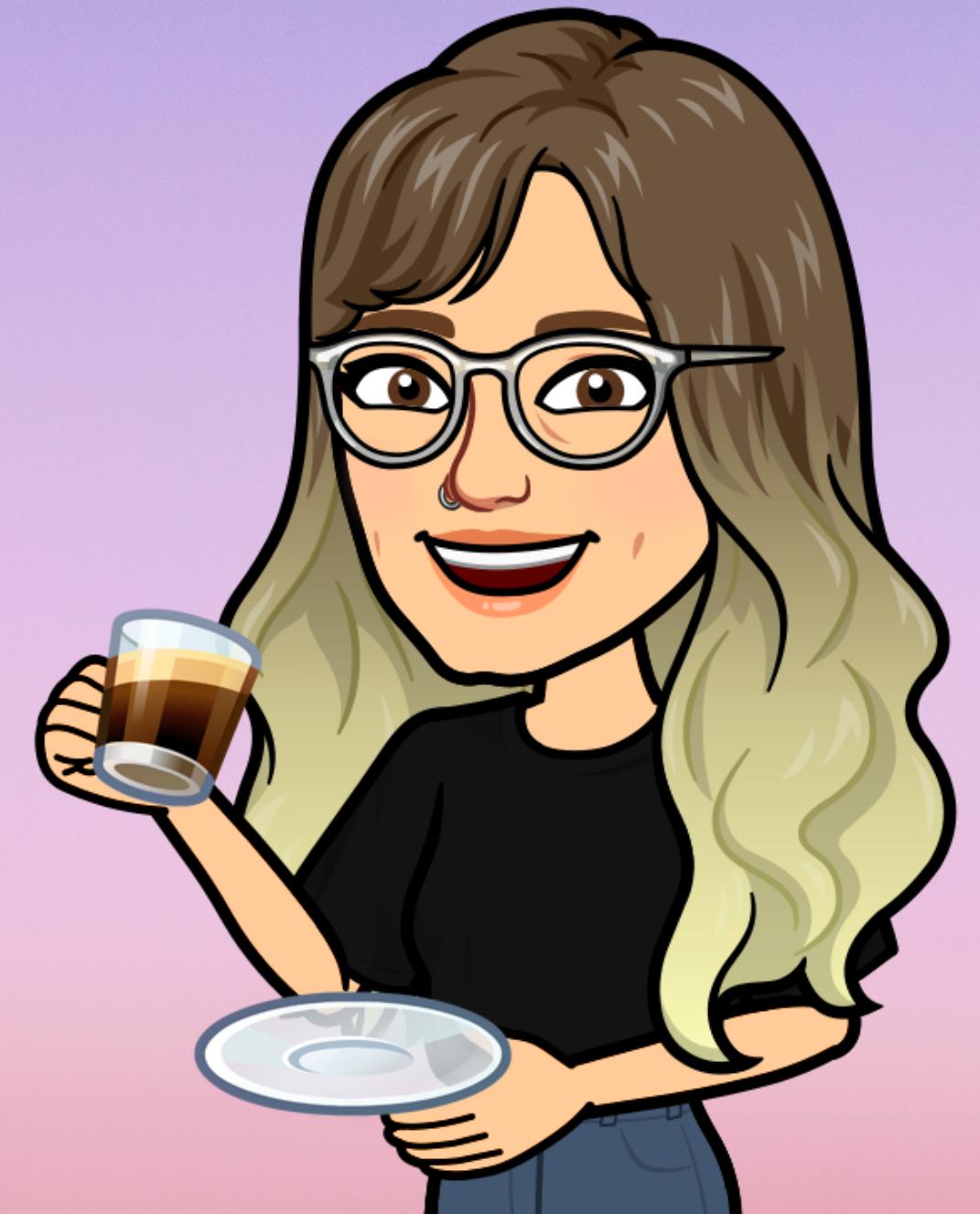
Today's Agenda:

- What is Ethereum?
- How and why is it different from Bitcoin?
- Where did it come from?
- What are Smart Contracts?
- What it enables



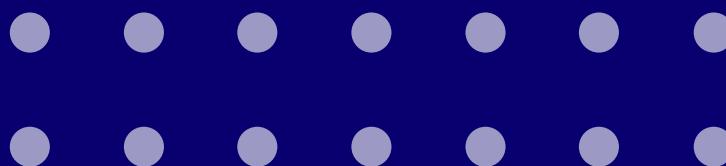
Hi!

I'm Shirley



This is CryptoCurious

- "CryptoCurious" is the **Puerto Rico Blockchain Trade Association's** (PRBTA) **education initiative** created specifically to serve Puerto Ricans
- The main objective of "Crypto Curious" is to facilitate Puerto Ricans the access to the tools and knowledge they need in order to navigate and participate of the new crypto economy and the creation of Web 3.O.
- The **PRBTA** was established in 2021 to build an inclusive crypto-community and propel Puerto Rico to the forefront of blockchain innovation.



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What is Ethereum?



But first...

**Once upon a time,
in a crypto-galaxy far, far away...**



Bitcoin:

- Open source
- C++
- Uses blockchain tech
 - decentralized
 - transparent
 - automatic



Bitcoin:

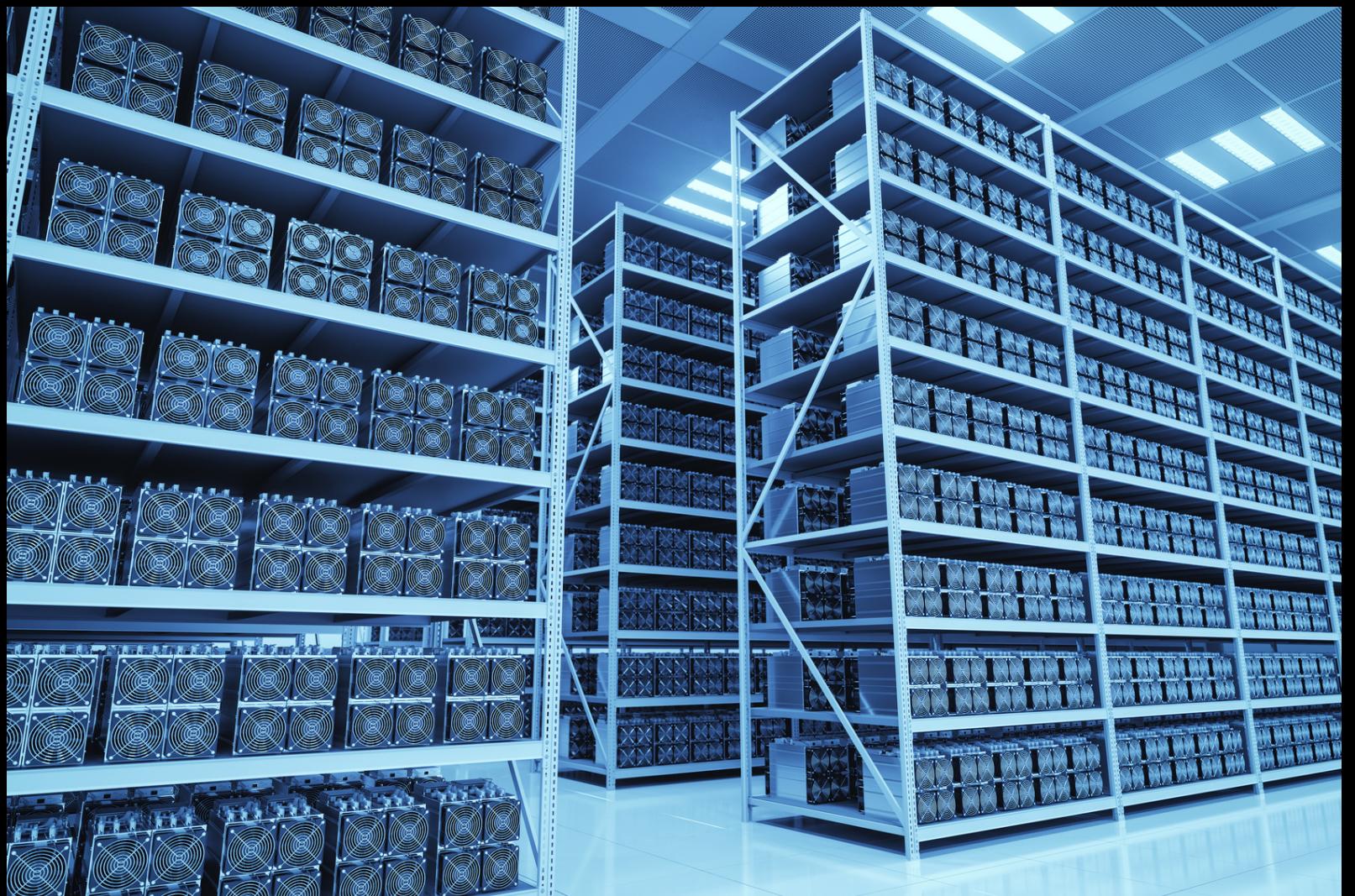
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- Validates transactions through Mining and "Proof of Work"
- great for managing and keeping track of transactions
- not so great for anything else



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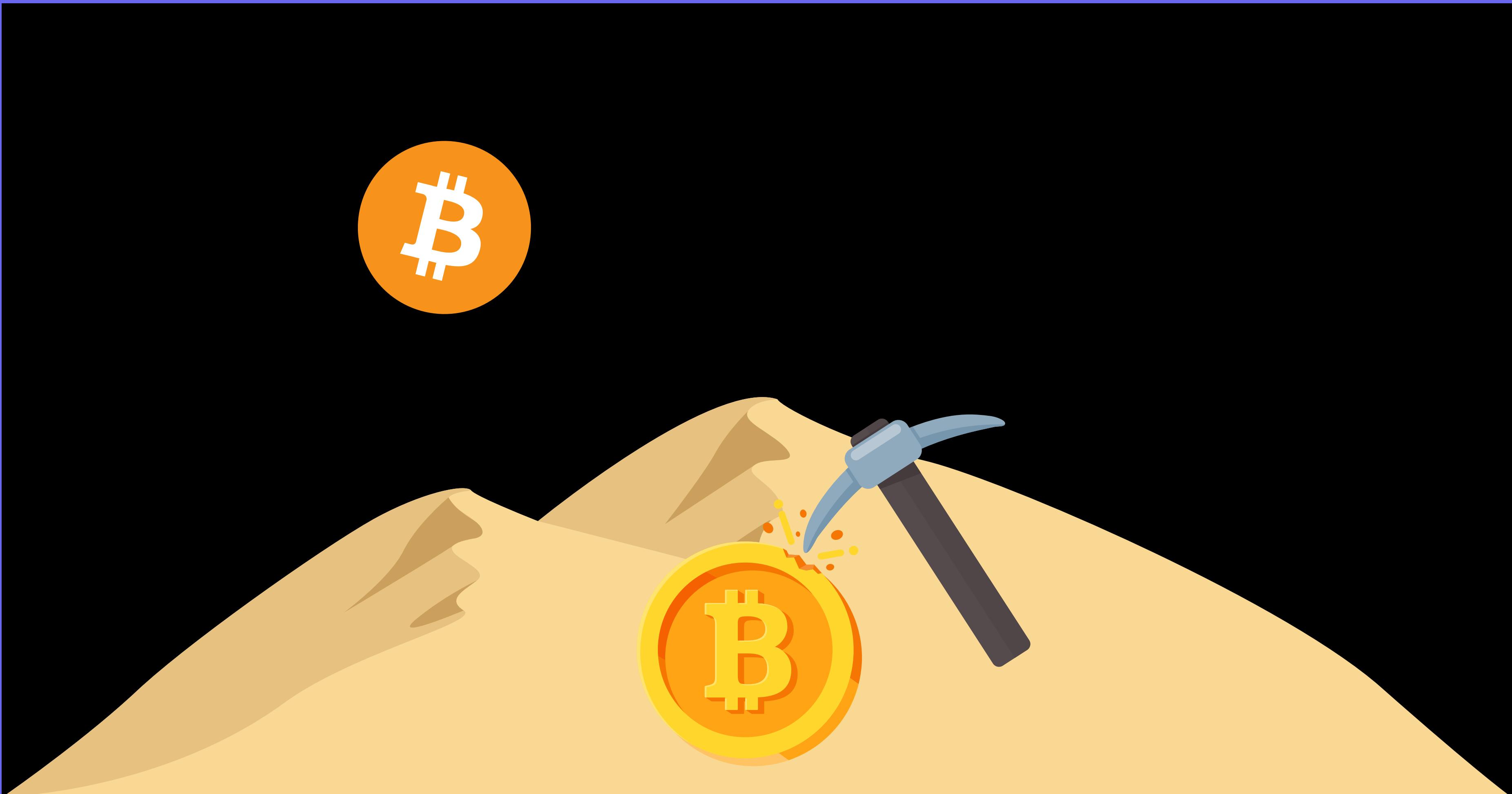


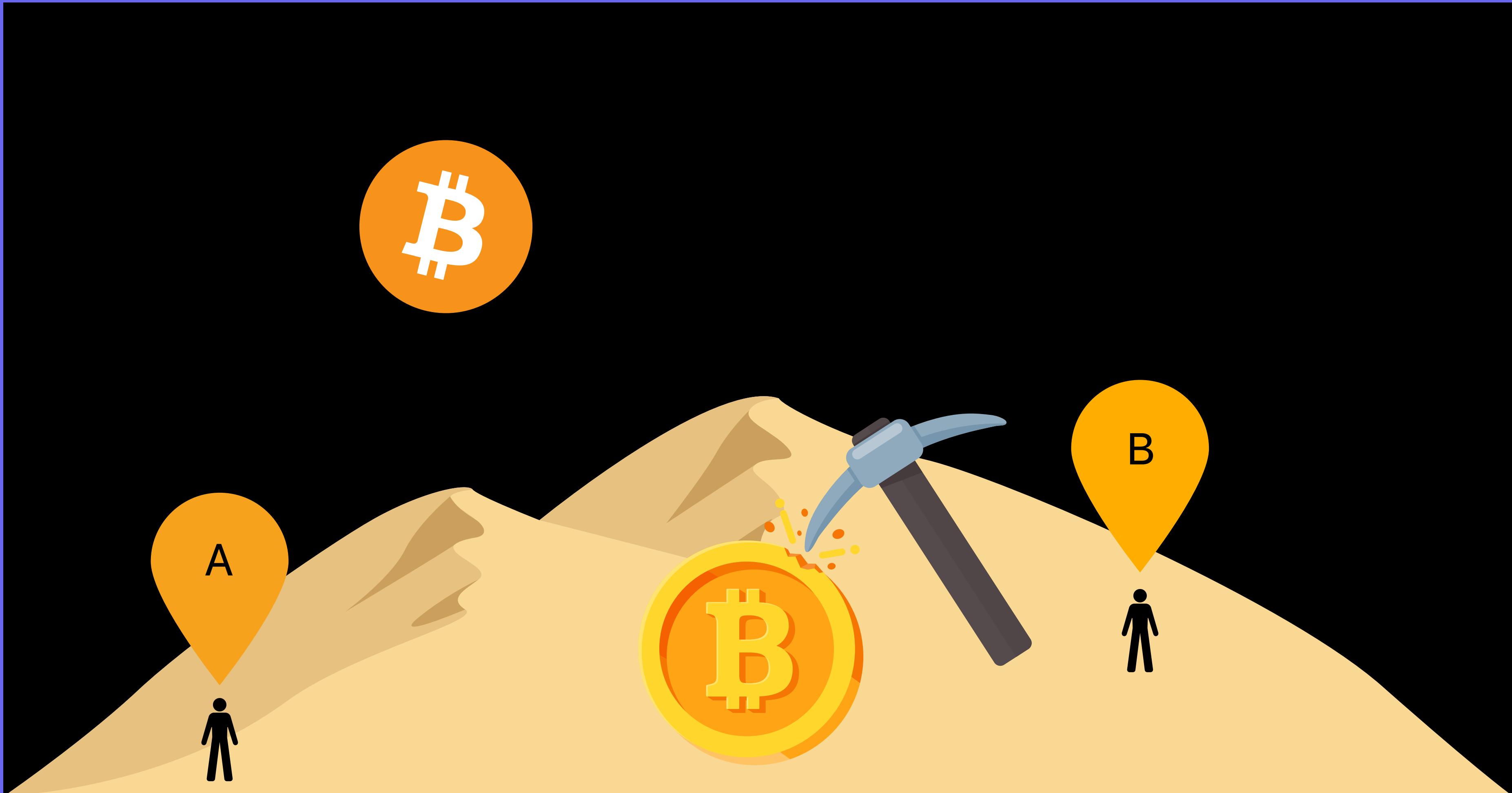


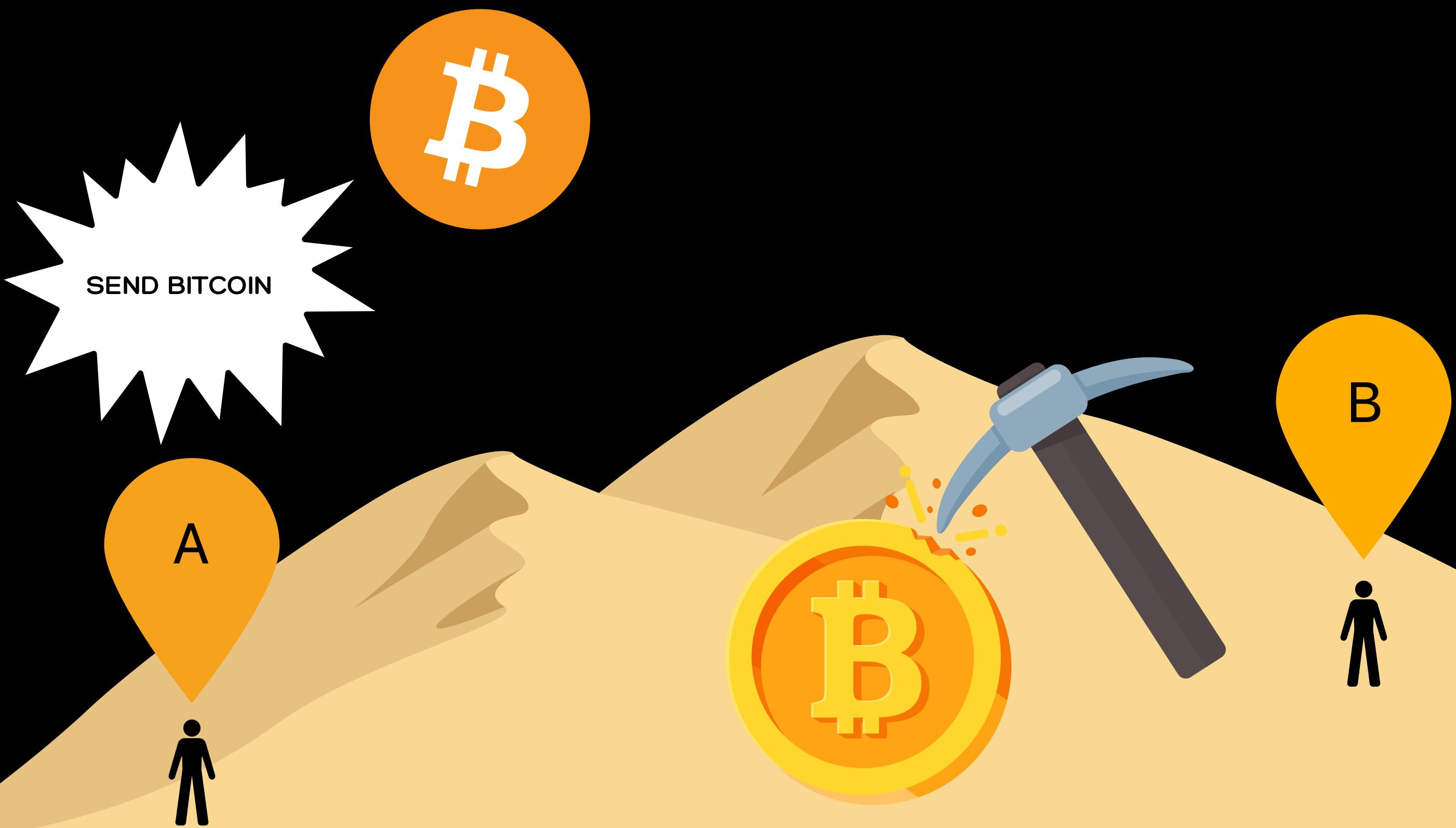
Bitcoin:

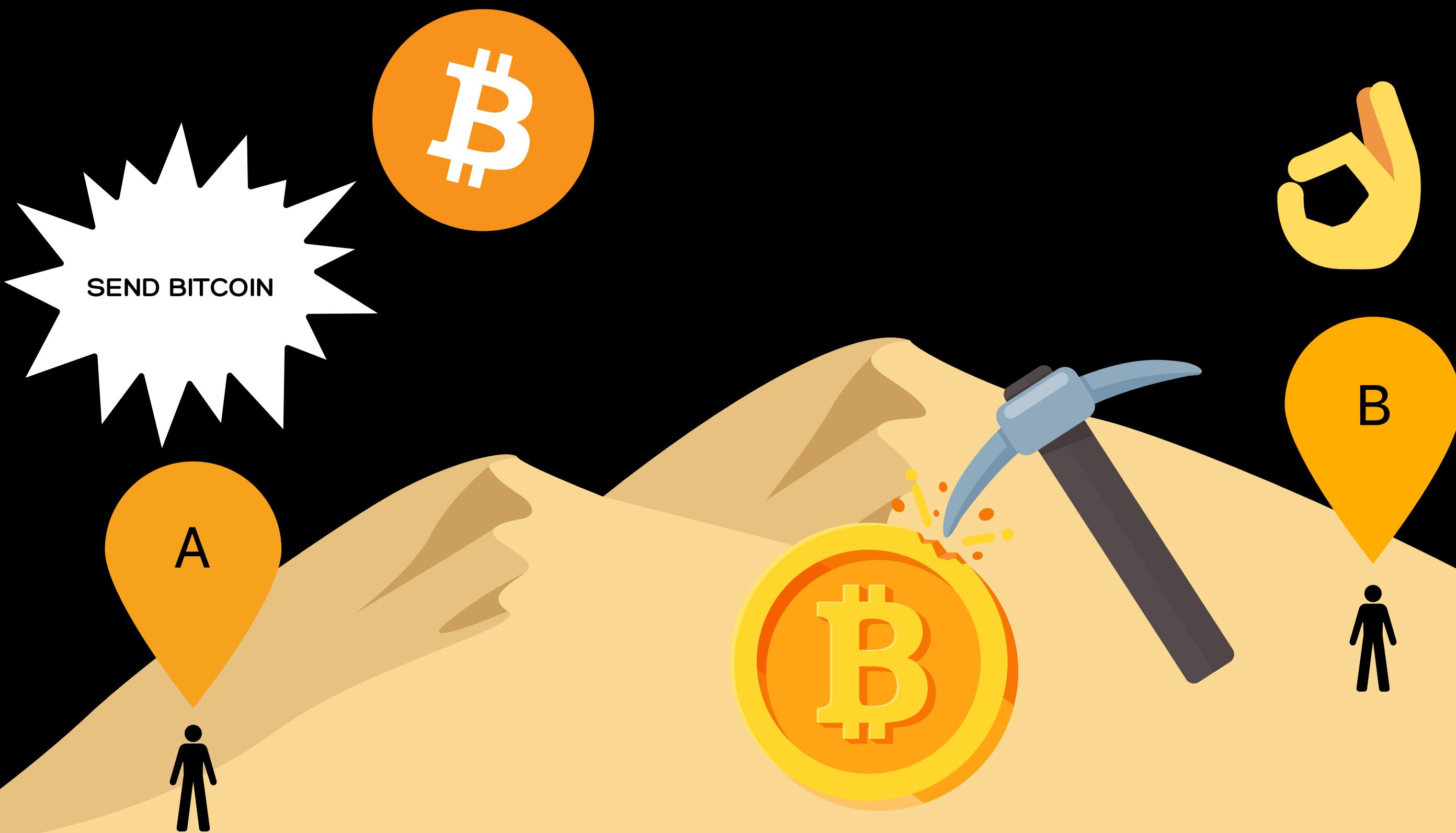
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Ethereum:

- Open source
- Uses blockchain tech
 - decentralized
 - transparent
 - automatic
- Great for managing and keeping track of transactions
- Written in "Solidity" an object-oriented programming language influenced by C++, Python and JavaScript.



"What Ethereum intends to provide is a blockchain with a built-in fully fledged Turing-complete programming language that can be used to create "contracts" that can be used to encode arbitrary state transition functions, allowing users to create (...) systems (...), simply by writing up the logic in a few lines of code"

- ethereum.org



**So, what is the
difference between
Bitcoin and
Ethereum?**





**They are two DIFFERENT
use cases for blockchain
technology**



**Bitcoin was created as
an alternative for a
"world digital currency,"
a medium for exchange
and a store of value**





Bitcoin was created as an alternative for a "world digital currency," a medium for exchange and a store of value

Ethereum, in contrast, was intended as a platform to execute programmable contracts and applications





Bitcoin is useful as a payment method



Ethereum is useful as a platform to build decentralized applications on



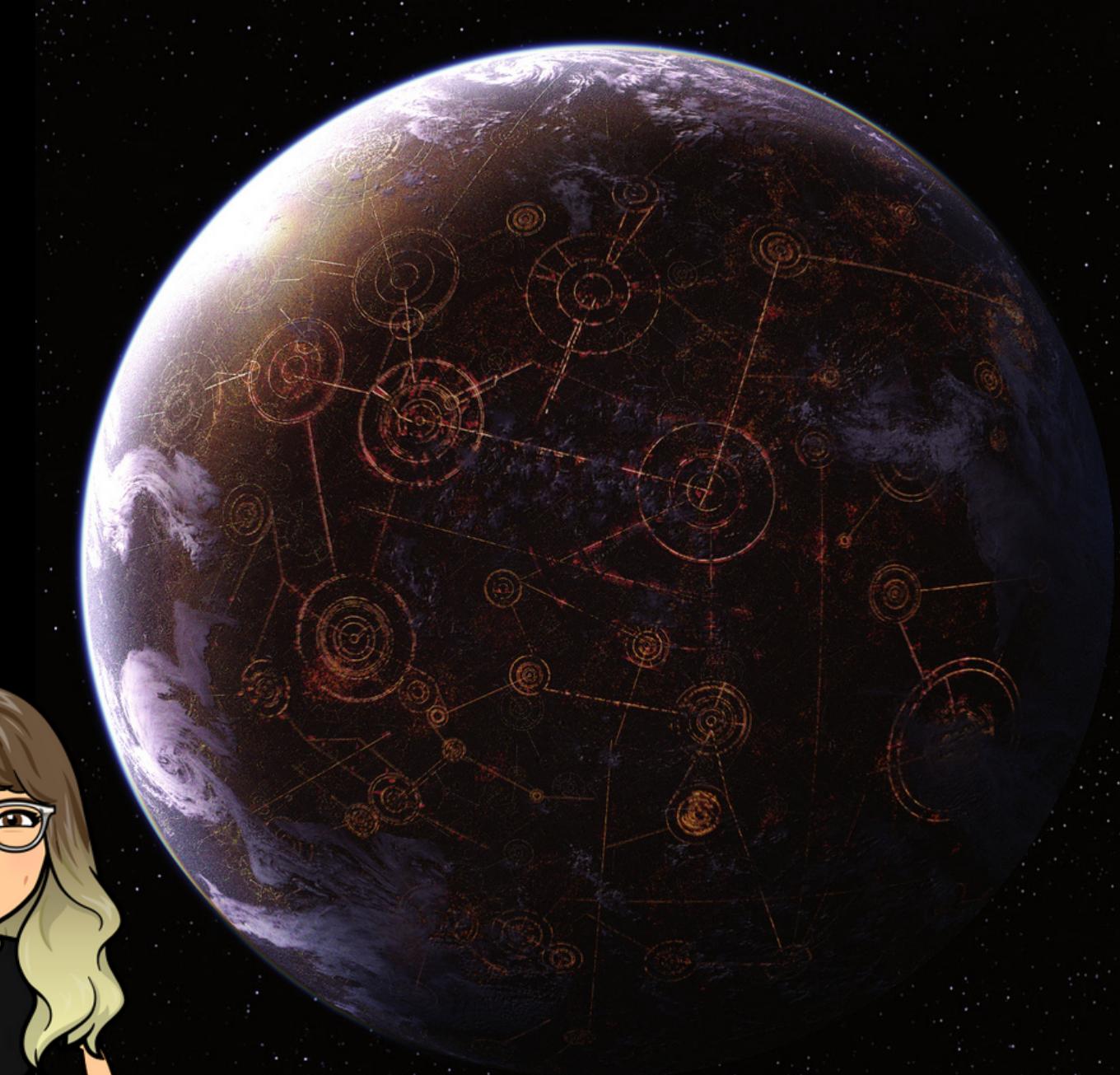
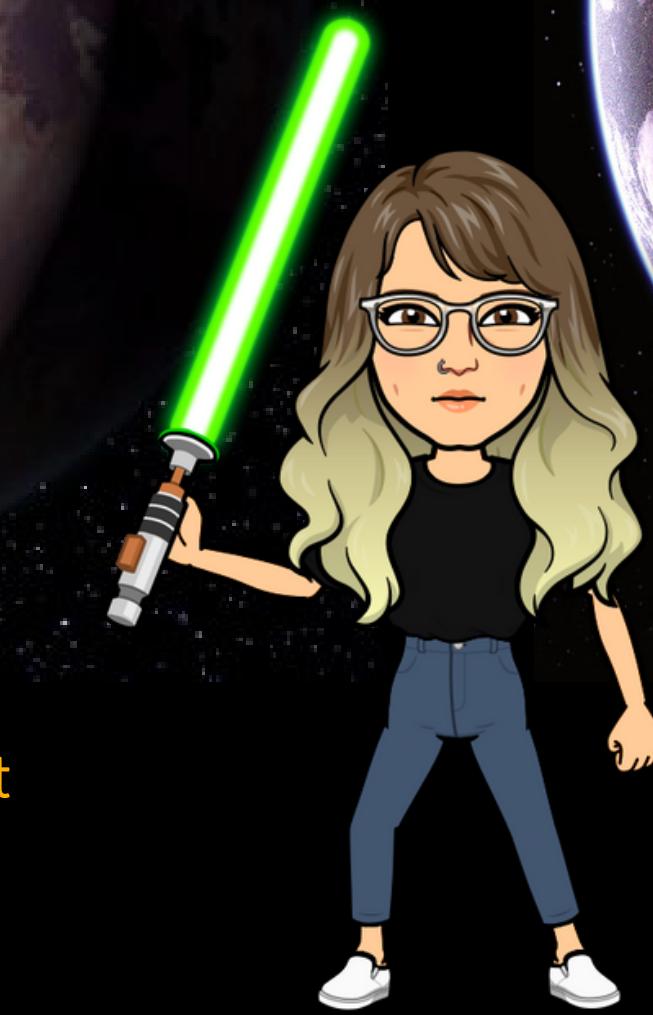
Tatooine: a mining planet



Coruscant: a giant city



Tatooine: a mining planet



Coruscant: a giant city



Tatooine:
a mining planet
(no BTC, though. Only Silicax Oxalate)



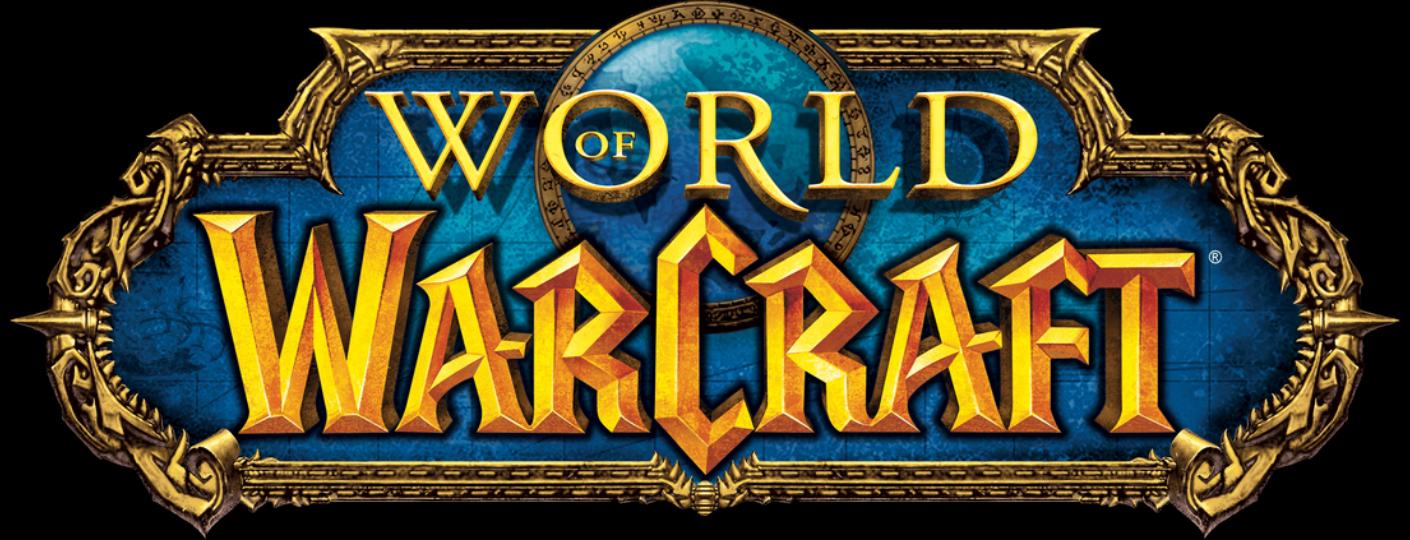
Coruscant: An ecumenopolis (a type of planet whose entire surface is covered with a single worldwide city).
How I visualize all blockchains that are deploy Smart Contract

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Where does
Ethereum come
from?



"I happily played World of Warcraft during 2007-2010, but one day Blizzard removed the damage component from my beloved warlock's Siphon Life spell. I cried myself to sleep, and on that day I realized what horrors centralized services can bring. I soon decided to quit."



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-Vitalik Buterin, Co-Founder of Ethereum
about.me/vitalik_buterin



Vitalik Buterin

- Born Jan 31st 1994 in Kolomna, Russia
- Grew up in Canada
- University dropout
- Co-Founded Ethereum
- Level 100 Affliction Warlock



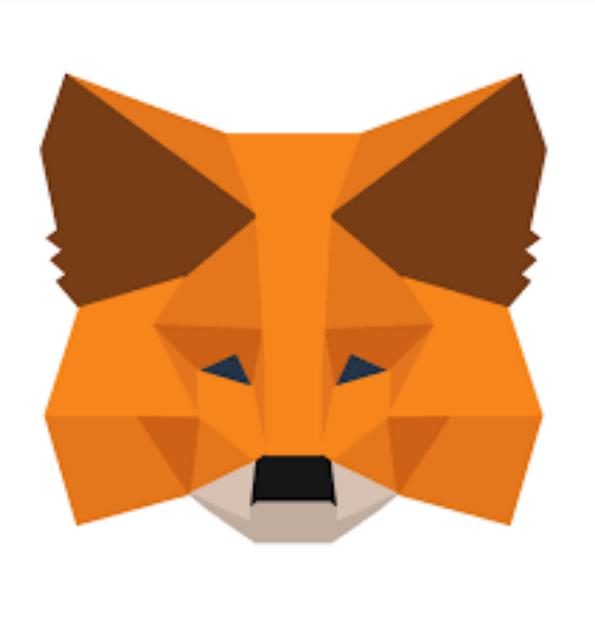
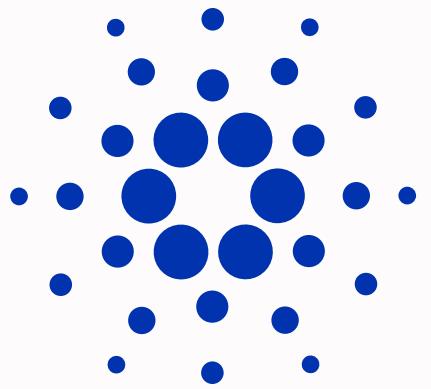
Ethereum Co-Founders:

- Charles Hoskinson
- Gavin Wood
- Joe Lubin
- Anthony Di Iorio
- Mihai Alisie
- Jeffrey Wilcke
- Amir Chetrit



Most notably:

- Charles Hoskinson
 - Cardano
- Gavin Wood
 - Polkadot
- Joe Lubin
 - ConsenSys (Metamask)
- Anthony Di Iorio
 - Decentral
- Mihai Alisie
 - Co-founder "Bitcoin Magazine"



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What is ETH and why
is using Ethereum so
expensive?



What is "ETH"?

\$ETH is Ethereum's native currency.

It's what users need in order to navigate the network. Every time you transact in the network, you have to pay a "small" network fee, also called a "gas" fee.

This is because, very much like Bitcoin, Ethereum requires validators to perform "Proof of Work" to verify transactions and keep the blockchain safe.

The fee you pay per transaction is collected as a "tip" incentive for validators to do their job.

What is "ETH"?

It's worth mentioning that:

- BTC and ETH are both digital currencies
- However, their purpose is different
 - \$BTC = alternative monetary system and world currency
 - \$ETH = facilitate and monetize the operation of the Ethereum smart contracts and decentralized application platform."

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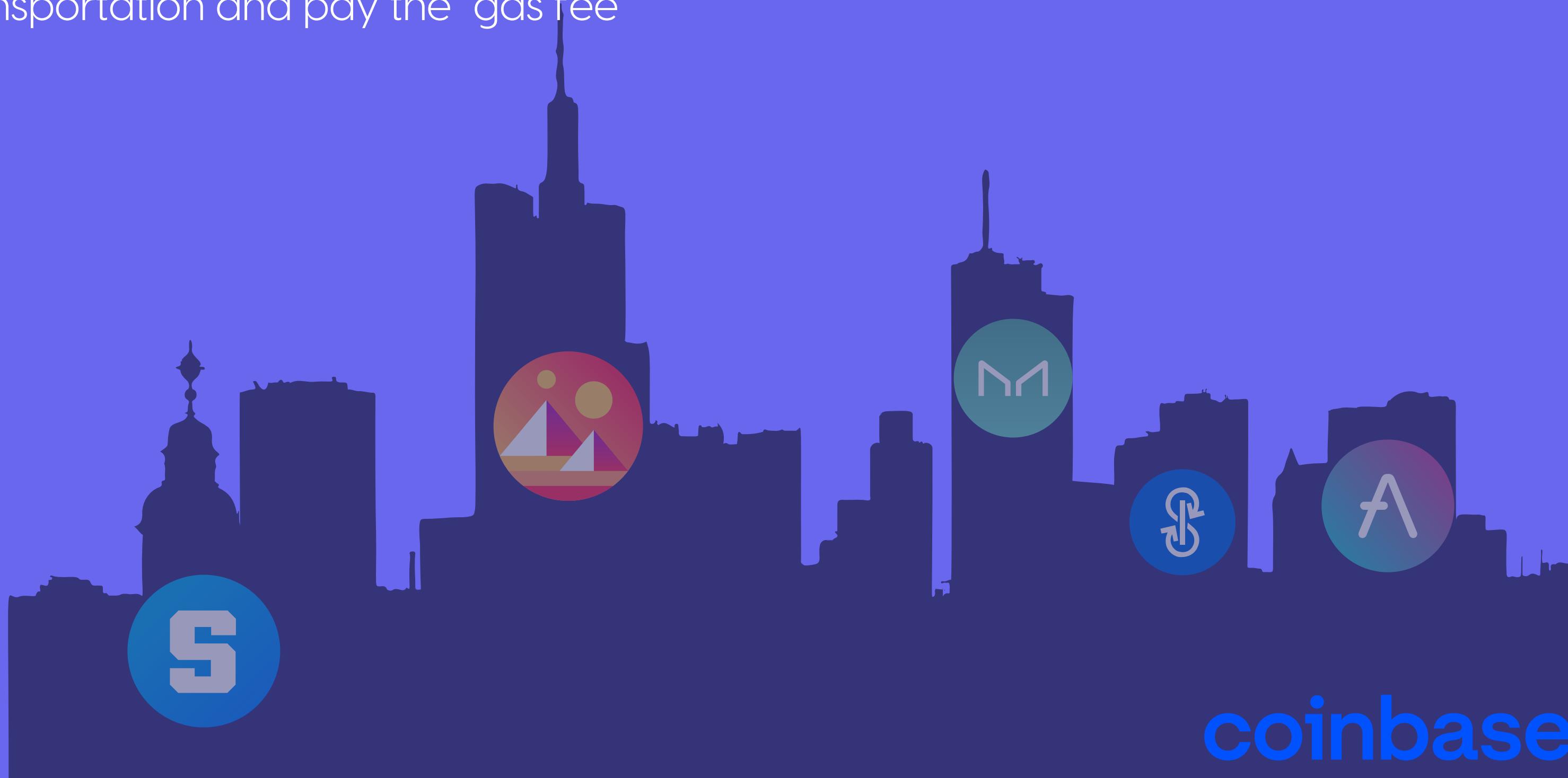
The Ethereum Network

There are many applications built and executed on top of Ethereum

- You need ETH to :
 - transfer assets between applications
 - send ETH from Coinbase to Metamask
 - signing certain transactions
- Different applications may require you to acquire additional tokens in order to use them.

The Ethereum Network

So, if I want to deposit \$100 worth of SSAND from Coinbase to Sandbox, I need a means of transportation and pay the "gas fee"



The Ethereum Network

How do you access DApps on a blockchain?

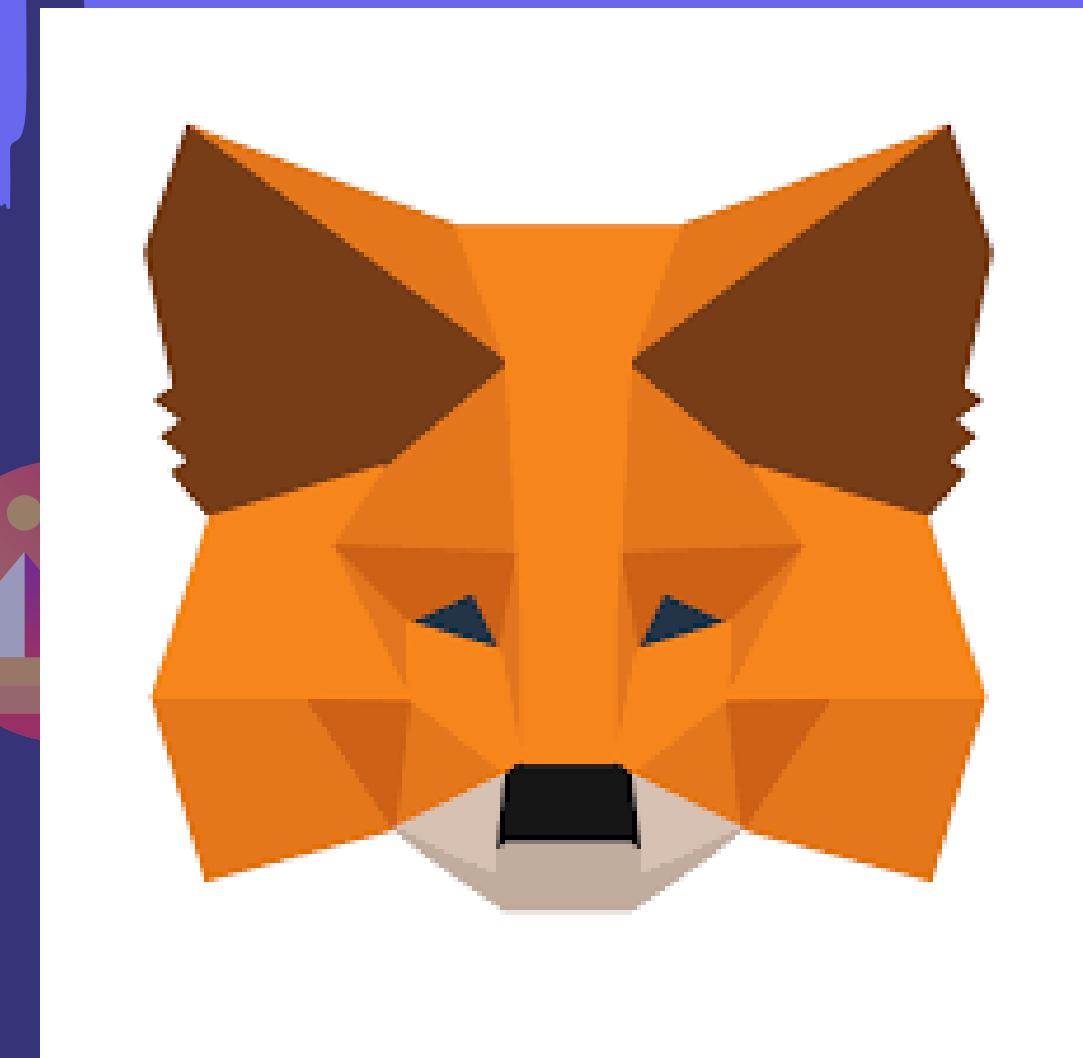
- A "Crypto Wallet"



The Ethereum Network

How do you access DApps on a blockchain?

- A "Crypto Wallet"



coinbase

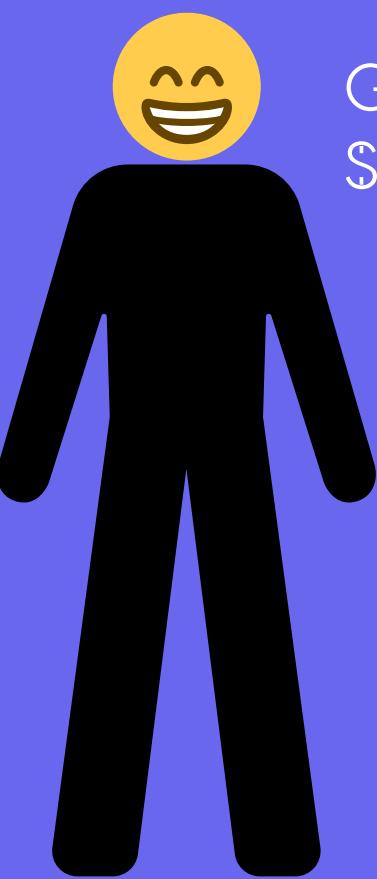
What is "ETH"?

Why is using the network so expensive?

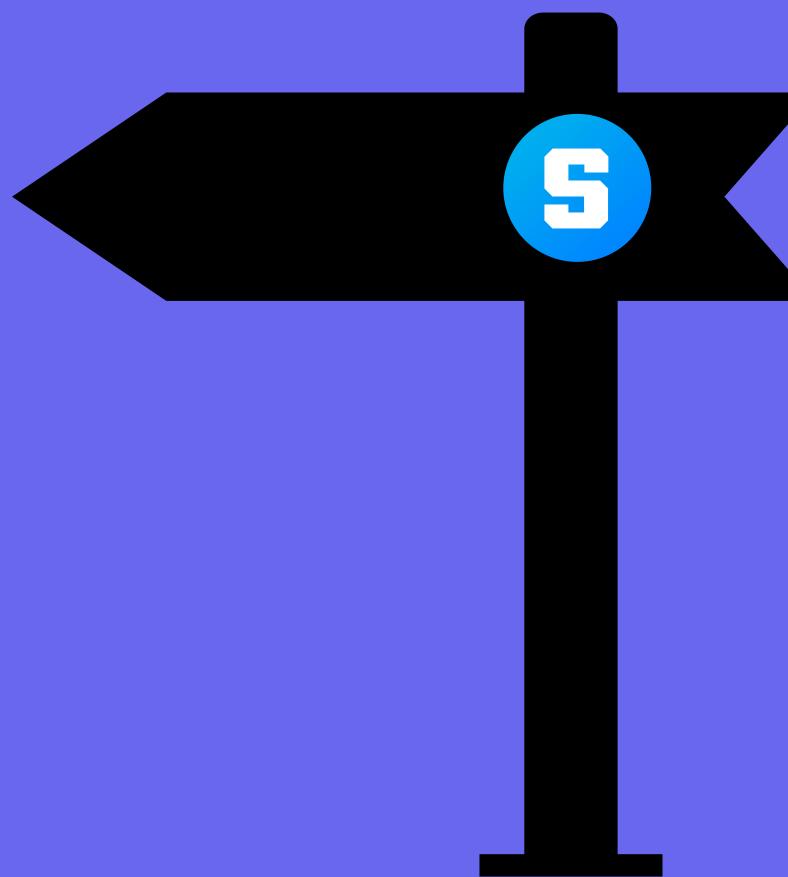


coinbase

You



Gotta transfer that
\$SAND!!



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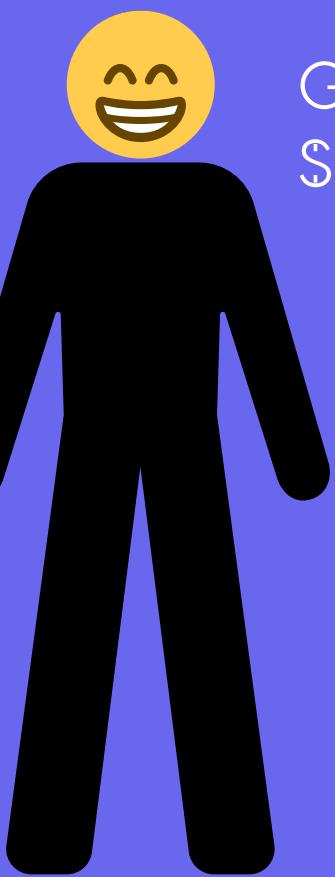


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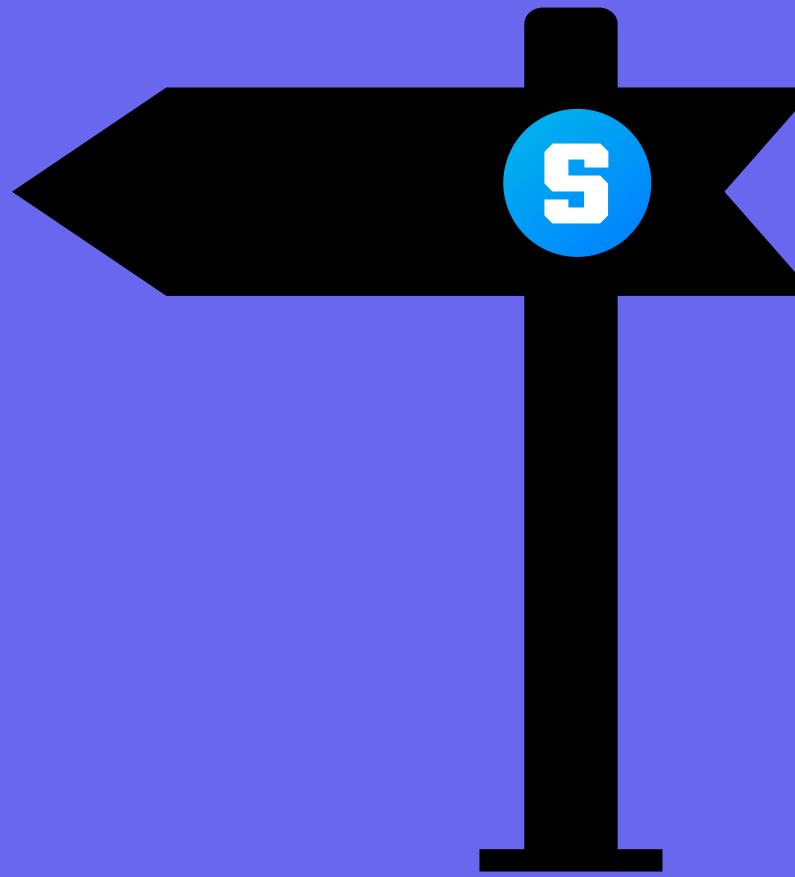
Why is using the network so expensive?

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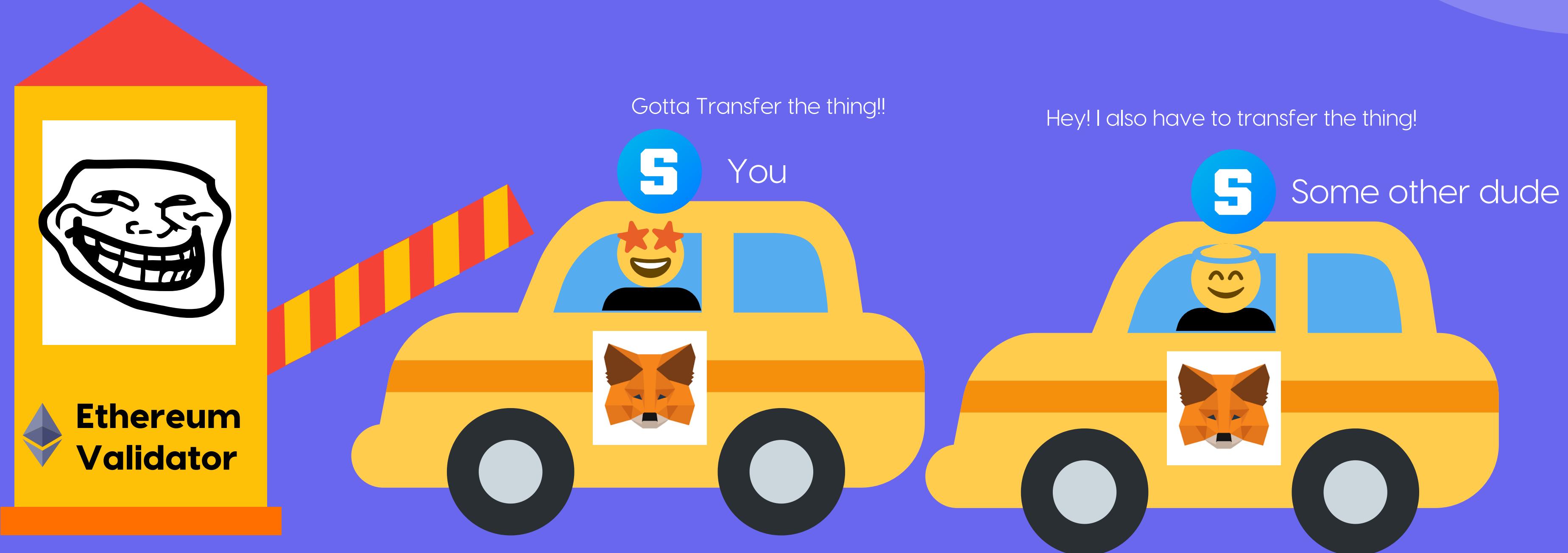
Why is using the network so expensive?

coinbase



What is "ETH"?

Why is using the network so expensive?



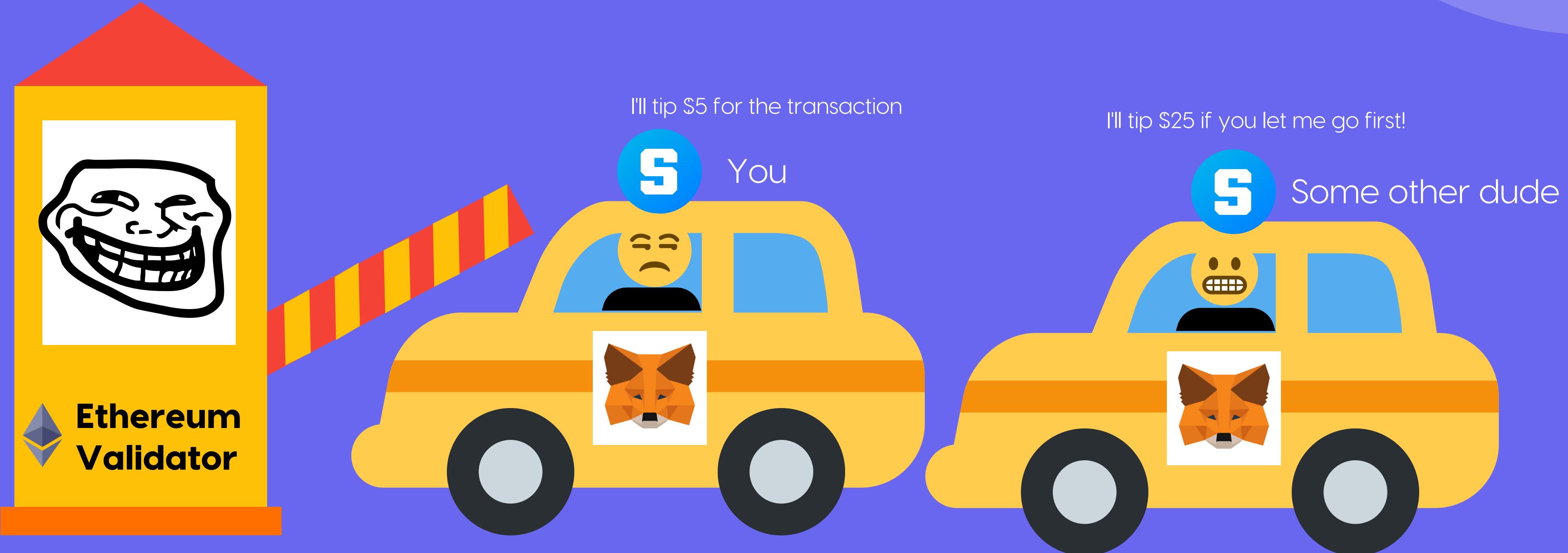
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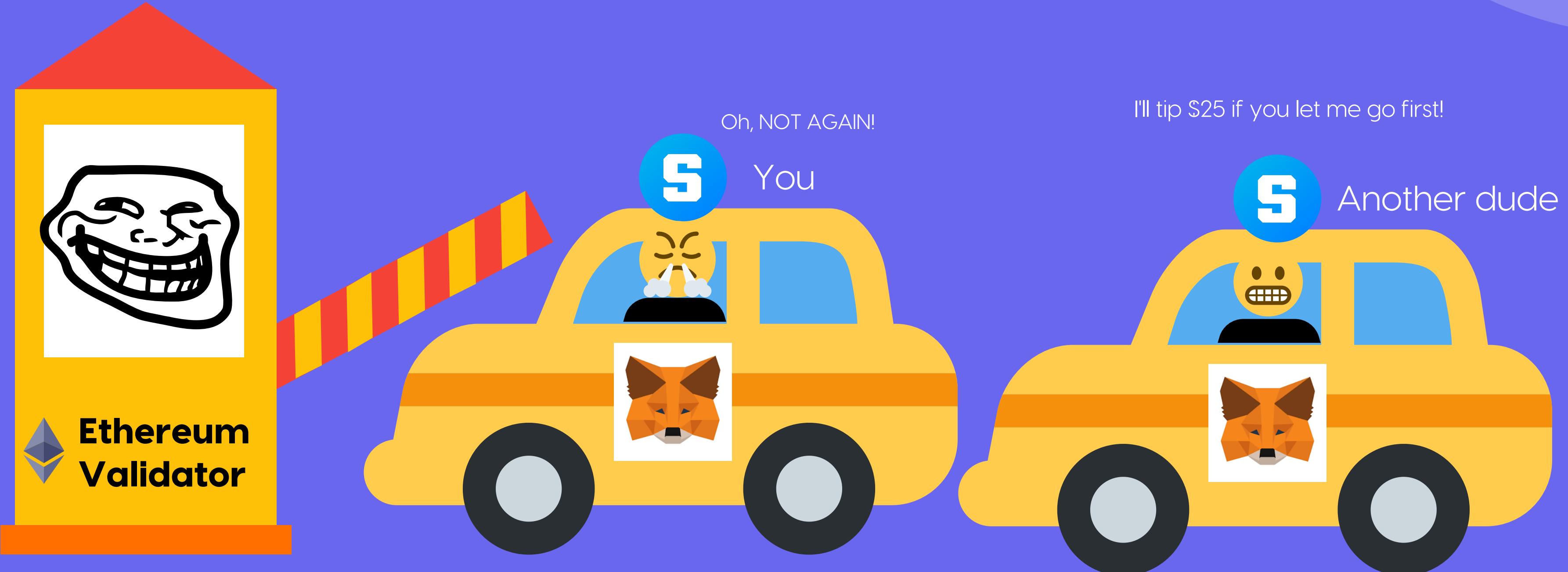
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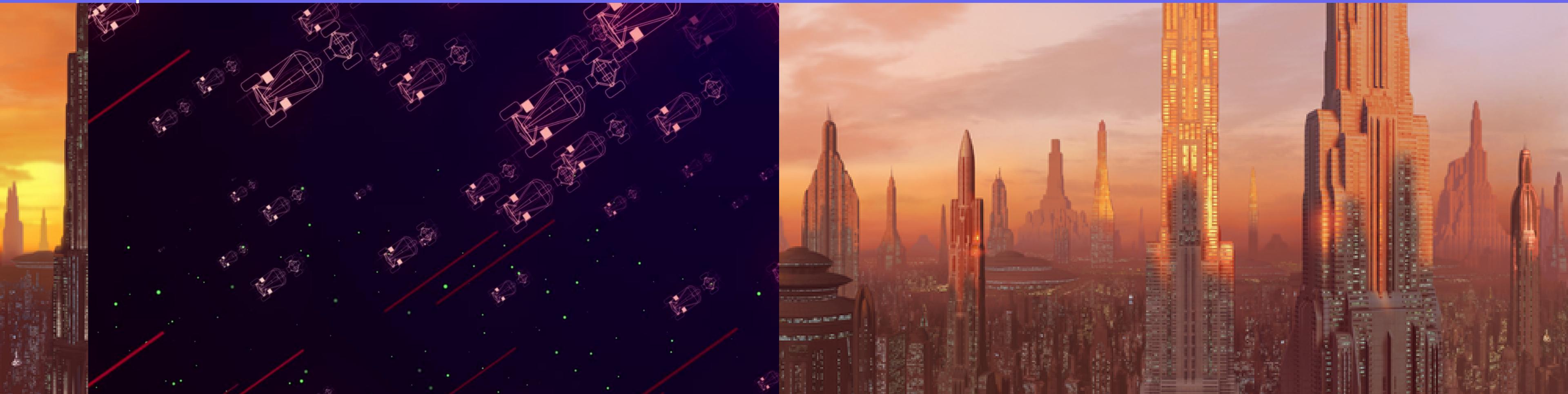
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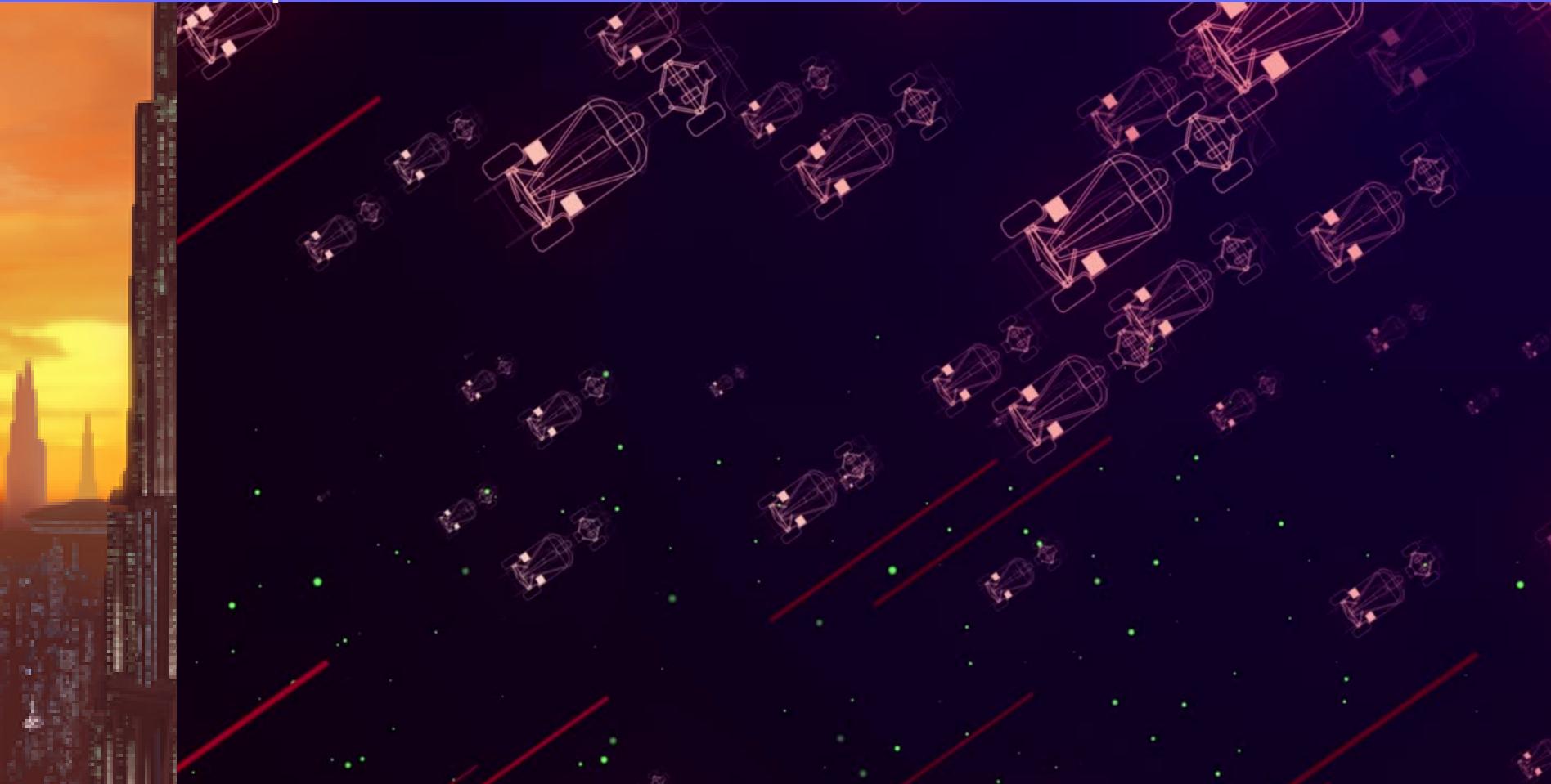
Expectation:



What is "ETH"?

Why is using the network so expensive?

Expectation:



Reality:



What is "ETH"?

Why is using the network so expensive?

- Every transaction has a "base fee" according to the network's usage



1 gwei = 0.000000001 ETH

What is "ETH"?

Why is using the network so expensive?

- Every transaction has a "base fee" according to the network's usage
- Users can "speed" the transactions by spending more gas

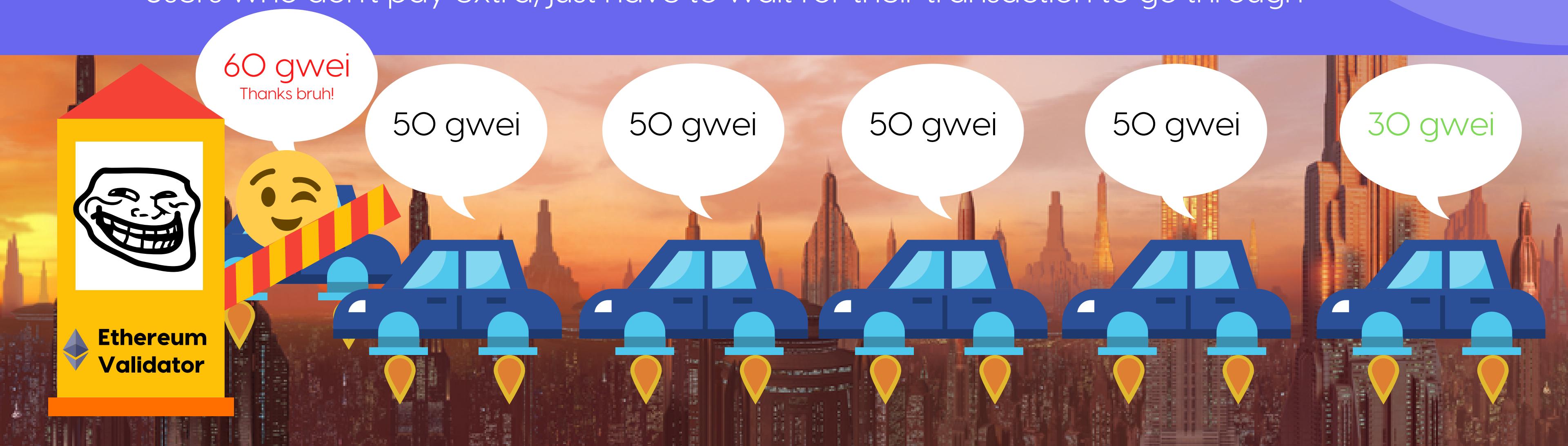


1 gwei = 0.000000001 ETH

What is "ETH"?

Why is using the network so expensive?

- Users who don't pay extra, just have to wait for their transaction to go through



1 gwei = 0.000000001 ETH

What is "ETH"?

Why is using the network so expensive?

- What looks like 1 transaction (send ETH from W1 to W2) is actually multiple transactions
- The more congested the network, the more expensive transactions get.



1 gwei = 0.000000001 ETH

Why so many transactions?

Ethereum is capable of doing more complex things than Bitcoin

More complexity = More transactions



Why so many transactions?

Ethereum is capable of doing more complex things than Bitcoin

Smart Contracts = More transactions



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What are "smart contracts?"



What are "Smart Contracts?"

Smart contracts are the fundamental building blocks of Ethereum applications.

They are lines of code, that state and implement instructions to the system, following an "if-this-then-that" structure.

Smart contracts (which ironically are not very smart) behave exactly as programmed, even if they've been programmed poorly.

Once deployed, smart contracts cannot be easily changed.

Code =



What are "Smart Contracts?"

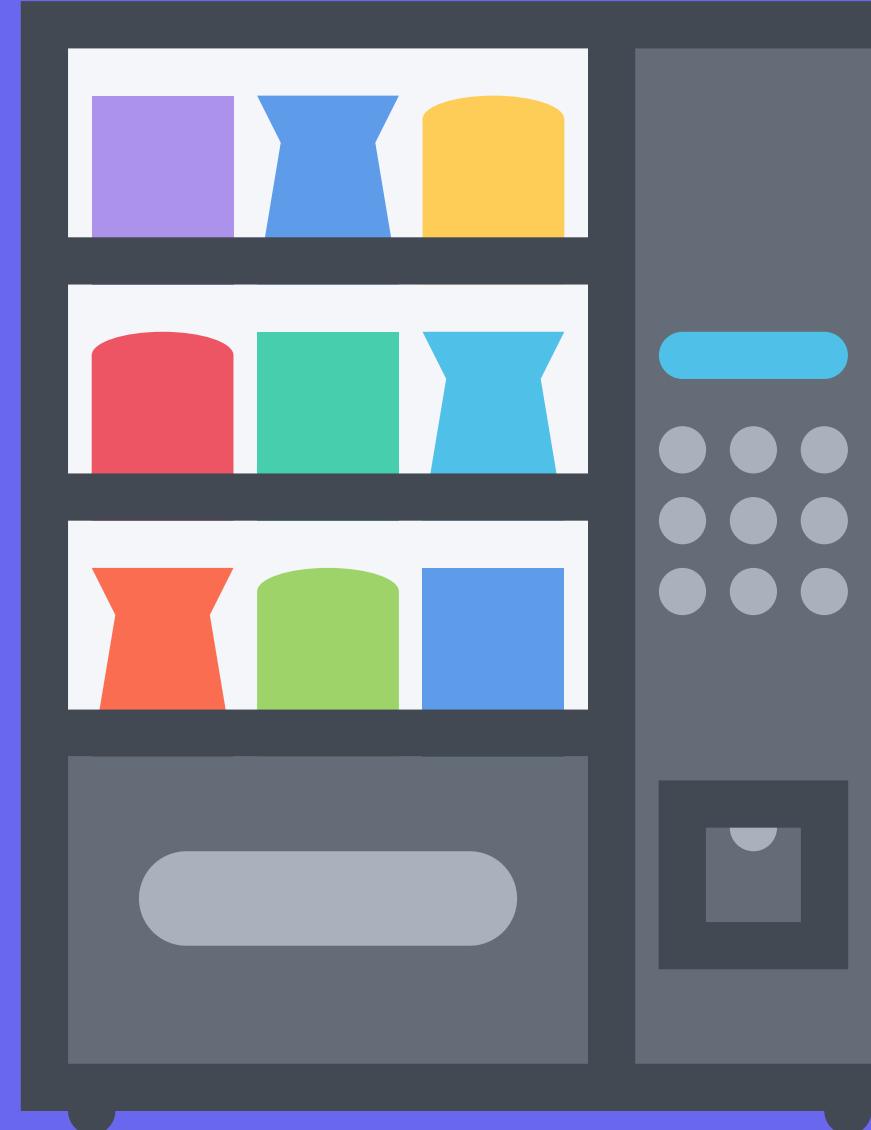
The idea was born in the 90's with the hopes that one day we would have a digital marketplace built on these automatic, cryptographically secure processes.

Ethereum made this possible by implementing code that is executed automatically whenever the terms to a pre-determined agreement are met.

What are "Smart Contracts?"

A "digital vending machine"

- **Store rules**
- **Verify rules**
- **Execute rules**



- Select a product
- The vending machine tells you how much \$\$ you need.
- The correct amount is inserted.
- The vending machine verifies that it is the correct amount
- The vending machine dispenses the product
- The vending machine will only dispense what was selected after all requirements are met.
- If you don't select a product or insert enough money, the vending machine won't do anything.

What are "Smart Contracts?"

Why use "Smart Contracts"?

- Automatic execution
- Predictable Outcomes
- Public Record
- Privacy Protection
- Visible terms

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What it enables?



What it enables?

Tokens with different types of "utility"

- Stable Coins
- Governance Coins
- Sh*t Coins
- Collectible Tokens



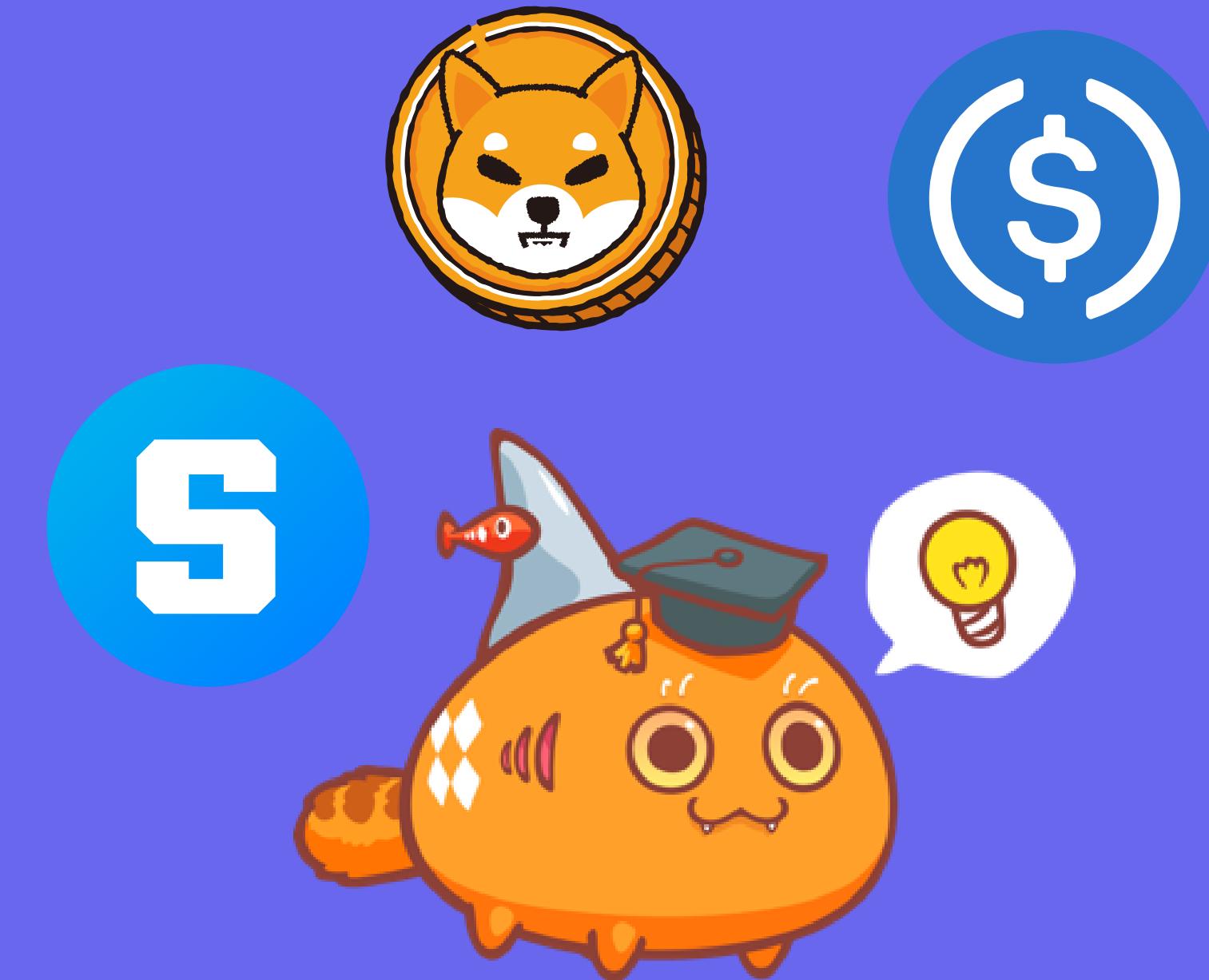
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- Stable Coins
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Ethereum use cases (so far):

- DeFi
- NFTs
- DAOs



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Conclusion



Ethereum and Smart Contracts

Ethereum intends to provide a blockchain capable of functioning as a platform for different type of applications. These applications are ruled by "smart contracts" that can be used to encode arbitrary state transition functions.

Smart contracts are the fundamental building blocks of Ethereum applications. They are lines of code that execute automatically to implement rules and consequences within the system.

Ethereum applies blockchain technology in a way that allows us to build on top of it and create a decentralized set of tools that could fundamentally change our society.

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¡Gracias!



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Shirley@prblockchain.org



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