Bancor

Bancor

Bancor

A

$64

B

$100

Bancor

A	B
$64	$100
× 125	
$8,000	

Bancor

A	B
$64	$100
× 125	× 80
$8,000	$8,000

Bancor

A	B
$64	$100
× 125	× 80
$8,000	$8,000

single token price

Bancor

A	B
$64	$100
× 125	× 80
$8,000	$8,000

number of tokens

Bancor

A	B
$64 × 125	$100 × 80
$8,000	$8,000

total token values

Bancor

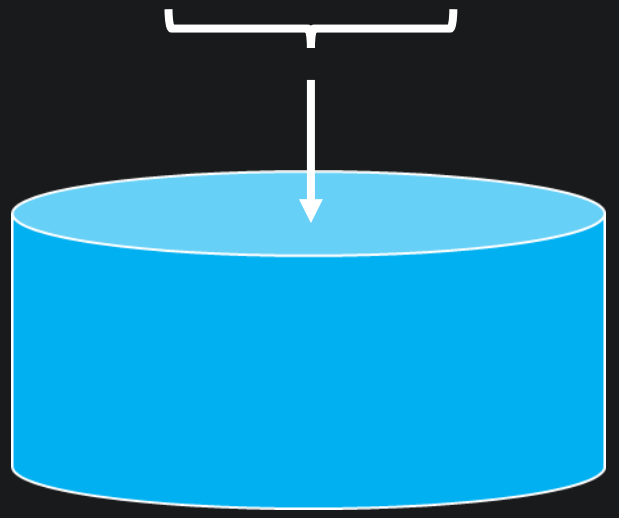
A	B
$64	$100
× 125	× 80

$16,000

Bancor

A × 125

B × 80



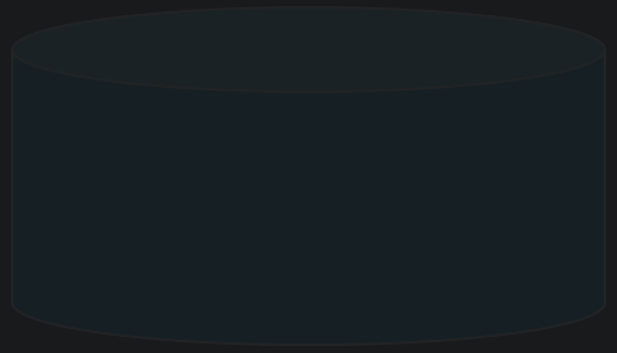
liquidity pool

Bancor

$64 A × 125

$100 B × 80

Martin knows the price...



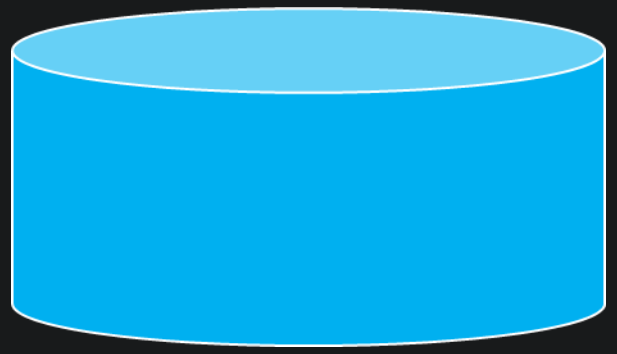
liquidity pool

Bancor

$64 A × 125

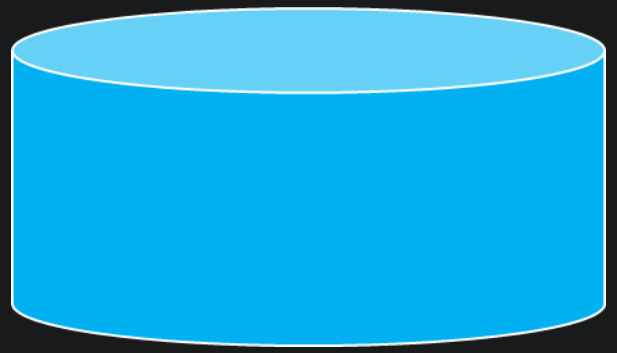
$100 B × 80

*...but the pool knows **only** the number.*



liquidity pool

Bancor



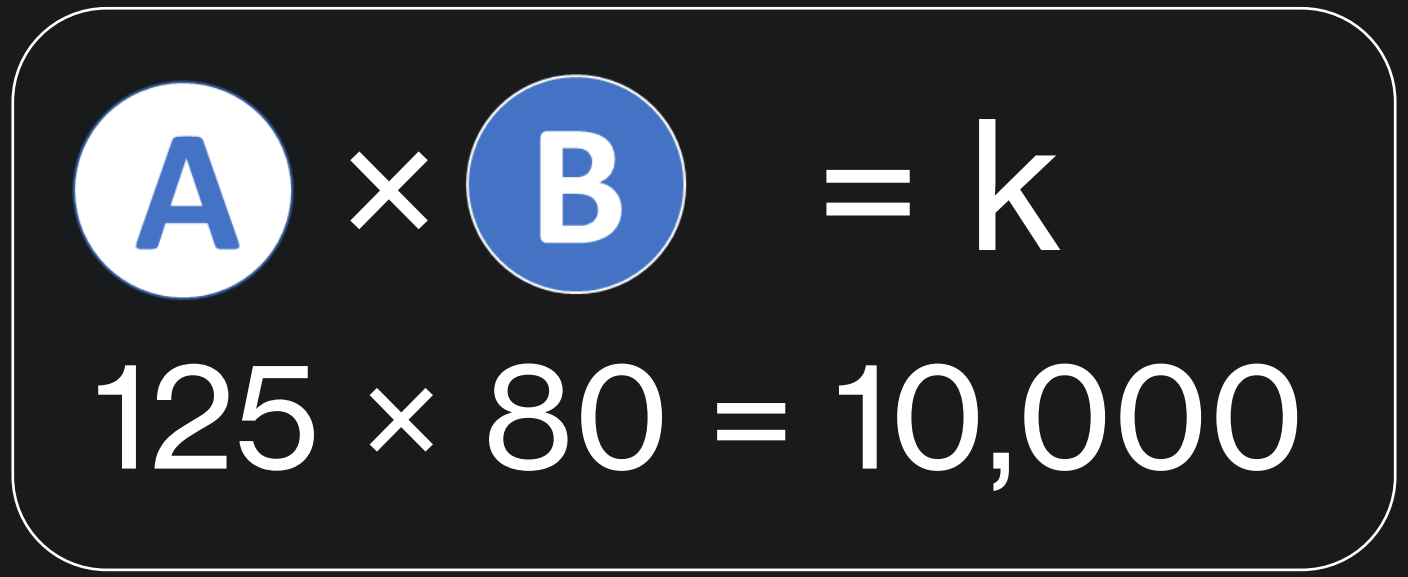
liquidity pool

A × B = k

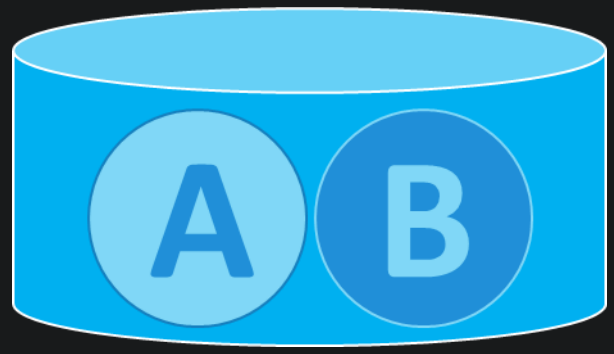
125 × 80 = 10,000

Bancor

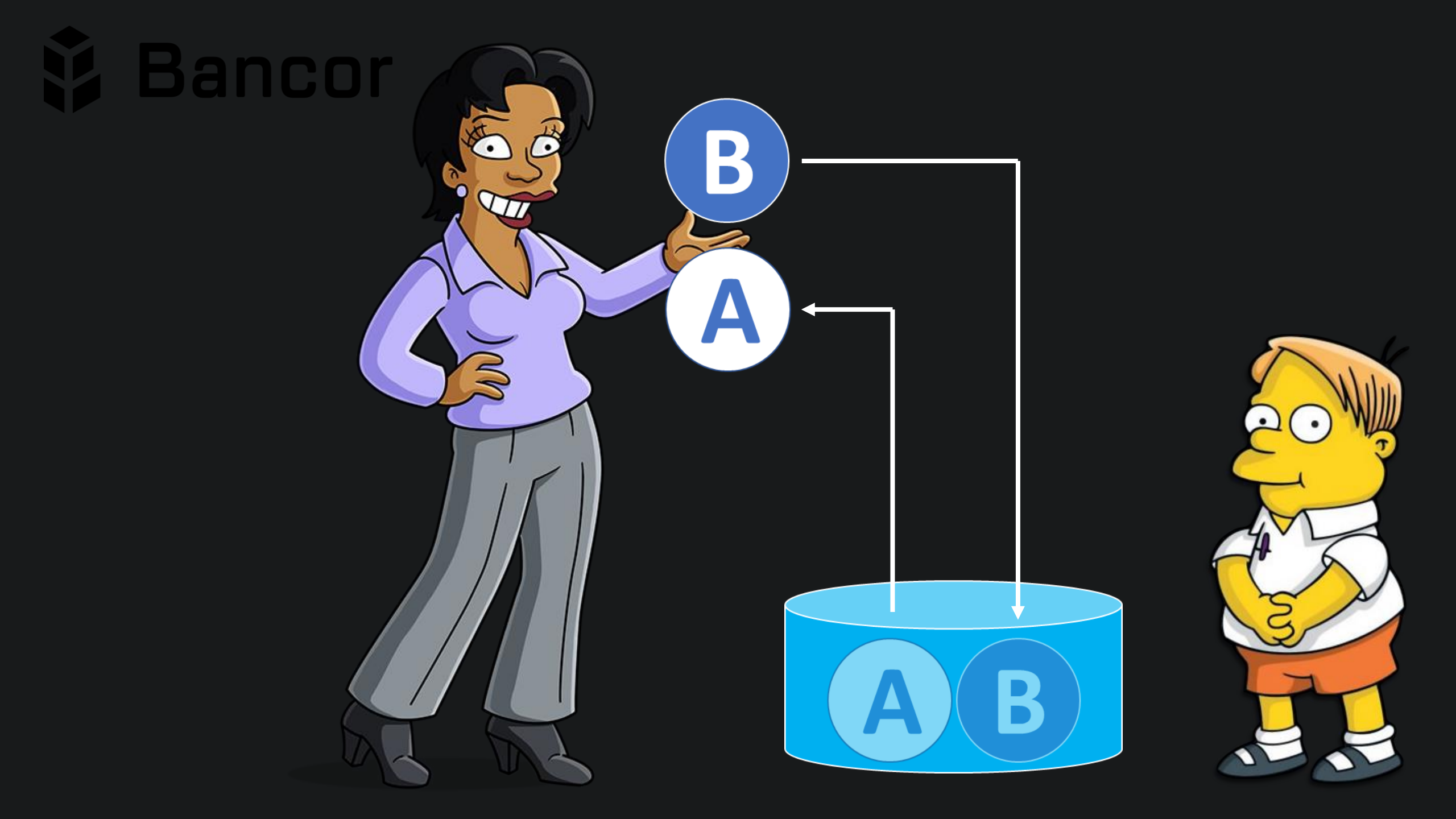
“*the constant product model*”



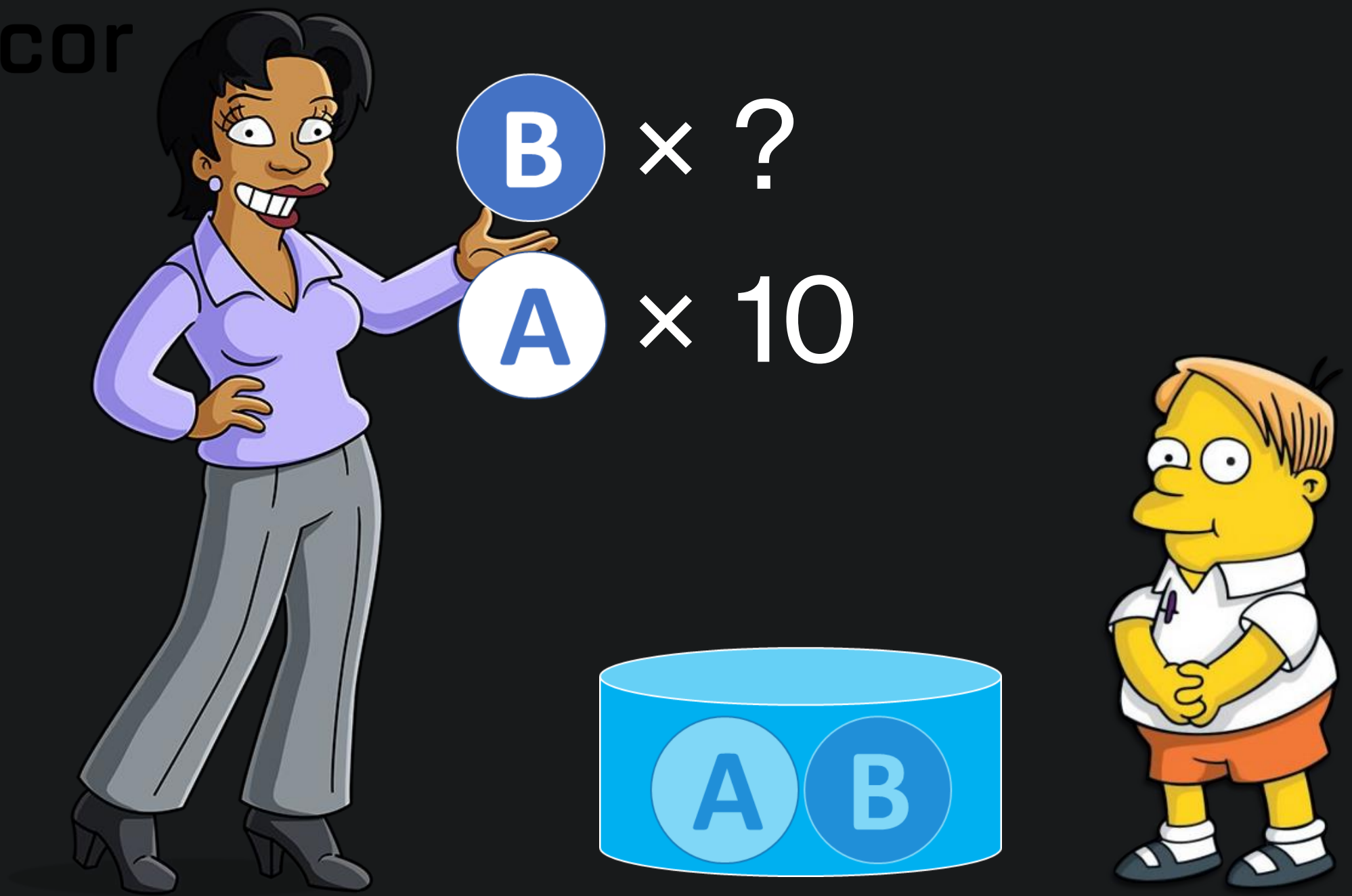
Bancor



Bancor



Bancor



Bancor

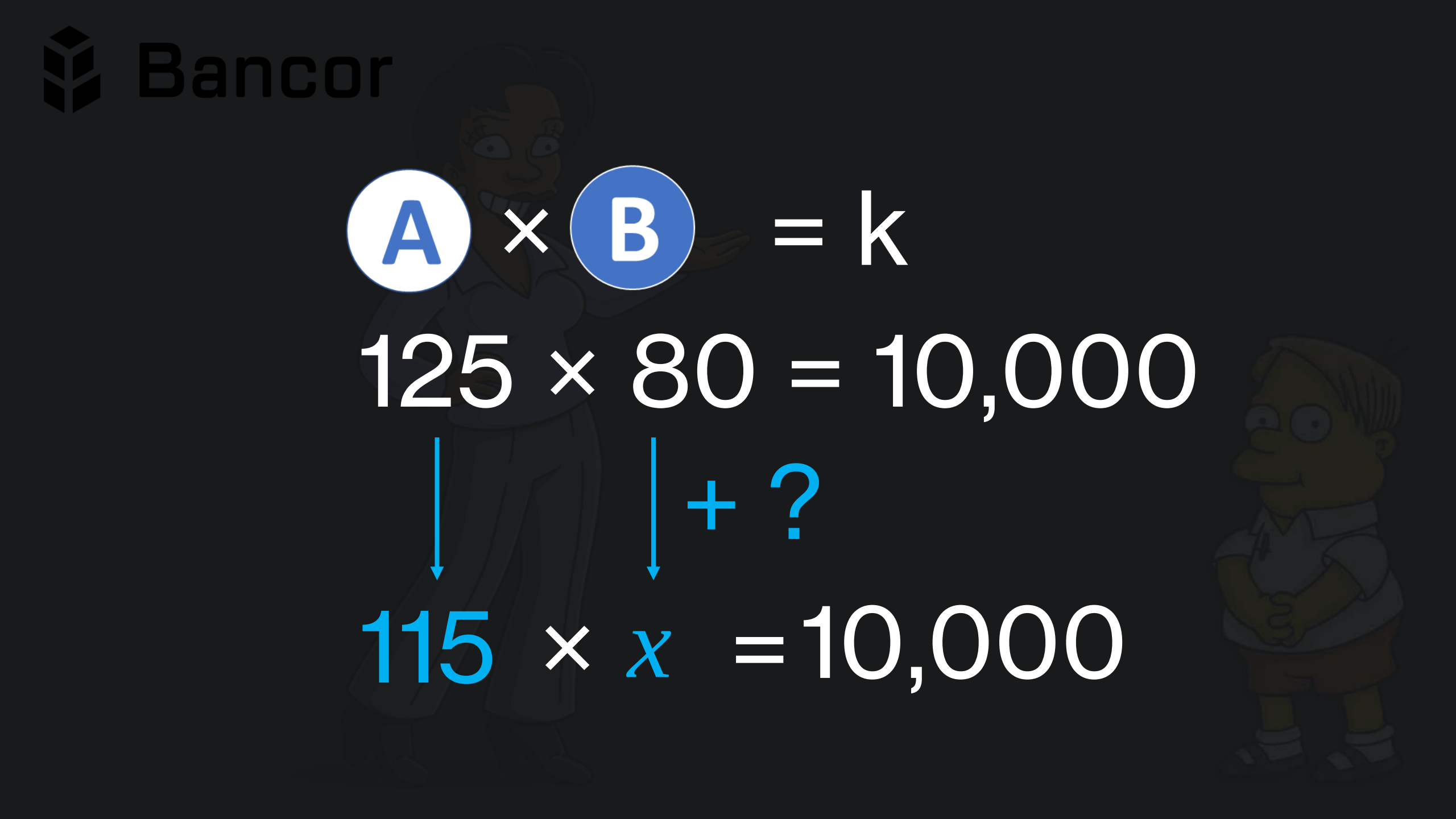
A × B = k

125 × 80 = 10,000

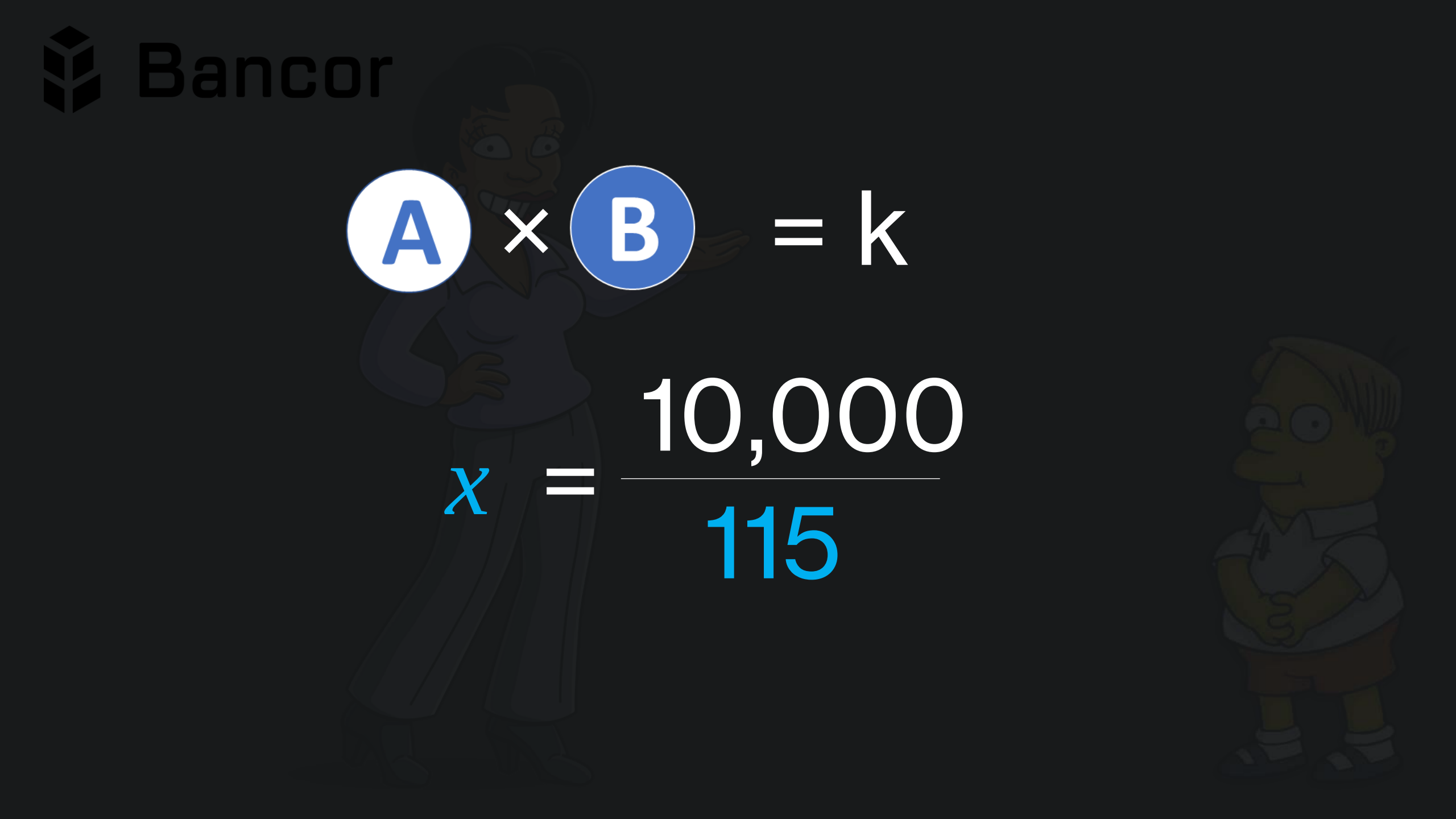
-10

115

Bancor



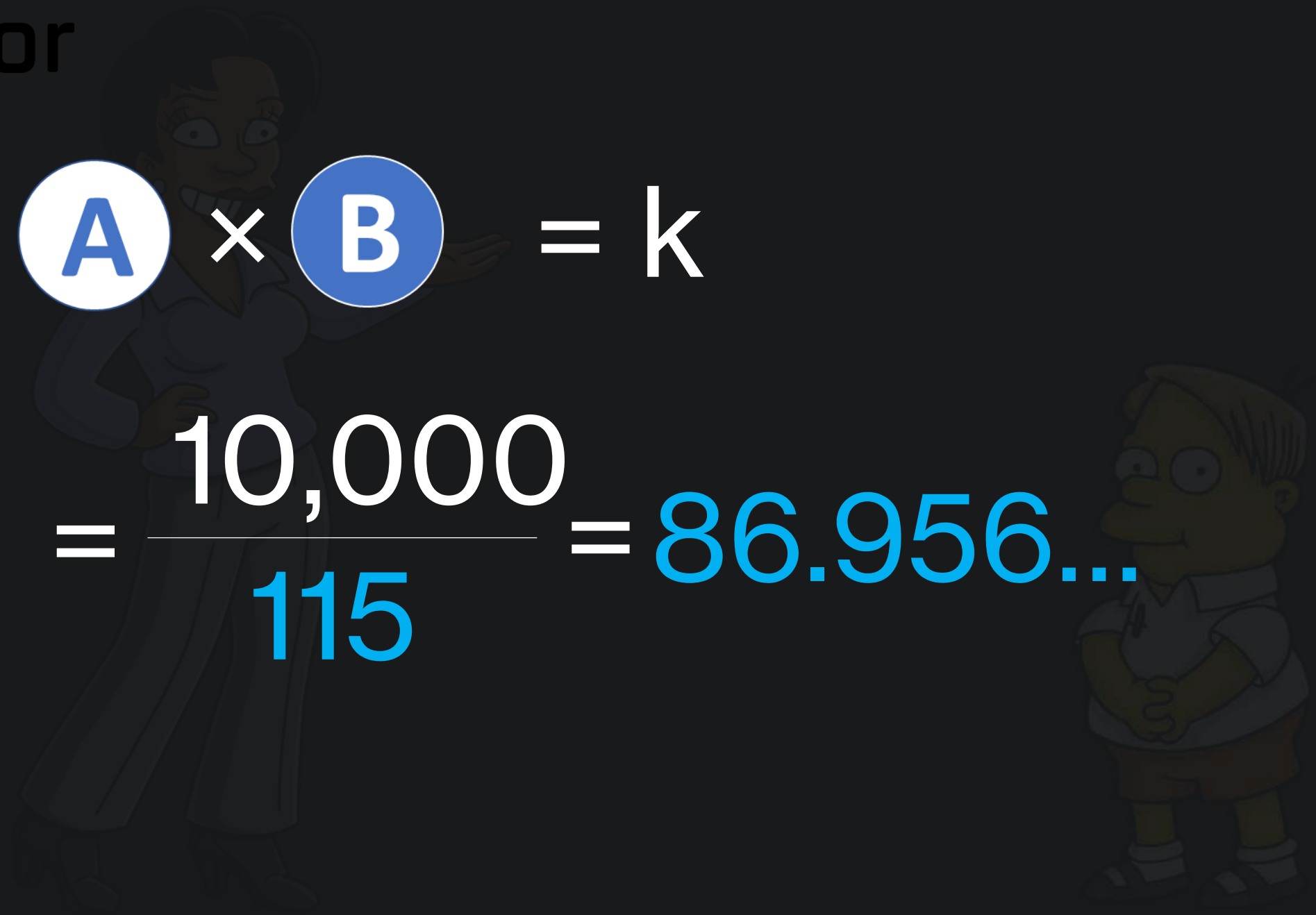
Bancor



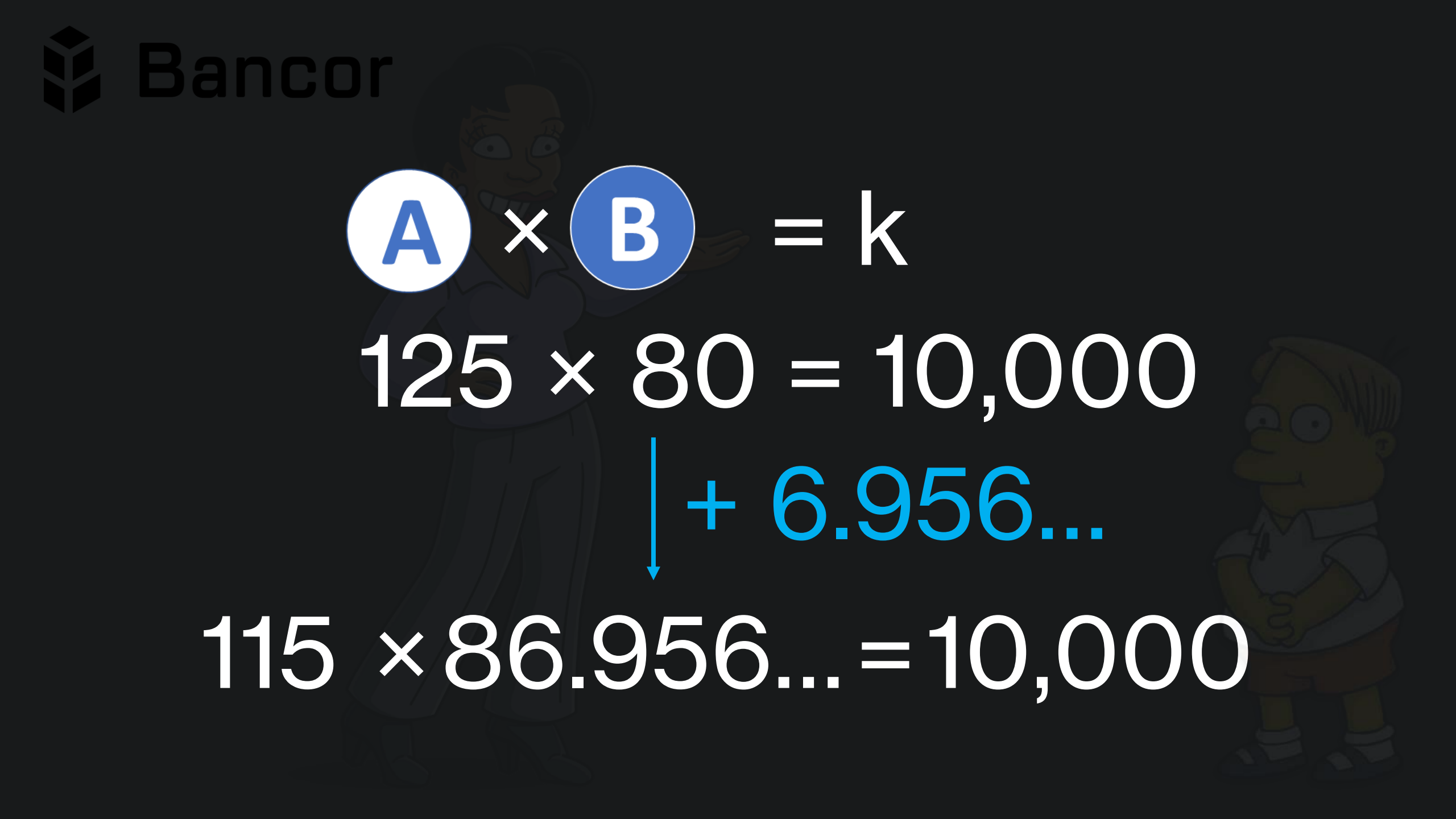
Bancor

$$A \times B = k$$

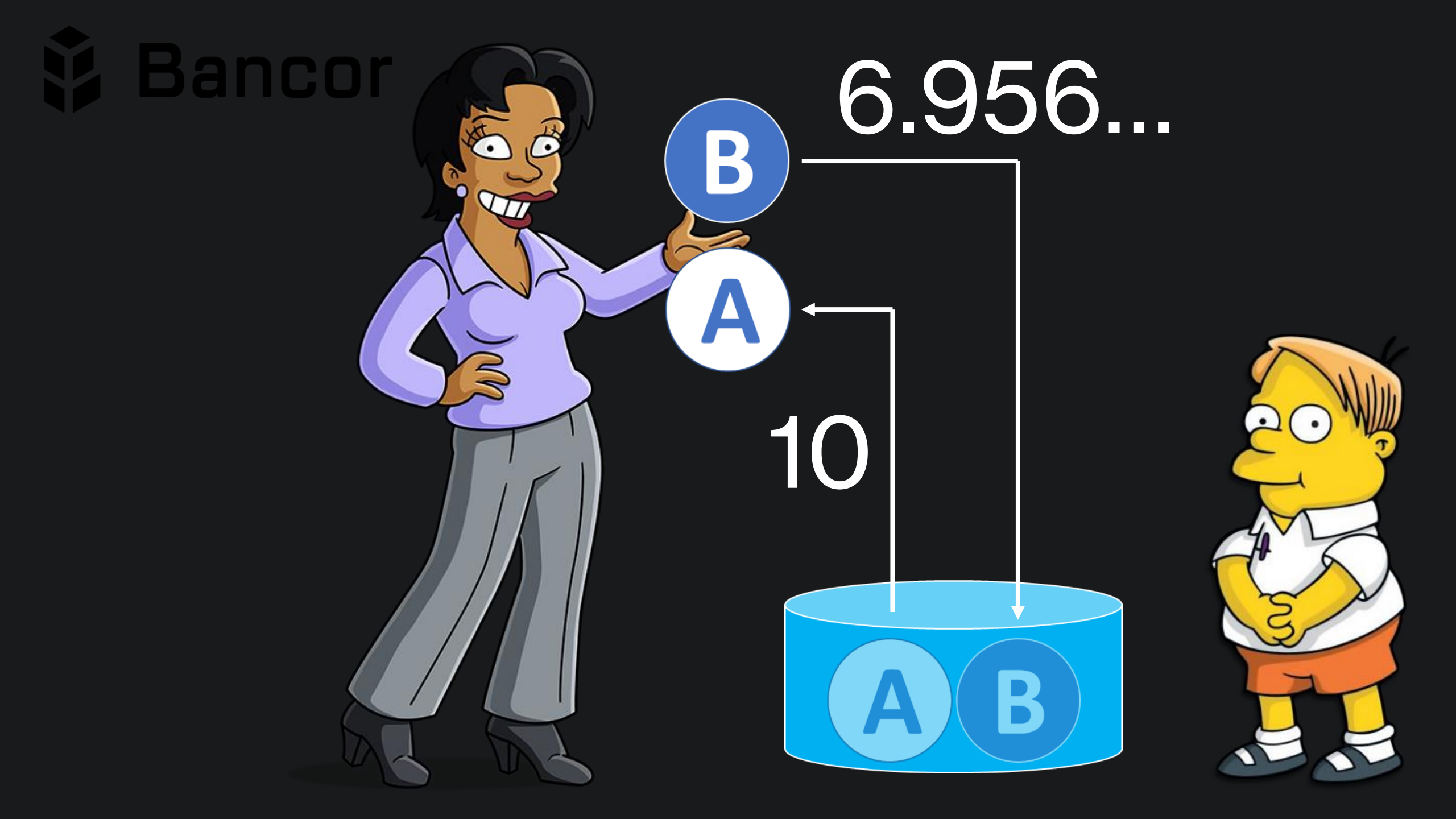
$$x = \frac{10{,}000}{115} = 86.956...$$



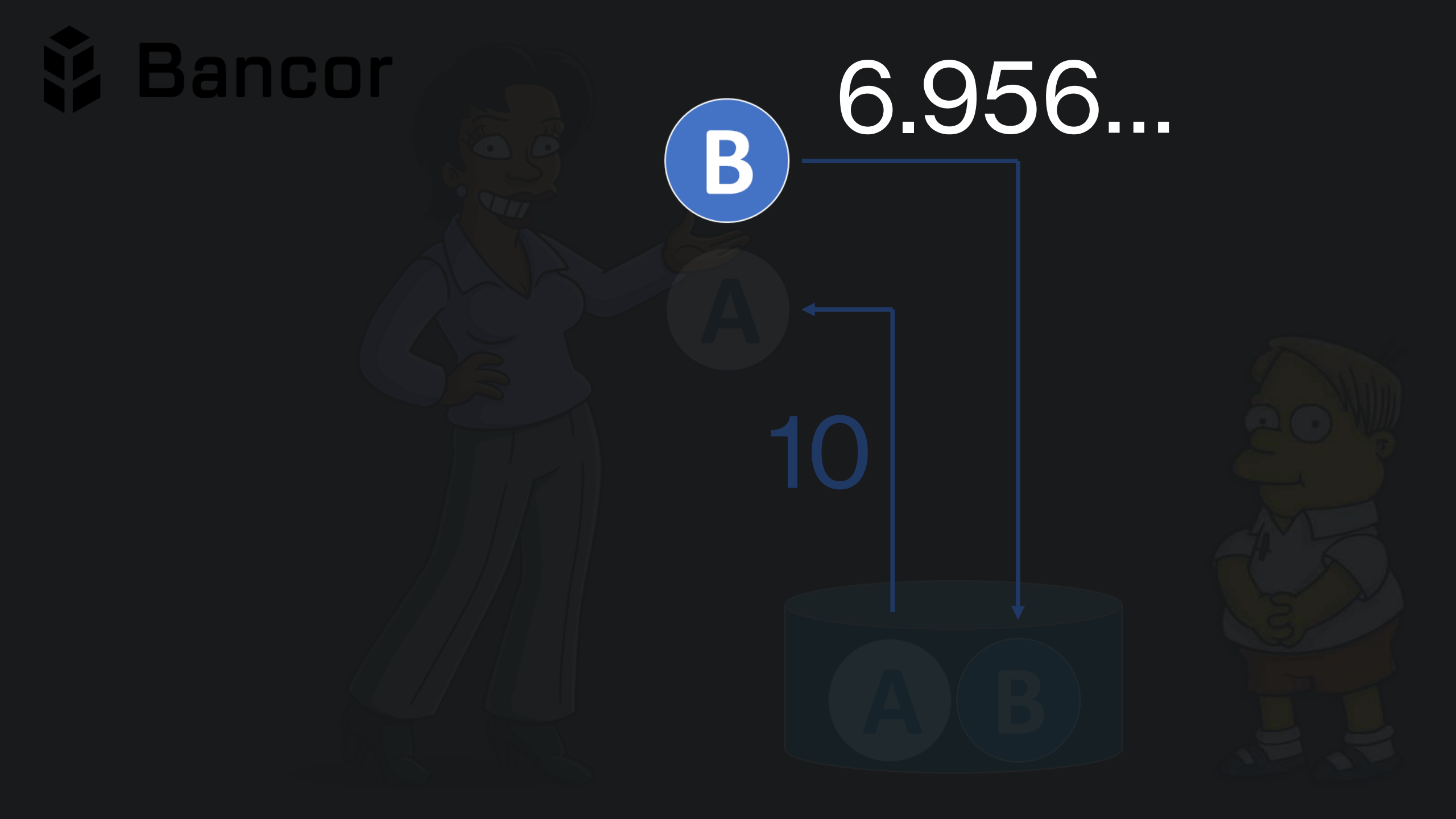
Bancor



Bancor

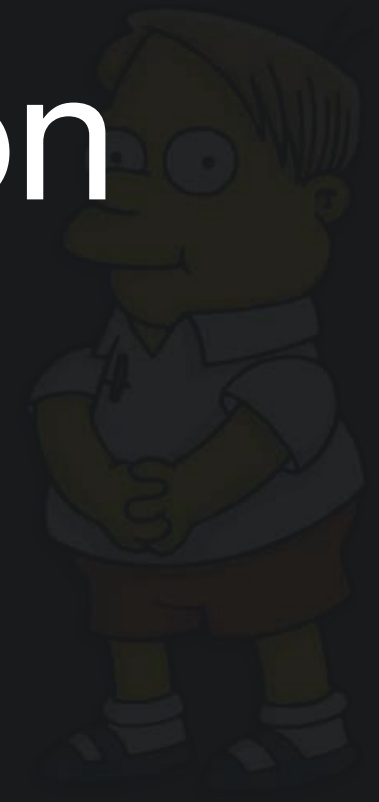


Bancor

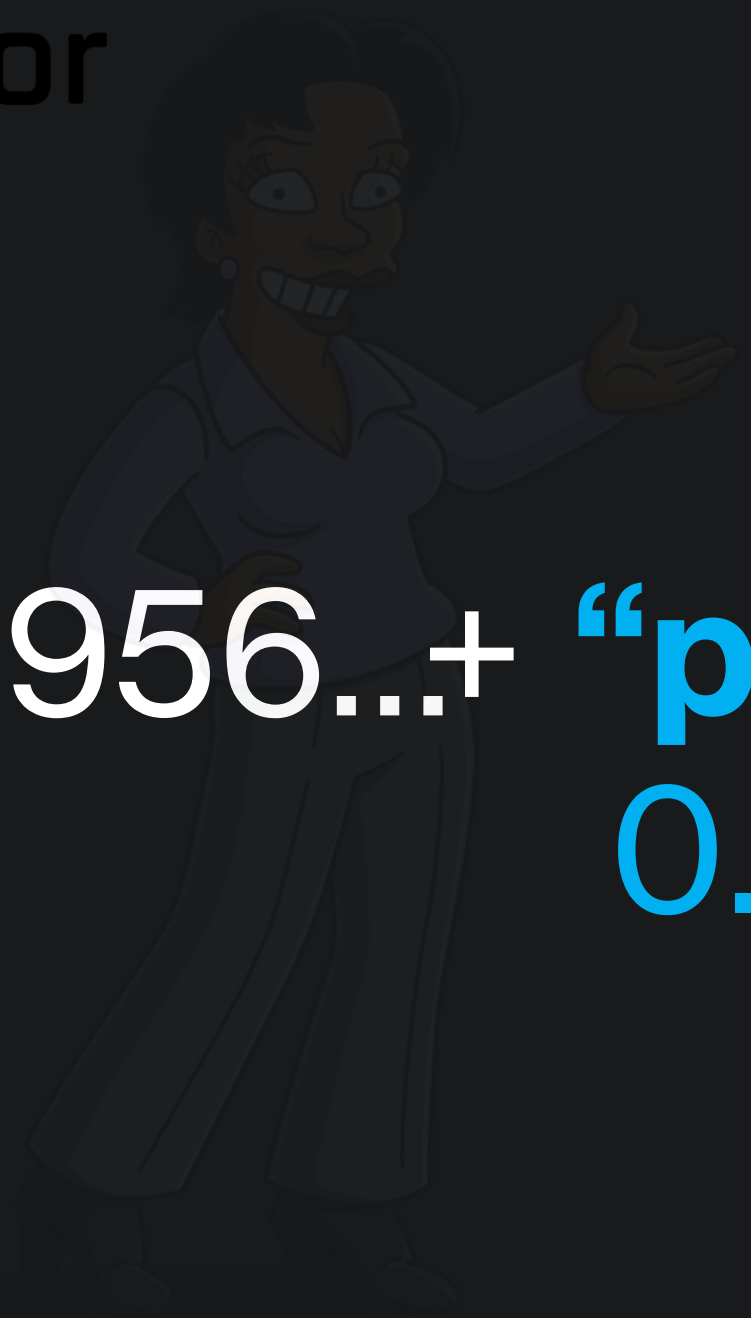


Bancor

6.956... + commission



Bancor



6.956...+ **“pool fee”**

0.1 – 1%

Bancor

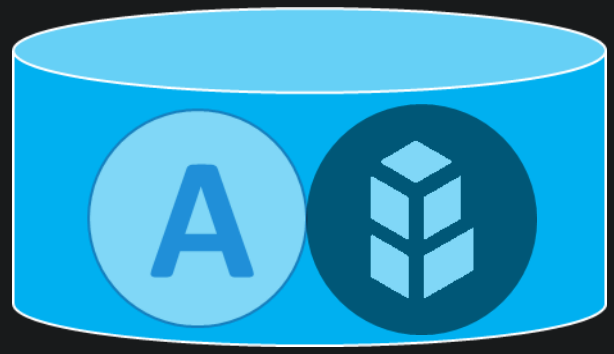
Bancor

A

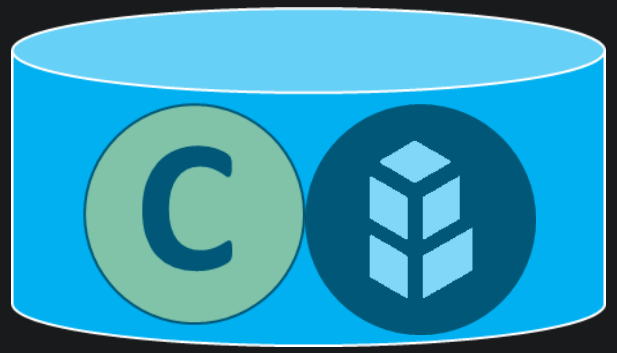
“Bancor Network Token”

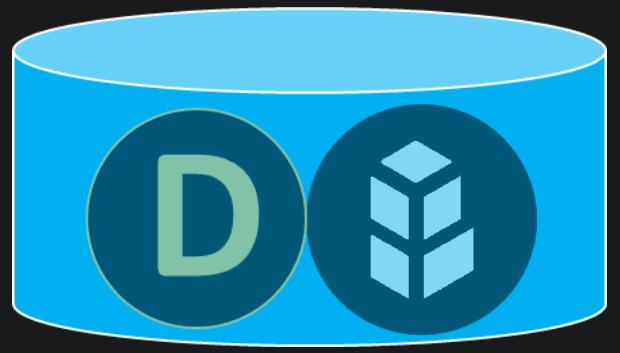
BNT

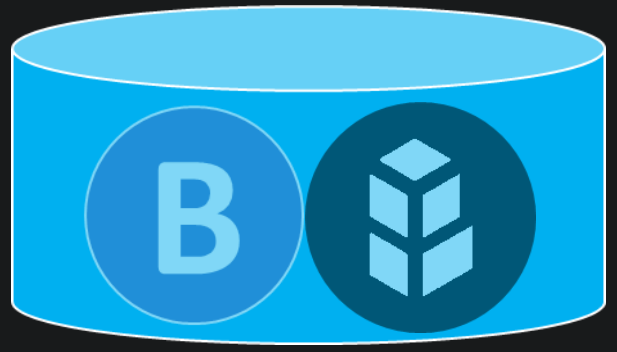
Bancor

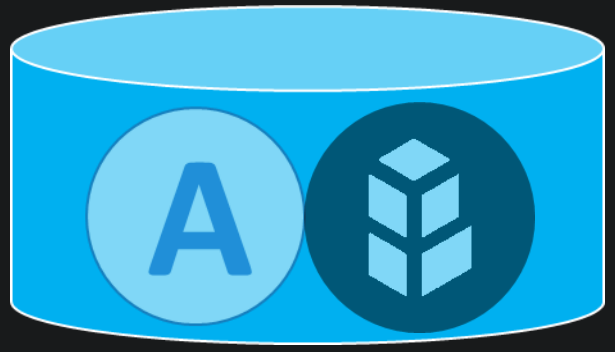


Bancor

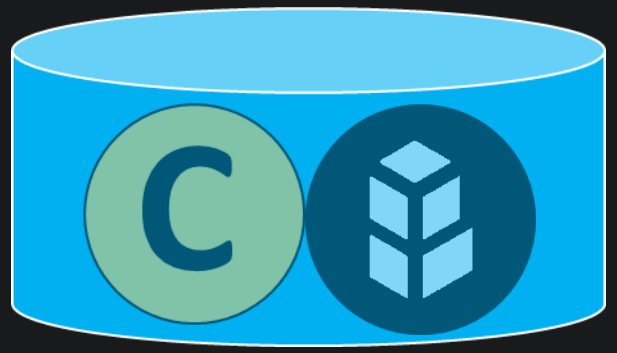


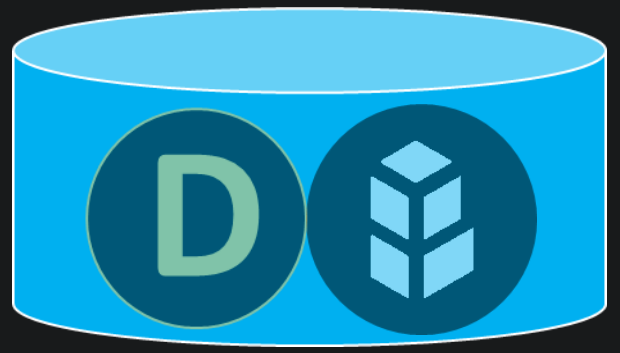


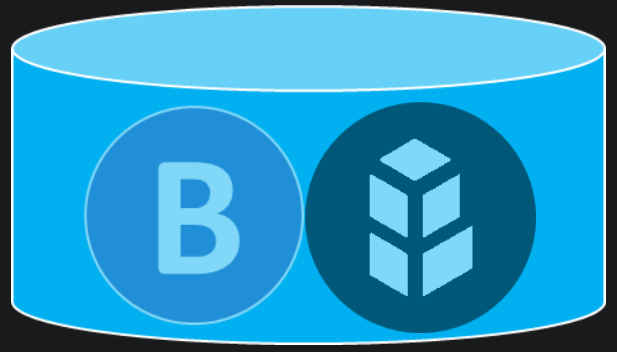


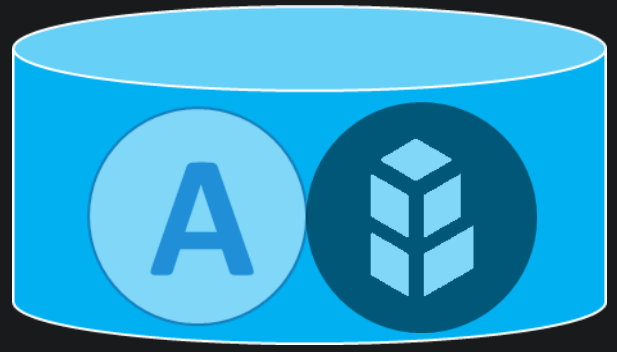


Bancor

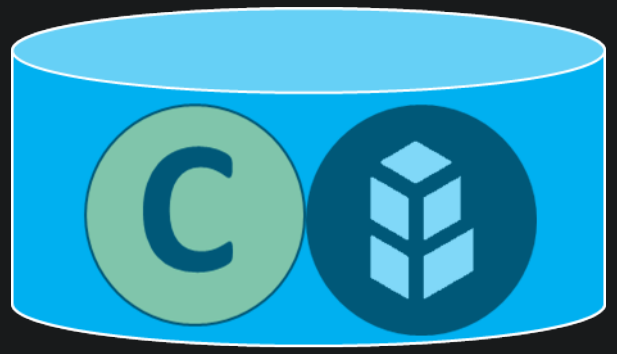


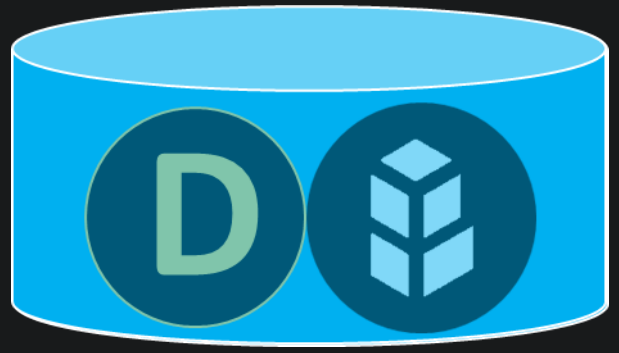




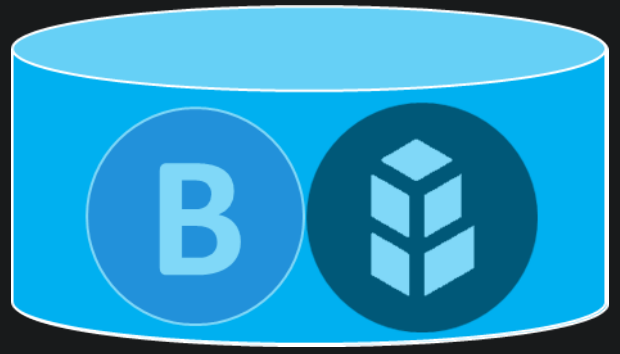


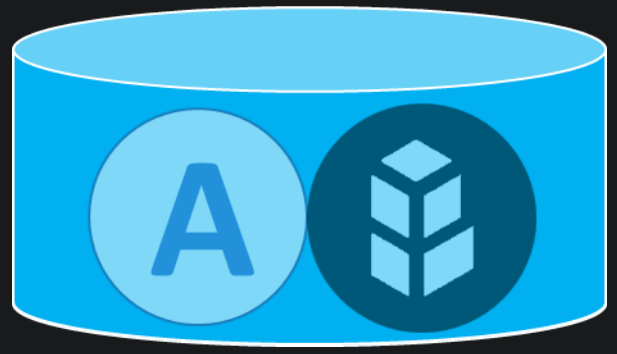
Bancor





C

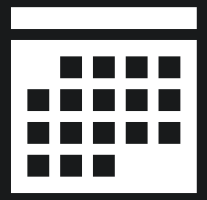
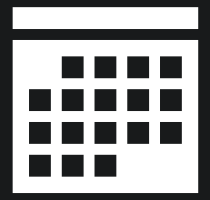




Bancor

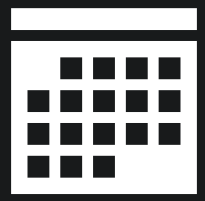
BNT is a utility token, and it powers the Bancor network.

n Jul Aug

21 2021 2021

Apr



2020

May

2020

Announcing Bancor V2

Bancor Follow
Apr 29, 2020 · 4 min read

Update: See the next iteration of Bancor — Bancor v2.1 — which offers similar features, including single-asset exposure and impermanent loss mitigation.

Bancor V2 features:

- A new automated market maker (AMM) liquidity pool integrated with **Chainlink** price oracles that mitigates the risk of impermanent loss for both stable and volatile tokens.
- Provide liquidity with 100% exposure to a single token
- A more efficient bonding curve that reduces slippage
- Support for lending protocols

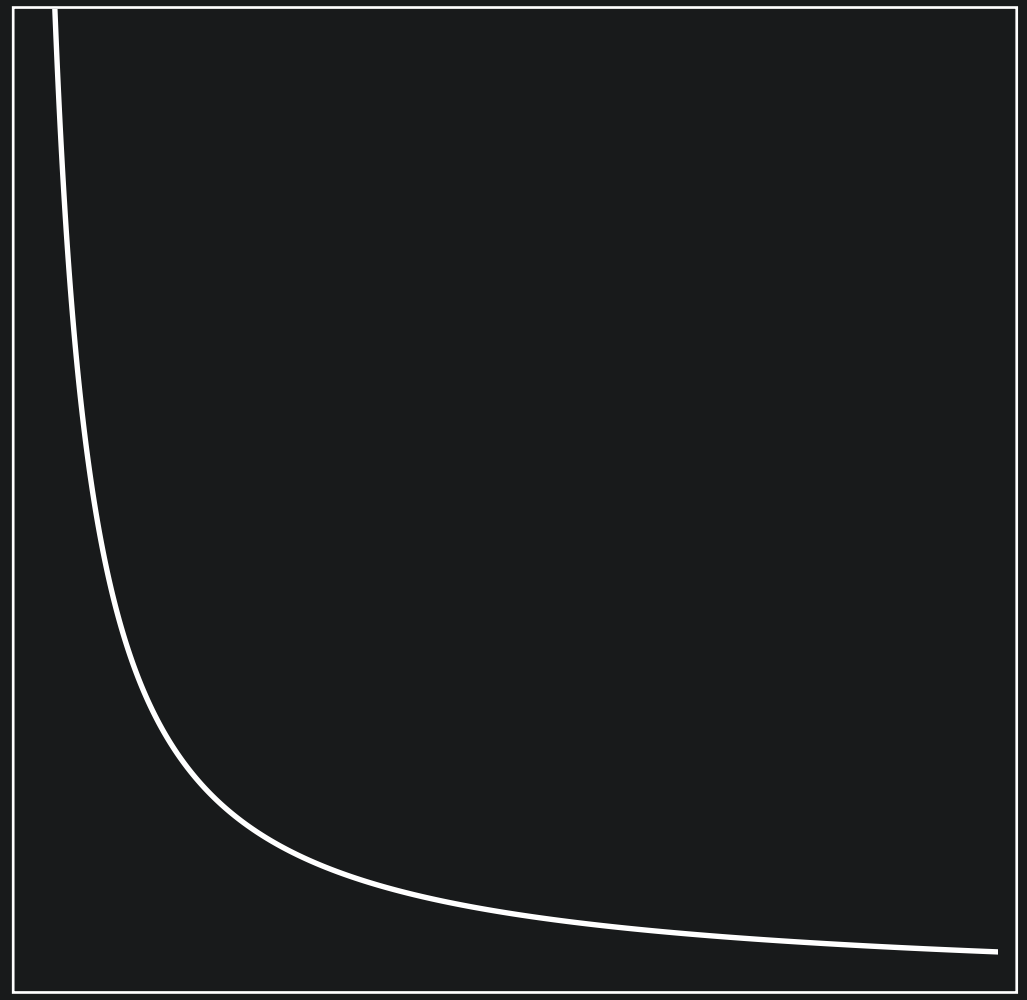
These features address four key issues commonly cited as obstacles to the widespread adoption of AMMs:

1. Exposure to “impermanent loss”
2. Exposure to multiple assets
3. Capital inefficiency (i.e., high slippage)
4. Opportunity cost of providing liquidity

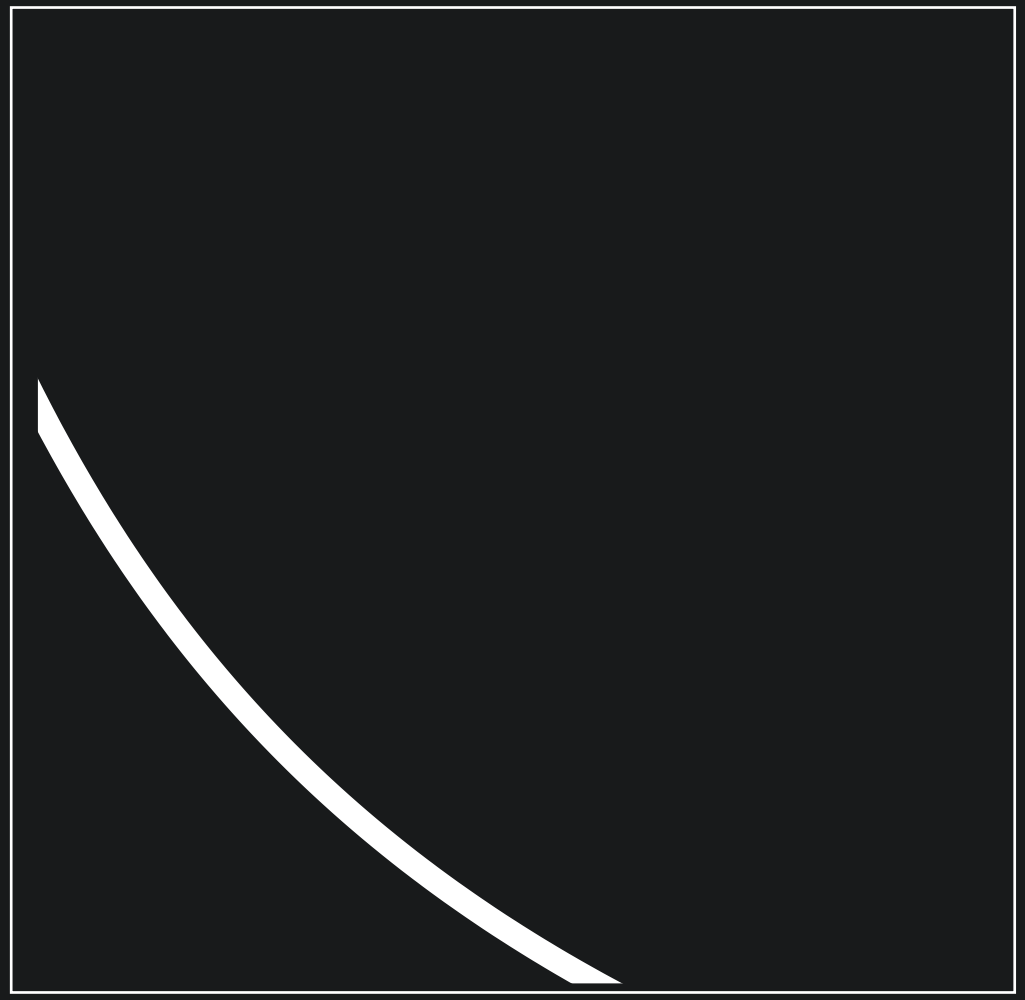
Mitigating Impermanent Loss

AMM technology has taken off in spite of one of DeFi’s dirty secrets: Users who provide liquidity to AMMs (“liquidity providers”) can see their “staked” tokens lose value compared to simply holding the tokens on their own.

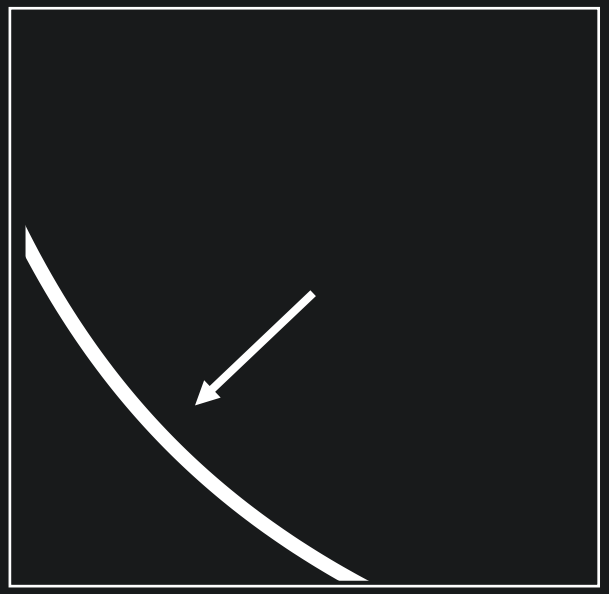
This risk, known as “impermanent loss”, has prevented many mainstream and

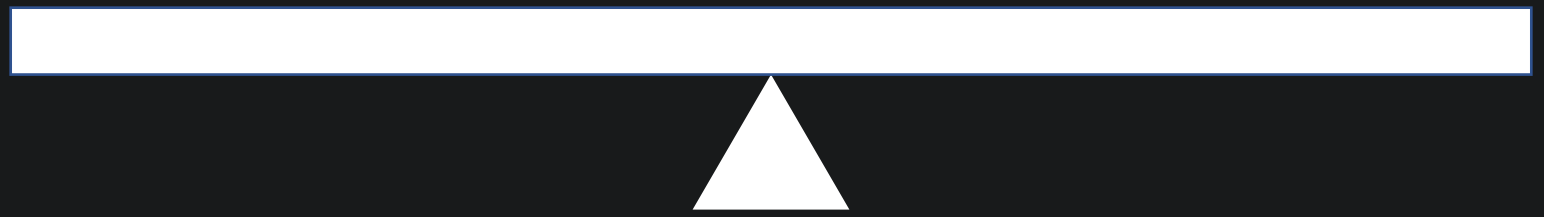


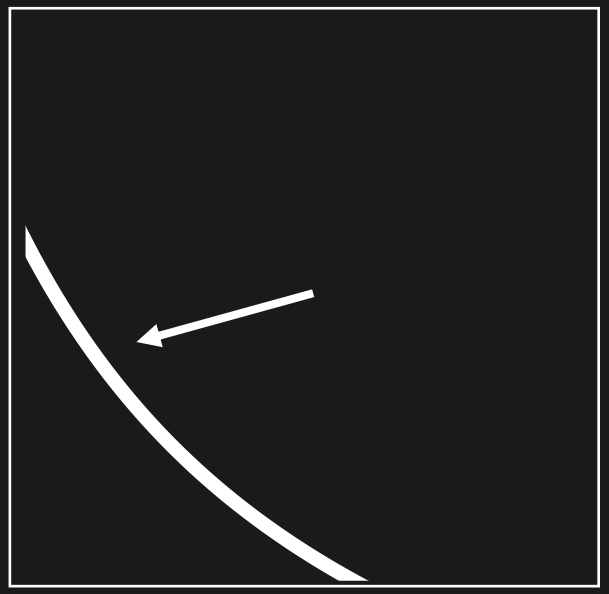
20× liquidity amplification

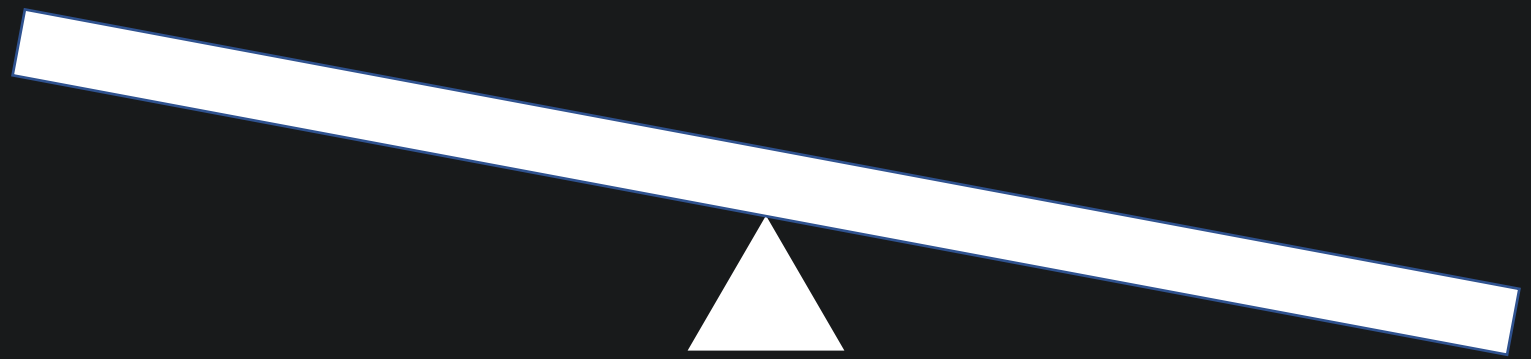


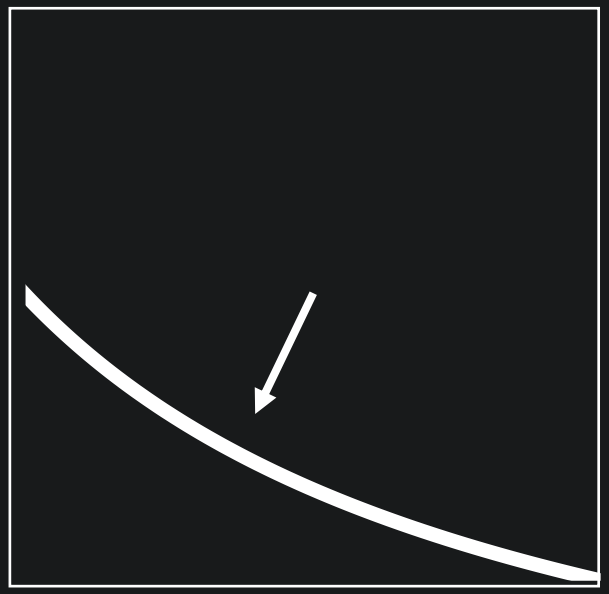
“*concentrated liquidity*”

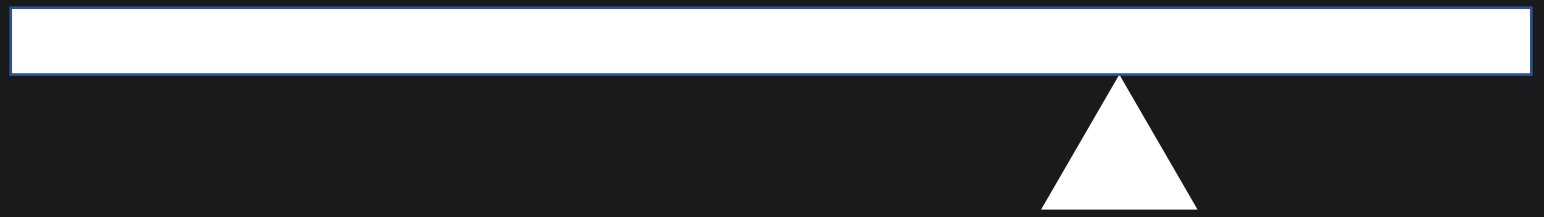


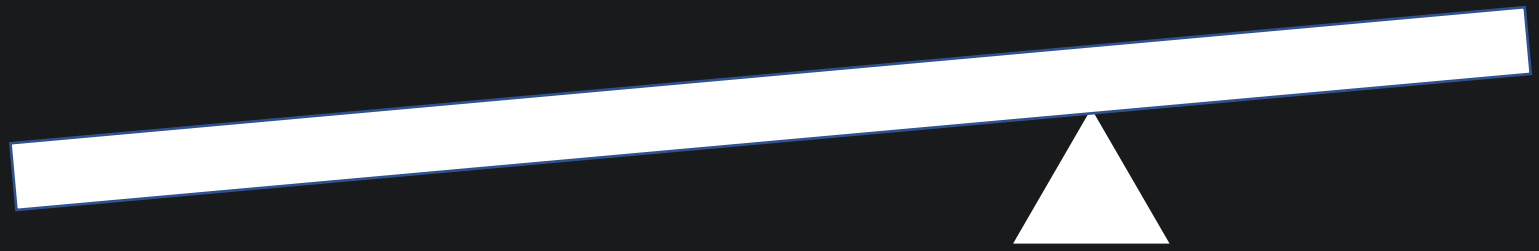


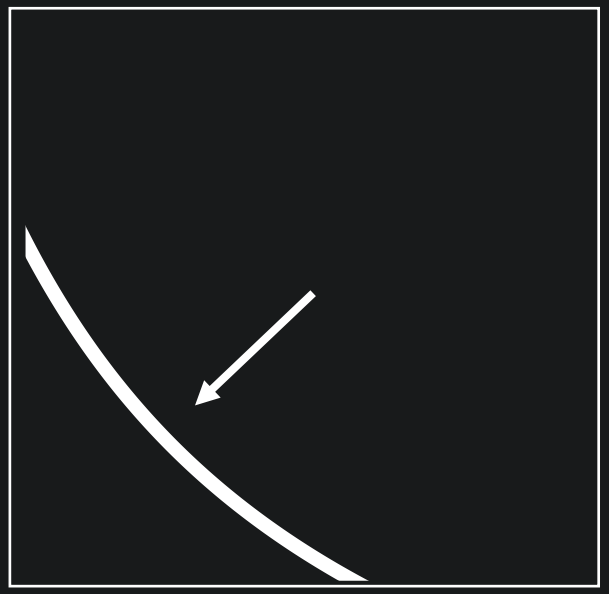


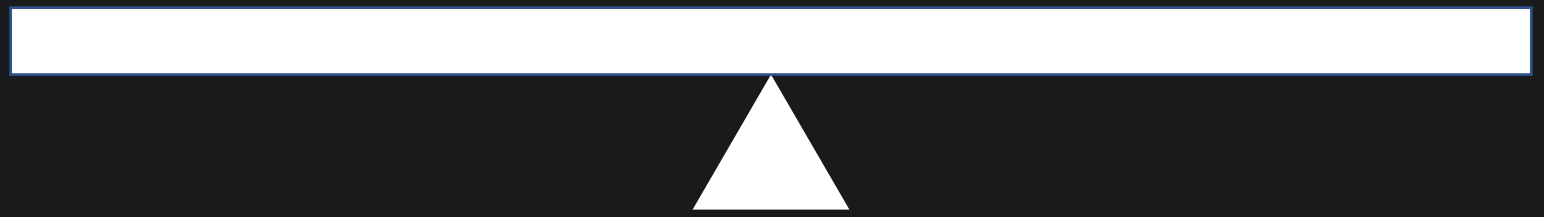




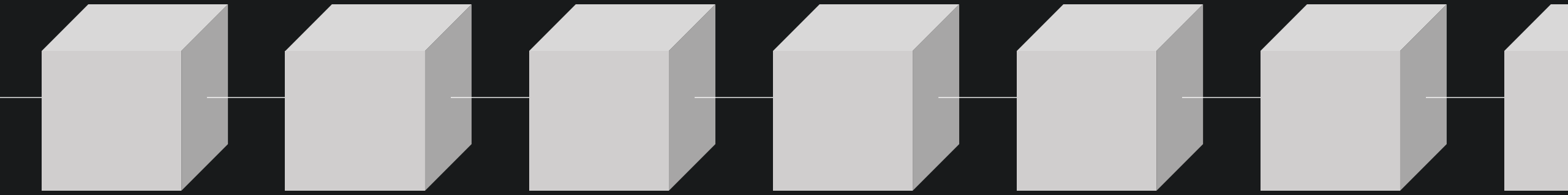


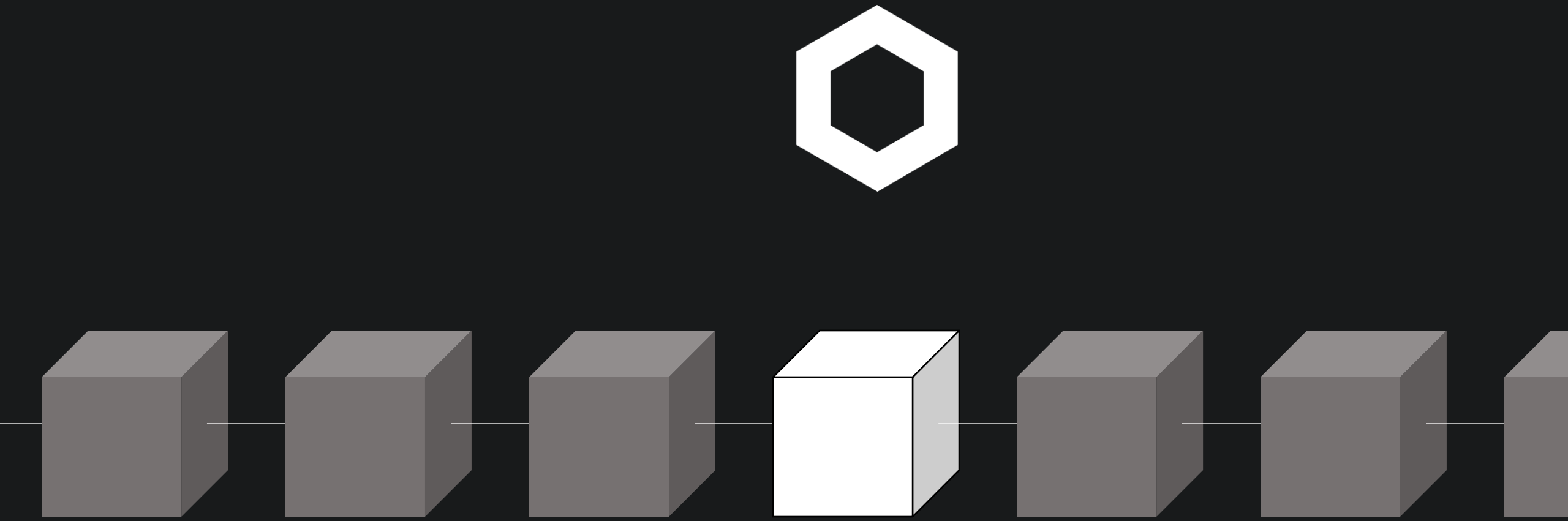


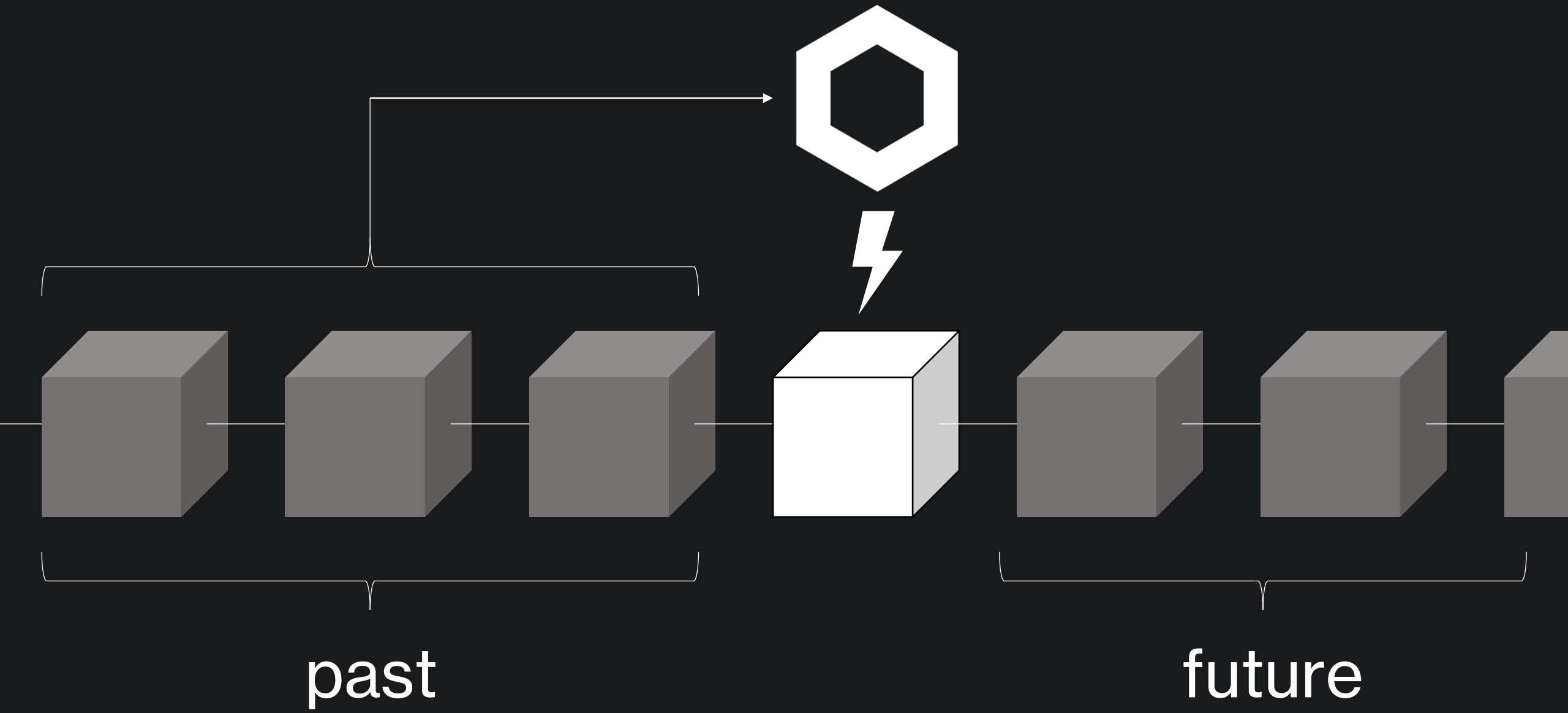


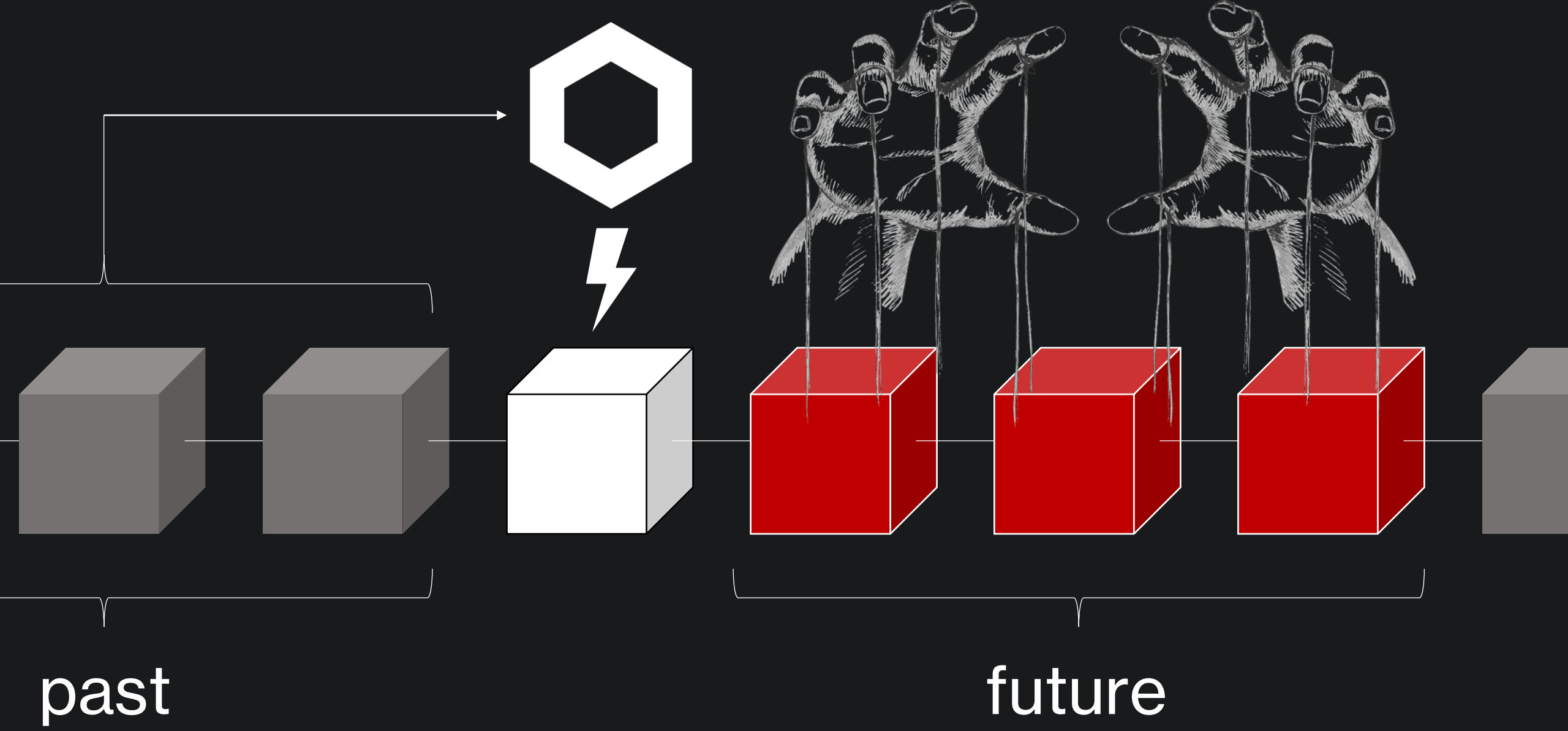


Why was this unsustainable?

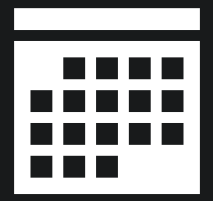





past
future


past
future

Sep Oct Nov


2020 2020 2020

Proposing Bancor v2.1: Single-Sided AMM with Elastic BNT Supply

Bancor Follow

Oct 13, 2020 · 6 min read

- Bancor v2.1 introduces **single-sided exposure** & **impermanent loss protection** to AMM pools via **elastic BNT supply**
- Initially, more than 60 ERC20 tokens will be supported as “protected” pools
- vBNT, Bancor’s new governance token, can be generated by staking in a protected pool
- Stake and earn Liquidity Protection (impermanent loss insurance) + swap fees on **app.bancor.network** (**guide**)

Bancor v2.1 Proposal on Discourse

Bancor v2.1 Staking Guide

The promise of crypto AMMs to enable “passive” market-making for everyday users has proven to be elusive. While the risk of impermanent loss (IL) is increasingly understood among liquidity providers (LPs), the issue is yet to be effectively addressed by any AMM protocol.

Existing AMM pools require LPs to forfeit their long position on their tokens and take on exposure to other assets in the pool. Protocols compensate for these undesirable aspects of liquidity provision by incentivizing LPs with airdrops and liquidity mining rewards. However, these incentives only temporarily mask the issue.

wgmi

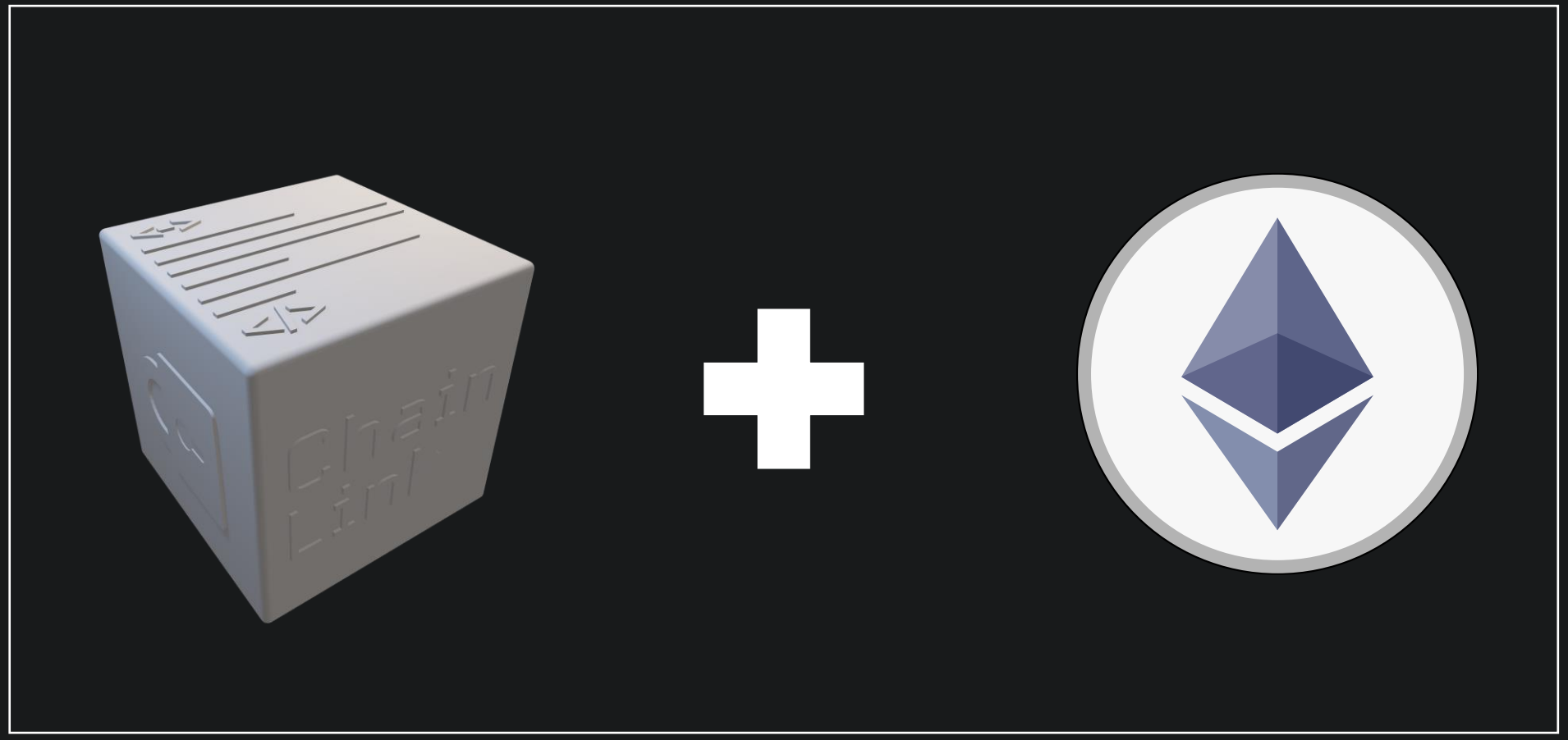
neverselling.jpg

believes the token will outperform the market

loyal;
wishes to maintain exposure to a single asset

Cube model by submariner777

status quo



both tokens are required

Cube model by submariner777

Bancor

provide liquidity with one token

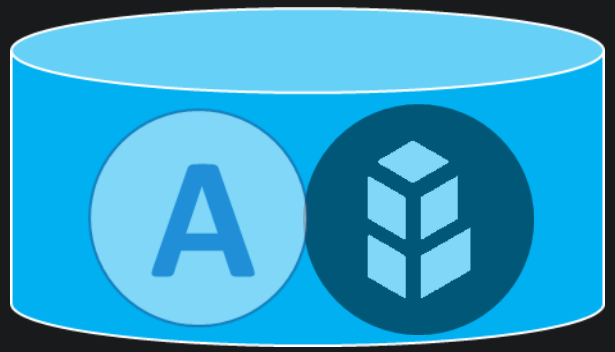
Cube model by submariner777

Bancor

Banner

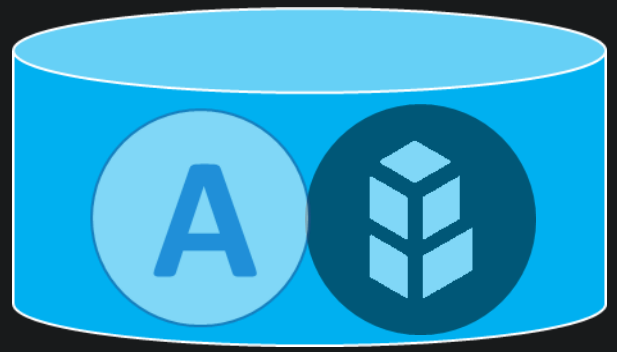
A

Banner



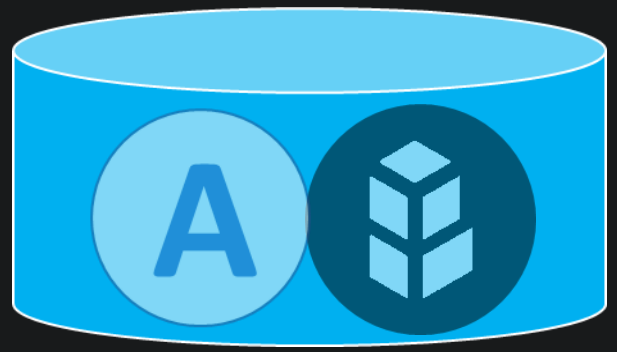
Bancor

Can participate in the protocol without owning BNT tokens.



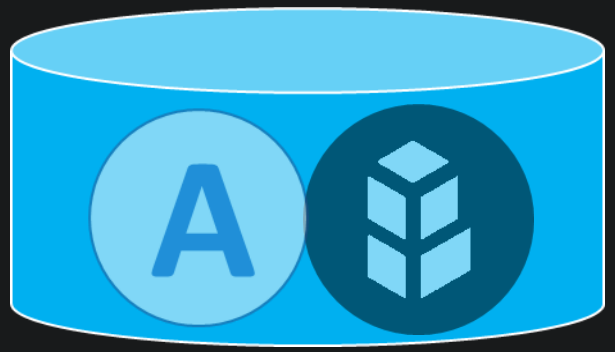
Banner

Can earn revenue from high velocity assets without owning them.



Banzai

This is a commensal business relationship.



Banner

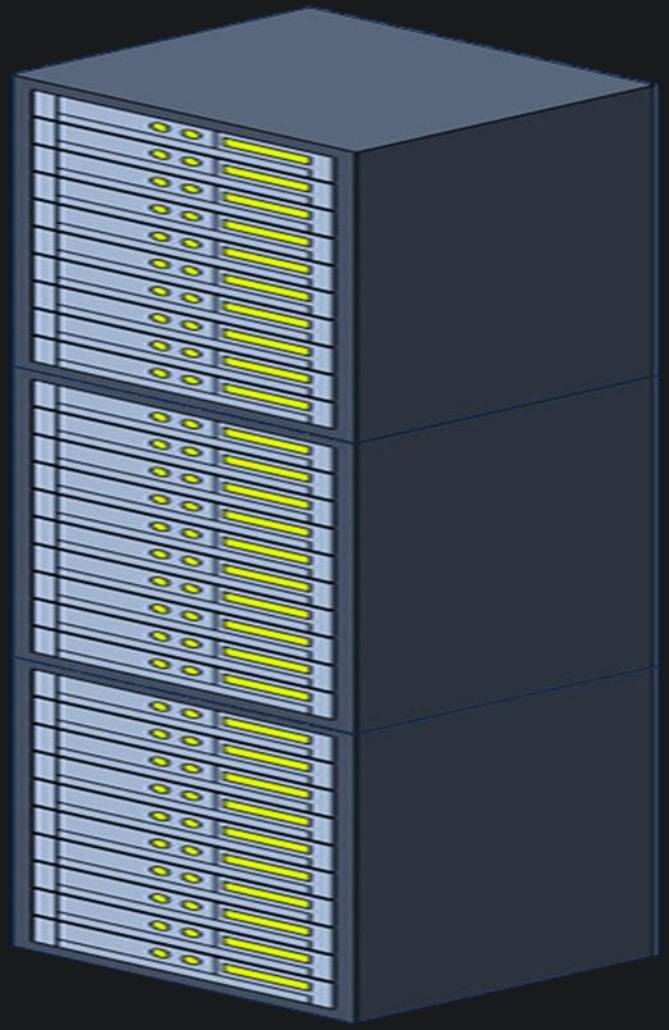
A

Banner

A

Banner

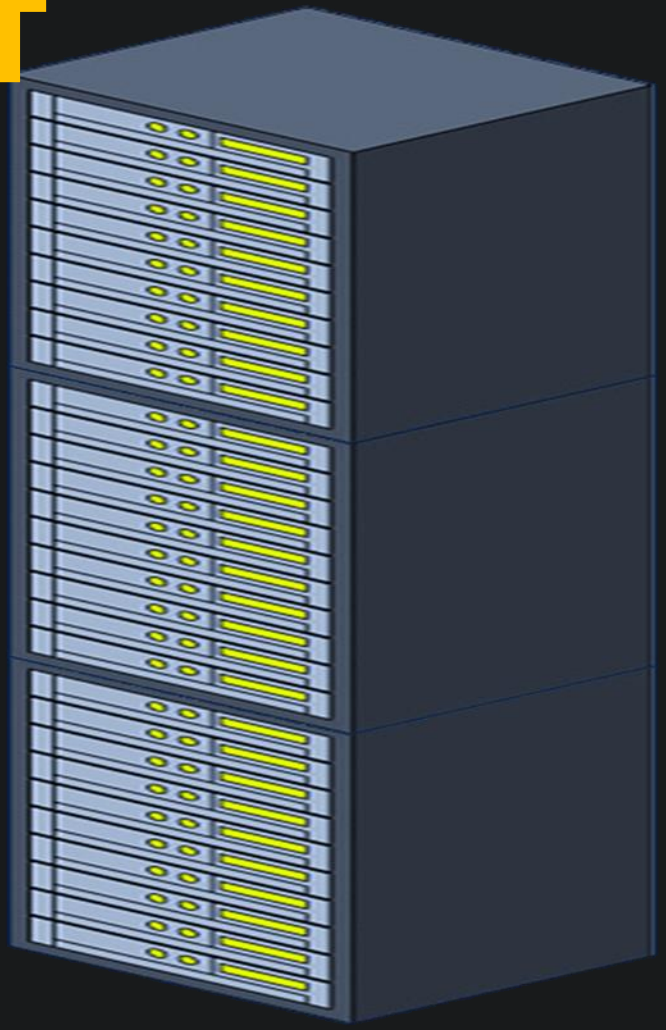
A



Bancor

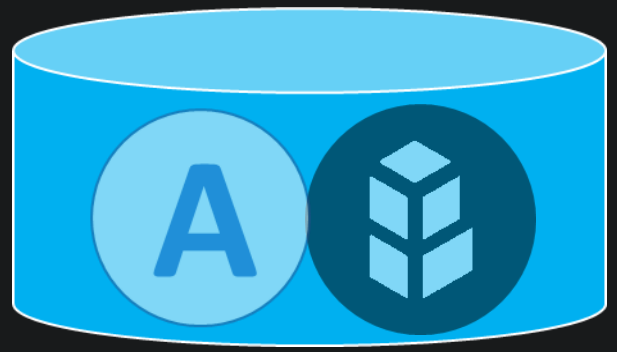
A

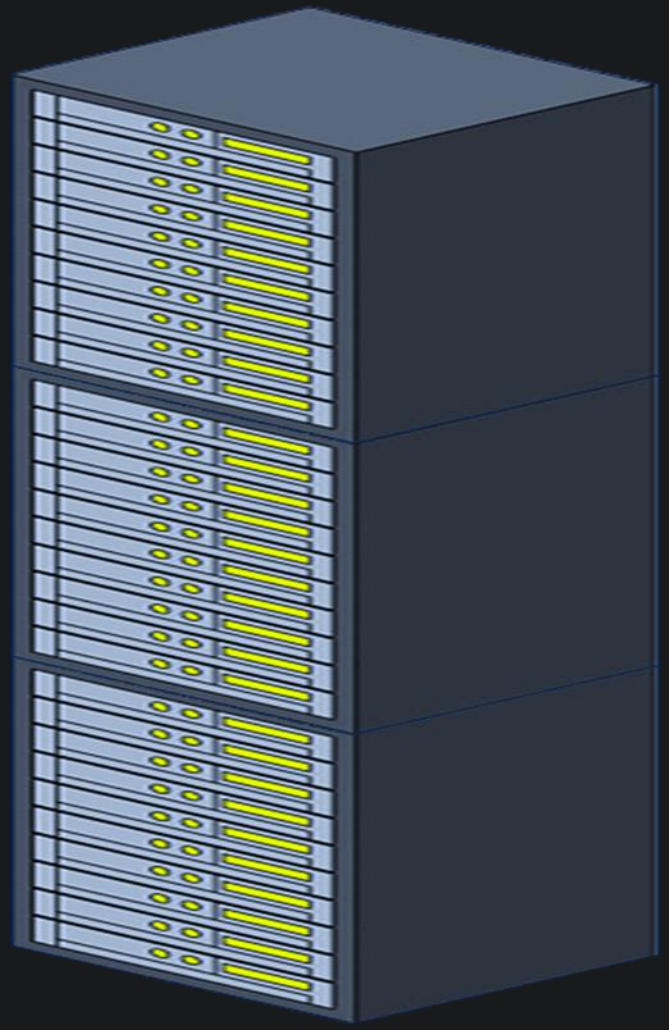
minted BNT



Banner

The protocol earns its own revenue by co-investing in the liquidity pool.



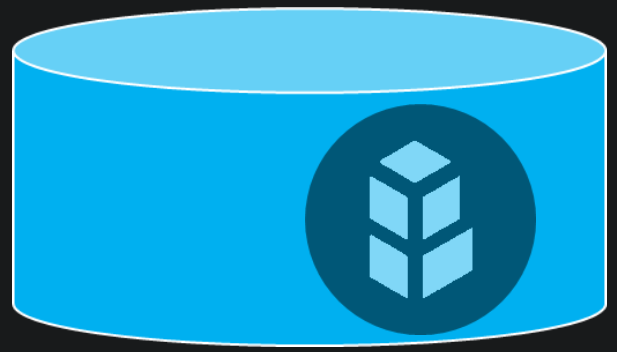


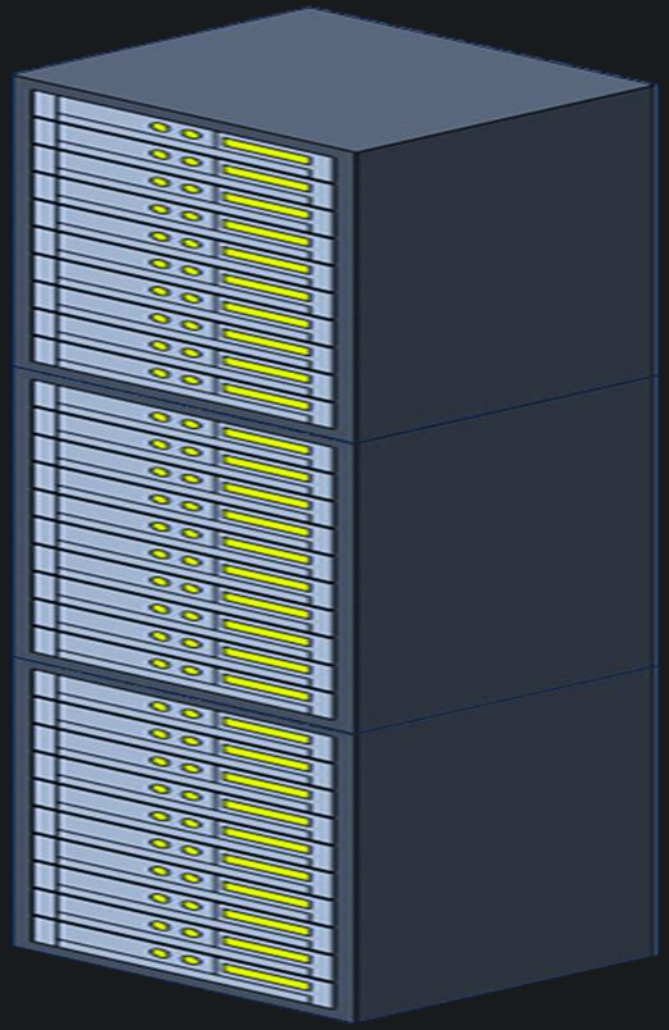
Bancor

The minting of new tokens brings an inflationary element to BNT; however, there are opposing deflationary mechanisms.

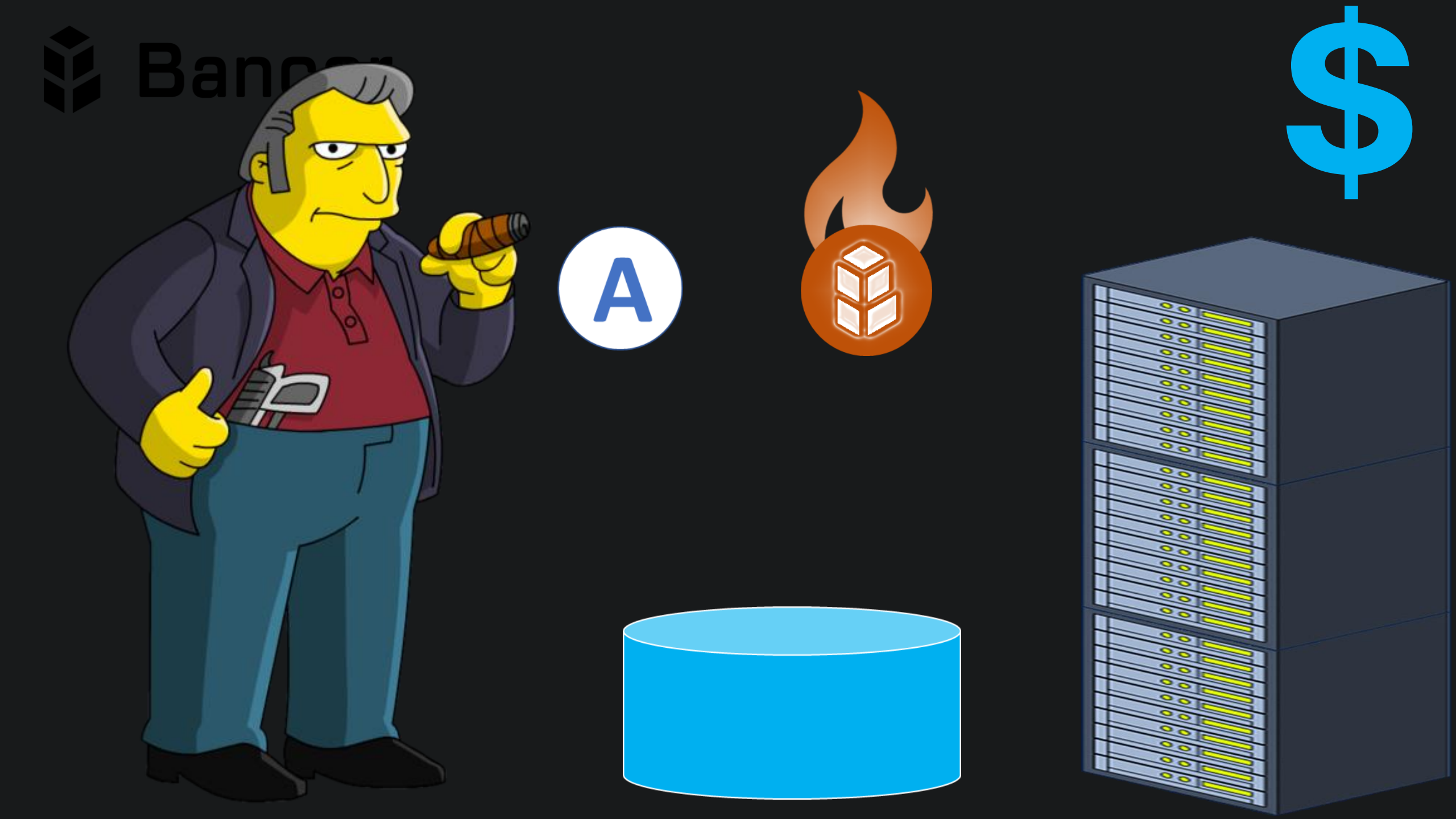
Banzai

A





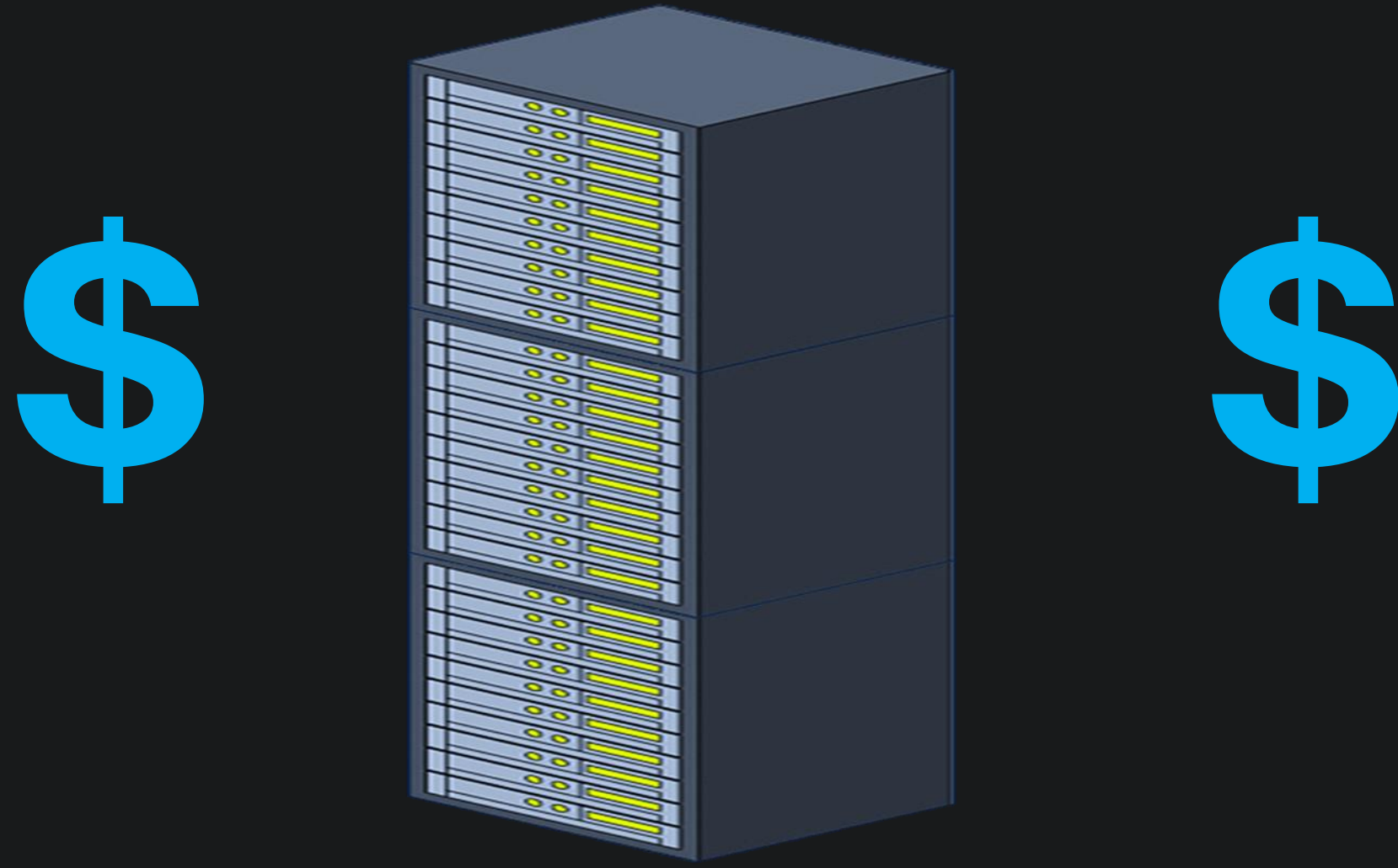
$


Banzai
A
$

Bancor

Burn the minted BNT, keep the trade revenue.

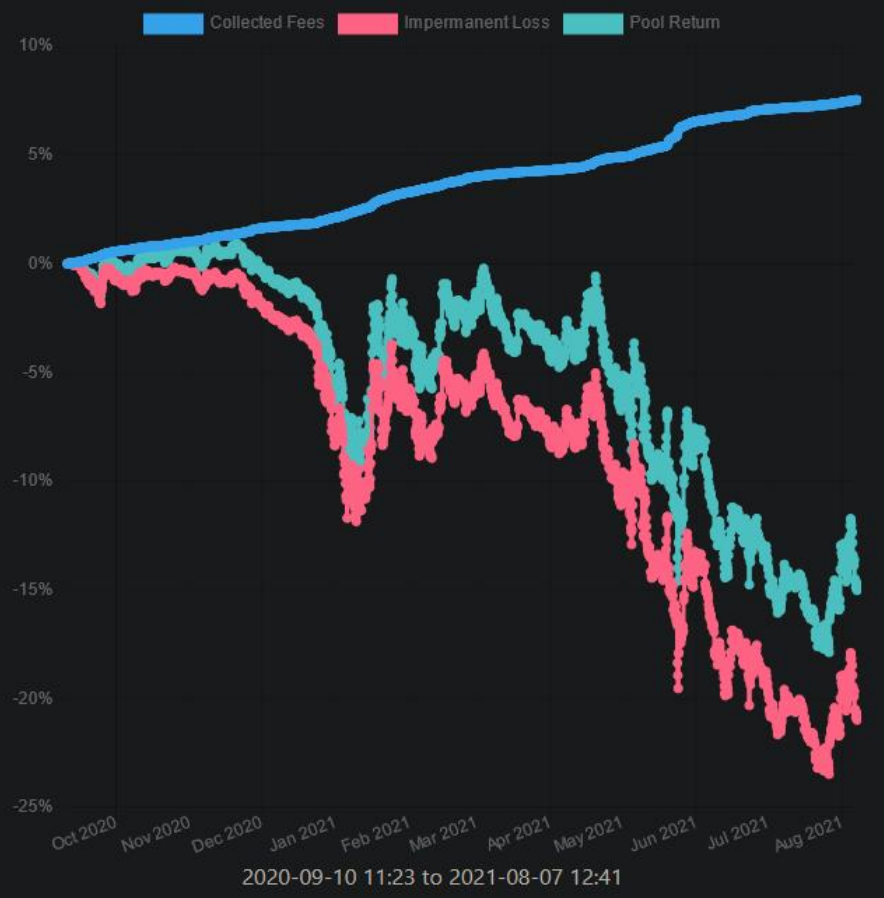
Bancor



Bancor

What is the protocol going to spend its money on?

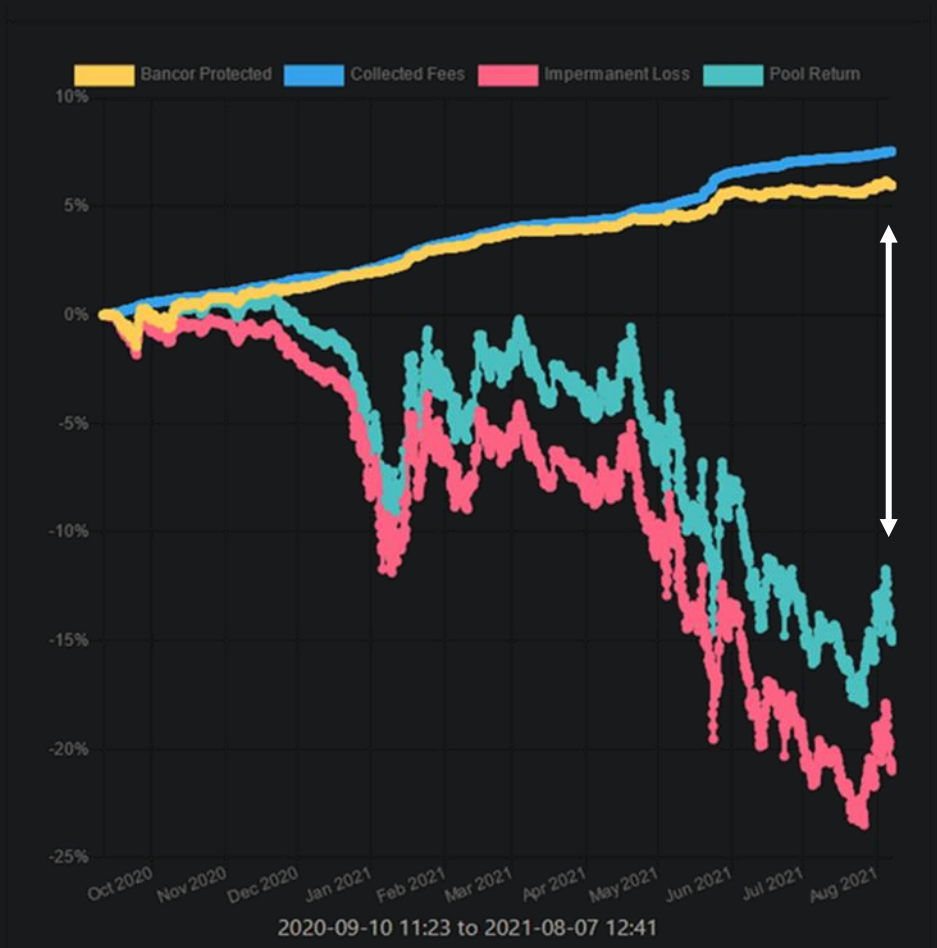
status quo



impermanent loss and broken hearts

Cube model by submariner777

Bancor



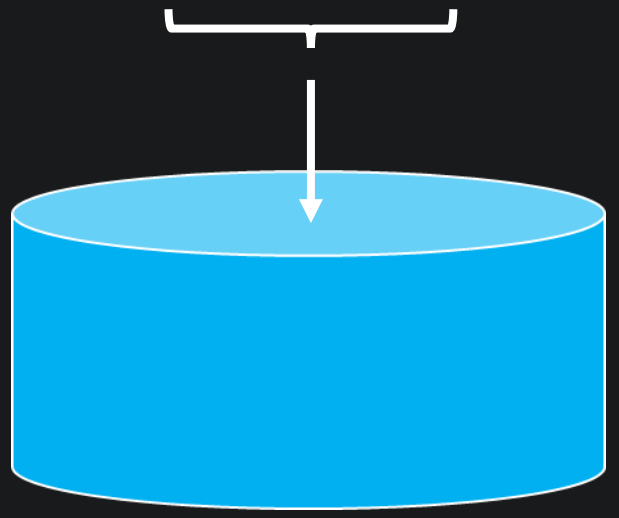
100% exposure to a single token

Cube model by submariner777

Bancor

A × 125

B × 80



liquidity pool

Bancor

$64 A × 125

$100 B × 80

What happens if the price changes?

Bancor

$128 A × 125

$100 B × 80

Bancor

A	B
$128	$100
× 125	× 80
$16,000	$8,000

Bancor

A	B
$128	$100
× 125	× 80

$24,000

Bancor

A	B
$128	$100
× 125	× 80
$16,000	$8,000

The pool has no knowledge of this.

Bancor

The pool only cares about one thing:

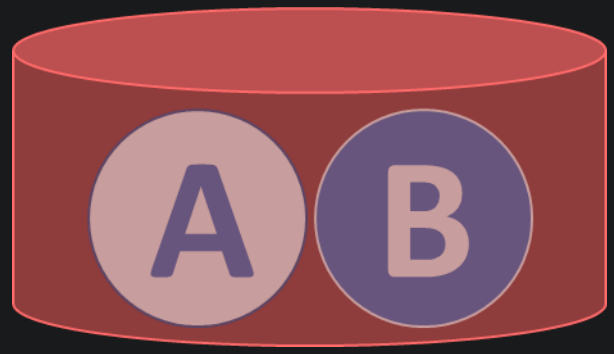
125 × 80 = 10,000

Bancor

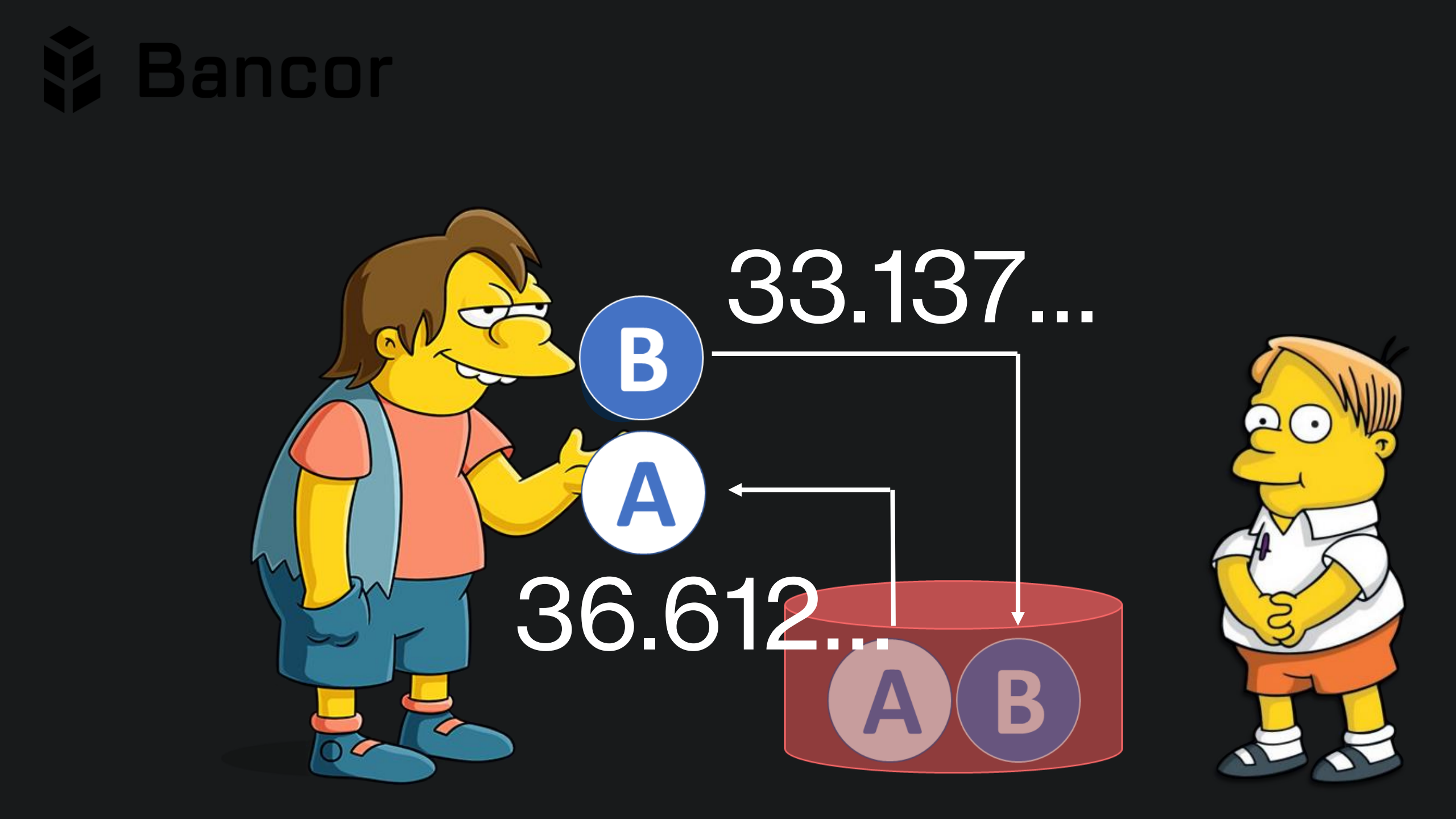
125 × 80 = 10,000

Which means Martin is now selling tokens at a heavily discounted price.

Bancor



Bancor



Bancor

A	B
$128	$100
× 88.388	× 113.137
$11,313.7	$11,313.7

Bancor

A	B
$128	$100
× 88.388	× 113.137

$22,627.4

Bancor

$22,627.4

- $24,000.0

- $1,372.6

Bancor

- $1,372.6

+ $33.2

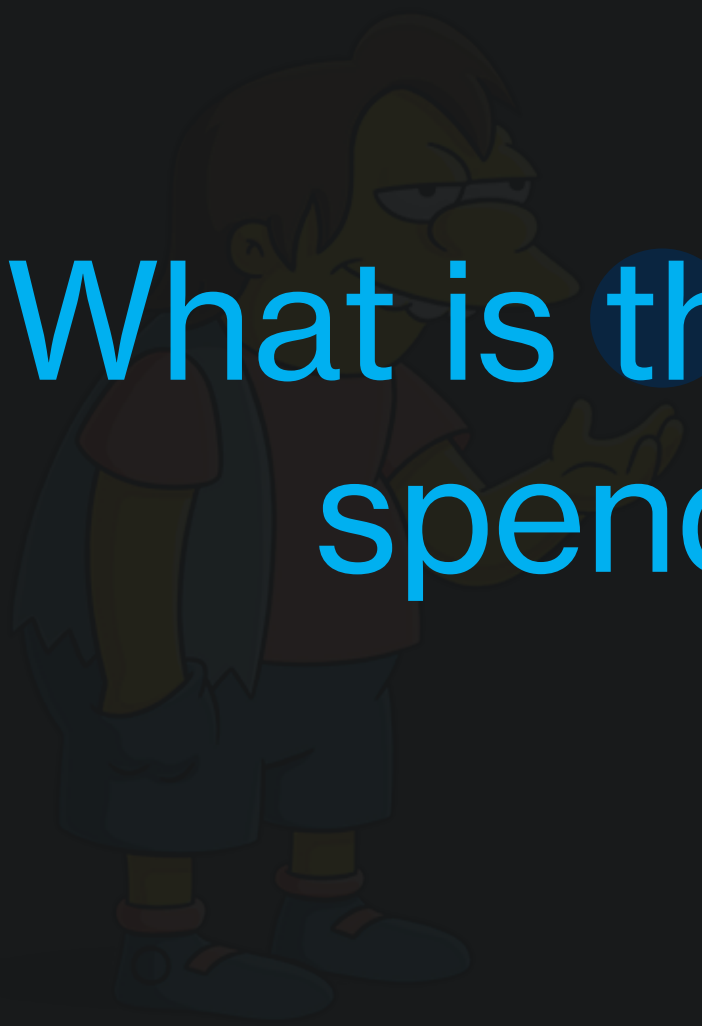
- $1,339.4

Bancor

- $1,339.4

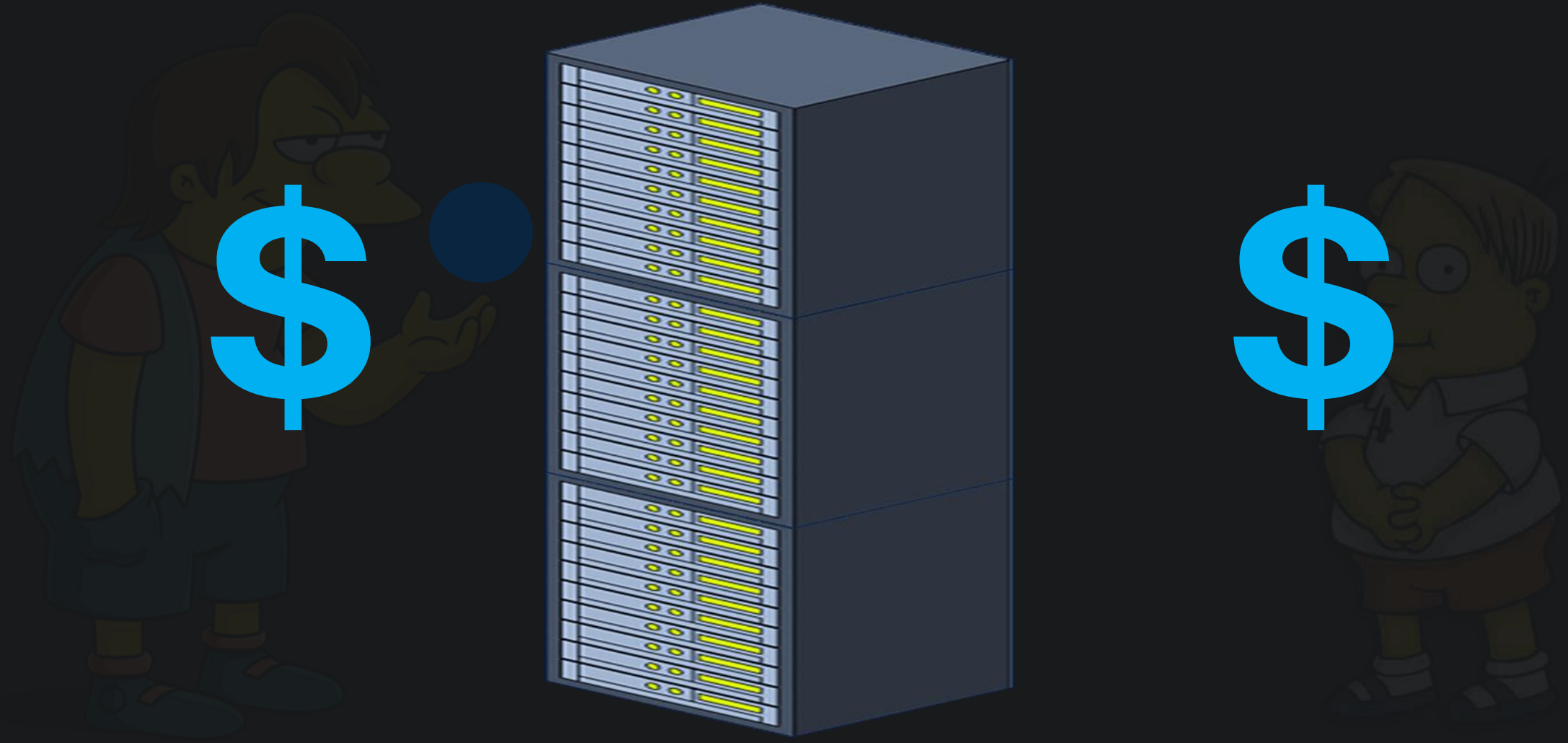
“Arbitrage cost”

Bancor



What is the protocol going to spend its money on?

Bancor



Bancor

The protocol uses its money to compensate liquidity providers.

Aug

2021


Bancor
V3

Bancor V2 features:

- A new automated market maker (AMM) liquidity pool integrated with **Chainlink** price oracles that mitigates the risk of impermanent loss for both stable and volatile tokens.
- Provide liquidity with 100% exposure to a single token
- A more efficient bonding curve that reduces slippage
- Support for lending protocols

These features address four key issues commonly cited as obstacles to the widespread adoption of AMMs:

1. ~~Exposure to "impermanent loss"~~
2. ~~Exposure to multiple assets~~
3. Capital inefficiency (i.e., high slippage)
4. Opportunity cost of providing liquidity

Mitigating Impermanent Loss

AMM technology has taken off in spite of one of DeFi's dirty secrets: Users who provide liquidity to AMMs ("liquidity providers") can see their "staked" tokens lose value compared to simply holding the tokens on their own.

This risk, known as "impermanent loss", has prevented many mainstream and

Bancor V2 features:

- A new automated market maker (AMM) liquidity pool integrated with **Chainlink** price oracles that mitigates the risk of impermanent loss for both stable and volatile tokens.
- Provide liquidity with 100% exposure to a single token
- A more efficient bonding curve that reduces slippage
- Support for lending protocols

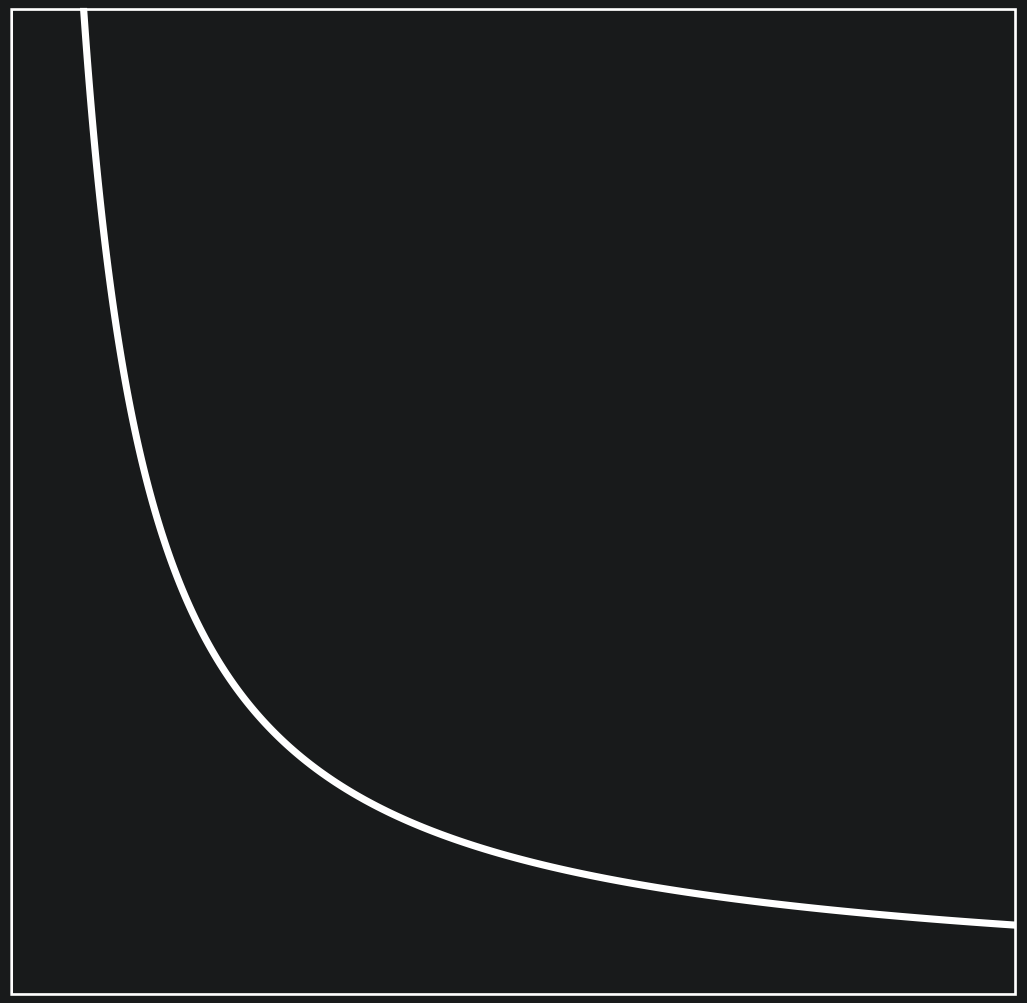
These features address four key issues commonly cited as obstacles to the widespread adoption of AMMs:

1. ~~Exposure to "impermanent loss"~~
2. ~~Exposure to multiple assets~~
3. Capital inefficiency (i.e., high slippage)
4. Opportunity cost of providing liquidity

Mitigating Impermanent Loss

AMM technology has taken off in spite of one of DeFi's dirty secrets: Users who provide liquidity to AMMs ("liquidity providers") can see their "staked" tokens lose value compared to simply holding the tokens on their own.

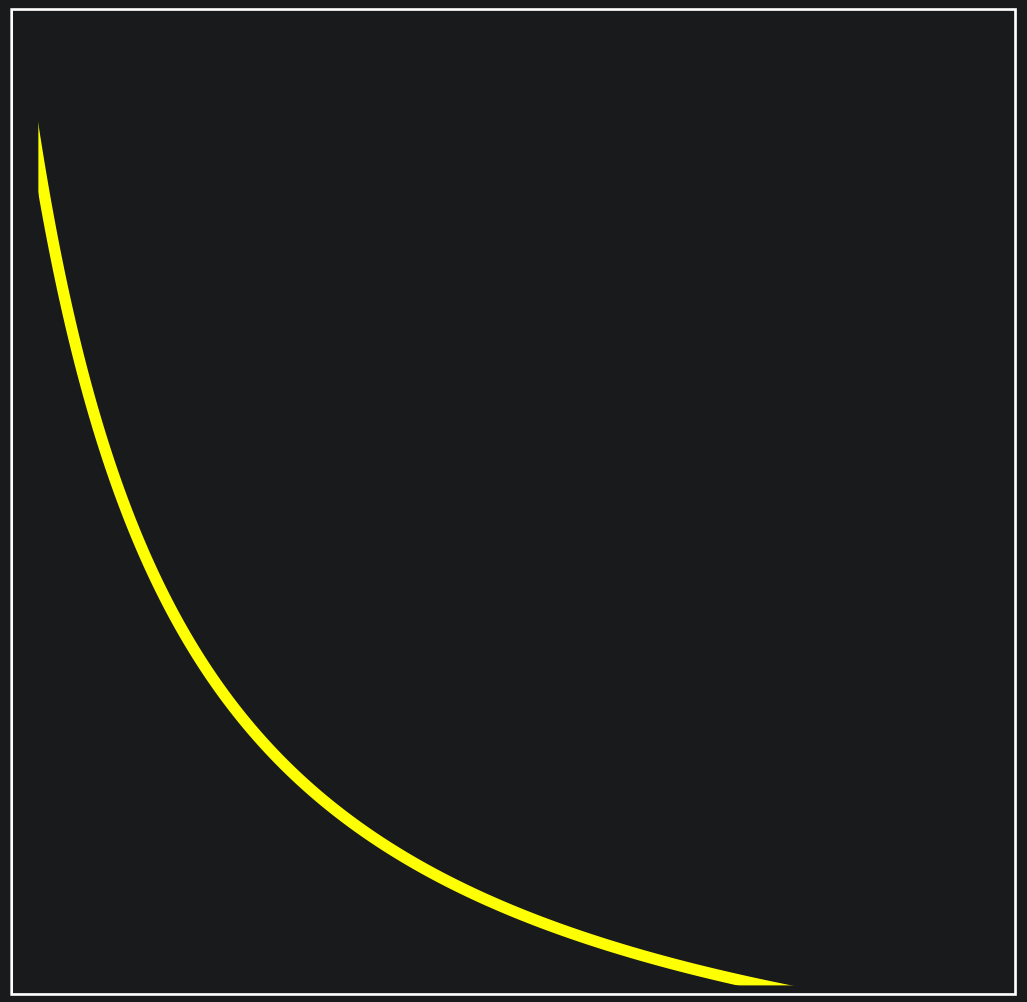
This risk, known as "impermanent loss", has prevented many mainstream and



amplification factor: C
pool constant: D

$$A = \frac{D(2B + 2CD - D - 2BC)}{2(2B + CD - D)} \qquad B = \frac{D(2A + 2CD - D - 2AC)}{2(2A + CD - D)}$$

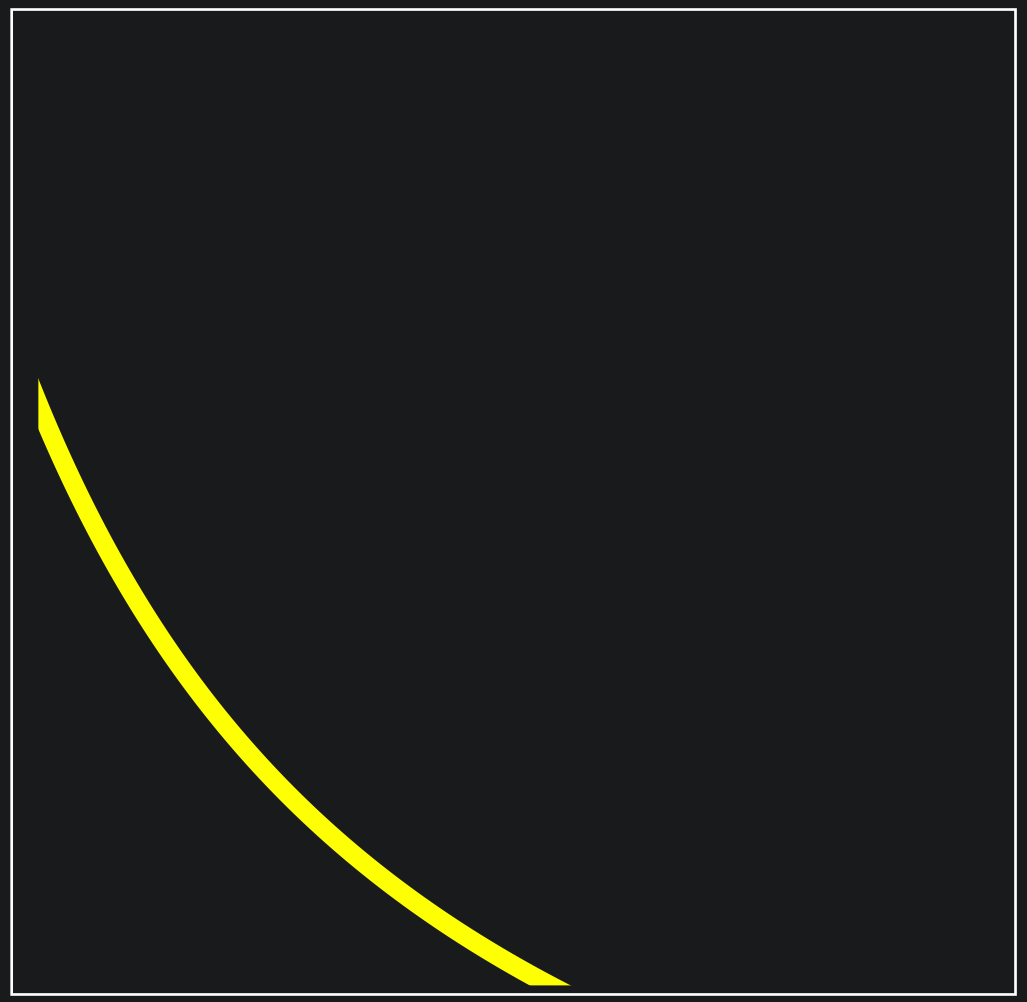
$$D = \frac{(A + B)(C - 1) + \sqrt{(A - B)^2(C + 1)^2 - 4C\left(A^2 + B^2 - AB(C - 2)\right)}}{2C - 1}$$



amplification factor: 2
pool constant: D

$$A = \frac{D(2B + 2CD - D - 2BC)}{2(2B + CD - D)} \qquad B = \frac{D(2A + 2CD - D - 2AC)}{2(2A + CD - D)}$$

$$D = \frac{(A + B)(C - 1) + \sqrt{(A - B)^2(C + 1)^2 - 4C\left(A^2 + B^2 - AB(C - 2)\right)}}{2C - 1}$$



amplification factor: 5
pool constant: D

$$A = \frac{D(2B + 2CD - D - 2BC)}{2(2B + CD - D)} \qquad B = \frac{D(2A + 2CD - D - 2AC)}{2(2A + CD - D)}$$

$$D = \frac{(A + B)(C - 1) + \sqrt{(A - B)^2(C + 1)^2 - 4C\left(A^2 + B^2 - AB(C - 2)\right)}}{2C - 1}$$

amplification factor:

the proportion of the slippage **paid by the liquidity provider** (instead of the trader)

Efficient for whom?

Token ID: 36341

Transaction hash:
0xce279686a6056052f0bf26336428ed70cd3047d1af03f2e2264cb9d32bf6aa9b

← Back to Pools Overview

AXS / ETH 0.3% In range

Owner

Liquidity

$202,952.61

AXS ↗	634.7	38%
ETH	36.61	62%

Unclaimed fees

$64,646.54

AXS	396.3
ETH	4.493

32% in 123 days?

Price range In range

AXS ETH

Min price		Max price
6.6586	⟷	628.71
AXS per ETH		AXS per ETH
Your position will be 100% ETH at this price.		Your position will be 100% AXS at this price.

Current price

27.1827

AXS per ETH

← Back to Pools Overview

AXS / ETH 0.3% In range

Owner

Liquidity

$202,952.61

AXS ↗	634.7	38%
ETH	36.61	62%

Unclaimed fees

$64,646.54

AXS	396.3
ETH	4.493

Price range In range

AXS ETH

Min price		Max price
6.6586	⟷	628.71
AXS per ETH		AXS per ETH
Your position will be 100% ETH at this price.		Your position will be 100% AXS at this price.

Current price
27.1827
AXS per ETH

Overview | Internal Txns | Logs (8) | State | Comments

Transaction Hash:	0xce279686a6056052f0bf26336428ed70cd3047d1af03f2e2264cb9d32bf6aa9b
Status:	Success
Block:	12572997 791884 Block Confirmations
Timestamp:	123 days 3 hrs ago (Jun-05-2021 06:58:34 AM +UTC)
From:	0x64a629a24f3da1cbb40d96ecb118ce050a577e3f
Interacted With (To):	Contract 0xc36442b4a4522e871399cd717abdd847ab11fe88 (Uniswap V3: Positions NFT) TRANSFER 0.058330166184308967 Ether From Uniswap V3: Positions ... To Wrapped Et...
Transaction Action:	Add 5,385.232719703778843972 AXS And 0.058330166184308967 Ether Liquidity To Uniswap V3 Mint of Uniswap V3: ... (UNI-V3...) To 0x64a629a24f3da1cbb40d96ecb118ce050a577e3f 1 of Token ID [36341]
Tokens Transferred: 2	From 0x64a629a24f3da... To Uniswap V3: A... For 5,385.232719703778843972 ($675,347.97) Axie Infinit... (AXS) From Uniswap V3: Positi... To Uniswap V3: A... For 0.058330166184308967 ($197.52) Wrapped Ethe... (WETH)
Tokens Transferred:	From Black Hole: 0x000... To 0x64a629a24f3da... For ERC-721 TokenID [36341] Uniswap V3: ... (UNI-V3...)
Value:	0.058330166184308967 Ether ($197.18)
Transaction Fee:	0.088110473 Ether ($297.85)
Gas Price:	0.000000017 Ether (17 Gwei)
Ether Price:	$2,629.76 / ETH
Click to see More	
Private Note:	To access the Private Note feature, you must be Logged In

0x64a629a24f3da1cbb40d96ecb118ce050a577e3f

Contract 0xc36442b4a4522e871399cd717abdd847ab11fe88 (Uniswap V3: Positions NFT)

TRANSFER 0.058330166184308967 Ether From Uniswap V3: Positions ... To Wrapped Et...

Add 5,385.232719703778843972 AXS And 0.058330166184308967 Ether Liquidity To Uniswap V3

Mint of Uniswap V3: ... (UNI-V3...) To 0x64a629a24f3da1cbb40d96ecb118ce050a577e3f

1 of Token ID [36341]

From 0x64a629a24f3da... **To** Uniswap V3: A... **For** 5,385.232719703778843972 ($675,347.97) Axie Infinit... (AXS)

From Uniswap V3: Positi... **To** Uniswap V3: A... **For** 0.058330166184308967 ($197.52) Wrapped Ethe... (WETH)

From Black Hole: 0x000... **To** 0x64a629a24f3da... **For** ERC-721 TokenID [36341] Uniswap V3: ... (UNI-V3...)

0.058330166184308967 Ether ($197.18)

0.088110473 Ether ($297.85)

0.000000017 Ether (17 Gwei)

$2,629.76 / ETH

$267,598

← Back to Pools Overview

AXS / ETH 0.3% In range

Liquidity

$202,952.61

AXS ↗	634.7	38%
ETH	36.61	62%

Unclaimed fees

$64,646.54

AXS	396.3
ETH	4.493

$675,544

Tokens Transferred: 2

From 0x64a629a24f3da... To Uniswap V3: A... For 5,385.23271703778843972 ($675,347.97) Axie Infinit... (AXS)

From Uniswap V3: Positi... To Uniswap V3: A... For 0.058330166184308967 ($197.52) Wrapped Ethe... (WETH)

-60% in 123 days

Institutions want assurances.

As do I.

Bancor V2 features:

- A new automated market maker (AMM) liquidity pool integrated with **Chainlink** price oracles that mitigates the risk of impermanent loss for both stable and volatile tokens.
- Provide liquidity with 100% exposure to a single token
- A more efficient bonding curve that reduces slippage
- Support for lending protocols

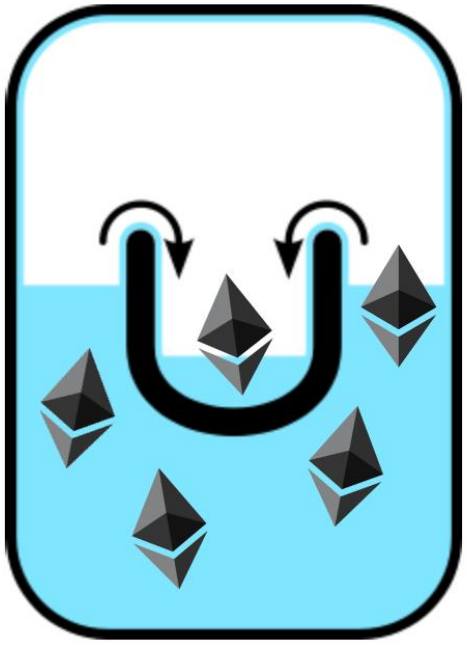
These features address four key issues commonly cited as obstacles to the widespread adoption of AMMs:

1. ~~Exposure to "impermanent loss"~~
2. ~~Exposure to multiple assets~~
3. Capital inefficiency (i.e., high slippage) ??
4. Opportunity cost of providing liquidity

Mitigating Impermanent Loss

AMM technology has taken off in spite of one of DeFi's dirty secrets: Users who provide liquidity to AMMs ("liquidity providers") can see their "staked" tokens lose value compared to simply holding the tokens on their own.

This risk, known as "impermanent loss", has prevented many mainstream and



Superfluid Collateral in Open Finance

What happens when collateral becomes liquid?

Dan Elitzer Follow

Feb 15, 2019 · 8 min read

But given what we know of human nature, do you really think we'll show restraint when the possibility exists to earn an extra point of yield or pay a slightly lower rate on a loan?

And yet...

There is something undeniably compelling about all of this. If assets can be allocated for multiple purposes simultaneously, we should see more liquidity, lower cost of borrowing, and more effective allocation of capital. Most of the builders I've met working on Open Finance protocols and applications are not looking for ways to wring a few extra bips (basis points, not Bitcoin Improvement Proposals... sorry) out of the system; they're trying to build the tools that will ultimately make every imaginable financial asset, service, and tool available via open source software on the phone of every person on the planet. Maybe we'll never get there, but based on the hyperspeed pace at which this industry is evolving, if this is all a big terrible idea, at least we're likely to figure that out while it's still only a few million nerds losing their shirts, rather than causing the entire global financial system to crash and burn.

mark@bancor.network

@MBRichardson87

@MB_Richardson