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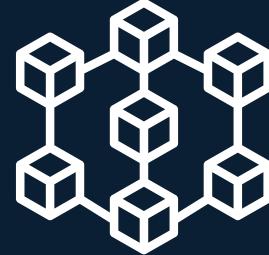
Project 1 Presentation

# Arbitrage Opportunities on Decentralized Exchanges

Group 6

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## Blockchain

A blockchain is essentially a digital ledger of transactions that is duplicated and distributed across the entire network of computer systems on the blockchain.



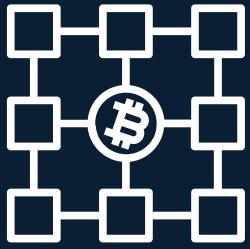
## Automated Market Maker

A type of decentralized exchange (DEX) protocol that relies on a mathematical formula (like a pricing algorithm) to price assets.



## Flash Swaps and Flash Loans

Flash Loan is a type of uncollateralized loan that is only valid within a single transaction. It can be implemented through a smart contract. The transaction will be reverted if the execution result is not as expected.



## Decentralized Finance

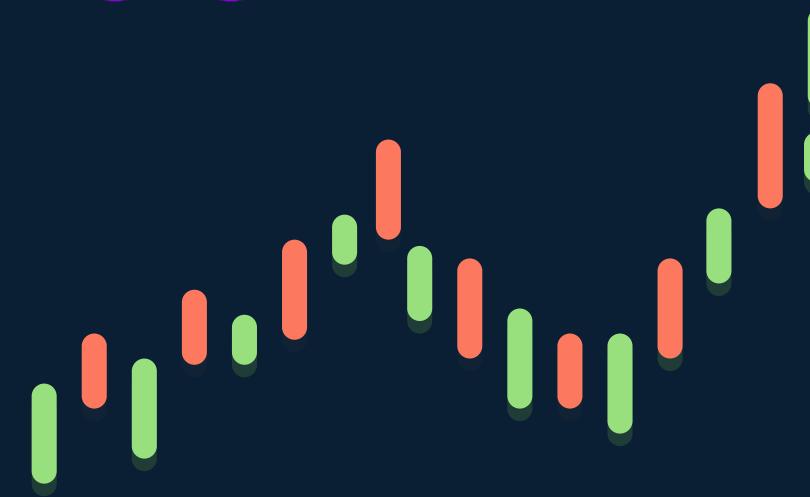
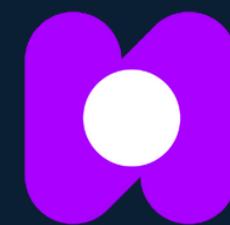
Decentralized Finance (or simply DeFi) refers to an ecosystem of peer-to-peer financial applications that are built on top of blockchain networks.

Terms To  
Know

# Investment Thesis

Arbitrage arises from small differences in market prices due to market inefficiencies. Given the decentralized nature of automated market makers, there is likely to be plentiful arbitrage opportunities. Furthermore, flashswaps provide a low-risk way of executing on arbitrage opportunities.

# Data (Nomics)

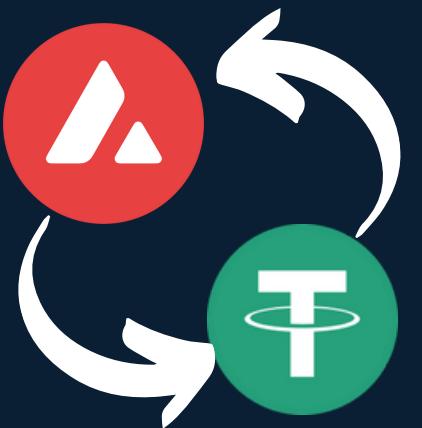


- **1 minute candle data**
- **raw trade data**
- **restful query api**

```
https://api.nomics.com/v1/exchange_candles?key={0}  
&interval=1m  
&exchange={1}  
&market={2}  
&start={3}  
&end={4}
```

Datetime	low	open	close	high	volume	num_trades	price_outlier	volume_outlier
2022-01-23 00:00:00+00:00	356.89656867	356.90339579	356.89656867	356.90339579	0.13	3	False	False

# Smart Chains & Markets



# Project Goals

<https://github.com/sububer/dex-arbitrage>



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- 01** Easily read in new or historical data from different exchanges and pairs

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  - 02** Easily perform arbitrage opportunity analysis on pairs

# system overview

**CLI**

**Data  
Harvesting**

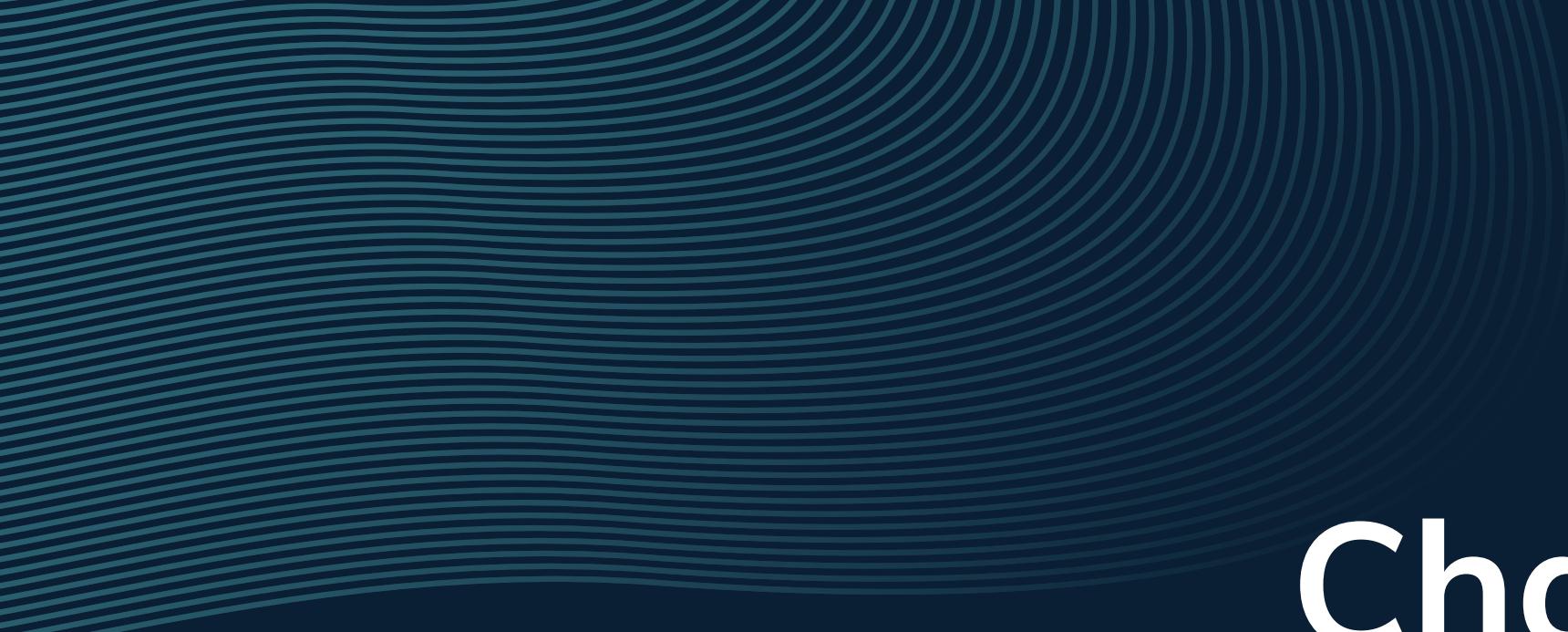
*nomics API,  
cached csv*

**Analysis**

*dataframes*

**GUI and Vis**

*hvplot gui*



# Challenges

- Integration in short amount of time
- 1 minute data as a compromise for raw trade data
  - simplify time alignment
  - simplify analysis





# Demo



# Next Steps

- Move to raw trade data instead of candle data.
- Investigate TheGraph & Chainlink instead of nomics for real-time price data
- More charts and interactions with GUI
- Smart Contract for automated trading ( let's do it for real : )