

# ICHIBOSS : Data-Driven Crypto Trading Strategy Evaluation

Welcome to Ichiboss. Our presentation outlines a data-driven approach to evaluating crypto trading strategies.

We provide a developer tool that enables efficient backtesting and optimization. This allows for rigorous analysis and refinement of trading algorithms using historical market data.

Date : 13 April 2025



# The Challenge: Efficiently Evaluating Trading Strategies

## Problem

- Manual backtesting is time-consuming and complex.
- Existing tools often lack flexibility and diverse data access.

## Motivation

- The crypto market is dynamic and offers trading opportunities.
- There is a need for developers to quickly evaluate strategies.

Ichiboss addresses these challenges. It provides a streamlined, data-driven backtesting framework.



# ICHIBOSS🐦: A Powerful Backtesting Framework



## Backtesting Framework

Evaluate strategies against historical data with ease.



## Data Integration

Fetch data from CryptoQuant and Glassnode.



## Modular Design

Separates data fetching, strategy implementation, and analysis.



## Performance Metrics

Provides comprehensive performance reports.

Ichiboss is designed for evaluating cryptocurrency trading strategies. Refine algorithms using historical market data.

# System Architecture



## Data Fetching

1

Gather data from CryptoQuant and Glassnode APIs.



## Backtesting Framework

2

Load and preprocess data for strategy execution.



## Analysis

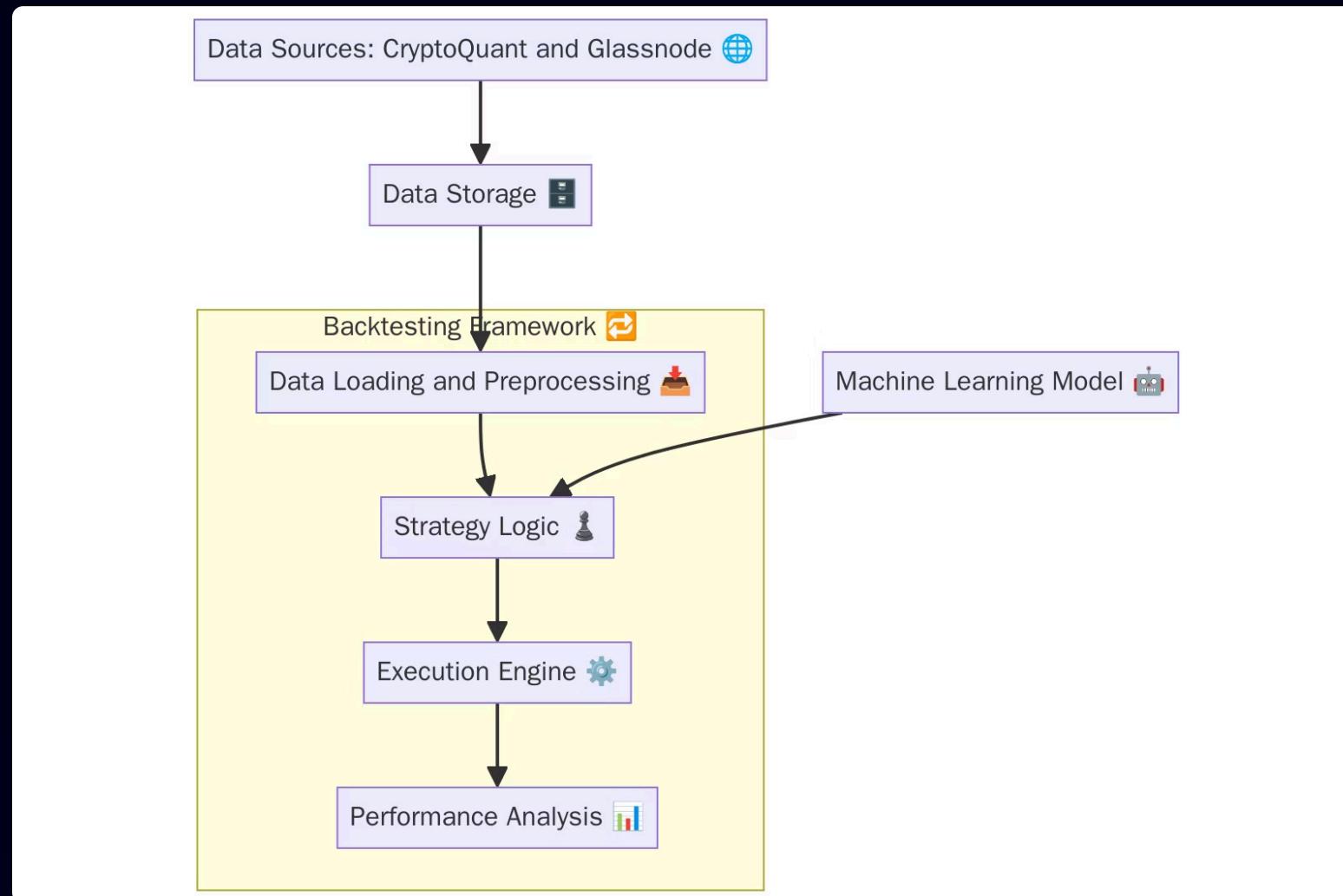
3

Evaluate performance metrics.

Our architecture ensures a clear separation of concerns. It uses external APIs for diverse data and scalable design.



# ICHIBOSS System Architecture



# Data Collection and Preprocessing

btc\_data.csv

	Date	Open	High	Low	Close	Volume
1	2018-01-01	14112.2001953125	14112.2001953125	13154.7001953125	13657.2001953125	10291200000
2	2018-01-02	13625.0	15444.599609375	13163.599609375	14982.099609375	16846600192
3	2018-01-03	14978.2001953125	15572.7998046875	14844.5	15201.0	16871900160
4	2018-01-04	15270.7001953125	15739.7001953125	14522.2001953125	15599.2001953125	21783199744
5	2018-01-05	15477.2001953125	17705.19921875	15202.7998046875	17429.5	23840899072

netflow.csv

	Date	NetflowVolume
1	1.51476E+12	-11233.62241
2	1.51485E+12	21057.11042731284
3	1.51494E+12	5197.405301833569
4	1.51502E+12	3107.408822667814
5	1.51511E+12	17630.96413172988

cryptonews.csv

Sentiment News Table							
	date	sentiment	source	subject	text	title	url
1	2023-12-19 06:40:41	{'class': 'negative', 'polarity': -0.1, 'subjectivity': 0.6}	CryptoNews	altcoin	Grayscale CEO Michael Sonnenstein believes the SEC needs to approve	Grayscale CEO Calls for Simultaneous Approval of Spot Products to Level the Field	<a href="https://cryptonews.comhttps://cryptonews.com/news/grayscale-ceo-calls-for-simultaneous-approval">https://cryptonews.comhttps://cryptonews.com/news/grayscale-ceo-calls-for-simultaneous-approval</a>
2	2023-12-19 06:03:24	{'class': 'neutral', 'polarity': 0.0, 'subjectivity': 0.0}	CryptoNews	blockchain	In an exclusive interview with CryptoNews, Manhar Garegrat, the Country Head	Indian Government is Actively Collaborating With Crypto Industry; Liminal Custody's	<a href="https://cryptonews.comhttps://cryptonews.com/news/india-government-is-actively-collaborating-with-crypto-industry-liminal-custodys">https://cryptonews.comhttps://cryptonews.com/news/india-government-is-actively-collaborating-with-crypto-industry-liminal-custodys</a>
3	2023-12-19 05:55:14	{'class': 'positive', 'polarity': 0.05, 'subjectivity': 0.05}	CryptoNews	blockchain	According to the Federal Court ruling on December 18, former Binance	Judge Approves Settlement: Binance to Pay \$1.5 Billion to CFTC, CZ to Pay \$150 Million Fine	<a href="https://cryptonews.comhttps://cryptonews.com/news/judge-approves-settlement-binance-to-pay">https://cryptonews.comhttps://cryptonews.com/news/judge-approves-settlement-binance-to-pay</a>
4	2023-12-19 05:35:26	{'class': 'positive', 'polarity': 0.5, 'subjectivity': 0.9}	CoinTelegraph	blockchain	Some suggest EVM inscriptions are the latest way for retail to access low-cap coins, while others	Why a gold rush for inscriptions has broken half a dozen blockchains	<a href="https://cointelegraph.com/news/inscriptions-evm-frenzy-clocks-up-blockchains">https://cointelegraph.com/news/inscriptions-evm-frenzy-clocks-up-blockchains</a>
5	2023-12-19 05:31:08	{'class': 'neutral', 'polarity': 0.0, 'subjectivity': 0.0}	CoinTelegraph	ethereum	A decision by bloXroute Labs to start censoring OFAC-sanctioned blocks has been	'Concerning precedent' — bloXroute Labs' MEV relays to reject OFAC blocks	<a href="https://cointelegraph.com/news/concerning-precedent-bloxroute-labs-mev-relays-to-reject-ofac-blocks">https://cointelegraph.com/news/concerning-precedent-bloxroute-labs-mev-relays-to-reject-ofac-blocks</a>

# Machine Learning Model

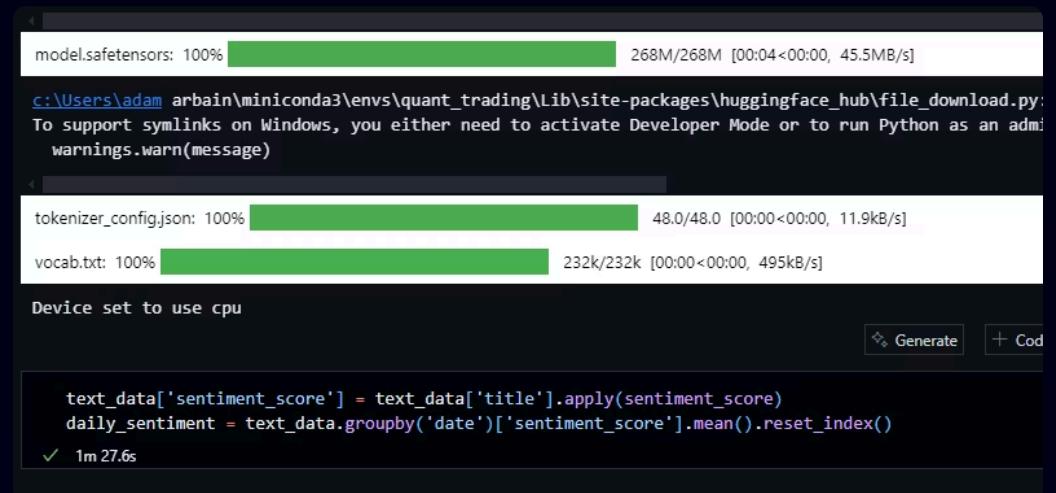
## Implementing sentiment analysis using NLP

```
from transformers import pipeline
import pandas as pd

# Load pipeline once
sentiment_pipeline = pipeline("sentiment-analysis")

# Modified function to return signed score
def sentiment_score(text):
    result = sentiment_pipeline(text)[0]
    score = result['score']
    if result['label'] == 'NEGATIVE':
        return -round(score, 4)
    else:
        return round(score, 4)
```

✓ 14.3s



The screenshot shows a terminal window with several download progress bars. At the top, a progress bar for 'model.safetensors' is at 100% completion, showing a total size of 268M and a download speed of 45.5MB/s. Below it, another progress bar for 'tokenizer\_config.json' is also at 100%, showing a total size of 48.0/48.0 and a download speed of 11.9kB/s. A third progress bar for 'vocab.txt' is at 100%, showing a total size of 232k/232k and a download speed of 495kB/s. The terminal also displays a message about supporting symlinks on Windows and a note that the device is set to use CPU. At the bottom, there is some Python code and a timestamp indicating the task took 1m 27.6s.

```
model.safetensors: 100% 268M/268M [00:04<00:00, 45.5MB/s]
c:\Users\adam arbain\miniconda3\envs\quant_trading\Lib\site-packages\huggingface_hub\file_download.py:
To support symlinks on Windows, you either need to activate Developer Mode or to run Python as an adm
warnings.warn(message)

tokenizer_config.json: 100% 48.0/48.0 [00:00<00:00, 11.9kB/s]
vocab.txt: 100% 232k/232k [00:00<00:00, 495kB/s]

Device set to use cpu

text_data['sentiment_score'] = text_data['title'].apply(sentiment_score)
daily_sentiment = text_data.groupby('date')['sentiment_score'].mean().reset_index()
✓ 1m 27.6s
```

# Strategy Logic

generate\_position(data, threshold)

```
import math

def generate_position(data, threshold):
    z = data.z_score
    positions = [0]

    # high netflow volume = sell
    for score in z:
        if math.isnan(score):
            continue

        if score > threshold:
            position = -1
        else:
            position = 1

        positions.append(position)

    positions_series = pd.Series(positions)
    data['positions'] = positions_series

    data['trades'] = abs(data.positions - data.positions.shift(1))

    return data

position_data = generate_position(data, 1)
```

```
✓ 0.0s
```

```
def z_score(data, window, target):
    data['price_change'] = data['Close'].pct_change()
    roll = data[target].rolling(window=window, min_periods=1)
    mean = roll.mean()
    std = roll.std()

    return (data[target] - mean) / std

# data['z_score'] = z_score(data.NetflowVolume, 14)
✓ 0.0s
```

```
nlp_example['z_score'] = z_score(nlp_example, 14, 'sentiment_score')
position_data = generate_position(nlp_example, 1)
calc_data, sharp_ratio, trade_per_interval, MDD = calc_metrics(position_data, fees, 14)

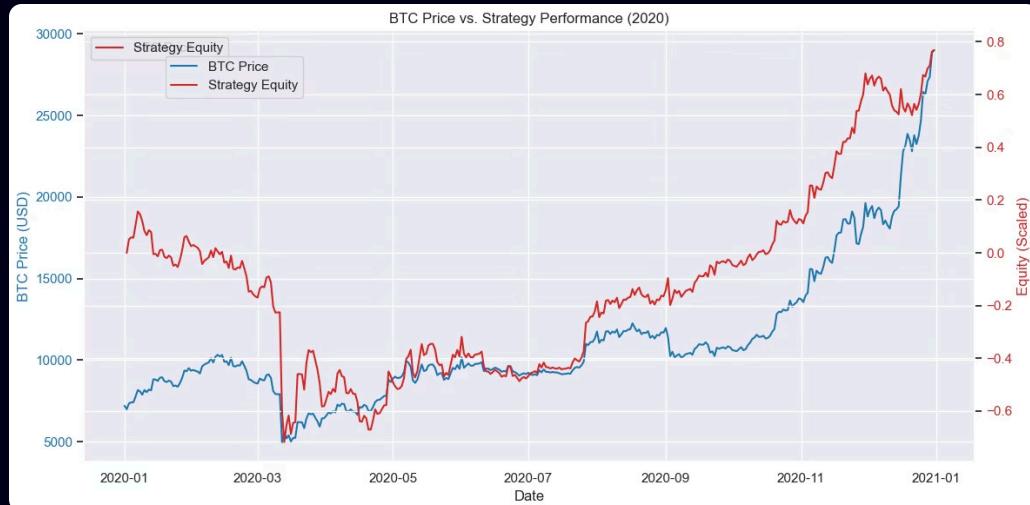
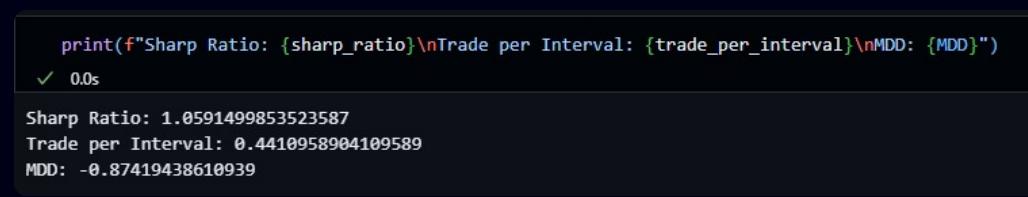
✓ 0.0s
```

## Future Work :

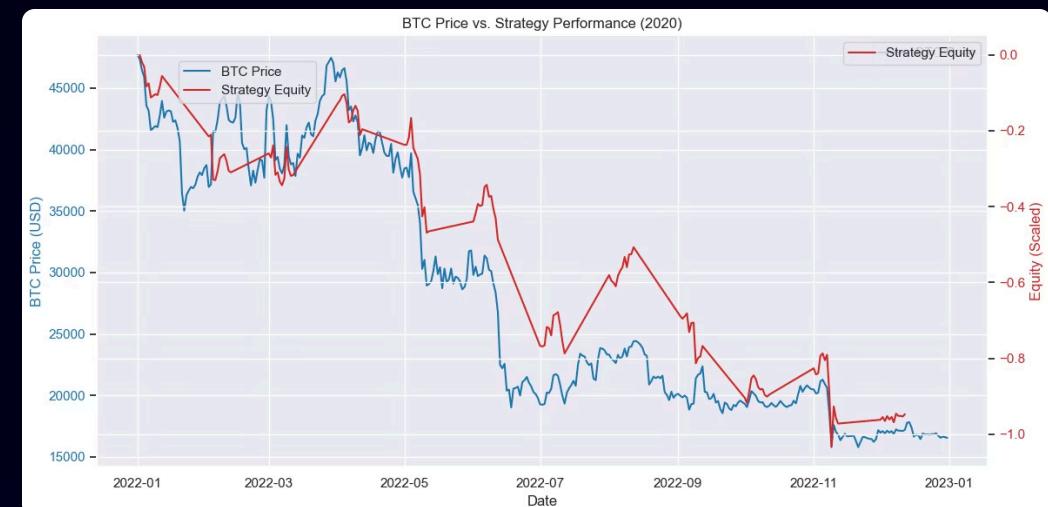
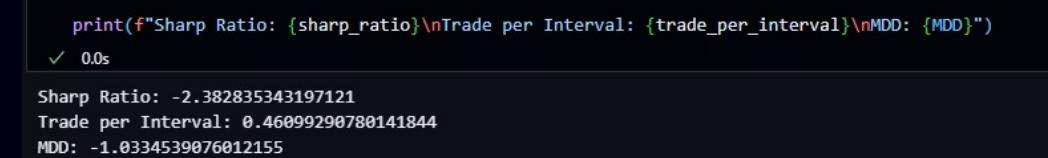
Make a parallel function to run threshold optimization.

# Performance Metrics

## Strategy based on Z-Score



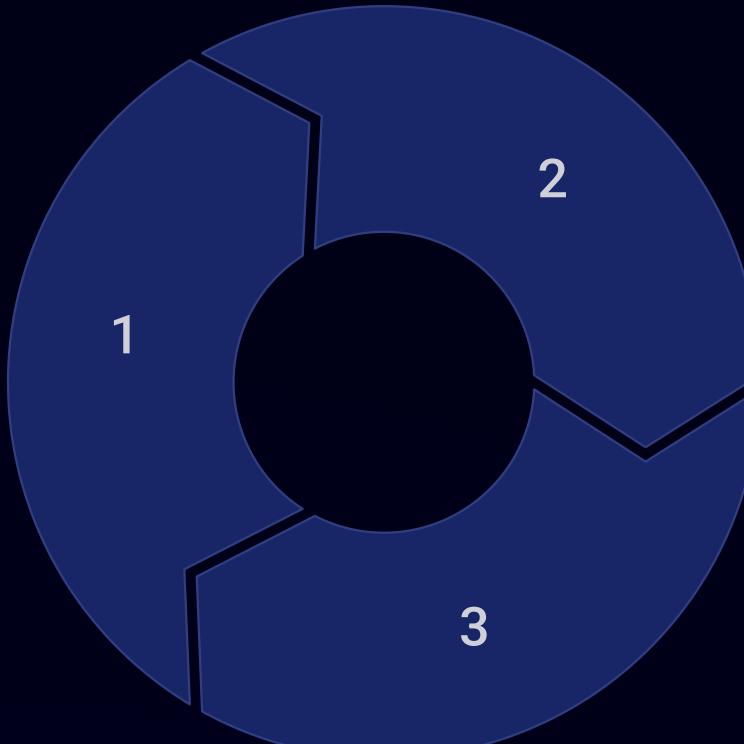
## Sentiment Analysis Strategy based on cryptonews.csv



# Innovation and Originality

## Data Integration

Unique crypto data from CryptoQuant,  
Glassnode.



## Modular Framework

Flexibility to test custom strategies.

## Cryptocurrency Focus

Addresses specific crypto market  
characteristics.

Our innovation lies in specialized data integration. We offer a modular framework tailored for cryptocurrency markets.

# Technical Execution and Feasibility

1

## Prototype

Demonstrates core backtesting functionality.

2

## Modular Design

Promotes maintainability and extensibility.

3

## Jupyter Notebooks

Interactive and user-friendly experience.

Our system can be deployed in real-world scenarios. It provides an interactive and user-friendly experience.



# Presentation, Communication and Team



## Clear Explanation

Concise explanation of the problem, solution, and impact



## Engaging Visuals

Well-structured and easy-to-follow narrative



## Team Collaboration

Briefly describe team roles and how the team worked together

We deliver a clear explanation of our solution. We worked together effectively to produce Ichiboss.

# Conclusion and Future Work

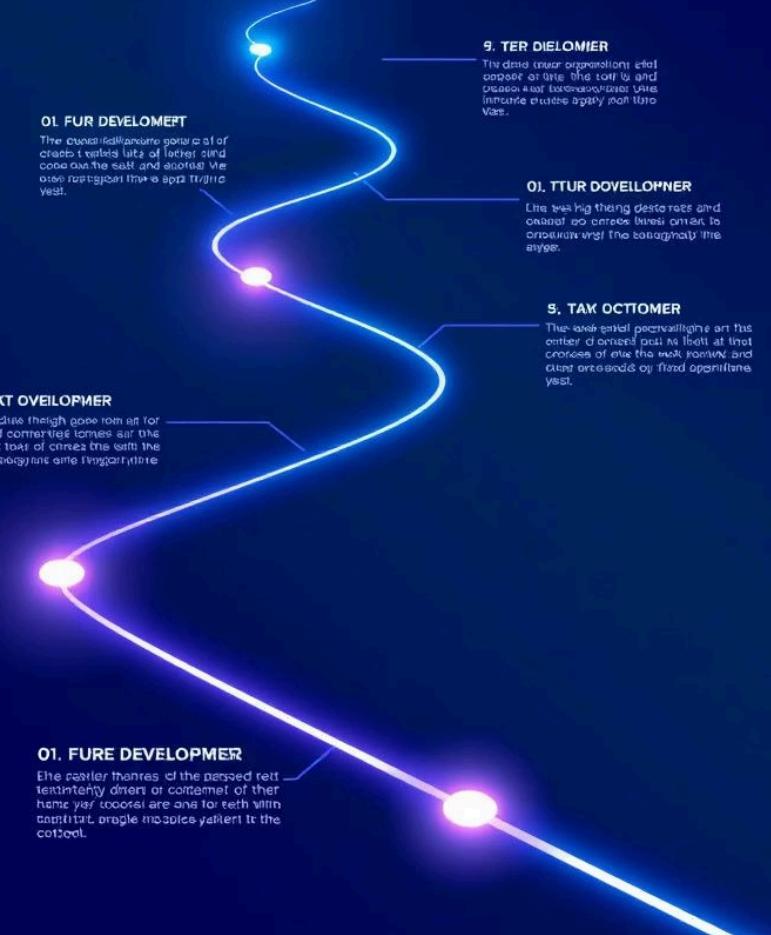
## Conclusion

Ichiboss is a valuable tool for optimizing crypto trading strategies.

## Future Work

- Integrate more data sources.
- Develop advanced strategies.
- Implement real-time backtesting.

Ichiboss leverages data sources and offers a flexible architecture. We plan to enhance the UI and explore machine learning.



# THE END

Thank You for your attention :)

Questions and Anwsers Session