



AI Empowered Finance – Next Generation Trading System

Using Artificial Intelligence for Quantitative Trading

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Home page of the Trading Application

The screenshot shows the home page of the trading application. On the left is a dark sidebar with navigation options: Home, Cryptocurrencies, Portfolio, Blotter, Strategy, User Profile, and Logout. The main content area is titled 'Global Crypto Stats' and displays the following data:

Total Cryptocurrencies	23,501	Total Exchanges	179
Total Market Cap:	\$1.1T	Total 24h Volume	\$51.2B
Total Cryptocurrencies	23,501	Total Markets	37.6K

Below the stats is a section titled 'Top 100 Cryptos In The World' with a 'Show more' link and a search bar. The top four cryptos are listed in a grid:

Rank	Coin Name	Price	Market Cap	Daily Change
1.	Bitcoin	23.4K	450.6B	-1.23%
2.	Ethereum	1.6K	200.9B	-0.41%
3.	Tether USD	1	65.4B	0.12%
4.	USDC	1	43.8B	0.15%

Project Objectives:

The objective of this project is to design and develop a cryptocurrency trading application that allows users to input their own trading strategies. The application will utilize these strategies in conjunction with the smart routing algorithm, reinforcement learning and order resolver to execute the trades suggested by the strategies.

In addition to the feature of inputting strategies and executing trades with a smart routing algorithm and order resolver, the application also includes basic functionality such as user registration and login, viewing user profile, viewing cryptocurrencies details and viewing strategies.

Strategy page of the Trading Application

The screenshot shows the 'Strategies' page of the trading application. On the left is a dark sidebar with navigation options: Home, Cryptocurrencies, Portfolio, Blotter, Strategy, User Profile, and Logout. The main content area is titled 'Strategies' and displays a list of strategies: 1-New Strategy, 2-New Strategy, Strategy 1, Strategy 2, Strategy 3, Strategy 4, and Strategy 5. Strategy 1 is selected. Below the list is a code editor for creating a new strategy. The code is as follows:

```
Script:
import ntugant as ntu
#
# Type your strategy here
# Example of API calls to get a coin information
# ntu.get_coin(symbol: str = 'BTC')
# ntu.get_coin(name: str = 'Bitcoin')
#
# Examples of API calls to create an order
# ntu.buy_coin(symbol: str = 'BTC', amount: str = '0.01', max_price: str = 'INF')
# ntu.buy_coin(name: str = 'Bitcoin', amount: str = '0.01', max_price: str = 'INF')
# ntu.sell_coin(symbol: str = 'BTC', amount: str = '0.01', max_price: str = 'INF')
# ntu.sell_coin(name: str = 'Bitcoin', amount: str = '0.01', max_price: str = 'INF')
print('Hello Word')
pass
```

At the bottom of the code editor are two buttons: 'Execute/Test Strategy' and 'Save/Update'.

Approaches:

Reinforcement learning can be used for portfolio management, enabling investors to hold multiple financial assets and periodically reallocate them for maximum long-term profits. Through reinforcement learning, the optimal percentage weightings for each stock in a portfolio can be determined, allowing traders to reallocate their portfolio at advantageous prices and reduce trading costs.

When adjusting portfolios, investors must execute orders to buy or sell shares, which can be done using smart order routing, an automated process that seeks to find the best trading opportunities across different venues.