

# Invest4some

## Financial

# Dashboard

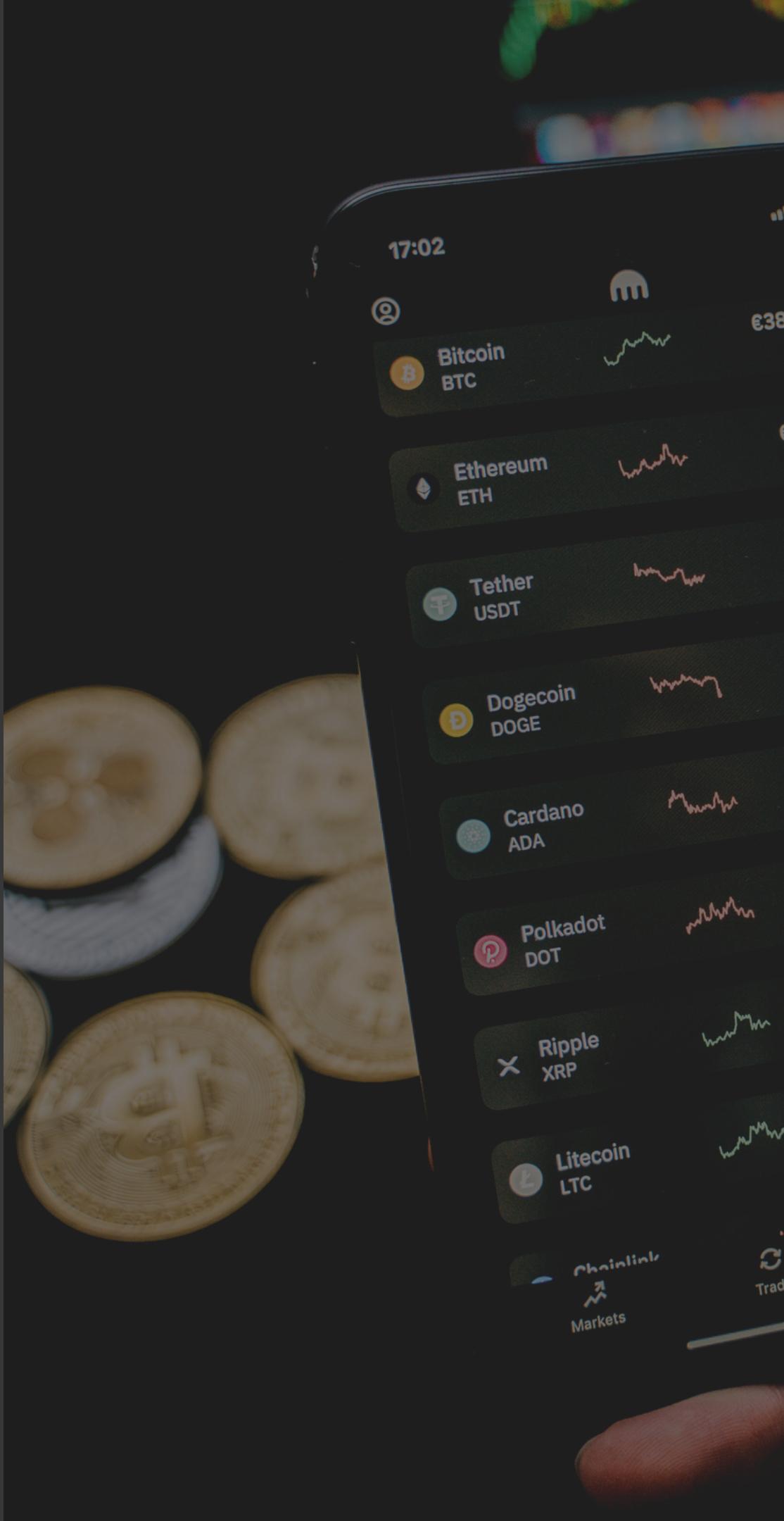
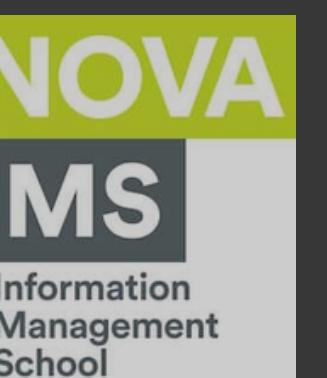
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# AGENDA

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01 Business Understanding

02 Data Understanding & Data Preparation

03 Modeling

04 Deployment

05 Limitations

# Business Understanding

## Business Goal

Invest4some needs a dashboard with financial information to help their financial analysts making better investment decisions

## Data Mining Goal

Develop a dashboard that can include financial data in real-time and display the most adequate visualizations to provide relevant information to answer the needs of the company

# Data Understanding & Data Preparation



## Data Understanding

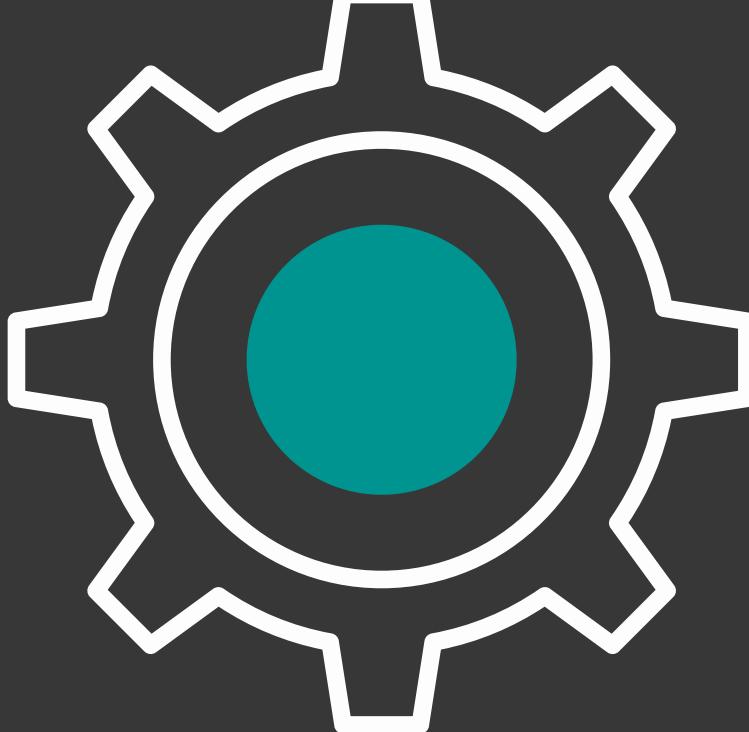
- Data was imported from Yahoo Finance
- We extracted the “Low”, “High”, “Close”, “Adj Close”, “Open” prices and the “Volume” since January 1st, 2021



## Data Preparation

- Deleting missing entries, creating new important features
- Adding external data for predictions (EURUSD)
- MinMaxScaler to scale the data
- The highly correlated variables were deleted

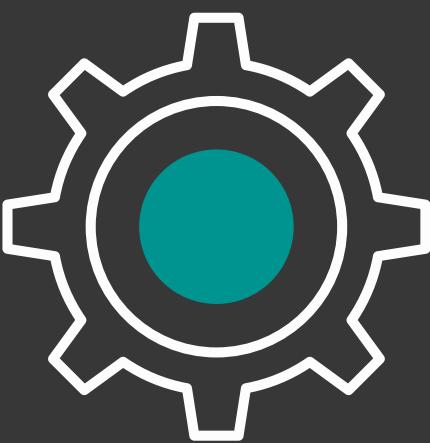
# Modeling



## Algorithm : **XGBoostRegressor**

Calculate the prediction for the next closing price for each cryptocurrency

We used a sliding window but, in this case, each user decide which is the interval he/she wants to consider



# Deployment

The dashboard was developed and deployed using:

Streamlit

Streamlit Share

MAIN  
STRUCTURE

Menu

Cryptocurrencies

Predictions

Currencies

Other Assets

Exploratory Space

# Final Dashboard

<https://share.streamlit.io/andremforte/businesscase5/main/app.py>



# Deployment

Menu

The screenshot shows the 'Invest4Some Financial Dashboard' menu page. At the top left is a sidebar titled 'Select which asset do you want to analyse' with options: Cryptocurrencies, Predictions, Currencies, Other Assets, Exploratory Space, and Menu (which is selected). The main content area has a heading 'Invest4Some Financial Dashboard' and a welcome message: 'Welcome! In this dashboard, it is possible to analyse different financial assets in order to have more information to make better investment decisions. In the sidebar, it is possible to select which asset do you want to analyse, having independent analyses for each of them. Lastly, there is a section called 'Exploratory Space' where you can perform your personalized analysis, including different indicators in the same plot and extracting the information that you need.' Below this are three sections: 'Cryptocurrencies', 'Currencies', and 'Other Assets', each with a brief description.

This is the default page of the dashboard!

Select which asset do you want to analyse

- Cryptocurrencies
- Predictions
- Currencies
- Other Assets
- Exploratory Space
- Menu

## Invest4Some Financial Dashboard

Welcome! In this dashboard, it is possible to analyse different financial assets in order to have more information to make better investment decisions. In the sidebar, it is possible to select which asset do you want to analyse, having independent analyses for each of them. Lastly, there is a section called 'Exploratory Space' where you can perform your personalized analysis, including different indicators in the same plot and extracting the information that you need.

### Cryptocurrencies

In this chapter, there is information about Cryptocurrencies. You have access to the current price and the distribution of the prices from January 1st, 2021. Moreover, you can find information about financial indicators. Finally, using Machine Learning algorithms, it is possible to see the prediction for the next closing price for each cryptocurrency.

### Currencies

Here you can find information about Currencies. It is possible to analyse their prices' distribution and some important financial indicators.

### Other Assets

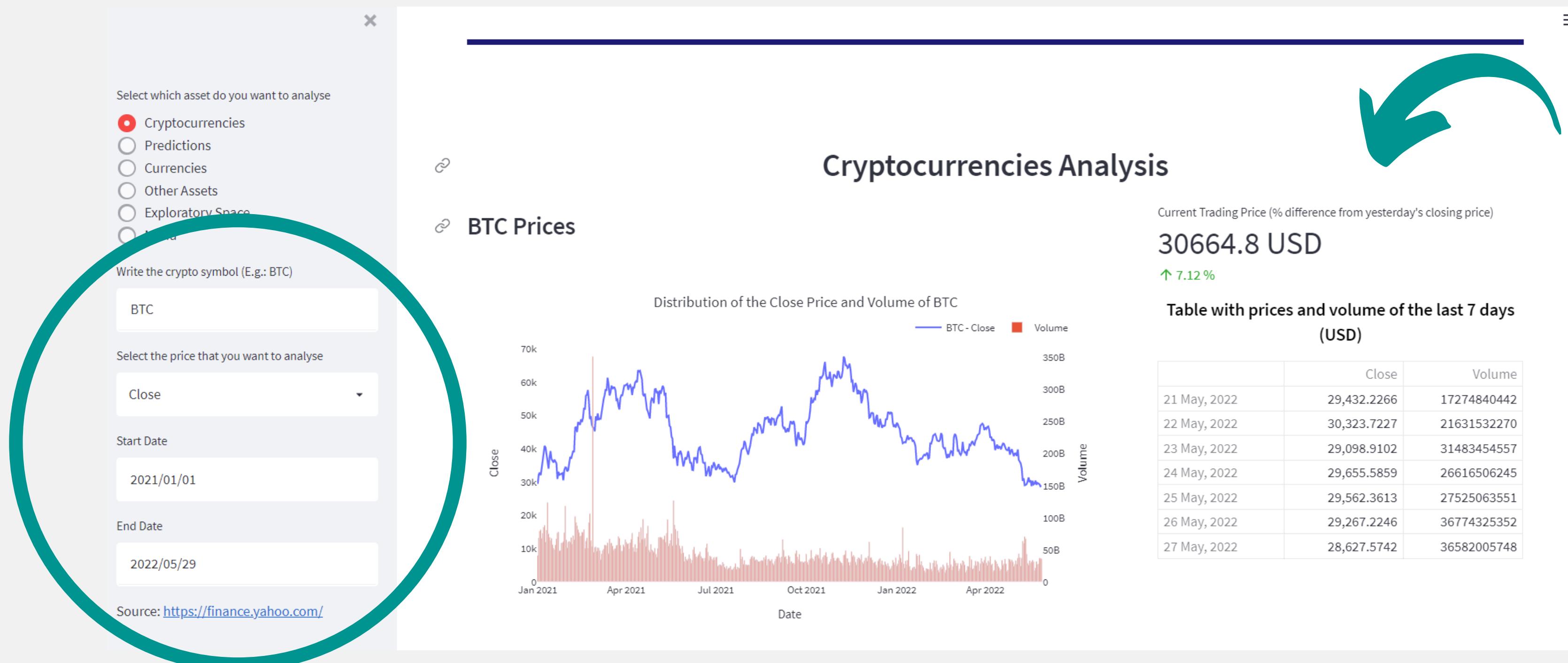
In "Other Assets", it is possible to analyse stocks prices. You can analyse financial indicators and extract interesting patterns from them.

The **side bar** contains filter options and instructions to help the users using the dashboard.

**Figure 1.** Menu page

# Deployment

## Cryptocurrencies



**Figure 2 .** Cryptocurrencies Analysis

# Deployment

Cryptocurrencies

MACD

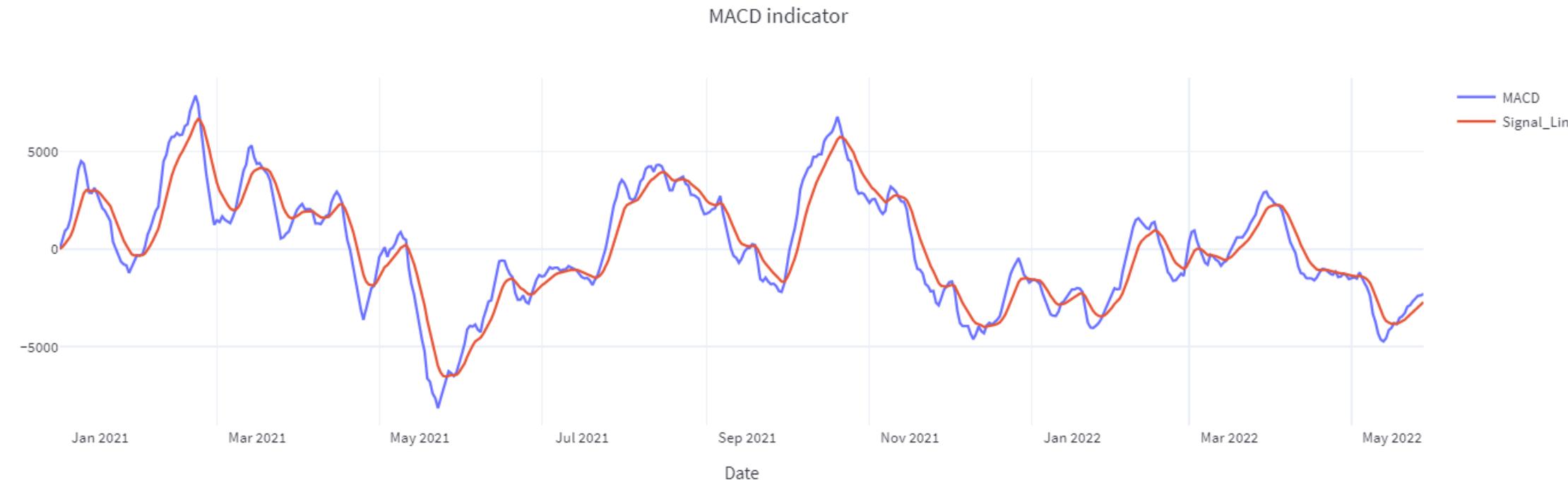
## Financial Indicators

Select the indicator

Moving Average Convergence Divergence

### Important Information:

Traders may buy the security when the MACD crosses above its signal line and sell—or short—the security when the MACD crosses below the signal line.



**Figure 3.** Moving Average Convergence Divergence

# Deployment

## Cryptocurrencies

### Moving Average



**Figure 4.** Moving Average

# Deployment

## Cryptocurrencies

### Bollinger Bands

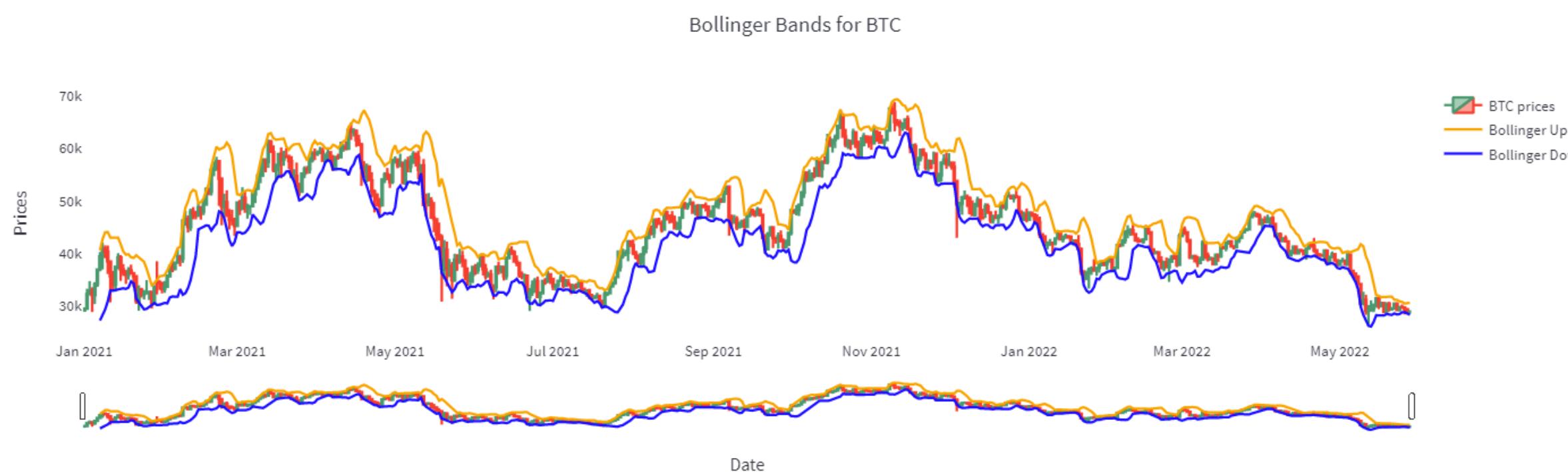
#### Financial Indicators

Select the length of the window

5 7

Select the indicator

Bollinger Bands



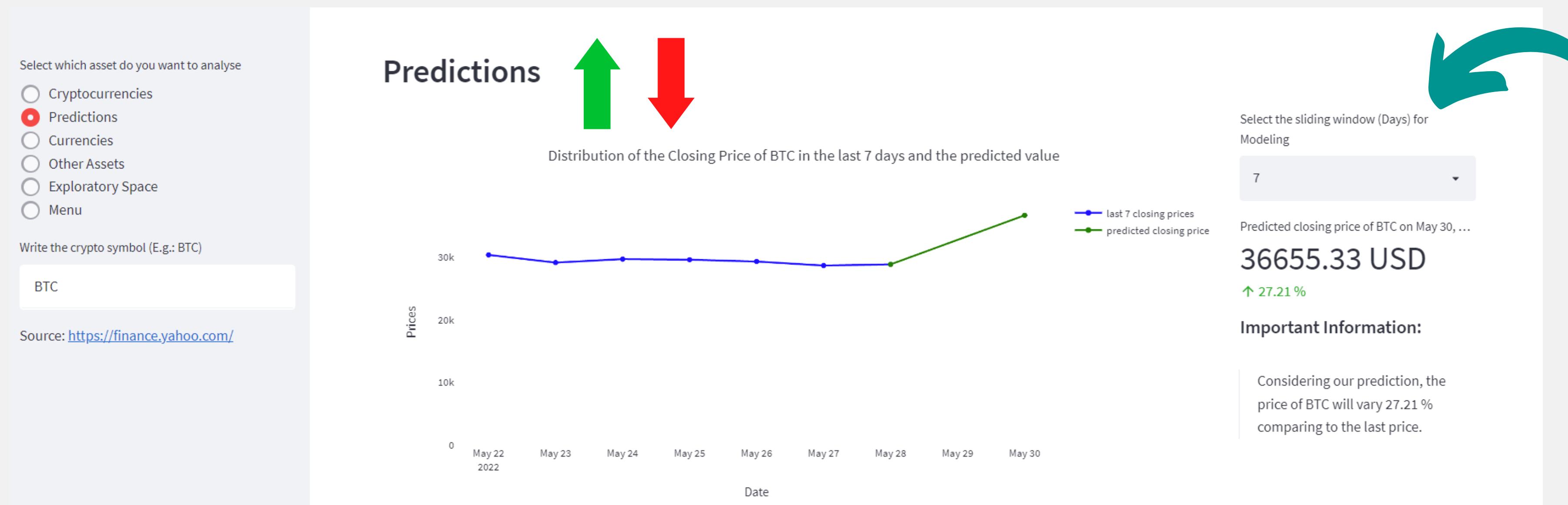
#### Important Information:

Bollinger Bands can be used to determine how strongly an asset is rising and when it is potentially reversing or losing strength. An uptrend that reaches the upper band indicates that the stock is pushing higher and traders can exploit the opportunity to make a buy decision. In a strong downtrend, the price will run along the lower band, and this shows that selling activity remains strong.

**Figure 5.** Bollinger Bands

# Deployment

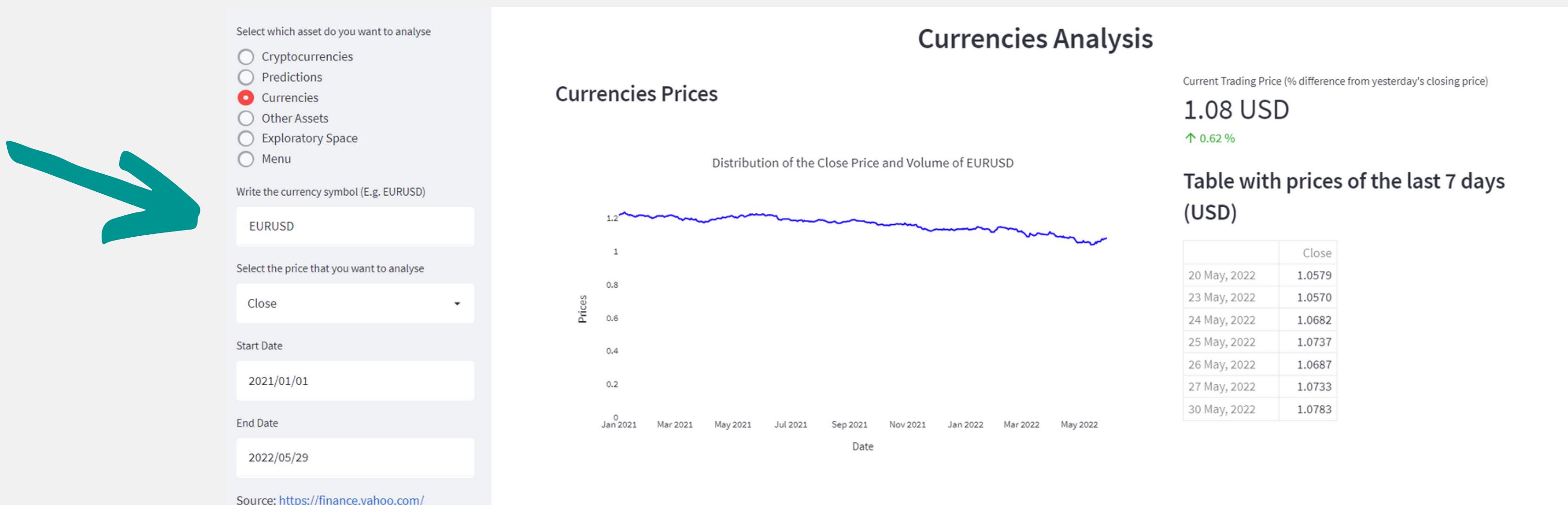
## Predictions



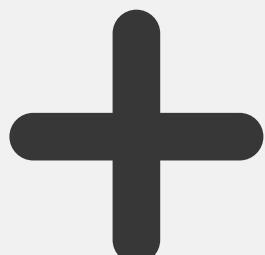
**Figure 6.** Predictions

# Deployment

## Currencies



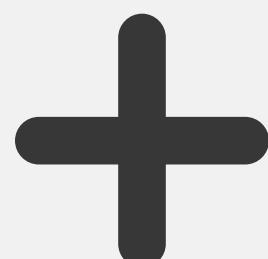
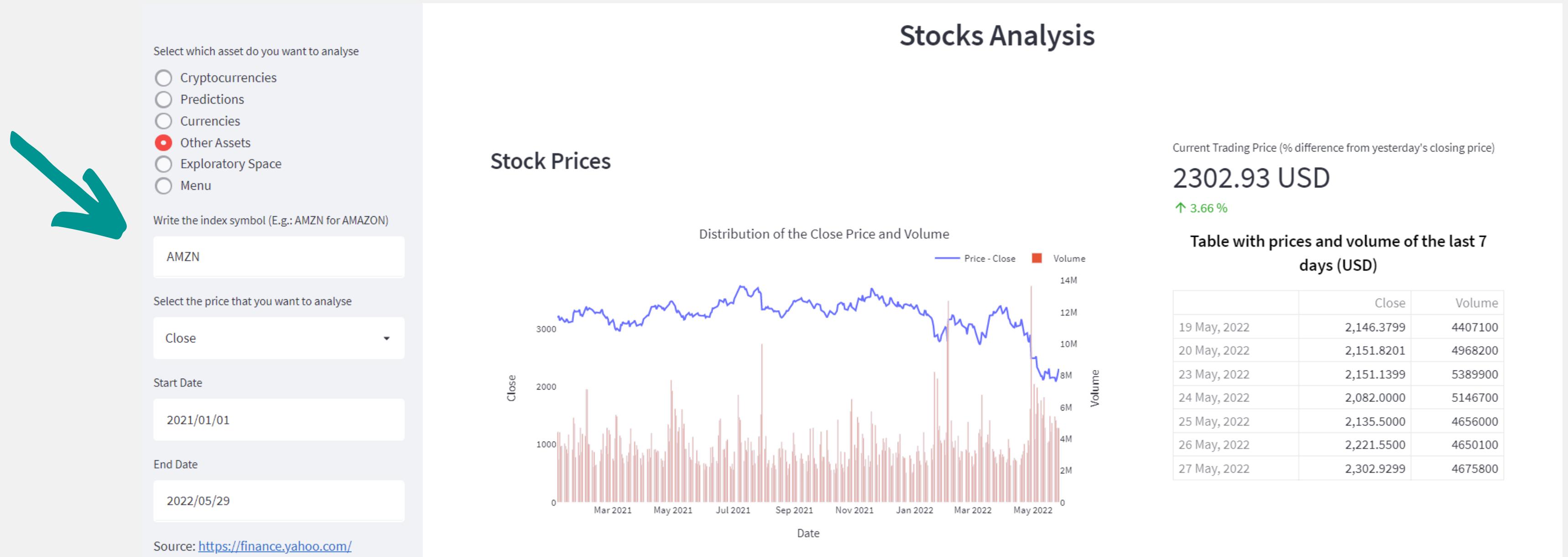
**Figure 7.** Currencies Analysis



Financial Indicators

# Deployment

## Other Assets



Financial Indicators

**Figure 8.** Other Assets page

# Deployment

## Exploratory Space

It's an open space where users can perform their personalized analyses (E.g., comparisons of prices between different assets)

# Deployment

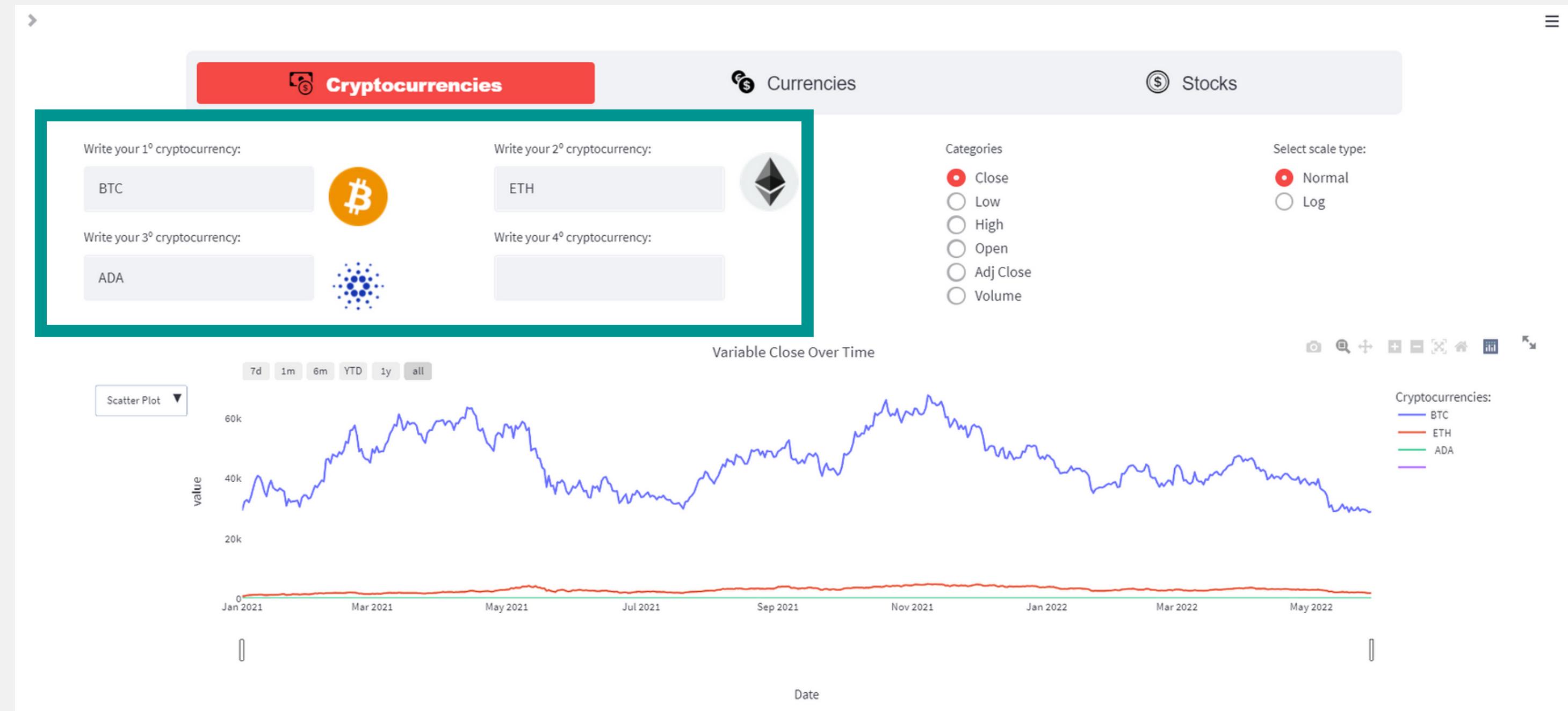
## Exploratory Space

The screenshot shows a web-based financial dashboard titled "Invest4Some Financial Dashboard". On the left, a sidebar lists categories: Cryptocurrencies, Predictions, Currencies, Other Assets, Exploratory Space (which is selected), and Menu. Below this is a source link: <https://finance.yahoo.com/>. The main content area has a heading "Welcome to Exploratory Space! In this page, it is possible to make extra analyses, comparing cryptocurrencies, currencies, and stocks. You may also select which chart do you want to analyse and which category of prices. Improve your analysis and extract useful information to make better decisions with this space!" A large teal arrow points from the top right towards the "Exploratory Space" section. Below the welcome message, there are four tabs: "Cryptocurrencies" (selected), "Currencies", "Stocks", and "Currencies". Under the "Cryptocurrencies" tab, there are input fields for "Write your 1º cryptocurrency:" (BTC) and "Write your 2º cryptocurrency:" (ETH). There are also fields for "Write your 3º cryptocurrency:" and "Write your 4º cryptocurrency:". To the right, there are sections for "Categories" (Close, Low, High, Open, Adj Close, Volume) and "Select scale type" (Normal, Log). At the bottom, there are time range buttons: 7d, 1m, 6m, YTD, 1y, all, and a dropdown menu. The overall theme is teal and white.

**Figure 9.** Exploratory Space

# Deployment

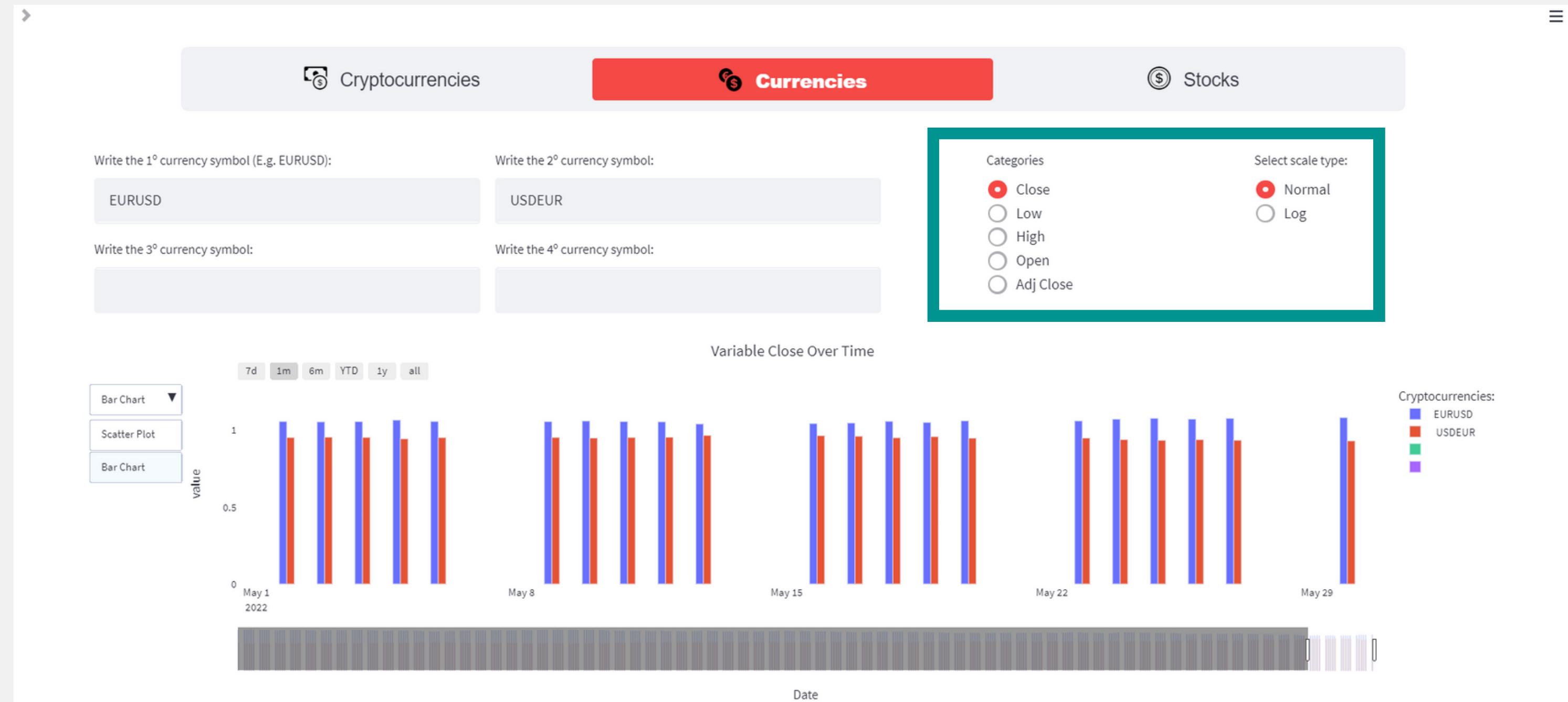
## Exploratory Space



**Figure 10.** Exploratory Space

# Deployment

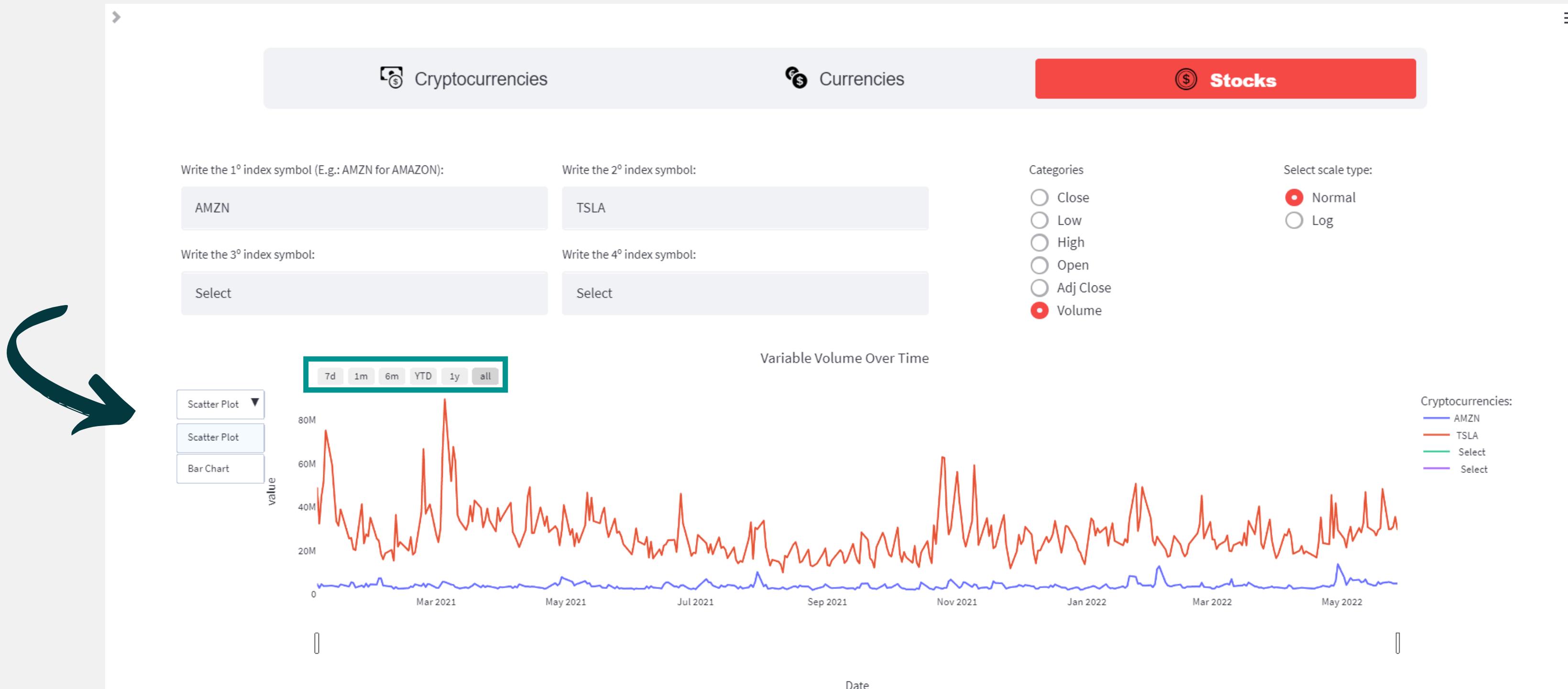
## Exploratory Space



**Figure 11.** Exploratory Space

# Deployment

## Exploratory Space



**Figure 12.** Exploratory Space

# Limitations

01

**Include more financial data  
to develop a more  
complete dashboard  
And more different types of  
visualizations/charts**

02

**The design may be  
personalized to make the  
application more  
attractive**

03

**Add more external  
information to  
complement the  
dashboard such as  
“Financial News”**

# Thank you!

## Group V

June 2022

