RESTFUL STOCK MARKET Application

Presented by: Amresh Kumar

Roll No. : 21CSBOB03

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WHAT THIS APPLICATION DO?

This application simulates stock market operations by providing APIs for key financial calculations, including dividend yield, P/E ratio, and volume-weighted stock prices. It allows users to simulate trading activities, manage multiple stock types, and perform real-time calculations based on stock data and prices. The backend handles CRUD operations, error validations, and optimizes performance using thread-safe mechanisms, ensuring a seamless user experience for managing and analyzing stock market data.

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DIVIDEND YIELD

01 DEFINATION

Dividend yield is a financial ratio that shows how much money a company returns to its shareholders in the form of dividends relative to its stock price.

02 FORMULA

Dividend Yield = (Annual Dividends per Share / Price per Share) × 100

$. 608.00.896.789.900	+23487.09
$. 708.006.789.859.77	-13487.09
$. 567.345.678.123.	-487.09

03 IMPORTANCE

It helps investors gauge the return on investment in terms of dividends, and compare the attractiveness of different stocks.

PRICE-TO-EARNINGS (P/E) RATIO

01 DEFINATION

The P/E ratio is a valuation metric used to measure the price of a company’s stock relative to its earnings per share (EPS).

02 FORMULA

P/E Ratio = Price per Share / Earnings per Share (EPS)

03 IMPORTANCE

It indicates how much investors are willing to pay for $1 of a company's earnings. A high P/E ratio suggests the stock may be overvalued, while a low P/E could indicate undervaluation.

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VOLUME-WEIGHTED AVERAGE PRICE (VWAP):

01 DEFINATION

VWAP is a trading indicator that gives the average price of a stock throughout the day, weighted by trading volume.

02 FORMULA

VWAP = (Sum of Price × Volume) / Total Volume

03 IMPORTANCE

- It helps to understand the average price at which a stock was traded, and is used by traders to gauge market trends and make buy/sell decisions.

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STOCK TYPES:

- **COMMON STOCK:**

Represents ownership in a company and a claim on part of the company’s profits through dividends. Common stockholders have voting rights in corporate matters.

- **PREFERRED STOCK:**

Represents a higher claim on assets and earnings than common stock. Preferred stockholders typically receive dividends before common stockholders and have limited or no voting rights.

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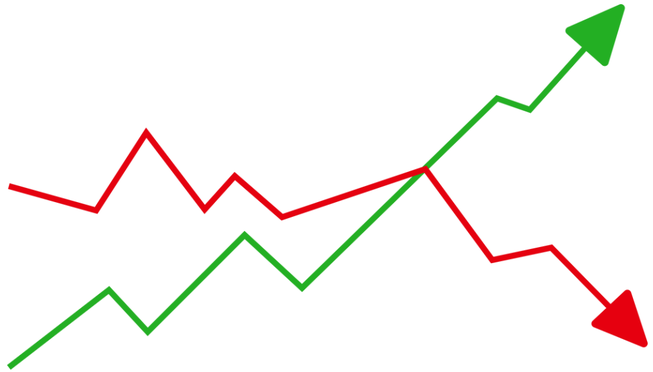
STOCK PRICE:



01 DEFINATION

The current market price of a stock reflects what investors are willing to pay for it, based on supply and demand.

02 IMPORTANCE

- It is essential for calculating ratios like Dividend Yield, P/E, and determining the overall value of a company in the market.

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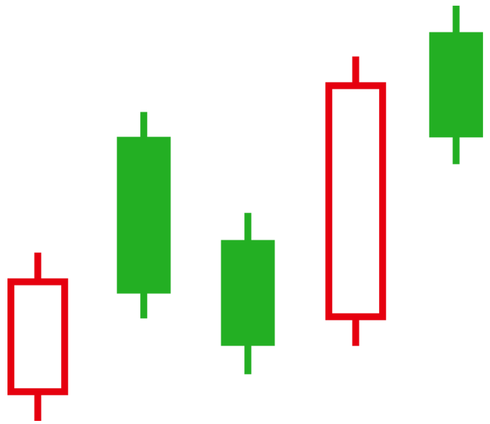
TRADE VOLUME:



01 DEFINATION

Trade volume refers to the number of shares of a stock traded during a given period.

02 IMPORTANCE

- Higher volume indicates more investor activity and can signal price movements. It's crucial for calculating metrics like VWAP and liquidity.

MARKET CAPITALIZATION (MARKET CAP):

01 DEFINATION

Market capitalization is the total value of a company's outstanding shares of stock, calculated by multiplying the stock's current market price by the total number of outstanding shares.

02 IMPORTANCE

- It is used to determine the size of a company, and investors often categorize companies as large-cap, mid-cap, or small-cap based on their market cap.

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EARNINGS PER SHARE (EPS):

01 DEFINATION

EPS is the portion of a company’s profit allocated to each outstanding share of common stock.

02 FORMULA

EPS = (Net Income - Dividends on Preferred Stock) / Number of Outstanding Shares

03 IMPORTANCE

- It is a key indicator of a company's profitability and is used in calculating the P/E ratio.

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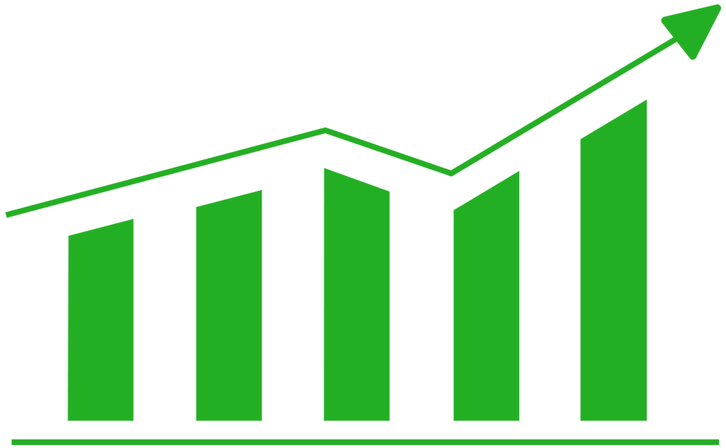
STOCK TRADE:



01 DEFINATION

A stock trade refers to the buying and selling of stocks. It can be done through exchanges or over-the-counter markets.

02 IMPORTANCE

- It is the core activity that drives stock prices and volumes, influencing various stock market metrics.

FINAL GOAL

SIMULATE REAL-TIME STOCK MARKET OPERATIONS:

The primary goal is to simulate stock market activities by providing accurate calculations such as dividend yield, P/E ratio, and volume-weighted stock prices, and enabling users to perform stock trading simulations.

PROVIDE SEAMLESS STOCK MANAGEMENT AND ANALYSIS:

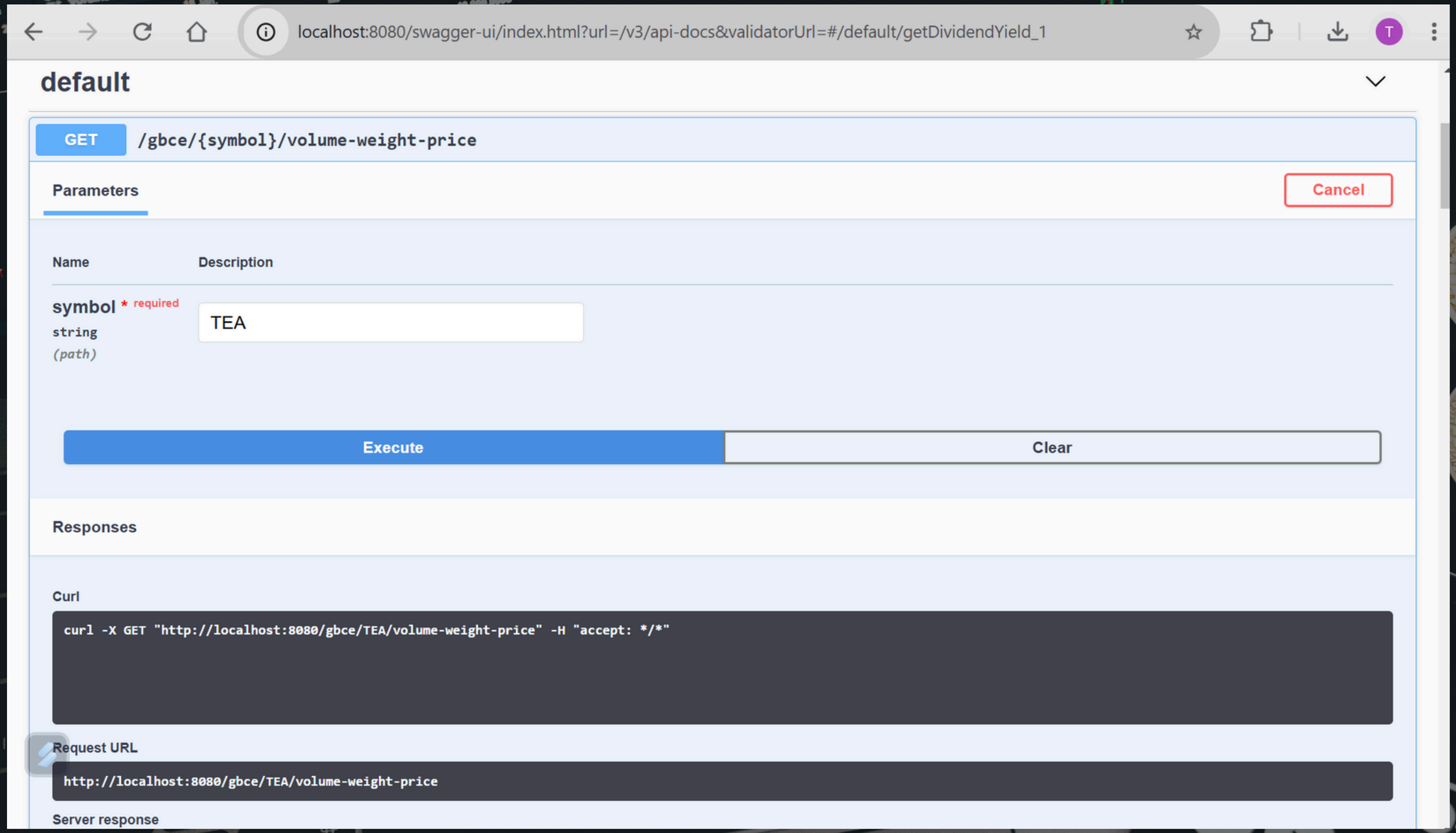
The application aims to offer an efficient platform for managing various stock types, performing CRUD operations, and ensuring real-time updates and data accuracy for users to analyze and track stock performance.

OUTPUT SCREENSHOTS

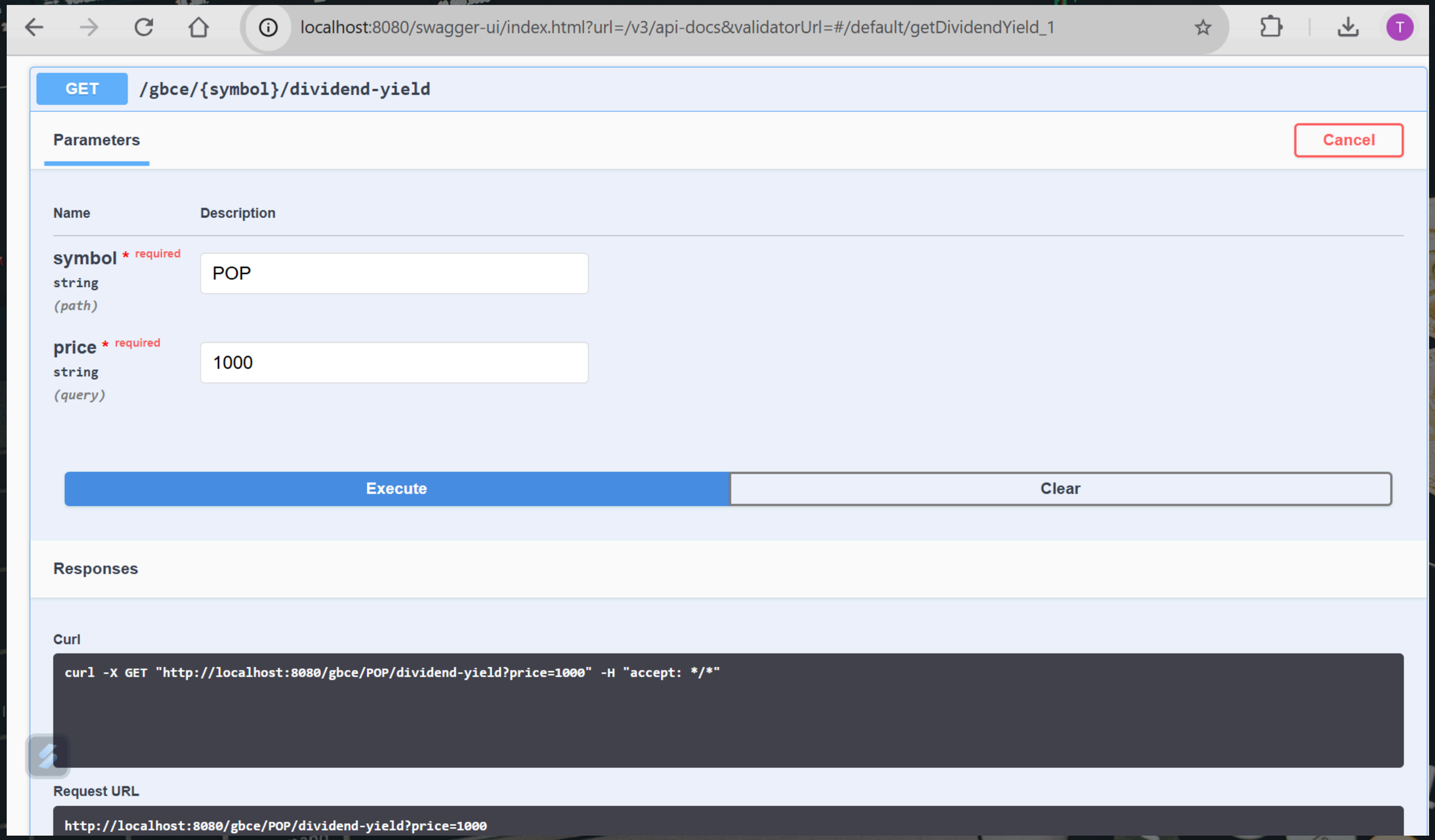
Spring Boot running status in VS Code:

```
PS C:\Users\ASUS\Downloads\simple-stock-market-master> mvn spring-boot:run
>>
[INFO] Scanning for projects...
[INFO]
[INFO] ----------------------< com.gbce:stock-market >-----------------------
[INFO] Building stock-market 0.0.1-SNAPSHOT
[INFO]   from pom.xml
[INFO] --------------------------------[ jar ]---------------------------------
[INFO]
[INFO] >>> spring-boot:2.2.4.RELEASE:run (default-cli) > test-compile @ stock-market >>>
[INFO]
[INFO] --- resources:3.1.0:resources (default-resources) @ stock-market ---
```

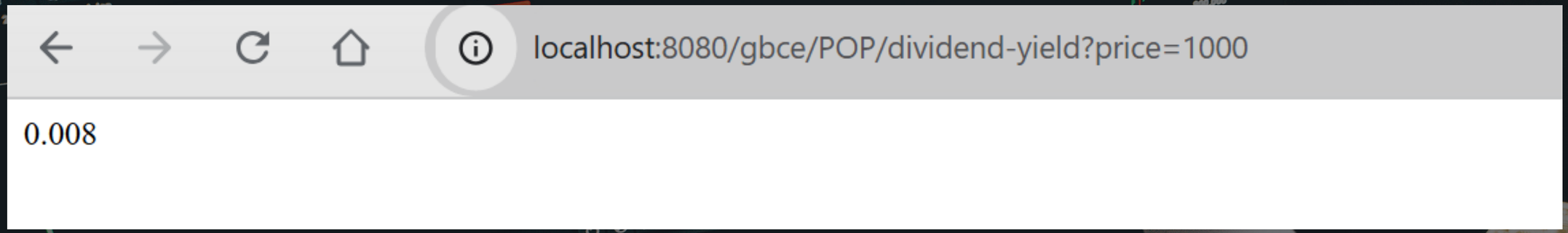
SWAGGER UI GENERATED THE URL TO CALCULATE VOL-WEIGHT PRICE



SWAGGER UI GENERATED THE URL TO CALCULATE DIVIDEND-YIELD



RESPONSE FOR THE GENERATED URL TO CALCULATE DIVIDEND-YIELD



Server response

Code	Details
200	**Response body**

```
0.008
```

PRESENTED BY

AMRESH KUMAR

THANKYOU

9304789862

amresh93047@gmail.com