TRENDANALYZER

Overview

Trend Analyzer is a web application built with Flask and Dash, designed to analyze, visualize and forecast financial trends using various models such as ARIMA-GARCH, Prophet and LSTM Neural Networks. The app provides interactive graphs and insights based on the provided financial data.

Features

- **Financial Trend Analysis**: Utilizes ARIMA-GARCH, Prophet and LSTM models.
- **Interactive Graphs**: Built with Dash and Plotly for dynamic data visualization.
- **User-Friendly Interface**: Easy-to-use interface for analyzing and forecasting financial data.

Prerequisites

- Docker installed on your system.
- Docker Hub account (for image hosting).

Commands

For the Developer (Building the Docker Image)

1. **Clone the Repository**:

```
git clone https://github.com/SergioCuencaNunez/trend-analyzer.git
cd trend-analyzer
```

2. **Build the Docker Image and Push it to DockerHub**:

```
docker buildx create --use
docker buildx inspect --bootstrap
docker buildx build --platform linux/amd64,linux/arm64 -t
sergiocuenca1/trend-analyzer --push .
```

3. **Save the Docker Image** (optional for distribution):

```
docker save -o my-flask-app.tar sergiocuenca1/trend-analyzer
```

For the User (Running the Docker Container)

1. **Pull the Docker Image from Docker Hub**:

```
docker pull sergiocuenca1/trend-analyzer:latest
```

2. **Run the Docker Container** (specifying the platform):
    - For Intel based:

      ```
      docker run --platform linux/amd64 -p 8080:8080 sergiocuenca1/trend-analyzer:latest
      ```

    - For M1 o later based:

      ```
      docker run --platform linux/arm64 -p 8080:8080 sergiocuenca1/trend-analyzer:latest
      ```

Usage

1. **Access the Application**: Open your web browser and navigate to `http://localhost:8080`.
2. **View and Interact with Graphs**: Use the provided interface to explore the stocks.
3. **Forecast Stock Proces**: Forecast stock price based on the numer of days or desired percentage of earnings and explore the generated graphs and insights.

Troubleshooting

- **Worker Timeout Issues**: If you encounter worker timeout issues, try increasing the Gunicorn timeout in the Dockerfile.

  ```
  CMD ["gunicorn", "-b", ":8080", "--timeout", "120", "app_instance:server"]
  ```

- **Compatibility Issues**: Ensure you specify the correct platform when running the Docker container on different architectures.

Contribution

For major changes, please open an issue first to discuss what you would like to change.

License

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For more information, visit the TrendAnalyzer GitHub Repository.