

Trading Bot Documentation

1. Introduction

This document provides an overview of the trading bot implemented using the Moving Average Crossover strategy. The bot fetches stock price data (generated synthetically in this version), applies a simple algorithm to decide when to buy or sell based on moving averages, tracks profit and loss, and logs all trades made during its execution.

2. Trading Strategy: Moving Average Crossover

The Moving Average Crossover strategy is a technical analysis tool used to identify potential buy and sell signals based on moving averages of stock prices.

Short-Term Moving Average: The average price over a shorter period (5 periods in this implementation).

Long-Term Moving Average: The average price over a longer period (20 periods in this implementation).

Buy Signal: When the short-term moving average crosses above the long-term moving average, a buy signal is generated. This suggests that the stock price might be trending upward.

Sell Signal: When the short-term moving average crosses below the long-term moving average, a sell signal is generated, indicating a possible downward trend.

3. System Components

- **mockApi.js:** Generates synthetic stock price data.
- **tradingLogic.js:** Core trading logic, calculating moving averages, executing trades, tracking profit/loss.
- **index.js:** Main application that fetches data, executes trades, and logs results.

4. How to Run the Application

Clone the Repository Clone the project repository to your local machine

```
git clone <repository_url>
cd trading-bot
```

Install Dependencies Install the required packages using `npm`.

```
npm install
```

Configure Environment Variables Optionally, create a `.env` file if you need to change any environment settings, such as the port number.

Example `.env`:

```
PORT=3000
```

Run the Trading Bot Run the bot using `npm start`.

```
npm start
```

View Logs As the bot runs, it will:

- Fetch stock prices.
- Log buy and sell trades to `logs.txt`.
- Print a summary of the final profit and loss when the trading session ends.

5.Trade Logging and Profit/Loss Tracking

- Trades (buy/sell) are recorded in `logs.txt` with timestamps and prices.
- At the end of the session, the final balance and profit/loss summary are logged.