User’s Documentation

User‘s Documentation of the program Cryptocurrency Algorithmic Trading Bot

Programming in C# (NPRG035), Advanced Programming in C# (NPRG038)

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Short Project Description

Cryptocurrency Algorithmic Trading Bot (CATB) is a console application written in C# that serves as a cryptocurrency trading bot that uses technical indicators to spot signals on whether to buy, sell or hold a particular cryptocurrency. The bot has a watchlist specified by the user and uses a specified strategy for money management. Note that this project is meant primarily as a toy simulator since no real money is involved nor API key is needed.

Moreover, the library operates only with CRYPTOCURRENCY-USDT pairs. Therefore although e.g. ETH/BTC is a supported and fairly common conversion, the expected output from the library is that this pair is not available. Consequently, the API may not (for Binance, it does not) support all cryptocurrency symbols listed. Therefore it is recommended to use rather conventional cryptocurrency symbols.

One of the options to check whether the API supports your pair – in particular Binance API, is to take a look at https://api.binance.com/api/v3/ticker/price from your browser and CTRL+F your desired cryptocurrency symbol with its price.

Disclaimer: in case anyone uses results produced by the CATB for their own financial decisions, the library author holds no responsibility for potential losses.

How To Use

Prerequisites

For Windows users, it is highly recommended to use Visual Studio 2022 with .NET 6. Since the project utilizes global using directives C#10 is required. Otherwise, the project uses the standard library exclusively, so no external dependencies are required.

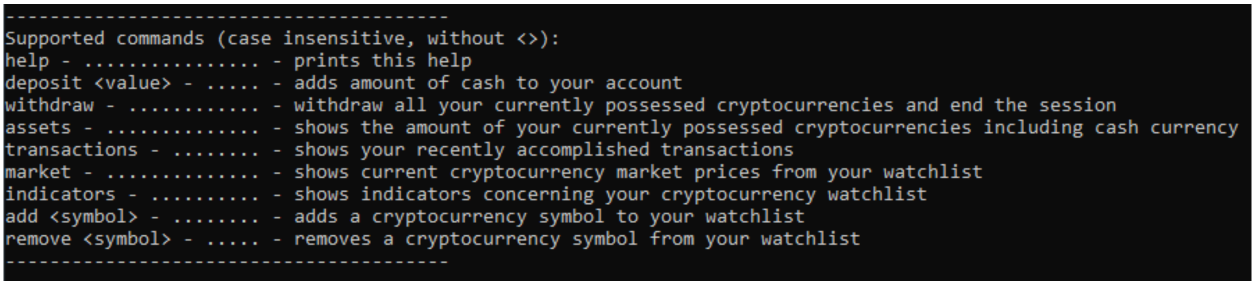
Installation

Since the program does not rely on external dependencies, Visual Studio 2022 with .NET 6, opening the AlgorithmicTrading.sln, and choosing between Debug and Release should be sufficient to compile and run successfully.

Features – Expected Behaviour

In general, a user is prompted via console to enter input, and after the initial cryptocurrency watchlist (case insensitive, slash can be included – since on the website provided for the cryptocurrency symbols "slash variants" BTC/USDT are used) is selected, current commands support is shown (in the picture below). Only after the list appears the program is ready for an interaction (an initial API call is required to ensure that the entered input is correct and the innvalid records are discarded – it is shown to the user that the particular symbol is not available).

Furthermore, the dialog between a user and the bot is relatively simple and consists of various commands containing zero or one additional argument. Currently supported commands and their expected behavior are described in Figure 1. Be warned that the output may take quite some time since the inputs entered need to be validated, and data need to be obtained from the API service.



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Supported commands (case insensitive, without <>):
help - ................ - prints this help
deposit <value> - ..... - adds amount of cash to your account
withdraw - ............ - withdraw all your currently possessed cryptocurrencies and end the session
assets - .............. - shows the amount of your currently possessed cryptocurrencies including cash currency
transactions - ........ - shows your recently accomplished transactions
market - .............. - shows current cryptocurrency market prices from your watchlist
indicators - .......... - shows indicators concerning your cryptocurrency watchlist
add <symbol> - ........ - adds a cryptocurrency symbol to your watchlist
remove <symbol> - ..... - removes a cryptocurrency symbol from your watchlist
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Figure 1: Currently supported commands by CATB (also used as a *help* command)

Hardware/Software Requirements

- For an end-user, there are no special requirements

- Operating system should not be an issue in terms of Windows; Linux users should not have any issues either since the program does not rely on any external dependencies, so Mono should not have any problems either

- Note that although the program should be prepared for a connection loss, to make use of the functionality provided, ensure you are connected to the internet. In case you do not have an internet connection at the beginning of the program (after filling in the cryptocurrency watchlist), the program ends with an error message; otherwise, if you lose connection during the program run, the program keeps running and keeps shouting the connection to the service was lost, so it does not receive any updates from the API service

- The application was compiled and run using a device with the CPU AMD Ryzen 7 4800H, RAM 16 GB, OS Windows 10 Home (64-bit)