

Project #3. Fall 2021.

#SPECIFICATIONS

For this project, students will also be allowed to work in pairs. This will provide them with an opportunity to collaborate, exchange ideas and check each other's work.

The project will consist in designing a program that will read stock data and display it. Later we will look for some specific stock price patterns and identify them on the chart.

You can obtain your stock price data from any source you like (as long as it is a free source). As discussed in class you can use the Yahoo free data at: [Yahoo Finance - Stock Market Live, Quotes, Business & Finance News](#)

In the search box you can type the ticker for the stock (e.g. AAPL for Apple Inc.) Then click on "Historical Data" and you will be presented with historical data for that stock. On that page, you can select the starting and ending dates for the data as well as the kind of data (e.g. Daily, Weekly or Monthly) you desire.

Click on "Apply" to update the data. You can then click on the "Download" button which is just below the "Apply" button in order to download a CSV file.

For practice, you may use a CSV file to read the data in your application. This will of course mean that you will have to learn about how to read files in C#. You can look at [How to read from a text file - C# Programming Guide | Microsoft Docs](#)

You then will want to display the stock data as Candlesticks. To see what a candlestick chart looks like, click on "Chart" in the Yahoo web page. You will at first get a line chart. To change the chart to a candlestick chart, click on the arrow next to "Line" on the right side of the menu and select "Candle".

We discussed what a candlestick is but you can learn more at [Candlestick chart - Wikipedia](#)

Your main window should ask for:

The ticker

The start date

The end date

The candlestick period (Daily, Weekly or Monthly)

And a button to go read the requested data. This should launch another form that will display the stock data as candlesticks.

To select the ticker, use a ComboBox containing the tickers for a number of stocks (preferably at least 10 stocks). There is a SP500.csv file in the files folder -> Projects

that you can use to get the tickers of companies that make up the S&P 500. You can look at information about the S&P 500 at [S&P 500 - Wikipedia](#)

In the form that displays your candlestick chart you want to have a ComboBox with a list of different candlestick patterns. Those patterns can consist of only one candle or more than one. Though you should have a number of patterns in your ComboBox, those patterns can consist of 1-candlestick and multiple-candlestick patterns.

You are not expected to recognize all patterns. However you must provide recognizers for the different types of DOJIS described in [Candlestick pattern - Wikipedia](#)

In your list of patterns you should therefore include: Neutral, long-legged, gravestone and dragonfly DOJIs

You should also have the MARUBOZU patterns described in the same web page. Note that there are BULLISH MARUBOZUS (Green) and BEARISH (Red) ones. You should add both types in your list.

As for the complex patterns (those formed by more than 1 candlestick) you must recognize both BULLISH and BEARISH Haramis which are also described in the same article.

When the user clicks on a particular pattern to recognize, you should display a rectangle around the candlestick (or candlesticks) forming the pattern.

You can read about the RectangleAnnotation Class in the Microsoft documentation.

Annotations are drawings (Text, Shapes,etc...) that you can place on a chart drawing.

Check out the following links:

[RectangleAnnotation Class \(System.Windows.Forms.DataVisualization.Charting\) | Microsoft Docs](#)

And

[RectangleAnnotation, System.Windows.Forms.DataVisualization.Charting C# \(CSharp\) Code Examples - HotExamples](#)

Good Luck.