USER MANUAL

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WELCOME TO DMY'S STOCKQUOTE APPLICATION 😄 💰

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Installation

You will need to install following package.

Package Name	Install Guide
yfinance	https://pypi.org/project/yfinance/
mplfinance	https://pypi.org/project/mplfinance/
sklearn	https://scikit-learn.org/stable/install.html
tabulate	https://pypi.org/project/tabulate/
rich	https://pypi.org/project/rich/
pandas	https://pandas.pydata.org/pandas-docs/stable/getting_started/install.html
numpy	https://numpy.org/install/
matplotlib	https://matplotlib.org/3.3.3/users/installing.html
datetime	https://pypi.org/project/DateTime/

In terminal, run "stockquote.py"

An black backgroud will give you a better experience.

Function Overview

As you run the application, you will find the following information in your terminal. As displayed in the "Menu" zone, this application include 3 main functuons.

```
===============================================================================

                WELCOME TO DMY'S STOCKQUOTE APPLICATION   😄  💰

===============================================================================
+-----------------------------------------------------------------------------+
|                                                                             |
|                             DISCLAIMER                                      |
|                                                                             |
|          This application is only used for academic assignment             |
|                       When making investment                               |
|            Please don't trust the result from prediction function          |
|                                                                             |
|                              Cheers!                                        |
|                                                                             |
|                                                                             |
+-----------------------------------------------------------------------------+
-------------------------------------------------------------------------------
      📜  I AM MENU  📜
      1. Stock Basic Information Query
      2. Stock Quote Descriptive Analytics
      3. Stock Quote Prediction
      4. Read T&C
      0. Quit
-------------------------------------------------------------------------------
      PLEASE CHOOSE A FUNCTION FROM MENU LIST: ▐
```

Function 1 Stock Basic Information Query

Function Description

This function gives you some basic information of the stock you want to query. It includes the stock's "Symbol", "Name", "MarketCap", "Sector", "industry". It will query local file "companylist.scv" first, if the ticker symbol user input cannot be found, it will download data from an online resource, yahoo finance. It also allows you to input keywords that contains in ticker symbol or company name. By doing this, you will get a list of companies' information. This is only available when the keywords can be found in the local file.

Step by Step Guidance

Step 1 Input "1" to activate function 1.

Example: PLEASE CHOOSE A FUNCTION FROM MENU LIST: 1

Step 2 Input the tick symbol you want to query.

- Case insensitive.
- Only alphabets and numbers are allowed, otherwise you will get an error message.

Example: PLEASE ENTER A TICKER SYMBOL (eg. AMZN): AMZN

Output

Output 1 Single company's basic information

```
        PLEASE ENTER A TICKER SYMBOL (eg. AMZN): amzn
********************************STOCK BASIC INFOMATION********************************
```

	Symbol	Name	MarketCap	Sector	industry
194	AMZN	Amazon.com, Inc.	$1558.17B	Consumer Services	Catalog/Specialty Distribution

```
*********************************END OF THE TABLE*********************************
```

Output 2 Multiple companies' basic information

```
        PLEASE ENTER A TICKER SYMBOL (eg. AMZN): GOOG
********************************STOCK BASIC INFOMATION********************************
```

	Symbol	Name	MarketCap	Sector	industry
175	GOOG	Alphabet Inc.	$1181.57B	Technology	Computer Software: Programming, Data Processing
176	GOOGL	Alphabet Inc.	$1177.41B	Technology	Computer Software: Programming, Data Processing

```
*********************************END OF THE TABLE*********************************
```

Function 1 Stock Basic Information Query

Output 2 Multiple companies' basic information (Continue)

If you get something like below, you may need to magnify your terminal window.

```
        PLEASE ENTER A TICKER SYMBOL (eg. AMZN): GOOG
******************************STOCK BASIC INFOMATION*******************************

    |    | Symbol  | Name         | MarketCap   | Sector     | industry
    |    |         |              |
    |————|—————————|——————————————|—————————————|————————————|———————————————————
    | 175 | GOOG    | Alphabet Inc. | $1181.57B   | Technology | Computer Software: Programmin
    g, Data Processing |
    |————|—————————|——————————————|—————————————|————————————|———————————————————
    | 176 | GOOGL   | Alphabet Inc. | $1177.41B   | Technology | Computer Software: Programmin
    g, Data Processing |

***************************************END OF THE TABLE*****************************
```

Error Message

Error will arise when the input contains characters other than alphabets and numbers. You will get following message, and it will require you to input again until you get a valid ticker symbol.

```
        PLEASE ENTER A TICKER SYMBOL (eg. AMZN): !@#$%^&
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
                        ERROR MESSAGE
        😵   TIKER SYMBOL CONTAINS ILLEGAL CHARACTORS   😵
                        PLEASE TRY AGAIN
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
        PLEASE ENTER A TICKER SYMBOL (eg. AMZN): ▮
```

Error will also arise when the ticker symbol is not exist. You will get following message. and it will require you to input again until you get a valid ticker symbol.

```
        PLEASE ENTER A TICKER SYMBOL (eg. AMZN): AAAAA
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
                        ERROR MESSAGE
        😵  THE TICKER SYMBOL DOES NOT EXIST  😵
                        PLEASE TRY AGAIN
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
        PLEASE ENTER A TICKER SYMBOL (eg. AMZN): ▮
```

End of function

after the output, the menu will be display again. And you can either choose another function or quit.

Function 2 Stock Quote Descriptive Analytics

Function Description

This function provides you a descriptive analysis of the stock you want to query. It also contains a graph with Raw time-series; Linear trend lines; Moving Averages (you are able to choose a MA period); Weighted Moving Averages; Moving Average Convergence/Divergence (MACD); You need to decide the time range.to get above information.

Step by Step Guidance

Step 1 Input "3" to activate function 3.

Example: **PLEASE CHOOSE A FUNCTION FROM MENU LIST: 3**

Step 2 Input a start date.

- Format YYYY-MM-DD, otherwise you will get an error.
- The gap between start and end date should >7, otherwise you will get an error message.

Example: **PLEASE ENTER START DATE (YYYY-MM-DD): 2020-1-1**

Step 3 Input an end date.

- Format YYYY-MM-DD, otherwise you will get an error.
- The gap between start and end date should >7, otherwise you will get an error message.

Example: **PLEASE ENTER END DATE (YYYY-MM-DD): 2020-10-10**

Step 4 Input a moving average number

- Only numbers allowed
- Should be > 1

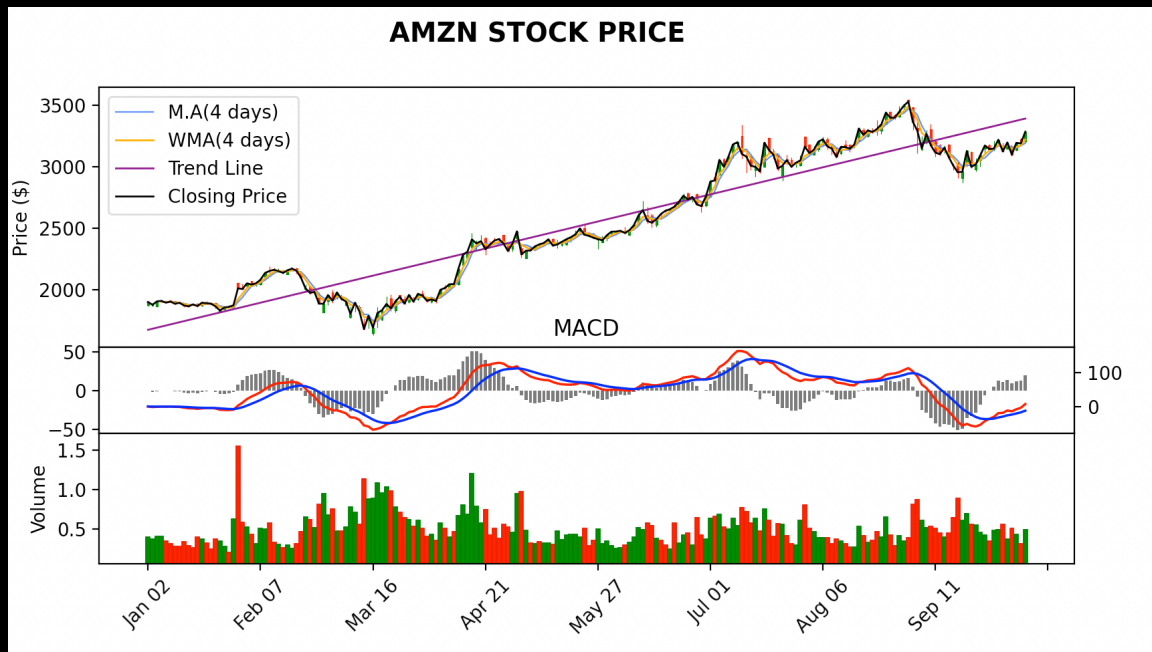Example: **PLEASE ENTER A MOVING AVERAGE NUMBER (n>1): 4**

Output

Output 1 Descriptive Analytics

```
*******************************DESCRIPTIVE ANALYTICS********************************
       |      Close |
       |------------|
 count |       196  |
       |------------|
 mean  |    2532.2  |
       |------------|
 std   |     532.9  |
       |------------|
 min   |    1676.6  |
       |------------|
 25%   |    1993.1  |
       |------------|
 50%   |    2439.6  |
       |------------|
 75%   |    3086.8  |
       |------------|
 max   |    3531.4  |
       |------------|
 range |    1854.8  |
       |------------|
 cv    |       0.2  |
*******************************END OF THE TABLE********************************
```

Function 2 Stock Quote Descriptive Analytics

Output 2 A candlestick graph

Error Message

Error will arise when the date is invalid. You will get following message, and it will require you to input again until you get a valid date.

```
PLEASE ENTER START DATE (YYYY-MM-DD): 12345
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
                            ERROR MESSAGE
                😵 INVALID DATE FORMAT 😵
                        PLEASE TRY AGAIN
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
```

Error will arise when the date range is less than 7 days. You will get following message, and it will require you to input again until you get a valid date range.

```
PLEASE ENTER START DATE (YYYY-MM-DD): 2020-1-1
PLEASE ENTER END DATE (YYYY-MM-DD): 2020-1-2
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
                            ERROR MESSAGE
        😵 DATE RANGE SHOULD BE MORE THAN 7 DAYS 😵
                        PLEASE TRY AGAIN
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
```

Error will arise there is no data found. You will get following message, and it will require you to input again until you get a valid ticker symbol.

```
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
                            ERROR MESSAGE
😵 NO DATA FOUND. REASONS COULD BE:
1. The ticker symbol may be invalid.
2. No data during the selected date range. 😵
                        PLEASE TRY AGAIN
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
```

Function 3 Stock Quote Prediction

Function Description

This function provides you a predictive analysis of the stock you want to query. It contains 2 prediction model, Linear Regression and Support Vector Regression. You need to decide the time range to get above information as well the prediction date.

Step by Step Guidance

Step 1 Input "3" to activate function 3.

Example: **PLEASE CHOOSE A FUNCTION FROM MENU LIST: 3**

Step 2 and Step 3 is the same as Function 2.

Step 4 Input a ticker symbol, same as function 1 step 2

Step 5 Input a preditiction date.
- Format YYYY-MM-DD, otherwise you will get an error.
- It cannot be later than the end date, otherwise you will get an error.

Example: **PLEASE ENTER PREDICTION DATE (YYYY-MM-DD): 2020-11-12**
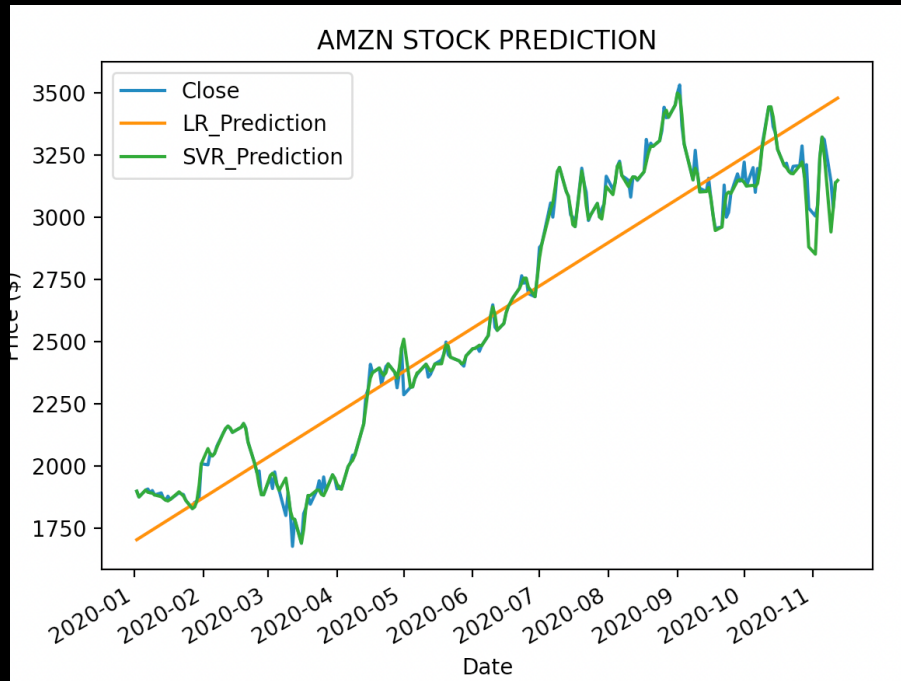
Output

Output 1 Pridiction information table

```
*********************************PREDICTION RESULT*********************************
|                             |  r2 Score |  RMSE Score | AMZN Prediction Price $ (2020-11-12) |
|-----------------------------|-----------|-------------|--------------------------------------|
| Linear Regression           |  0.866434 |   188.143   |                              3509.78 |
| Support Vector Regression   |  0.987493 |   59.9424   |                              3061.22 |
*********************************END OF THE TABLE*********************************
```

Function 3 Stock Quote Prediction

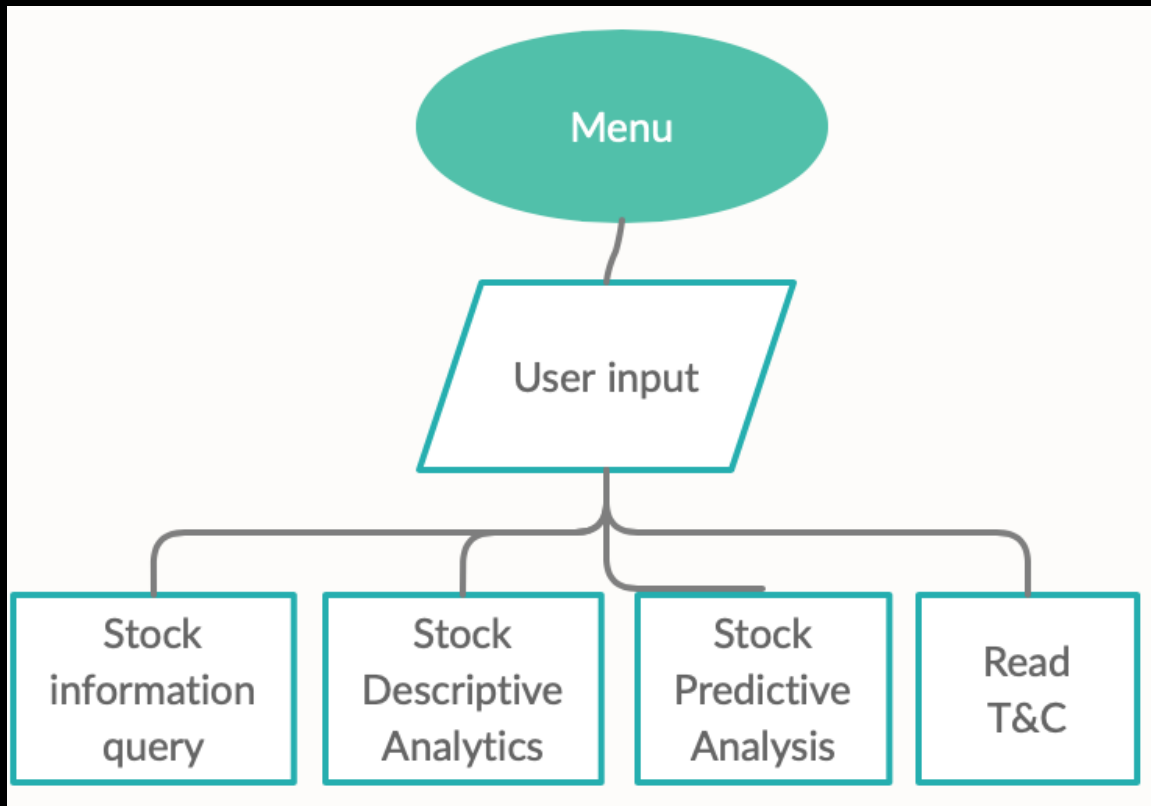Output 2 A prediction graph

Error Message

Same as function 2

End of function

after the output, the menu will be display again. And you can either choose another function or quit.

UML

Reference

randerson112358. 2020. Predict Stock Prices Using Python & Machine Learning | by randerson112358 | Medium. [ONLINE] Available at: https://randerson112358.medium.com/predict-stock-prices-using-python-machine-learning-53aa024da20a. [Accessed 06 December 2020].