ITP-116: Accelerated Programming in Python
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Final Project: Stock Tracker with GUI Implementation

- 20% of course grade
    - Proposal: 2% of course grade, Implementation: 18% of course grade

Goals:

- Use the various topics learned throughout the course of the semester to create a stock tracking project that is implemented with a GUI.
    - Output Information
    - Utilize arithmetic operators
    - Utilize various list techniques
    - Utilize conditional statements
    - Utilize File I/O to read and write files (possibly)
    - Utilize Object Orientated Programming
    - Utilize loops to repeat certain code blocks
    - Utilize functions to streamline your logic and code
    - Utilize a GUI interface (Hardest Challenge)
    - Utilize APIs

Overall Description:

- This project involves creating a stock tracking app where you are provided a GUI where you can type in a Ticker Symbol for a stock that you would want to track and analyze, and the program in return, provides useful and relevant information about the given company.
- Using a GUI, and object orientated programming, the goal is to create a nice user-face for the user that provides a useful functionality.
    - Something that users can use, rather than going to the Google Search Engine and searching up information from there.
- We will be using easy-to-use API's like "Plotly" to implement the stock chart graph, and "Fundmanetal Anaylsis" to help with the GUI functions that prints the information about the stock.

Requirements:

- Create a new Python file. It must begin with comments in the following format (replace the name and email with your actual information and write text for the description):

```
# Name, USC email
```

```
# ITP 116, Fall 2021
# Final Project
# Description:
# <describe what this program does>
```

- The program will begin by prompting the user for a ticker symbol/company name (All-Caps) of the stock that the user would like information on, given a list of 10-15 stock choices (*Could be more).
    - Validate user input if ticker exists.
- Print out a menu of information of the stock.
    - Print a graph using Plotly.
    - Print information:
        - Current Price, Trends, Year to Date, CEO, Description of company, etc.
    - Here, maybe we can add a bookmark functionality?
        - Like a "Add to Favorites" tab.
            - And in the GUI, we would implement a functionality to save the stock and click on it to open it up quickly.
- User can keep using the program unless exited out.

Sample Output:

- (In GUI) *At this point did not learn yet so I have no clue how it would look so far.
    - "Please enter a ticker symbol for the stock you would like to analyze."
        - Have 10-15 options in menu
        - // Use an API or File IO
    - Once input is entered
        - Validate User Input
    - Print Information about Stock
        - Company Description
        - Current Stock Price
        - Sentiment
        - Market Cap
        - PE Ratio
        - CEO
        - Outlook
        - Earnings
        - Graph/Stock Chart
- Repeats until program is exited

Submission Instructions:

- Create a folder on your computer called **ITP116_*FinalProject*_LastName_FirstName** (replace *Last Name* with your last/family name and *FirstName* with your first name).
- Inside the folder, put your Python source code.
- Compress the folder (make a zip file). This cannot be done within PyCharm. Find the folder on your computer and compress it.
    - Windows:
        - Select your file
        - Right click
        - Send to ->
        - Compressed (zipped) folder
    - macOS:
        - Select your file
        - Right click
        - Compress
- Upload the zip file to your Blackboard section:
    - On Blackboard, click on the Assignments item in the course menu on the left.
    - Click on the specific item for this assignment.
    - Click on the Browse My Computer button and select your zip file.
    - Click the Submit button.

Grading Criteria:

- 1% Program prompts the user for the ticker symbol of the stock given a list of possible options.
- 1% Program validates user input if ticker symbol exists or not.
- 1% Program uses at least four functions and are used.
- 1% Program continues to prompt user until the user exits GUI/Program.
- 1% Program implements a functional and accurate graph of the stock chart.
- 2% Program uses APIs from other libraries.
- 3% Program prints a menu of information about the given stock, such as P/E ratio, price, sentiment using an API or File IO.
- 3% Program uses object orientated programming.
- 5% Program implements a well-versed GUI functionality system that runs and is functionable.