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Financial Data Analyzer

Python Project

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Programming – Introduction Level

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Problem Statement

The internet provides unlimited amount of financial data. A wide variety of data can be accessed with little effort which is a great relief for private investors today. Unfortunately, this development also causes several problems. First of all, a lot of sources and platforms are not trustworthy and shouldn't be used for decision making. Second, platforms differ in layout, in calculation method of the key figures and data can't be modified or adjusted to the private investors taste. While some investors have too much information, others have too little, which leads to difficulties in comparing data and making the right decisions.

Project Description

This is where our Financial Data Analyzer steps in. Financial information needs to be reliable, clear and easy to use in order to make the right financial decisions now and in the future. The aim of our Python program is to let the user chose a listed company from a given stock exchange and provide a clear overview of the current financial situation. Our program visualizes a summary of the latest data with relevant financial key ratios in a separate window on the desktop. In addition, the user can choose to view more detailed information of the chosen company for deeper insights and analysis.

In order to achieve this, we use financialmodelingprep.com, a leading financial data platform, as our base. We implement its free to use API addresses in our code to continuously provide real-time and historic data stock data. (Note: As of May 21st, 2020, financialmodelingprep.com did an update, which requires the user to create an account before getting access to the free API addresses. We had to adjust the code by asking the user to insert an API key as a first step. As we created an own account, you can either copy this code: 04e76a6e365c082389b6a8a0da7190df or create an own account on financialmodelingprep.com). Please find the Python program with the link below where you will find the code and a video summarizing our project. The procedure and methods of our financial data analyzer are precisely described step by step along the code.

Click the following link to get access to the Financial Data Analyzer:

https://github.com/alexkw94/Python-Company-Analysis

Output

Step 1

Before starting the financial analysis, create an account on financialmodelingprep.com and insert the API key into the field. To run a test, you can use this code:

04e76a6e365c082389b6a8a0da7190df

```
Hello User! With this programm you will be able to choose between a variety of public stocks from different exchanges
before easily analysing the underlying company.

Please enter your individual API-Key from Financial Modelling Prep in order to access the data (e.g. 4e20e35a9763edf2
92366927d58a3614):
```

Step 2

Now you are logged in and user can choose from a list of the following four stock exchanges: NYSE, NasdaqCM, NasdaqGM, NasdaqGS. Once the user has entered a stock exchange, the companies which are traded will be displayed with the corresponding ticker.

```
These are the exchanges:
      exchange
0         NYSE
1     NasdaqCM
2     NasdaqGM
3     NasdaqGS
4    Other OTC


Enter the name of the exchange you want to see in detail (e.g. NYSE):
```

Step 3

Now, the user can pick a listed company and enter the ticker e.g. "APPL" to retrieve its financial data. Note that the program will only recognize listed companies with data available on financialmodelingprep.com. Otherwise, the ticker is not compatible, and the program will ask the user to enter another symbol.

```
319              Wyndham Destinations, Inc.    WYND
320             Wyndham Hotels & Resorts, Inc.   WH
321                         X Financial         XYF
322         Xtrackers Bloomberg Barclays US    ESCR
323         Xtrackers J.P. Morgan ESG Emerg    ESEB
324         Xtrackers J.P. Morgan ESG USD H    ESHY
325                     YETI Holdings, Inc.    YETI
326                         Youdao, Inc.       DAO
327             ZTEST Electronics Inc.       ZTEST
328                         Zuora, Inc.        ZUO
329                     nVent Electric plc     NVT

Enter the symbol of the company you would like to analyse (e.g. AAPL):
```

Step 4

A pop-up window will appear on the desktop with a summary of the current financial information available and key ratios of the chosen company. This will look like this:

```
●  ●  ●       Company Overview
         Company symbol:              AAPL
          Current price:             316.97
Market Capitalization (2019):  1150071.6 mil. $
       Price Earnings (2019):       20.81x
       Dividend Yield (2019):        1.23%
     Net Profit Margin (2019):      21.24%
        Current Ratio (2019):        1.54x
             ROE (2019):            61.06%
                  show more details
```

Step 5

If the user wants to get a deeper insight into the company, the user can simply click on the button "show more details" and analyze even more financial information of the company. Without additional effort, the latest balance sheet, income statement, cash flow statement and additional key figures will be displayed. Finally, a diagram is presented, showing the historical development of share prices and values according to the discounted cash flow method.

```
AAPL Balance Sheet 2019
date                            index   in million $ % of Total Assets
1              Cash and cash equivalents     48844.000          14.43%
2                  Short-term investments     51713.000          15.28%
3        Cash and short-term investments    100557.000          29.71%
4                             Receivables     22926.000           6.77%
5                             Inventories      4106.000           1.21%
6                    Total current assets    162819.000          48.10%
7           Property, Plant & Equipment Net   37378.000          11.04%
8           Goodwill and Intangible Assets       0.000           0.00%
9                   Long-term investments    105341.000          31.12%
10                             Tax assets       0.000           0.00%
11               Total non-current assets    175697.000          51.90%
```

Notes

By clicking the link https://github.com/alexkw94/Python-Company-Analysis you will get access to our Python project "Financial Data Analyzer" on the platform GitHub. As we had to do some changes to our code regarding the API Key for financialmodelingprep.com, you will see 4 files of our project in total: 2 files for the original code and 2 files for the updated code. Each of them is complemented with a video showing the output.

Original Code

- Project (Python).py

- Video - Project (Python).mov

Updated Code with API Key

- Project (Python) - Update 1_2_1.py

- Video 2 - Project (Python) Update 1_2_1.mov

Sources

https://financialmodelingprep.com/