Enriching stock market data using Open AI API

The Nasdaq-100 is a stock market index made up of 101 equity securities issued by 100 of the largest non-financial companies listed on the Nasdaq stock exchange. It helps investors compare stock prices with previous prices to determine market performance.

In this project you are provided with two CSV files containing Nasdaq-100 stock information:

- ***nasdaq100.csv***: contains information about companies in the index such as symbol, name, etc.
- ***nasdaq100_price_change.csv***: contains price changes per stock across periods including (but not limited to) one day, five days, one month, six months, one year, etc.

As an AI developer, you will leverage the OpenAI API to classify companies into sectors and produce a summary of sector and company performance for this year.

CSV with Nasdaq-100 stock data

In this project, you have available two CSV files `nasdaq100.csv` and `nasdaq100_price_change.csv`.

nasdaq100.csv

```
symbol,name,headQuarter,dateFirstAdded,ci
k,founded
AAPL,Apple Inc.,"Cupertino,
CA",,0000320193,1976-04-01
ABNB,Airbnb,"San Francisco,
CA",,0001559720,2008-08-01
ADBE,Adobe Inc.,"San Jose, CA",,0000796343,1982-
12-01
ADI,Analog Devices,"Wilmington,
MA",,0000006281,1965-01-01
...
```

Copy

nasdaq100_price_change.csv

```
symbol,1D,5D,1M,3M,6M,ytd,1Y,3Y,5Y,10Y,ma Copy
x
AAPL,-1.7254,-8.30086,-6.20411,3.042,15.64824,42
.99992,8.47941,60.96299,245.42031,976.99441,1392
45.53954
ABNB,2.1617,-2.21919,9.88336,19.43286,19.64241,6
8.66902,23.64013,-1.04347,-1.04347,-1.04347,-1.0
4347
ADBE,0.5409,-1.77817,9.16191,52.0465,38.01522,57
.22723,21.96206,17.83037,109.05718,1024.69214,25
1030.66399
ADI,0.9291,-4.03352,2.58486,3.65887,5.01602,17.0
2062,8.09735,63.42847,92.81874,286.77518,26012.6
3736
...
```

Before you start

In order to complete the project you will need to create a developer account with OpenAI and store your API key as an environment variable. Instructions for these steps are outlined below.

Create a developer account with OpenAI

1. Go to the API signup page.
2. Create your account (you'll need to provide your email address and your phone number).
3. Go to the API keys page.
4. Create a new secret key.
5. **Take a copy of it.** (If you lose it, delete the key and create a new one.)

Add a payment method

OpenAI sometimes provides free credits for the API, but it's not clear if that is worldwide or what the conditions are. You may need to add debit/credit card details.

The API costs $0.002 / 1000 tokens for GPT-3.5-turbo. 1000 tokens is about 750 words. This project should cost less than 1 US cents (but if you rerun tasks, you will be charged every time).

1. Go to the Payment Methods page.
2. Click Add payment method.
3. Fill in your card details.

Add an environmental variable with your OpenAI key

1. In DataLab, click on "Environment," in the menu.
2. Click on "Environment variables" to add environment variables.
3. In the "Name" field, type "OPENAI_API_KEY". In the "Value" field, paste in your secret key.
4. Click "Create", and following instructions to copy the environment variable for use via the `os` library.

See **this article** for further guidance.

```
# Start your code here!
import os
import pandas as pd
from openai import OpenAI

# Instantiate an API client
# If you named your environment variable
differently
# then change "OPENAI_API_KEY" to reflect the
variable name
client =
OpenAI(api_key=os.environ["OPENAI_API_KEY"])

# Continue coding here
# Use as many cells as you like
```