A company's stock share is a piece of the company more precisely: A stock (also known as equity) is a security that represents the ownership of a fraction of a corporation. This entitles the owner of the stock to a proportion of the corporation's assets and profits equal to how much stock they own. Units of stock are called "shares." [1]

An investor can buy a stock and sell it later. If the stock price increases, the investor profits, If it decreases,the investor with incur a loss. Determining the stock price is complex; it depends on the number of outstanding shares, the size of the company's future profits, and much more. People trade stocks throughout the day the stock ticker is a report of the price of a certain stock, updated continuously throughout the trading session by the various stock market exchanges. You are a data scientist working for a hedge fund; it's your job to determine any suspicious stock activity. In this lab you will extract stock data using a Python library. We will use the yfinance library, it allows us to extract data for stocks returning data in a pandas dataframe. You will use the lab to extract.

```
!pip install yfinance==0.2.4
!pip install pandas==1.3.3
```

```
Collecting yfinance==0.2.4
  Downloading yfinance-0.2.4-py2.py3-none-any.whl (51 kB)
━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 51.4/51.4 kB 9.5 MB/s eta
0:00:00
ent already satisfied: pandas>=1.3.0 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
yfinance==0.2.4) (1.3.5)
Requirement already satisfied: numpy>=1.16.5 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
yfinance==0.2.4) (1.21.6)
Requirement already satisfied: requests>=2.26 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
yfinance==0.2.4) (2.29.0)
Collecting multitasking>=0.0.7 (from yfinance==0.2.4)
  Downloading multitasking-0.0.11-py3-none-any.whl (8.5 kB)
Requirement already satisfied: lxml>=4.9.1 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
yfinance==0.2.4) (4.9.2)
Collecting appdirs>=1.4.4 (from yfinance==0.2.4)
  Downloading appdirs-1.4.4-py2.py3-none-any.whl (9.6 kB)
Requirement already satisfied: pytz>=2022.5 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
yfinance==0.2.4) (2023.3)
Collecting frozendict>=2.3.4 (from yfinance==0.2.4)
  Downloading frozendict-2.4.4-cp37-cp37m-
manylinux_2_17_x86_64.manylinux2014_x86_64.whl (103 kB)
━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 103.7/103.7 kB 24.7 MB/s eta
0:00:00
ent already satisfied: cryptography>=3.3.2 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
yfinance==0.2.4) (38.0.2)
```

```
Requirement already satisfied: beautifulsoup4>=4.11.1 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
yfinance==0.2.4) (4.11.1)
Collecting html5lib>=1.1 (from yfinance==0.2.4)
  Downloading html5lib-1.1-py2.py3-none-any.whl (112 kB)
━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 112.2/112.2 kB 23.5 MB/s eta
0:00:00
ent already satisfied: soupsieve>1.2 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
beautifulsoup4>=4.11.1->yfinance==0.2.4) (2.3.2.post1)
Requirement already satisfied: cffi>=1.12 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
cryptography>=3.3.2->yfinance==0.2.4) (1.15.1)
Requirement already satisfied: six>=1.9 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
html5lib>=1.1->yfinance==0.2.4) (1.16.0)
Requirement already satisfied: webencodings in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
html5lib>=1.1->yfinance==0.2.4) (0.5.1)
Requirement already satisfied: python-dateutil>=2.7.3 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
pandas>=1.3.0->yfinance==0.2.4) (2.8.2)
Requirement already satisfied: charset-normalizer<4,>=2 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
requests>=2.26->yfinance==0.2.4) (3.1.0)
Requirement already satisfied: idna<4,>=2.5 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
requests>=2.26->yfinance==0.2.4) (3.4)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
requests>=2.26->yfinance==0.2.4) (1.26.15)
Requirement already satisfied: certifi>=2017.4.17 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
requests>=2.26->yfinance==0.2.4) (2023.5.7)
Requirement already satisfied: pycparser in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
cffi>=1.12->cryptography>=3.3.2->yfinance==0.2.4) (2.21)
Installing collected packages: multitasking, appdirs, html5lib,
frozendict, yfinance
Successfully installed appdirs-1.4.4 frozendict-2.4.4 html5lib-1.1
multitasking-0.0.11 yfinance-0.2.4
Collecting pandas==1.3.3
  Downloading pandas-1.3.3-cp37-cp37m-
manylinux_2_17_x86_64.manylinux2014_x86_64.whl (11.3 MB)
━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 11.3/11.3 MB 69.0 MB/s eta
0:00:0000:0100:01
ent already satisfied: numpy>=1.17.3 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
pandas==1.3.3) (1.21.6)
```

```
Requirement already satisfied: python-dateutil>=2.7.3 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
pandas==1.3.3) (2.8.2)
Requirement already satisfied: pytz>=2017.3 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
pandas==1.3.3) (2023.3)
Requirement already satisfied: six>=1.5 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
python-dateutil>=2.7.3->pandas==1.3.3) (1.16.0)
Installing collected packages: pandas
  Attempting uninstall: pandas
    Found existing installation: pandas 1.3.5
    Uninstalling pandas-1.3.5:
      Successfully uninstalled pandas-1.3.5
Successfully installed pandas-1.3.3
```

```
import yfinance as yf
import pandas as pd
```

Using the yfinance Library to Extract Stock Data

Using the `Ticker` module we can create an object that will allow us to access functions to extract data. To do this we need to provide the ticker symbol for the stock, here the company is Apple and the ticker symbol is `AAPL`.

```
apple = yf.Ticker("AAPL")
```

Now we can access functions and variables to extract the type of data we need. You can view them and what they represent here https://aroussi.com/post/python-yahoo-finance.

```
!wget https://cf-courses-data.s3.us.cloud-object-
storage.appdomain.cloud/IBMDeveloperSkillsNetwork-PY0220EN-
SkillsNetwork/data/apple.json
```

```
--2024-06-26 07:19:53--  https://cf-courses-data.s3.us.cloud-object-
storage.appdomain.cloud/IBMDeveloperSkillsNetwork-PY0220EN-
SkillsNetwork/data/apple.json
Resolving cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud
(cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud)...
169.63.118.104, 169.63.118.104
Connecting to cf-courses-data.s3.us.cloud-object-
storage.appdomain.cloud (cf-courses-data.s3.us.cloud-object-
storage.appdomain.cloud)|169.63.118.104|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 5699 (5.6K) [application/json]
Saving to: ‘apple.json.2’

apple.json.2        100%[===================>]   5.57K  --.-KB/s    in
0s
```

```
2024-06-26 07:19:53 (43.0 MB/s) - ‘apple.json.2’ saved [5699/5699]
```

Stock Info

Using the attribute info we can extract information about the stock as a Python dictionary.

```
import json
with open('apple.json') as json_file:
    apple_info = json.load(json_file)
    # Print the type of data variable
    #print("Type:", type(apple_info))
apple_info
```


```
{'zip': '95014',
 'sector': 'Technology',
 'fullTimeEmployees': 100000,
 'longBusinessSummary': 'Apple Inc. designs, manufactures, and markets smartphones, personal computers, tablets, wearables, and accessories worldwide. It also sells various related services. In addition, the company offers iPhone, a line of smartphones; Mac, a line of personal computers; iPad, a line of multi-purpose tablets; AirPods Max, an over-ear wireless headphone; and wearables, home, and accessories comprising AirPods, Apple TV, Apple Watch, Beats products, HomePod, and iPod touch. Further, it provides AppleCare support services; cloud services store services; and operates various platforms, including the App Store that allow customers to discover and download applications and digital content, such as books, music, video, games, and podcasts. Additionally, the company offers various services, such as Apple Arcade, a game subscription service; Apple Music, which offers users a curated listening experience with on-demand radio stations; Apple News+, a subscription news and magazine service; Apple TV+, which offers exclusive original content; Apple Card, a co-branded credit card; and Apple Pay, a cashless payment service, as well as licenses its intellectual property. The company serves consumers, and small and mid-sized businesses; and the education, enterprise, and government markets. It distributes third-party applications for its products through the App Store. The company also sells its products through its retail and online stores, and direct sales force; and third-party cellular network carriers, wholesalers, retailers, and resellers. Apple Inc. was incorporated in 1977 and is headquartered in Cupertino, California.',
 'city': 'Cupertino',
 'phone': '408 996 1010',
 'state': 'CA',
 'country': 'United States',
 'companyOfficers': [],
 'website': 'https://www.apple.com',
```

```
'maxAge': 1,
'address1': 'One Apple Park Way',
'industry': 'Consumer Electronics',
'ebitdaMargins': 0.33890998,
'profitMargins': 0.26579002,
'grossMargins': 0.43019,
'operatingCashflow': 112241000448,
'revenueGrowth': 0.112,
'operatingMargins': 0.309,
'ebitda': 128217997312,
'targetLowPrice': 160,
'recommendationKey': 'buy',
'grossProfits': 152836000000,
'freeCashflow': 80153247744,
'targetMedianPrice': 199.5,
'currentPrice': 177.77,
'earningsGrowth': 0.25,
'currentRatio': 1.038,
'returnOnAssets': 0.19875,
'numberOfAnalystOpinions': 44,
'targetMeanPrice': 193.53,
'debtToEquity': 170.714,
'returnOnEquity': 1.45567,
'targetHighPrice': 215,
'totalCash': 63913000960,
'totalDebt': 122797998080,
'totalRevenue': 378323009536,
'totalCashPerShare': 3.916,
'financialCurrency': 'USD',
'revenuePerShare': 22.838,
'quickRatio': 0.875,
'recommendationMean': 1.8,
'exchange': 'NMS',
'shortName': 'Apple Inc.',
'longName': 'Apple Inc.',
'exchangeTimezoneName': 'America/New_York',
'exchangeTimezoneShortName': 'EDT',
'isEsgPopulated': False,
'gmtOffSetMilliseconds': '-14400000',
'quoteType': 'EQUITY',
'symbol': 'AAPL',
'messageBoardId': 'finmb_24937',
'market': 'us_market',
'annualHoldingsTurnover': None,
'enterpriseToRevenue': 7.824,
'beta3Year': None,
'enterpriseToEbitda': 23.086,
'52WeekChange': 0.4549594,
'morningStarRiskRating': None,
```

```
'forwardEps': 6.56,
'revenueQuarterlyGrowth': None,
'sharesOutstanding': 16319399936,
'fundInceptionDate': None,
'annualReportExpenseRatio': None,
'totalAssets': None,
'bookValue': 4.402,
'sharesShort': 111286790,
'sharesPercentSharesOut': 0.0068,
'fundFamily': None,
'lastFiscalYearEnd': 1632528000,
'heldPercentInstitutions': 0.59397,
'netIncomeToCommon': 100554997760,
'trailingEps': 6.015,
'lastDividendValue': 0.22,
'SandP52WeekChange': 0.15217662,
'priceToBook': 40.38392,
'heldPercentInsiders': 0.0007,
'nextFiscalYearEnd': 1695600000,
'yield': None,
'mostRecentQuarter': 1640390400,
'shortRatio': 1.21,
'sharesShortPreviousMonthDate': 1644883200,
'floatShares': 16302795170,
'beta': 1.185531,
'enterpriseValue': 2959991898112,
'priceHint': 2,
'threeYearAverageReturn': None,
'lastSplitDate': 1598832000,
'lastSplitFactor': '4:1',
'legalType': None,
'lastDividendDate': 1643932800,
'morningStarOverallRating': None,
'earningsQuarterlyGrowth': 0.204,
'priceToSalesTrailing12Months': 7.668314,
'dateShortInterest': 1647302400,
'pegRatio': 1.94,
'ytdReturn': None,
'forwardPE': 27.099087,
'lastCapGain': None,
'shortPercentOfFloat': 0.0068,
'sharesShortPriorMonth': 108944701,
'impliedSharesOutstanding': 0,
'category': None,
'fiveYearAverageReturn': None,
'previousClose': 178.96,
'regularMarketOpen': 178.55,
'twoHundredDayAverage': 156.03505,
'trailingAnnualDividendYield': 0.004833482,
```

```
 'payoutRatio': 0.1434,
 'volume24Hr': None,
 'regularMarketDayHigh': 179.61,
 'navPrice': None,
 'averageDailyVolume10Day': 93823630,
 'regularMarketPreviousClose': 178.96,
 'fiftyDayAverage': 166.498,
 'trailingAnnualDividendRate': 0.865,
 'open': 178.55,
 'toCurrency': None,
 'averageVolume10days': 93823630,
 'expireDate': None,
 'algorithm': None,
 'dividendRate': 0.88,
 'exDividendDate': 1643932800,
 'circulatingSupply': None,
 'startDate': None,
 'regularMarketDayLow': 176.7,
 'currency': 'USD',
 'trailingPE': 29.55445,
 'regularMarketVolume': 92633154,
 'lastMarket': None,
 'maxSupply': None,
 'openInterest': None,
 'marketCap': 2901099675648,
 'volumeAllCurrencies': None,
 'strikePrice': None,
 'averageVolume': 95342043,
 'dayLow': 176.7,
 'ask': 178.53,
 'askSize': 800,
 'volume': 92633154,
 'fiftyTwoWeekHigh': 182.94,
 'fromCurrency': None,
 'fiveYearAvgDividendYield': 1.13,
 'fiftyTwoWeekLow': 122.25,
 'bid': 178.4,
 'tradeable': False,
 'dividendYield': 0.005,
 'bidSize': 3200,
 'dayHigh': 179.61,
 'regularMarketPrice': 177.77,
 'preMarketPrice': 178.38,
 'logo_url': 'https://logo.clearbit.com/apple.com'}
```

We can get the 'country' using the key country

```
apple_info['country']
```

```
'United States'
```

Extracting Share Price

A share is the single smallest part of a company's stock that you can buy, the prices of these shares fluctuate over time. Using the history() method we can get the share price of the stock over a certain period of time. Using the `period` parameter we can set how far back from the present to get data. The options for `period` are 1 day (1d), 5d, 1 month (1mo) , 3mo, 6mo, 1 year (1y), 2y, 5y, 10y, ytd, and max.

```
apple_share_price_data = apple.history(period="max")
apple_share_price_data
```

```
                                 Open        High         Low
Close  \
Date

1980-12-12 00:00:00-05:00    0.099058    0.099488    0.099058
0.099058
1980-12-15 00:00:00-05:00    0.094320    0.094320    0.093890
0.093890
1980-12-16 00:00:00-05:00    0.087429    0.087429    0.086998
0.086998
1980-12-17 00:00:00-05:00    0.089152    0.089582    0.089152
0.089152
1980-12-18 00:00:00-05:00    0.091737    0.092167    0.091737
0.091737
...                               ...         ...         ...
...
2024-06-18 00:00:00-04:00  217.589996  218.630005  213.000000
214.289993
2024-06-20 00:00:00-04:00  213.929993  214.240005  208.850006
209.679993
2024-06-21 00:00:00-04:00  210.389999  211.889999  207.110001
207.490005
2024-06-24 00:00:00-04:00  207.720001  212.699997  206.589996
208.139999
2024-06-25 00:00:00-04:00  209.149994  211.380005  208.610001
209.070007

                               Volume  Dividends  Stock Splits
Date
1980-12-12 00:00:00-05:00  469033600        0.0           0.0
1980-12-15 00:00:00-05:00  175884800        0.0           0.0
1980-12-16 00:00:00-05:00  105728000        0.0           0.0
1980-12-17 00:00:00-05:00   86441600        0.0           0.0
1980-12-18 00:00:00-05:00   73449600        0.0           0.0
...                              ...        ...           ...
2024-06-18 00:00:00-04:00   79943300        0.0           0.0
```

```
2024-06-20 00:00:00-04:00   86172500        0.0           0.0
2024-06-21 00:00:00-04:00  246421400        0.0           0.0
2024-06-24 00:00:00-04:00   80727000        0.0           0.0
2024-06-25 00:00:00-04:00   55549700        0.0           0.0

[10974 rows x 7 columns]
```

The format that the data is returned in is a Pandas DataFrame. With the `Date` as the index the share `Open`, `High`, `Low`, `Close`, `Volume`, and `Stock Splits` are given for each day.

```
apple_share_price_data.head()
```

```
                                 Open      High       Low     Close
Volume  \
Date

1980-12-12 00:00:00-05:00  0.099058  0.099488  0.099058  0.099058
469033600
1980-12-15 00:00:00-05:00  0.094320  0.094320  0.093890  0.093890
175884800
1980-12-16 00:00:00-05:00  0.087429  0.087429  0.086998  0.086998
105728000
1980-12-17 00:00:00-05:00  0.089152  0.089582  0.089152  0.089152
86441600
1980-12-18 00:00:00-05:00  0.091737  0.092167  0.091737  0.091737
73449600

                           Dividends  Stock Splits
Date
1980-12-12 00:00:00-05:00        0.0           0.0
1980-12-15 00:00:00-05:00        0.0           0.0
1980-12-16 00:00:00-05:00        0.0           0.0
1980-12-17 00:00:00-05:00        0.0           0.0
1980-12-18 00:00:00-05:00        0.0           0.0
```

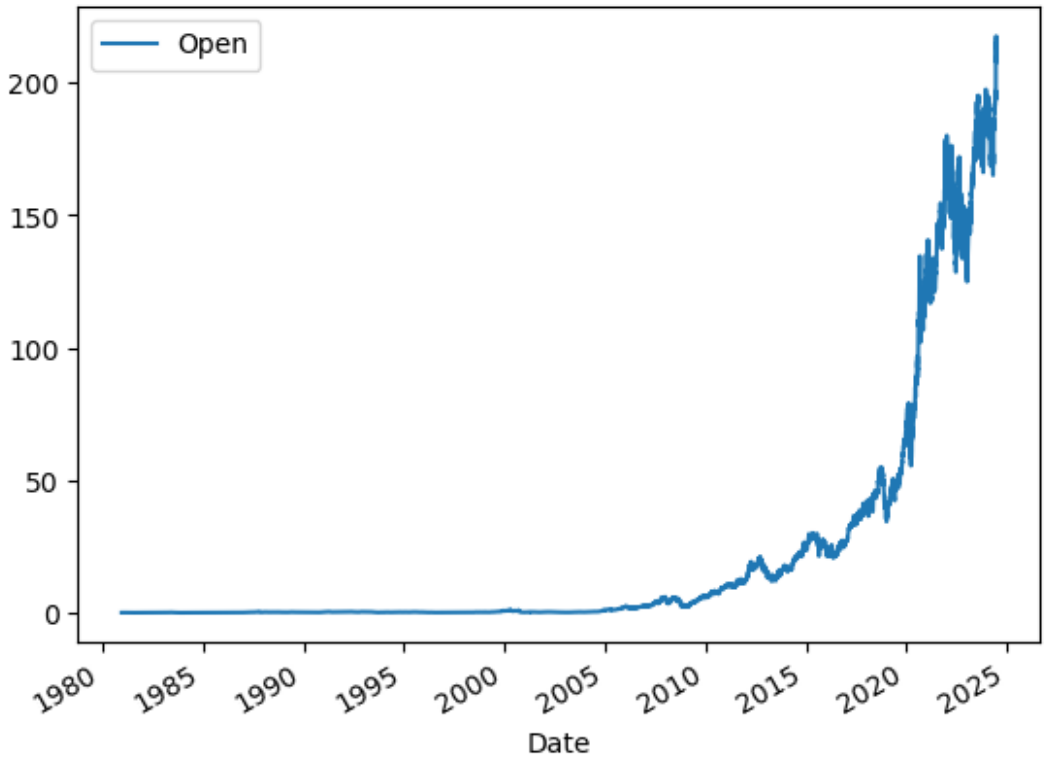
We can reset the index of the DataFrame with the `reset_index` function. We also set the `inplace` paramter to `True` so the change takes place to the DataFrame itself.

```
apple_share_price_data.reset_index(inplace=True)
```

We can plot the `Open` price against the `Date`:

```
apple_share_price_data.plot(x="Date", y="Open")
```

```
<AxesSubplot:xlabel='Date'>
```



Extracting Dividends

Dividends are the distribution of a companys profits to shareholders. In this case they are defined as an amount of money returned per share an investor owns. Using the variable `dividends` we can get a dataframe of the data. The period of the data is given by the period defined in the 'history` function.

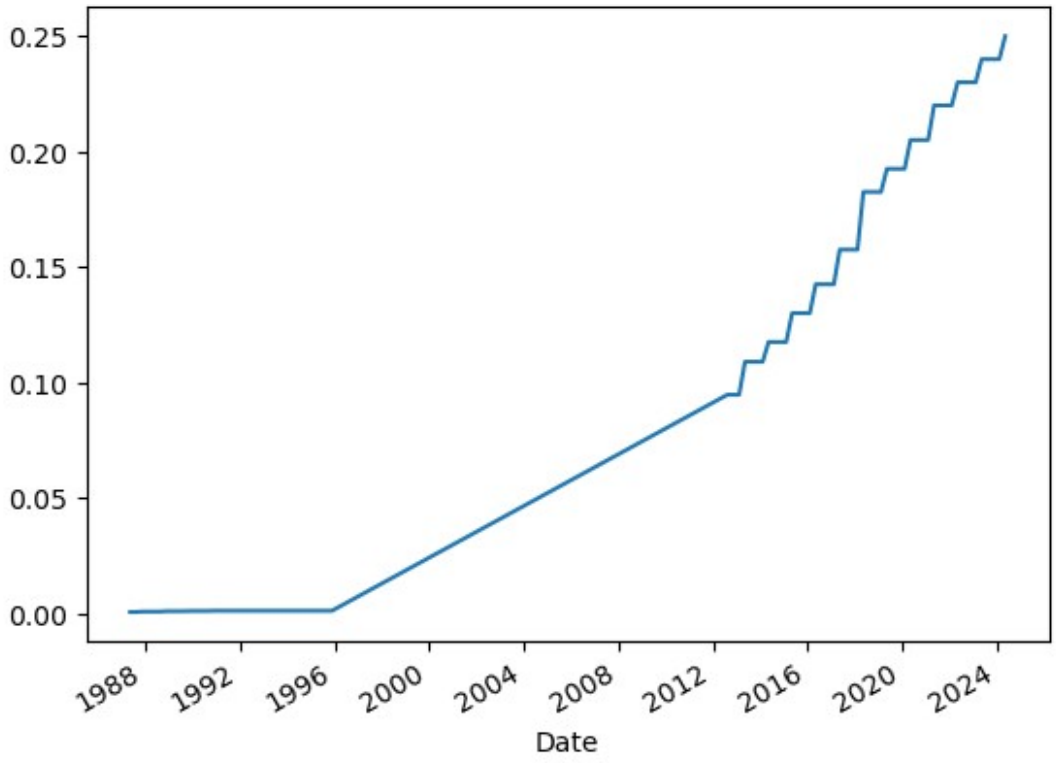
```
apple.dividends
```

```
Date
1987-05-11 00:00:00-04:00    0.000536
1987-08-10 00:00:00-04:00    0.000536
1987-11-17 00:00:00-05:00    0.000714
1988-02-12 00:00:00-05:00    0.000714
1988-05-16 00:00:00-04:00    0.000714
                               ...
2023-05-12 00:00:00-04:00    0.240000
2023-08-11 00:00:00-04:00    0.240000
2023-11-10 00:00:00-05:00    0.240000
2024-02-09 00:00:00-05:00    0.240000
2024-05-10 00:00:00-04:00    0.250000
Name: Dividends, Length: 83, dtype: float64
```

We can plot the dividends overtime:

```
apple.dividends.plot()
```

```
<AxesSubplot:xlabel='Date'>
```



Exercise

Now using the `Ticker` module create an object for AMD (Advanced Micro Devices) with the ticker symbol is `AMD` called; name the object amd.

```
amd = yf.Ticker("AMD")
```

```
!wget https://cf-courses-data.s3.us.cloud-object-
storage.appdomain.cloud/IBMDeveloperSkillsNetwork-PY0220EN-
SkillsNetwork/data/amd.json
```

```
--2024-06-26 07:19:56--  https://cf-courses-data.s3.us.cloud-object-
storage.appdomain.cloud/IBMDeveloperSkillsNetwork-PY0220EN-
SkillsNetwork/data/amd.json
Resolving cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud
(cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud)...
169.63.118.104, 169.63.118.104
Connecting to cf-courses-data.s3.us.cloud-object-
storage.appdomain.cloud (cf-courses-data.s3.us.cloud-object-
storage.appdomain.cloud)|169.63.118.104|:443... connected.
HTTP request sent, awaiting response... 200 OK
```

```
Length: 5838 (5.7K) [application/json]
Saving to: ‘amd.json.2’

amd.json.2          100%[===================>]   5.70K  --.-KB/s    in
0s

2024-06-26 07:19:56 (65.1 MB/s) - ‘amd.json.2’ saved [5838/5838]
```

```
import json
with open('amd.json') as json_file:
    amd_info = json.load(json_file)
    # Print the type of data variable
    #print("Type:", type(apple_info))
amd_info
```


```
{'zip': '95054',
 'sector': 'Technology',
 'fullTimeEmployees': 15500,
 'longBusinessSummary': 'Advanced Micro Devices, Inc. operates as a
semiconductor company worldwide. The company operates in two segments,
Computing and Graphics; and Enterprise, Embedded and Semi-Custom. Its
products include x86 microprocessors as an accelerated processing
unit, chipsets, discrete and integrated graphics processing units
(GPUs), data center and professional GPUs, and development services;
and server and embedded processors, and semi-custom System-on-Chip
(SoC) products, development services, and technology for game
consoles. The company provides processors for desktop and notebook
personal computers under the AMD Ryzen, AMD Ryzen PRO, Ryzen
Threadripper, Ryzen Threadripper PRO, AMD Athlon, AMD Athlon PRO, AMD
FX, AMD A-Series, and AMD PRO A-Series processors brands; discrete
GPUs for desktop and notebook PCs under the AMD Radeon graphics, AMD
Embedded Radeon graphics brands; and professional graphics products
under the AMD Radeon Pro and AMD FirePro graphics brands. It also
offers Radeon Instinct, Radeon PRO V-series, and AMD Instinct
accelerators for servers; chipsets under the AMD trademark;
microprocessors for servers under the AMD EPYC; embedded processor
solutions under the AMD Athlon, AMD Geode, AMD Ryzen, AMD EPYC, AMD R-
Series, and G-Series processors brands; and customer-specific
solutions based on AMD CPU, GPU, and multi-media technologies, as well
as semi-custom SoC products. It serves original equipment
manufacturers, public cloud service providers, original design
manufacturers, system integrators, independent distributors, online
retailers, and add-in-board manufacturers through its direct sales
force, independent distributors, and sales representatives. The
company was incorporated in 1969 and is headquartered in Santa Clara,
California.',
 'city': 'Santa Clara',
 'phone': '408 749 4000',
 'state': 'CA',
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'country': 'United States',
'companyOfficers': [],
'website': 'https://www.amd.com',
'maxAge': 1,
'address1': '2485 Augustine Drive',
'industry': 'Semiconductors',
'ebitdaMargins': 0.24674,
'profitMargins': 0.19240999,
'grossMargins': 0.48248002,
'operatingCashflow': 3520999936,
'revenueGrowth': 0.488,
'operatingMargins': 0.22198,
'ebitda': 4055000064,
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'grossProfits': 7929000000,
'freeCashflow': 3122749952,
'targetMedianPrice': 150,
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'totalCashPerShare': 3.008,
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'longName': 'Advanced Micro Devices, Inc.',
'exchangeTimezoneName': 'America/New_York',
'exchangeTimezoneShortName': 'EDT',
'isEsgPopulated': False,
'gmtOffSetMilliseconds': '-14400000',
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'legalType': None,
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'logo_url': 'https://logo.clearbit.com/amd.com'}
```

Question 1 Use the key 'country' to find the country the stock belongs to, remember it as it will be a quiz question.

```
amd_info['country']
```

```
'United States'
```

Question 2 Use the key 'sector' to find the sector the stock belongs to, remember it as it will be a quiz question.

```
amd_info["sector"]
```

```
'Technology'
```

Question 3 Obtain stock data for AMD using the `history` function, set the `period` to max. Find the `Volume` traded on the first day (first row).

```
amd_share_price_data = amd.history(period="max")
amd_share_price_data.max()
```

```
Open            2.134100e+02
High            2.273000e+02
Low             2.082200e+02
Close           2.113800e+02
Volume          3.250584e+08
Dividends       0.000000e+00
Stock Splits    2.000000e+00
dtype: float64
```

Joseph Santarcangelo has a PhD in Electrical Engineering, his research focused on using machine learning, signal processing, and computer vision to determine how videos impact human cognition. Joseph has been working for IBM since he completed his PhD.

Azim Hirjani

Change Log

Date (YYYY-MM-DD)	Version	Changed By	Change Description
2020-11-10	1.1	Malika Singla	Deleted the Optional part
2020-08-27	1.0	Malika Singla	Added lab to GitLab