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How to Download historical stock prices in Python ?

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Stock prices refer to the current price of the share of that stock. Stock prices are widely used in the field of [Machine Learning](#) for the demonstration of the [regression problem](#). Stock prediction is an application of Machine learning where we predict the stocks of a particular firm by looking at its past data. Now to build something like this first step is to get our historical stock data.

We can get our historical stock data using API's provided as library support in [Python](#). A few of the API's are mentioned below:

- Yahoo Finance
- Pandas DataReader
- Quandl

Approach:

Each of the methods uses a different python module, but they have a similar procedural structure which includes the following steps:

1. Import required libraries

- We are using [datetime](#) module to get the date of the starting and

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graphical format.

2. Initialize the start and end date for getting the stock data during that time period.
3. Get the data using the dedicated functions provided in each of the modules.
4. Display the data using the matplotlib library. We use the [plot\(\)](#) function to plot the data in a graphical format.

Method 1: Using Yahoo Finance

We can get stock using the **yfinance.download()** function provided in the yfinance module which is a module for Yahoo's Finance API. We can download the module using the following command.

```
pip install yfinance
```

We need to supply 3 required parameters in the yfinance.download() function which are

- Stock Symbol
- Start date
- End date

Below is the implementation.

Python3

```
# import modules
from datetime import datetime
import yfinance as yf
import matplotlib.pyplot as plt
```

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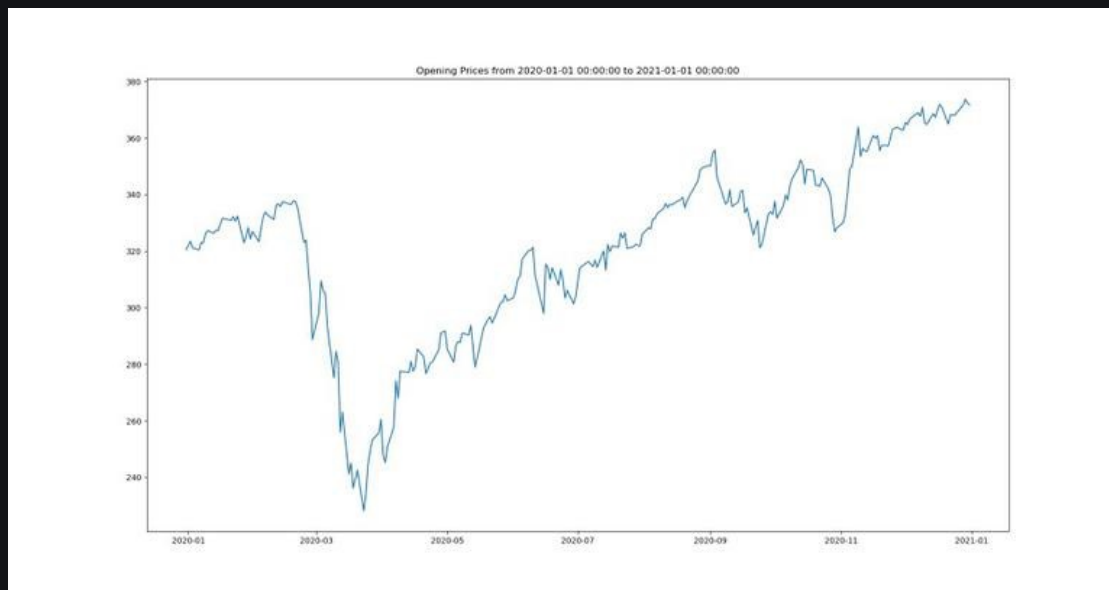
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```
# get the data
data = yf.download('SPY', start = start_date,
                  end = end_date)

# display
plt.figure(figsize = (20,10))
plt.title('Opening Prices from {} to {}'.format(start_date,
                                              end_date))

plt.plot(data['Open'])
plt.show()
```

Output:



Method 2: Using Pandas DataReader

Another way of getting the historical stock data is to use the [pandas_datareader](#) library. It also uses Yahoo's Finance API to load in the data. We can download the module using the following command.

```
pip install pandas_datareader
```

.....

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- End date

Below is the implementation:

Python3

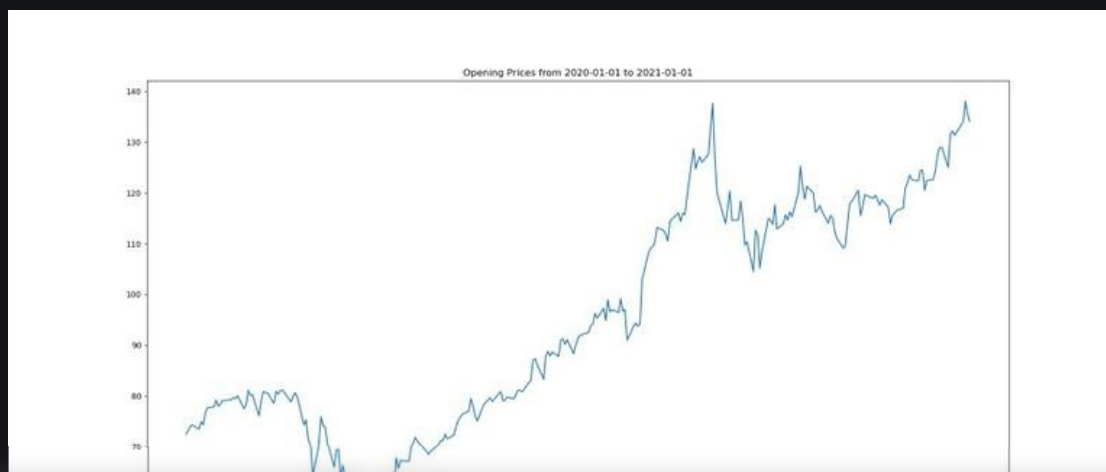
```
# import modules
from pandas_datareader import data as pdr
import matplotlib.pyplot as plt

# initializing Parameters
start = "2020-01-01"
end = "2021-01-01"
symbols = ["AAPL"]

# Getting the data
data = pdr.get_data_yahoo(symbols, start, end)

# Display
plt.figure(figsize = (20,10))
plt.title('Opening Prices from {} to {}'.format(start, end))
plt.plot(data['Open'])
plt.show()
```

Output:



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Method 3: Using Quandl

Quandl has hundreds of free and paid data sources, across equities, fixed incomes, commodities, exchange rates, etc. In order to get the access, we need to create an account on [Quandl](#) and get an API Key to access the data for free. After that, we need to download the API support quandl library of python using the following command.

```
pip install quandl
```

We will use **quandl.get()** function to get the data. It takes four fields to load in the data

- Symbol
- start_date
- end_date
- Authentication token

Below is the implementation:

Python3

```
# import modules
import quandl
from datetime import datetime
import matplotlib.pyplot as plt

# initialize parameters
start = datetime(2015, 1, 1)
end = datetime(2020, 1, 1)

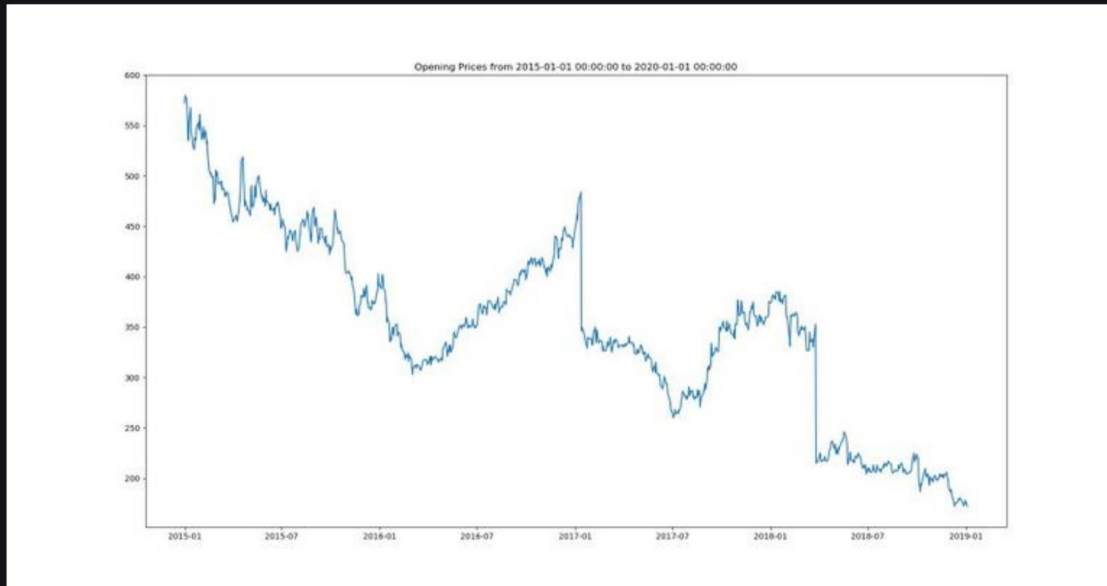
# get the data
df = quandl.get('NSE/OIL', start_date = start,
                end_date = end,
                authtoken = 'enter_your_api_key')
```

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```
plt.show()
```

Output:



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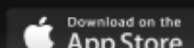
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