Group Name : Data_Wizards

Group Members

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DATAWIZ TASK 2- Crazy APIs

Defining the problem statement

Create a Python code that uses the Yahoo Finance API and get data for atleast 5 tickers. After getting the data into a csv or json, try basic operations on it.

In [1]:
```
import yfinance as yf
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import csv
import datetime
```

Analysing 5 companies of 5 different sectors

Apple - Technology

Tesla - Automobile

Johnson & Johnson - Healthcare

Facebook - Communication Service

EBAY - Ecommerce

In [2]:
```
yf.Tickers(["AAPL",'TSLA','JNJ','FB','EBAY'])
```

Out[2]: yfinance.Tickers object <AAPL,TSLA,JNJ,FB,EBAY>

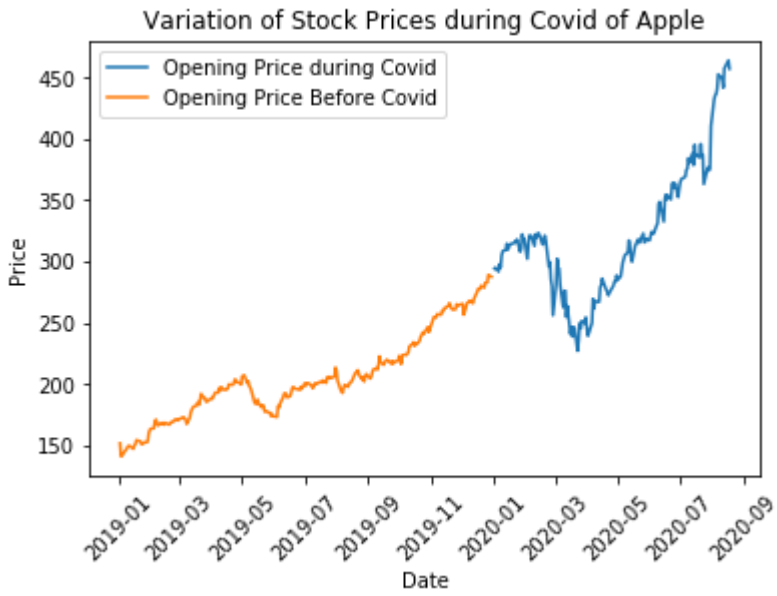
Analysing Covid and Pre Covid Share Price Trends

In [3]:
```
dict = {"AAPL": "Apple", "FB": "Facebook","JNJ":"Johnson & Johnson ","EBAY":"
#creating dictionary for future reference
```

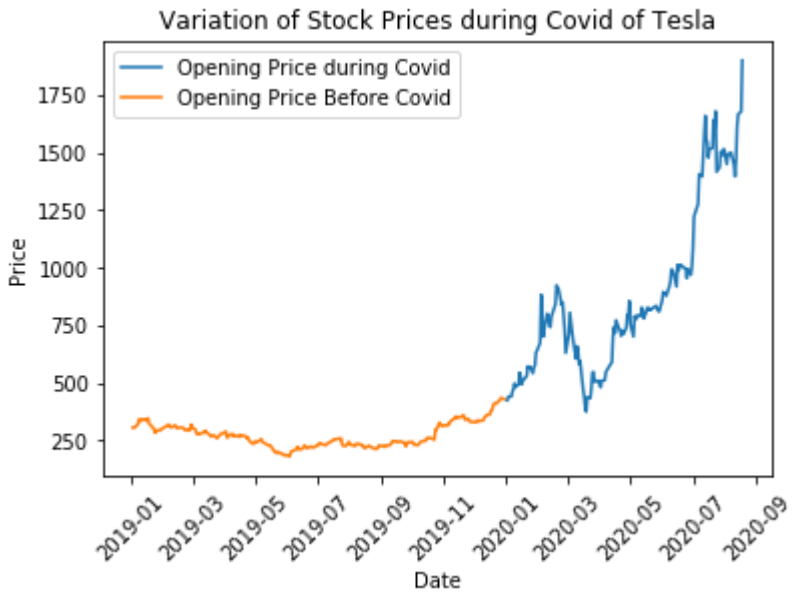
In [4]:
```
def share_price_Covid(ticker_symbol):

    Opening_price_Covid = yf.Ticker(ticker_symbol).history("ytd")['Open']
    index_lst = yf.Ticker(ticker_symbol).history("ytd").index
    plt.plot(index_lst,Opening_price_Covid,label='Opening Price during Covid'
    plt.xticks(rotation=45)
    plt.xlabel('Date')
    plt.ylabel('Price')
    plt.title('Variation of Stock Prices during Covid of ' + dict[ticker_symb
    plt.legend()
```

In [5]:
```
def share_price_PreCovid(ticker_symbol):
    Opening_price_PreCovid = yf.Ticker(ticker_symbol).history(start = "2019-0
    index_lst = yf.Ticker(ticker_symbol).history(start = "2019-01-02", end ="
    plt.plot(index_lst, Opening_price_PreCovid,label='Opening Price Before Co
    plt.xticks(rotation=45)
    plt.xlabel('Date')
    plt.ylabel('Price')
    plt.title('Variation of Stock Prices during Covid of '+dict[ticker_symbol
    plt.legend()
```

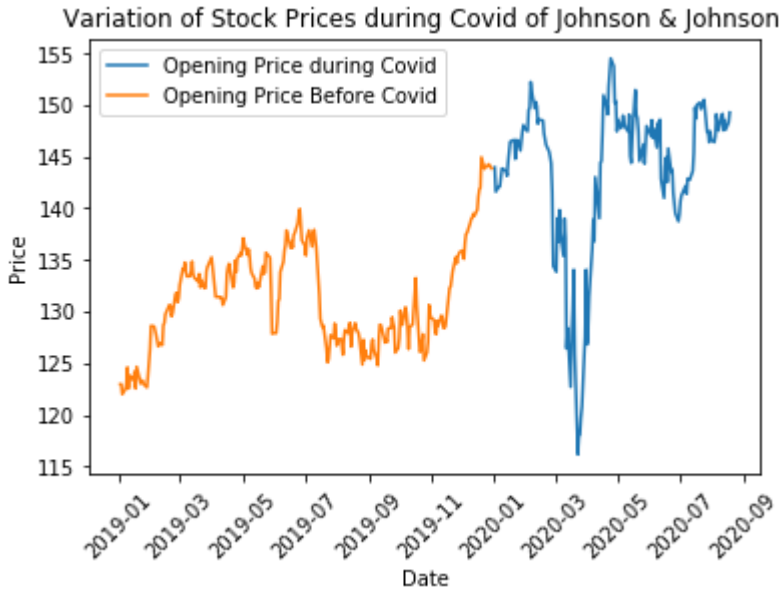
In [6]:
```
share_price_Covid("AAPL")
share_price_PreCovid("AAPL")
```



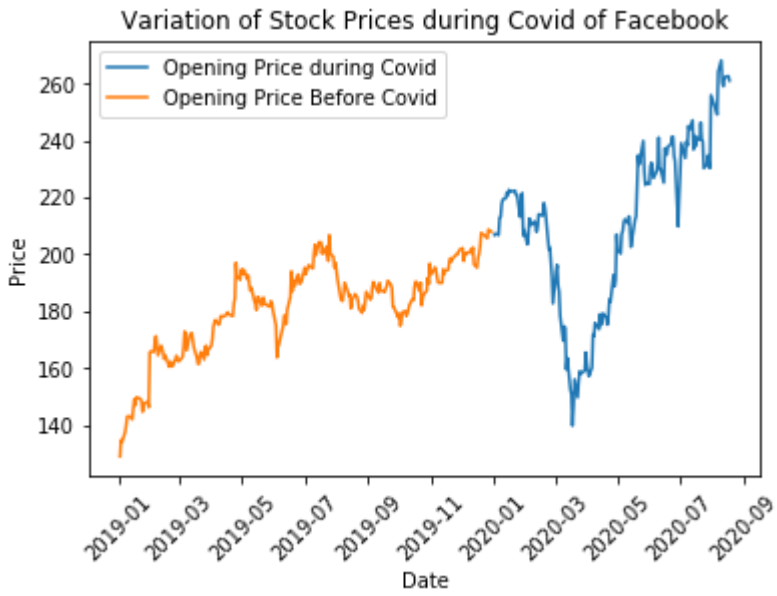
In [7]:
```
share_price_Covid('TSLA')
share_price_PreCovid('TSLA')
```



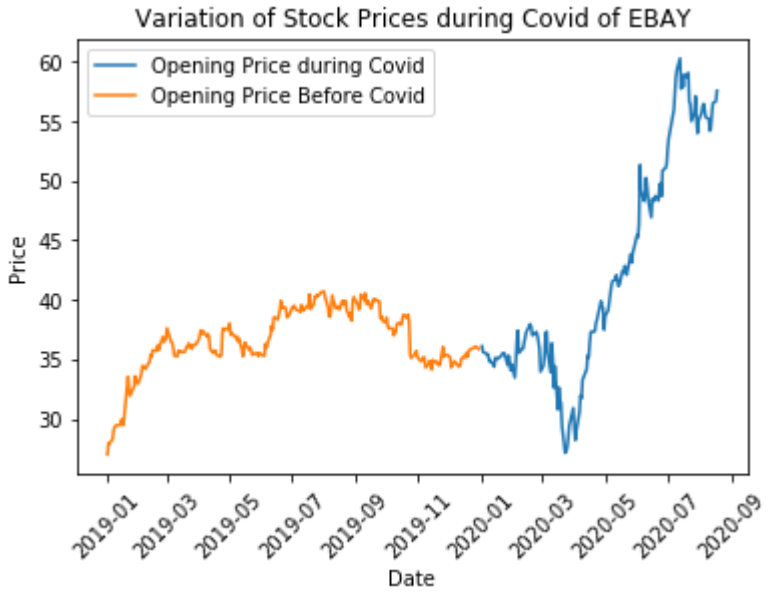
In [8]:
```
share_price_Covid('JNJ')
share_price_PreCovid('JNJ')
```



In [9]:
```
share_price_Covid("FB")
share_price_PreCovid("FB")
```



In [10]:
```
share_price_Covid("EBAY")
share_price_PreCovid("EBAY")
```



Deductions:

In March - April when Covid was at its peak the share prices of all companies fell drastically

All the companies except Johnson & Johnson had a "V" Shaped recovery following the crisis

Creating and downloading a CSV file of company information

In [11]:
```
def company_info(ticker_symbol):

    stock_name = yf.Ticker(ticker_symbol)
    keys = list(stock_name.info.keys())
    values = list(stock_name.info.values())
    df = pd.DataFrame(data=values,index=keys)
    comp_info  = df.transpose().rename(index={0:ticker_symbol})

    return comp_info

a =company_info('AAPL')
b =company_info('TSLA')
c =company_info('JNJ')
d =company_info('FB')
e =company_info('EBAY')
pd.concat([a,b,c,d,e]).to_csv('Company_info1.csv')
```

Listing Top Institutional Stackeholders in each Company

In [12]:
```
def top_institutional_stakeholdrs(ticker_symbol):
    df1 = yf.Ticker(ticker_symbol).get_institutional_holders().head()
    df1.index = [1,2,3,4,5]
    print("Top Institutional Stackeholders in "+ dict[ticker_symbol])
    print(df1)
```

In [13]:
```
top_institutional_stakeholdrs('AAPL')
```

```
Top Institutional Stackeholders in Apple
                      Holder     Shares Date Reported   % Out         Valu
e
1  Vanguard Group, Inc. (The)  328990250    2020-06-29  0.0769  12001564320
0
2              Blackrock Inc.  275456012    2020-06-29  0.0644  10048635317
7
3     Berkshire Hathaway, Inc  245155566    2020-06-29  0.0573   8943275047
6
4    State Street Corporation  177264368    2020-06-29  0.0415   6466604144
6
5                    FMR, LLC   95825047    2020-06-29  0.0224   3495697714
5
```

In [236]:
```
top_institutional_stakeholdrs('TSLA')
```

```
Top Institutional Stackeholders in Tesla
                       Holder    Shares Date Reported   % Out        Value
1  Baillie Gifford and Company  11771213    2020-06-29  0.0632  12710673509
2      Capital World Investors  10714131    2020-03-30  0.0575   5614204644
3   Vanguard Group, Inc. (The)   8662781    2020-03-30  0.0465   4539297244
4               Blackrock Inc.   7213587    2020-03-30  0.0387   3779919588
5                     FMR, LLC   4709340    2020-06-29  0.0253   5085192425
```

In [237]:
```
top_institutional_stakeholdrs('JNJ')
```

```
Top Institutional Stackeholders in Johnson & Johnson
                                    Holder     Shares Date Reported   % O
ut  \
1                Vanguard Group, Inc. (The)  233816138    2020-03-30  0.08
88
2                             Blackrock Inc.  192545915    2020-03-30  0.07
31
3                  State Street Corporation  151549024    2020-03-30  0.05
76
4              Geode Capital Management, LLC   39573737    2020-06-29  0.01
50
5  State Farm Mutual Automobile Insurance Co   34574792    2020-06-29  0.01
31

         Value
1  30660310175
2  25248545833
3  19872623517
4   5565254634
5   4862252998
```

In [238]:
```
top_institutional_stakeholdrs('FB')
```

```
Top Institutional Stackeholders in Facebook
                          Holder     Shares Date Reported   % Out        Va
lue
1     Vanguard Group, Inc. (The)  188139998    2020-06-29  0.0783  42720949
345
2                 Blackrock Inc.  161273433    2020-06-29  0.0671  36620358
431
3                       FMR, LLC  124032404    2020-06-29  0.0516  28164037
976
4  Price (T.Rowe) Associates Inc  103460097    2020-06-29  0.0430  23492684
225
5       State Street Corporation   96902907    2020-06-29  0.0403  22003743
092
```

In [239]:
```
top_institutional_stakeholdrs('EBAY')
```

```
Top Institutional Stackeholders in EBAY
                                    Holder    Shares Date Reported   % Out
\
1              Vanguard Group, Inc. (The)  61094315    2020-03-30  0.0873
2                           Blackrock Inc.  50003536    2020-03-30  0.0714
3                  State Street Corporation  35099047    2020-03-30  0.0502
4  Comprehensive Financial Management, LLC  32933858    2020-06-29  0.0471
5            Baupost Group, Inc,.(The) LLC  32086000    2020-06-29  0.0458

        Value
1  1836495108
2  1503106292
3  1055077352
4  1727380852
5  1682910700
```

Deduction:

Vanguard Group, Inc. is the biggest Institutional Stackeholder in 4 out 5 companies

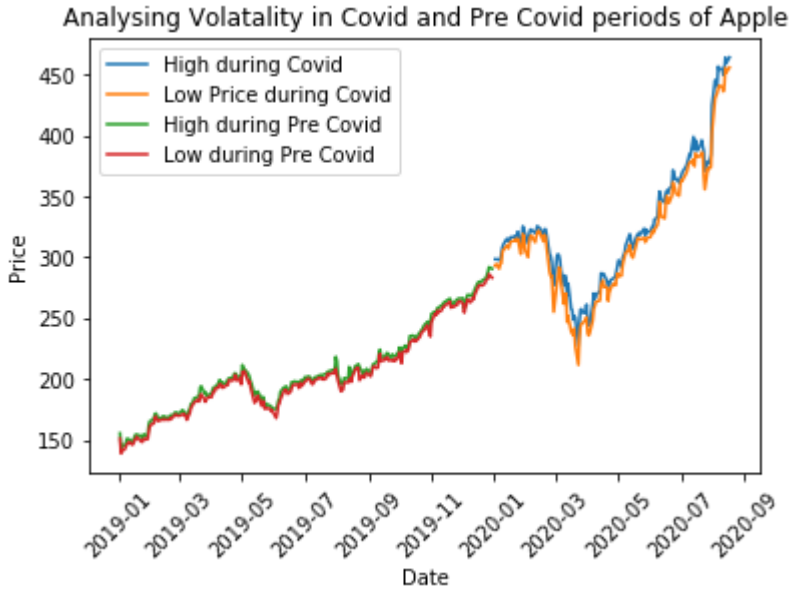
Analysing Volatality of stocks in Covid and Pre Covid periods:

More is the fluctuation between "High" and "Low" more volatile the stock is.

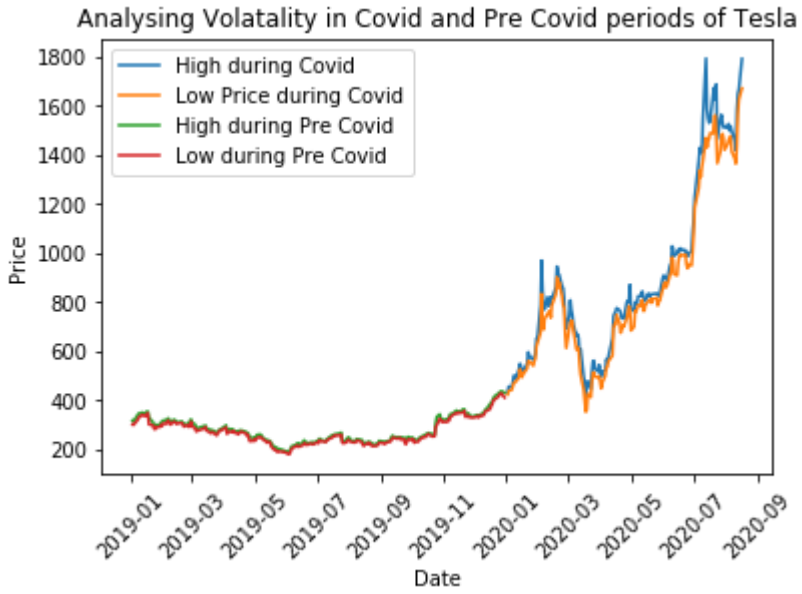
In [240]:
```
def volatility_Covid(ticker_symbol):
    Opening_price_Covid = yf.Ticker(ticker_symbol).history("ytd")['High']
    closing_price_Covid = yf.Ticker(ticker_symbol).history("ytd")['Low']
    index_lst = yf.Ticker(ticker_symbol).history("ytd").index
    plt.plot(index_lst,Opening_price_Covid,label='High during Covid')
    plt.plot(index_lst,closing_price_Covid,label='Low Price during Covid')
    plt.xticks(rotation=45)
    plt.xlabel('Date')
    plt.ylabel('Price')
    plt.title('Analysing Volatality in Covid and Pre Covid periods of '+dict[
    plt.legend()
```

In [241]:
```
def volatility_PreCovid(ticker_symbol):
    Opening_price_PreCovid = yf.Ticker(ticker_symbol).history(start = "2019-0
    Closing_price_PreCovid = yf.Ticker(ticker_symbol).history(start = "2019-0
    index_lst = yf.Ticker(ticker_symbol).history(start = "2019-01-02", end ="
    plt.plot(index_lst,Opening_price_PreCovid,label='High during Pre Covid')
    plt.plot(index_lst,Closing_price_PreCovid ,label='Low during Pre Covid')
    plt.xticks(rotation=45)
    plt.xlabel('Date')
    plt.ylabel('Price')
    plt.title('Analysing Volatality in Covid and Pre Covid periods of '+dict[
    plt.legend()
```

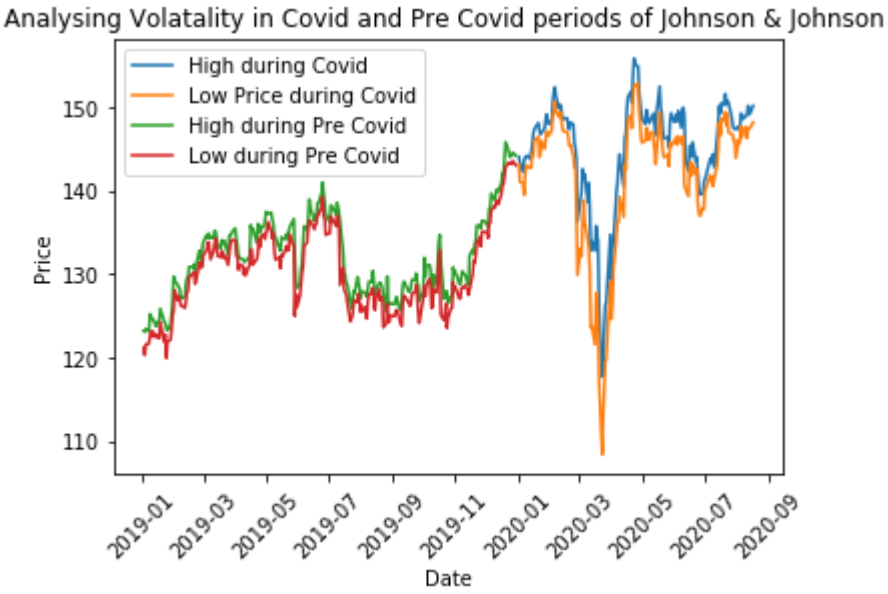
In [242]:
```
volatility_Covid('AAPL')
volatility_PreCovid('AAPL')
```



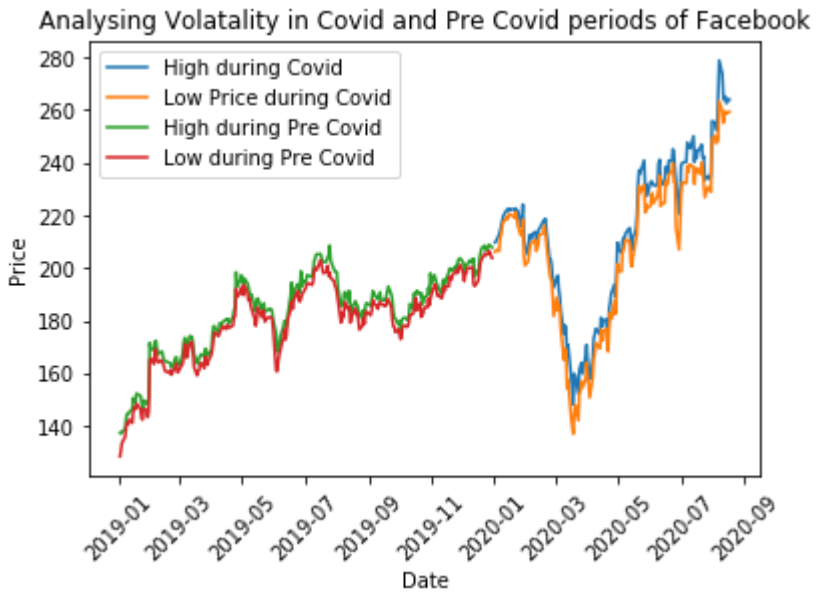
In [243]:
```
volatility_Covid('TSLA')
volatility_PreCovid('TSLA')
```



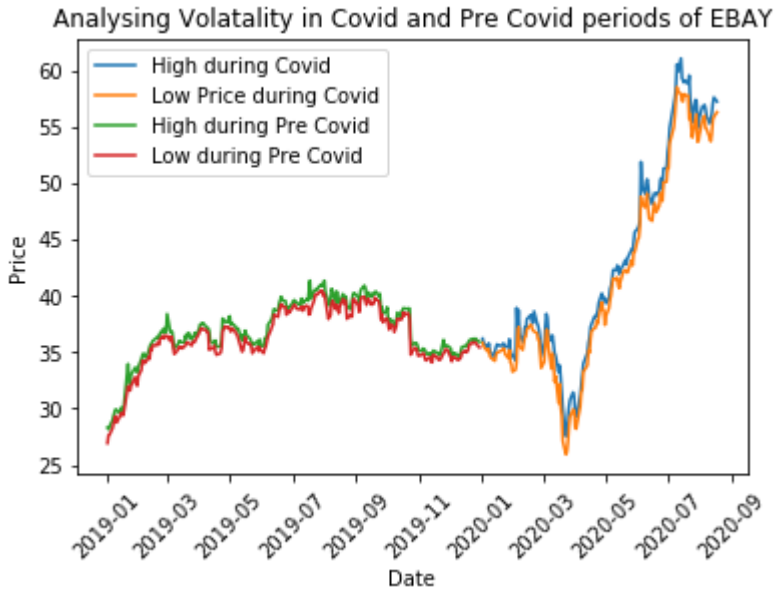
In [244]:
```
volatility_Covid('JNJ')
volatility_PreCovid('JNJ')
```



In [245]:
```
volatility_Covid('FB')
volatility_PreCovid('FB')
```



In [246]:
```
volatility_Covid('EBAY')
volatility_PreCovid('EBAY')
```



Deductions:

Stocks became more volatile during Covid as compared to Pre-Covid

Johnson & Johnson is the most volatile stock all of the companies

Analysing Quarterwise results in FY 2019:

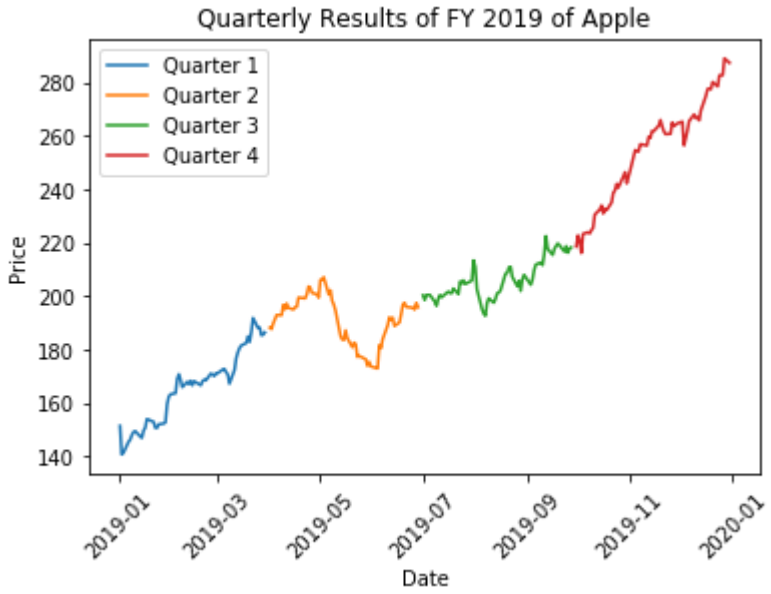
In [247]:
```
def Quarter_1(ticker_symbol):
    Quater_1 = yf.Ticker(ticker_symbol).history(start = "2019-01-02", end ="2
    index_lst = yf.Ticker(ticker_symbol).history(start = "2019-01-02", end ="
    plt.plot(index_lst, Quater_1,label="Quarter 1")
    plt.xticks(rotation=45)
    plt.xlabel('Date')
    plt.ylabel('Price')
    plt.title('Quarterly Results of FY 2019 of '+ dict[ticker_symbol])
    plt.legend()
```

In [248]:
```
def Quarter_2(ticker_symbol):
    Quater_2 = yf.Ticker(ticker_symbol).history(start = "2019-04-01", end ="2
    index_lst = yf.Ticker(ticker_symbol).history(start = "2019-04-01", end ="
    plt.plot(index_lst, Quater_2,label="Quarter 2")
    plt.xticks(rotation=45)
    plt.xlabel('Date')
    plt.ylabel('Price')
    plt.title('Quarterly Results of FY 2019 of '+ dict[ticker_symbol])
    plt.legend()
```

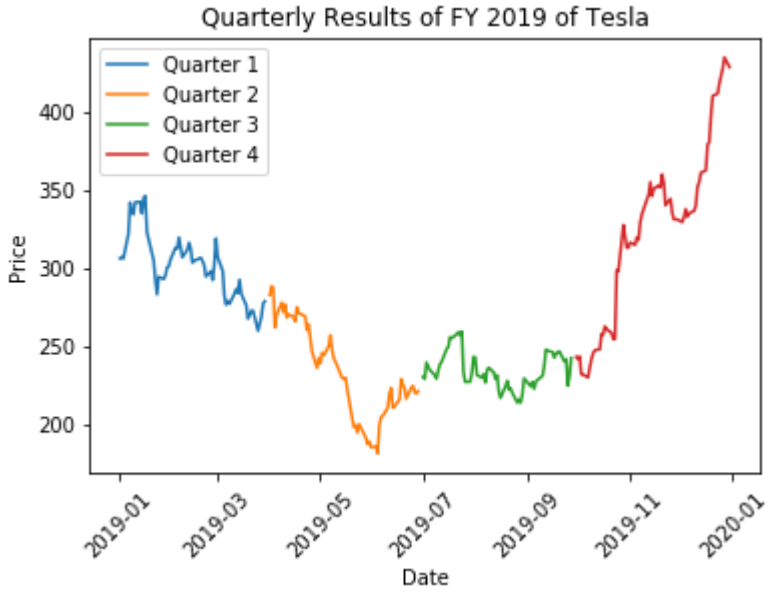
In [212]:
```
def Quarter_3(ticker_symbol):
    Quater_3 = yf.Ticker(ticker_symbol).history(start = "2019-07-01", end ="2
    index_lst = yf.Ticker(ticker_symbol).history(start = "2019-07-01", end ="
    plt.plot(index_lst,Quater_3,label="Quarter 3")
    plt.xticks(rotation=45)
    plt.xlabel('Date')
    plt.ylabel('Price')
    plt.title('Quarterly Results of FY 2019 of '+ dict[ticker_symbol])
    plt.legend()
```

In [249]:
```
def Quarter_4(ticker_symbol):
    Quater_4 = yf.Ticker(ticker_symbol).history(start = "2019-10-01", end ="2
    index_lst = yf.Ticker(ticker_symbol).history(start = "2019-10-01", end ="
    plt.plot(index_lst, Quater_4,label="Quarter 4")
    plt.xticks(rotation=45)
    plt.xlabel('Date')
    plt.ylabel('Price')
    plt.title('Quarterly Results of FY 2019 of '+ dict[ticker_symbol])
    plt.legend()
```

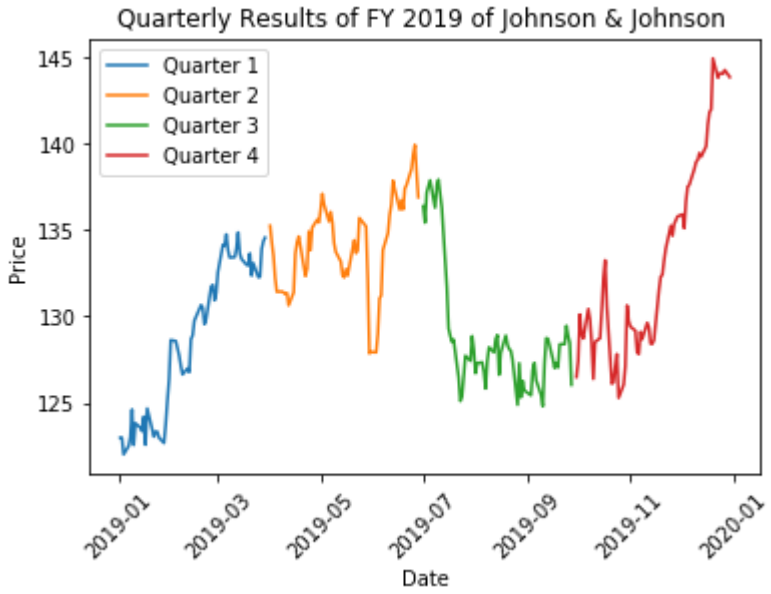
In [250]:
```
Quarter_1("AAPL")
Quarter_2("AAPL")
Quarter_3("AAPL")
Quarter_4("AAPL")
```



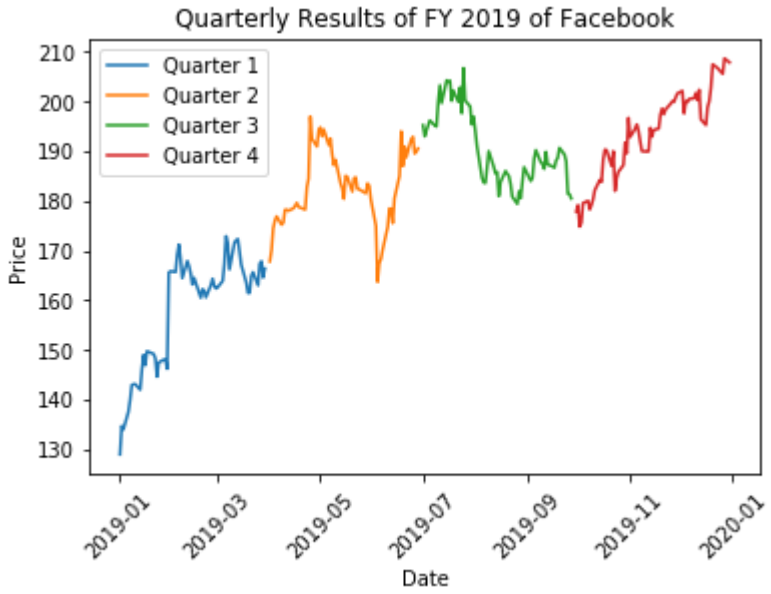
In [251]:
```
Quarter_1("TSLA")
Quarter_2("TSLA")
Quarter_3("TSLA")
Quarter_4("TSLA")
```



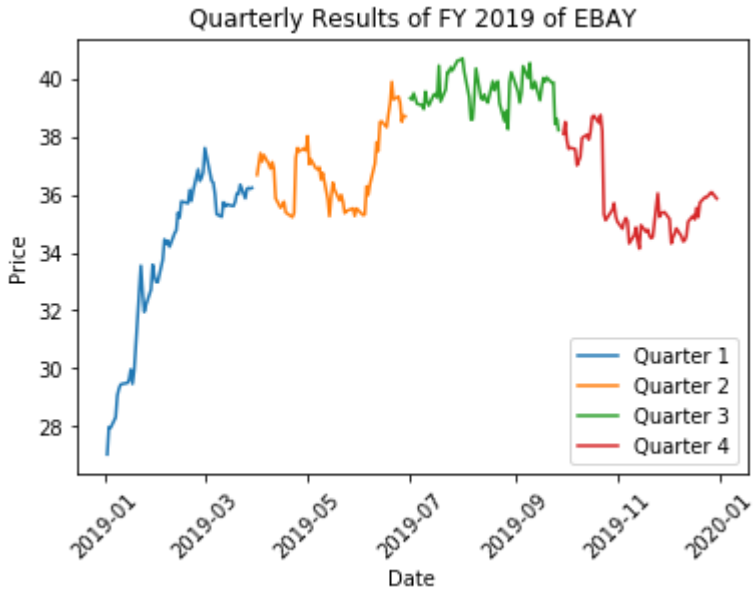
In [252]:
```
Quarter_1("JNJ")
Quarter_2("JNJ")
Quarter_3("JNJ")
Quarter_4("JNJ")
```



In [253]:
```
Quarter_1("FB")
Quarter_2("FB")
Quarter_3("FB")
Quarter_4("FB")
```



In [254]:
```
Quarter_1("EBAY")
Quarter_2("EBAY")
Quarter_3("EBAY")
Quarter_4("EBAY")
```



Deductions:

Q2 was bad for all the companies.

Q4 was the best quarter for all the companies except EBAY

Final Summary:

1) During March - April of 2020 the stock prices of companies were very low but most the companies had a V-shaped recovery after that. It won't be wrong to conclude that Covid affected businesses in a negative way across all the sectors.

2) Stocks of all companies became more volatile during Covid period

3) In 2019 Q2 was bad for all companies and Q4 was the best for most.

4) Vanguard Group, Inc. is the largest Institutional Stackeholder in most of the companies

In [ ]: