

Stockprice_Timeline

April 3, 2019

```
In [192]: # Importing the libraries
```

```
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
plt.style.use('fivethirtyeight')
!pip install pandas-datareader
from pandas_datareader import data as pdr
!pip install fix-yahoo-finance
import fix_yahoo_finance as yf
```

```
Requirement already satisfied: pandas-datareader in /usr/local/lib/python3.6/dist-packages (0.7.1)
Requirement already satisfied: pandas>=0.19.2 in /usr/local/lib/python3.6/dist-packages (from pandas-datareader) (0.23.4)
Requirement already satisfied: lxml in /usr/local/lib/python3.6/dist-packages (from pandas-datareader) (4.4.2)
Requirement already satisfied: requests>=2.3.0 in /usr/local/lib/python3.6/dist-packages (from pandas-datareader) (2.20.0)
Requirement already satisfied: wrapt in /usr/local/lib/python3.6/dist-packages (from pandas-datareader) (1.11.2)
Requirement already satisfied: python-dateutil>=2 in /usr/local/lib/python3.6/dist-packages (from pandas-datareader) (2.6.1)
Requirement already satisfied: numpy>=1.9.0 in /usr/local/lib/python3.6/dist-packages (from pandas-datareader) (1.16.2)
Requirement already satisfied: pytz>=2011k in /usr/local/lib/python3.6/dist-packages (from pandas-datareader) (2018.9)
Requirement already satisfied: urllib3<1.23,>=1.21.1 in /usr/local/lib/python3.6/dist-packages (from pandas-datareader) (1.22)
Requirement already satisfied: idna<2.7,>=2.5 in /usr/local/lib/python3.6/dist-packages (from pandas-datareader) (2.6)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.6/dist-packages (from pandas-datareader) (2018.11.29)
Requirement already satisfied: chardet<3.1.0,>=3.0.2 in /usr/local/lib/python3.6/dist-packages (from pandas-datareader) (3.0.4)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.6/dist-packages (from pandas-datareader) (1.11.0)
Requirement already satisfied: fix-yahoo-finance in /usr/local/lib/python3.6/dist-packages (0.7.1)
Requirement already satisfied: pandas in /usr/local/lib/python3.6/dist-packages (from fix-yahoo-finance) (0.23.4)
Requirement already satisfied: numpy in /usr/local/lib/python3.6/dist-packages (from fix-yahoo-finance) (1.16.2)
Requirement already satisfied: requests in /usr/local/lib/python3.6/dist-packages (from fix-yahoo-finance) (2.20.0)
Requirement already satisfied: multitasking in /usr/local/lib/python3.6/dist-packages (from fix-yahoo-finance) (0.0.29)
Requirement already satisfied: pytz>=2011k in /usr/local/lib/python3.6/dist-packages (from fix-yahoo-finance) (2018.9)
Requirement already satisfied: python-dateutil>=2 in /usr/local/lib/python3.6/dist-packages (from fix-yahoo-finance) (2.6.1)
Requirement already satisfied: chardet<3.1.0,>=3.0.2 in /usr/local/lib/python3.6/dist-packages (from fix-yahoo-finance) (3.0.4)
Requirement already satisfied: urllib3<1.23,>=1.21.1 in /usr/local/lib/python3.6/dist-packages (from fix-yahoo-finance) (1.22)
Requirement already satisfied: idna<2.7,>=2.5 in /usr/local/lib/python3.6/dist-packages (from fix-yahoo-finance) (2.6)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.6/dist-packages (from fix-yahoo-finance) (2018.11.29)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.6/dist-packages (from fix-yahoo-finance) (1.11.0)
```

```
In [193]: share = "GOOGL"
```

```
dataset = pdr.get_data_yahoo(share)
dataset = dataset.dropna() # removing missing value rows
dataset
```

```
Out[193]:
```

	High	Low	Open	Close	Volume \
Date					
2010-01-04	315.070068	312.432434	313.788788	313.688690	3908400.0
2010-01-05	314.234222	311.081085	313.903900	312.307312	6003300.0
2010-01-06	313.243256	303.483490	313.243256	304.434448	7949400.0
2010-01-07	305.305298	296.621613	305.005005	297.347351	12815700.0
2010-01-08	301.926941	294.849854	296.296295	301.311310	9439100.0
2010-01-11	302.532532	297.317322	302.532532	300.855865	14411300.0
2010-01-12	299.379395	294.294281	299.124115	295.535522	9696800.0
2010-01-13	294.484497	287.237244	288.533539	293.838837	12980200.0
2010-01-14	297.397400	291.696686	292.242249	295.220215	8471700.0
2010-01-15	297.077087	289.309296	296.966980	290.290283	10858100.0
2010-01-19	295.505493	288.433441	290.890900	294.104095	8624700.0
2010-01-20	293.283295	287.932922	293.283295	290.495483	6494800.0
2010-01-21	293.703705	286.411407	292.012024	291.781769	12602700.0
2010-01-22	285.585571	267.697693	282.532532	275.280273	13587100.0
2010-01-25	275.215210	268.023010	273.568573	270.270264	8830900.0
2010-01-26	275.075073	268.413422	269.254242	271.481476	8702200.0
2010-01-27	274.099091	267.922913	270.905914	271.321320	7920800.0
2010-01-28	273.773773	265.565552	272.517517	267.412415	6451700.0
2010-01-29	270.765778	263.068054	269.514526	265.235229	8272700.0
2010-02-01	268.173187	265.415405	267.567566	266.776764	4497000.0
2010-02-02	267.747742	264.069061	267.747742	265.825836	8184200.0
2010-02-03	271.321320	264.379395	264.599609	270.680695	5992200.0
2010-02-04	269.269257	263.043030	268.768768	263.653656	6748600.0
2010-02-05	267.017029	261.491486	264.464478	265.910919	6305600.0
2010-02-08	271.271271	266.031036	266.516510	267.002014	5383200.0
2010-02-09	271.036041	267.802795	270.040039	268.488495	5633500.0
2010-02-10	269.164154	264.109100	267.302307	267.492493	5343600.0
2010-02-11	270.515503	265.015015	266.926941	268.468475	4815100.0
2010-02-12	268.843842	265.515503	266.751740	266.826813	4554800.0
2010-02-16	272.337341	267.417419	268.703705	270.920929	7301400.0
...
2019-02-15	1139.300049	1116.719971	1139.300049	1119.630005	1391300.0
2019-02-19	1129.640015	1116.640015	1116.640015	1126.510010	1099000.0
2019-02-20	1130.930054	1111.750000	1128.880005	1120.589966	1204500.0
2019-02-21	1119.150024	1097.979980	1118.780029	1104.209961	1663600.0
2019-02-22	1117.250000	1100.500000	1109.699951	1116.560059	1471800.0
2019-02-25	1125.400024	1114.109985	1121.930054	1117.329956	1310400.0
2019-02-26	1126.439941	1106.699951	1114.369995	1122.010010	1751300.0
2019-02-27	1125.729980	1108.560059	1114.010010	1122.890015	1104600.0
2019-02-28	1133.989990	1118.410034	1119.000000	1126.550049	1371100.0
2019-03-01	1150.000000	1131.000000	1131.000000	1148.520020	1704300.0
2019-03-04	1165.520020	1138.250000	1154.560059	1153.420044	1774500.0

2019-03-05	1176.489990	1153.020020	1156.000000	1169.189941	2004700.0
2019-03-06	1174.739990	1163.050049	1171.760010	1164.939941	1180100.0
2019-03-07	1163.579956	1141.709961	1160.500000	1150.849976	1504300.0
2019-03-08	1153.449951	1130.199951	1133.900024	1149.969971	1184700.0
2019-03-11	1179.910034	1151.569946	1152.000000	1179.260010	1501600.0
2019-03-12	1205.709961	1182.300049	1182.300049	1197.250000	2111000.0
2019-03-13	1207.119995	1197.910034	1205.930054	1199.060059	1294400.0
2019-03-14	1204.699951	1191.229980	1199.020020	1192.530029	1365100.0
2019-03-15	1201.719971	1187.010010	1198.000000	1190.300049	2594300.0
2019-03-18	1194.949951	1181.479980	1189.689941	1188.550049	1222100.0
2019-03-19	1203.410034	1189.459961	1191.719971	1202.459961	1489400.0
2019-03-20	1229.989990	1199.589966	1201.400024	1226.430054	2075400.0
2019-03-21	1236.439941	1216.579956	1220.000000	1236.130005	1407500.0
2019-03-22	1233.630005	1206.000000	1228.849976	1207.650024	1721100.0
2019-03-25	1209.439941	1190.000000	1199.560059	1197.380005	1378800.0
2019-03-26	1207.650024	1181.760010	1205.189941	1189.839966	1537600.0
2019-03-27	1191.920044	1164.229980	1191.920044	1178.010010	1471400.0
2019-03-28	1177.250000	1163.430054	1175.500000	1172.270020	1120100.0
2019-03-29	1183.969971	1166.380005	1180.180054	1176.890015	1544500.0

Date	Adj Close
2010-01-04	313.688690
2010-01-05	312.307312
2010-01-06	304.434448
2010-01-07	297.347351
2010-01-08	301.311310
2010-01-11	300.855865
2010-01-12	295.535522
2010-01-13	293.838837
2010-01-14	295.220215
2010-01-15	290.290283
2010-01-19	294.104095
2010-01-20	290.495483
2010-01-21	291.781769
2010-01-22	275.280273
2010-01-25	270.270264
2010-01-26	271.481476
2010-01-27	271.321320
2010-01-28	267.412415
2010-01-29	265.235229
2010-02-01	266.776764
2010-02-02	265.825836
2010-02-03	270.680695
2010-02-04	263.653656
2010-02-05	265.910919
2010-02-08	267.002014
2010-02-09	268.488495

2010-02-10	267.492493
2010-02-11	268.468475
2010-02-12	266.826813
2010-02-16	270.920929
...	...
2019-02-15	1119.630005
2019-02-19	1126.510010
2019-02-20	1120.589966
2019-02-21	1104.209961
2019-02-22	1116.560059
2019-02-25	1117.329956
2019-02-26	1122.010010
2019-02-27	1122.890015
2019-02-28	1126.550049
2019-03-01	1148.520020
2019-03-04	1153.420044
2019-03-05	1169.189941
2019-03-06	1164.939941
2019-03-07	1150.849976
2019-03-08	1149.969971
2019-03-11	1179.260010
2019-03-12	1197.250000
2019-03-13	1199.060059
2019-03-14	1192.530029
2019-03-15	1190.300049
2019-03-18	1188.550049
2019-03-19	1202.459961
2019-03-20	1226.430054
2019-03-21	1236.130005
2019-03-22	1207.650024
2019-03-25	1197.380005
2019-03-26	1189.839966
2019-03-27	1178.010010
2019-03-28	1172.270020
2019-03-29	1176.890015

[2325 rows x 6 columns]

```
In [0]: openi=list(dataset['Open'])
```

```
In [0]: close=list(dataset['Close'])
```

```
In [196]: close
```

```
Out[196]: [313.6886901855469,
           312.30731201171875,
           304.4344482421875,
           297.34735107421875,
           301.3113098144531,
```

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263.1281433105469,
262.81280517578125,
262.78778076171875,
266.6766662597656,
269.1491394042969,
269.2542419433594,
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269.549560546875,
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267.40240478515625,
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540.9259033203125,
544.6947021484375,
...]
```

```

In [0]: change=[]
        for i,j in zip(openi,close):
            change.append(j-i)
```

```

In [0]: date=(dataset.index.tolist())
```

```

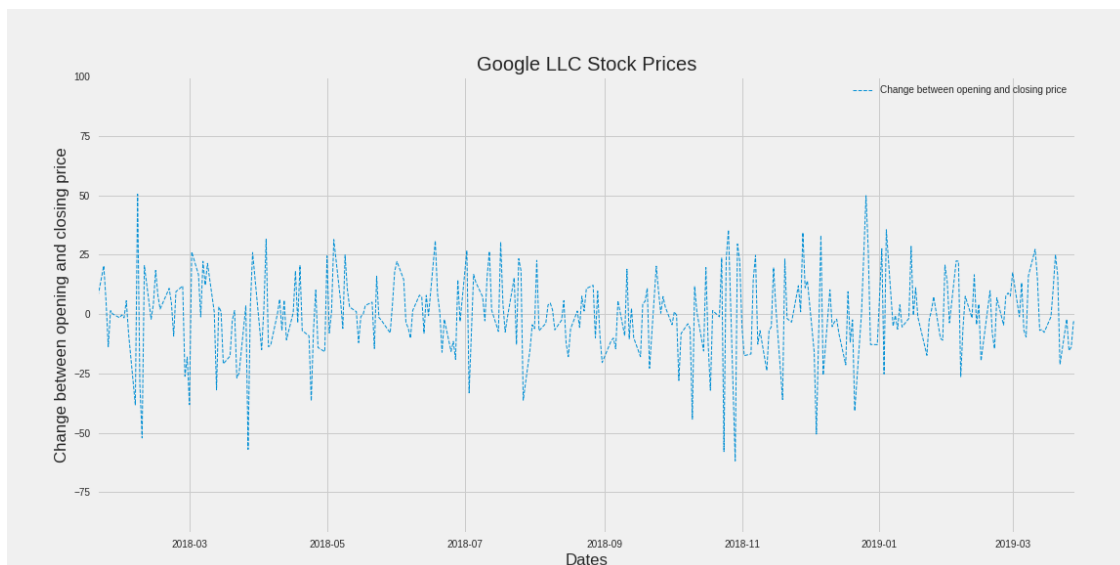
In [200]: plt.plot(date, openi, '--',linewidth=4.0)
           plt.plot(date, close, '--',linewidth=4.0)
           plt.axis([date[0], date[-1],int(min(min(openi),min(close))//2),int(max(openi)+max(close))])

           plt.legend(["Opening Price","Closing Price"])
           plt.title("Google LLC Stock Prices")
           plt.xlabel("Dates")
           plt.ylabel("Stock Price")
           plt.show()
```



```
In [201]: plt.plot(date[-300:], change[-300:], '--',linewidth=1.0)
# plt.plot(date[1022:], close[1022:], '--')
plt.axis([date[-300], date[-1],int(min(change)*1.5),int(max(change)+max(change))])

l=plt.legend(["Change between opening and closing price"])
plt.title("Google LLC Stock Prices")
#plt.xticks(rotation=90)
plt.xlabel("Dates")
plt.ylabel("Change between opening and closing price")
plt.show()
```



```

In [202]: import numpy as np
          import matplotlib.pyplot as plt

          # data to plot
          n_groups=len(date[-100:])
          op = openi[-100:]
          cl=close[-100:]

          # create plot
          fig, ax = plt.subplots()
          index = np.arange(n_groups)
          bar_width = 0.07
          opacity = 0.8

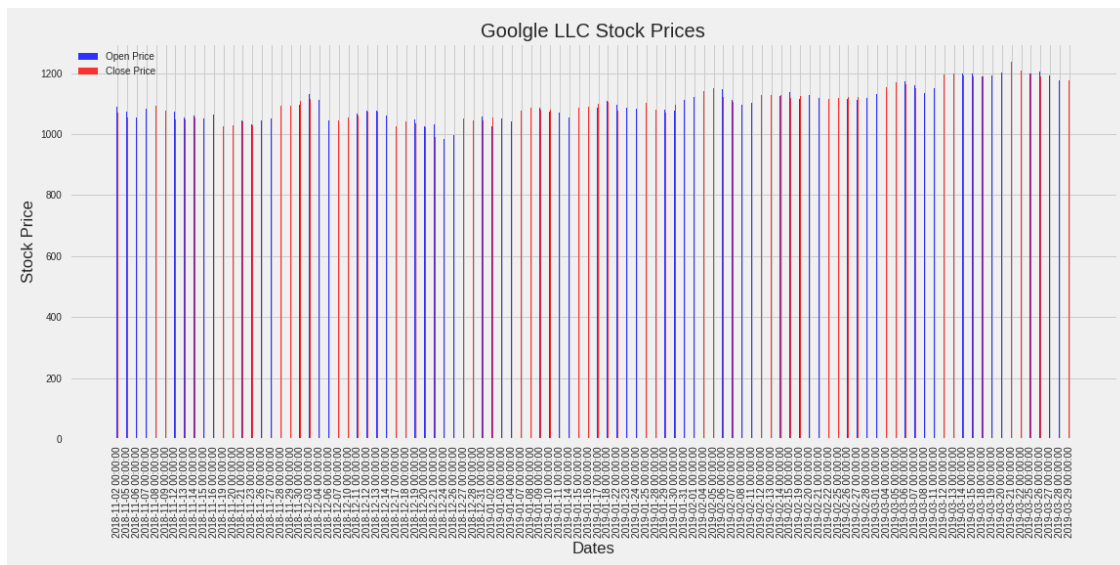
          rects1 = plt.bar(index, op, bar_width,
                           alpha=opacity,
                           color='b',
                           label='Open Price')

          rects2 = plt.bar(index + bar_width, cl, bar_width,
                           alpha=opacity,
                           color='r',
                           label='Close Price')

          plt.xlabel('Dates')
          plt.ylabel('Stock Price')
          plt.title('Goolgle LLC Stock Prices')
          plt.xticks(rotation=90)
          plt.xticks(index + bar_width, date[-100:])
          plt.legend()

          plt.tight_layout()
          plt.show()

```

```
In [203]: share = "RCOM.NS"
dataset = pdr.get_data_yahoo(share)
dataset = dataset.dropna() # removing missing value rows
dataset
```

```
Out [203]:
```

	High	Low	Open	Close	Volume \
Date					
2010-01-04	175.800003	172.550003	173.000000	175.199997	2418999.0
2010-01-05	182.000000	175.800003	176.000000	181.350006	6033757.0
2010-01-06	184.399994	180.800003	182.500000	181.800003	4680776.0
2010-01-07	185.300003	182.500000	183.699997	183.899994	4255338.0
2010-01-08	185.149994	180.199997	184.500000	180.850006	3775898.0
2010-01-11	184.000000	180.199997	184.000000	182.100006	3601269.0
2010-01-12	182.850006	175.050003	182.100006	175.449997	4834928.0
2010-01-13	176.600006	173.050003	174.000000	175.550003	3276310.0
2010-01-14	184.199997	175.649994	177.199997	183.000000	7227593.0
2010-01-15	193.399994	183.000000	183.000000	191.600006	15459863.0
2010-01-18	193.800003	188.350006	189.899994	190.449997	4710277.0
2010-01-19	192.899994	185.199997	190.000000	186.350006	4458474.0
2010-01-20	190.600006	185.300003	187.000000	186.899994	3581194.0
2010-01-21	189.750000	184.149994	186.850006	185.149994	3673061.0
2010-01-22	184.699997	176.449997	183.699997	181.550003	4194634.0
2010-01-25	183.199997	177.000000	180.100006	179.050003	3673742.0
2010-01-27	182.000000	172.500000	182.000000	174.750000	3886100.0
2010-01-28	178.199997	169.300003	176.500000	171.250000	8467806.0
2010-01-29	171.000000	165.500000	171.000000	169.800003	5167106.0
2010-02-01	175.449997	164.600006	169.000000	173.649994	4849037.0
2010-02-02	175.899994	168.050003	175.000000	168.949997	3493323.0
2010-02-03	172.600006	168.000000	170.100006	171.149994	2885242.0

2010-02-04	171.000000	164.000000	171.000000	164.800003	2698286.0
2010-02-05	165.250000	158.600006	159.800003	163.500000	3810517.0
2010-02-08	170.699997	163.750000	164.949997	169.000000	2874040.0
2010-02-09	170.199997	166.199997	167.500000	168.149994	2136048.0
2010-02-10	170.899994	167.750000	170.500000	168.500000	2337064.0
2010-02-11	171.000000	168.550003	168.550003	169.449997	1693914.0
2010-02-15	172.399994	163.850006	172.399994	164.800003	2433845.0
2010-02-16	168.800003	162.800003	165.300003	167.399994	2507508.0
...
2019-02-12	5.750000	5.100000	5.350000	5.650000	88569746.0
2019-02-14	5.750000	5.200000	5.750000	5.550000	90978467.0
2019-02-15	5.700000	5.400000	5.500000	5.500000	56200999.0
2019-02-18	6.850000	5.900000	6.050000	6.100000	105009120.0
2019-02-19	6.200000	5.950000	6.200000	6.000000	53952257.0
2019-02-20	6.150000	5.450000	6.100000	5.750000	134464383.0
2019-02-21	6.550000	5.700000	5.850000	6.350000	115064994.0
2019-02-22	7.650000	6.250000	6.350000	6.500000	244157493.0
2019-02-25	6.500000	5.900000	6.500000	6.000000	95247158.0
2019-02-26	6.650000	5.850000	5.900000	6.400000	121674643.0
2019-02-27	6.700000	6.200000	6.450000	6.500000	103565202.0
2019-02-28	6.650000	6.300000	6.500000	6.500000	89537271.0
2019-03-01	6.750000	6.500000	6.550000	6.600000	37810434.0
2019-03-05	6.700000	6.450000	6.600000	6.650000	29368036.0
2019-03-06	6.750000	5.900000	6.700000	6.050000	51975776.0
2019-03-07	6.100000	5.850000	6.100000	5.900000	24126795.0
2019-03-08	6.000000	5.800000	6.000000	5.850000	17747421.0
2019-03-11	5.900000	5.250000	5.850000	5.350000	46595548.0
2019-03-12	5.550000	5.050000	5.450000	5.100000	45161652.0
2019-03-13	5.150000	4.800000	5.150000	4.900000	42631323.0
2019-03-14	4.950000	4.600000	4.900000	4.650000	36928629.0
2019-03-15	4.700000	4.350000	4.700000	4.400000	49090349.0
2019-03-18	4.300000	3.950000	4.300000	4.000000	70109329.0
2019-03-19	4.400000	4.300000	4.400000	4.400000	106963985.0
2019-03-20	4.800000	4.650000	4.800000	4.800000	35449865.0
2019-03-22	5.250000	4.850000	5.250000	5.250000	211154872.0
2019-03-25	5.150000	5.000000	5.150000	5.000000	57980600.0
2019-03-26	4.850000	4.750000	4.750000	4.750000	20811969.0
2019-03-27	4.550000	4.550000	4.550000	4.550000	4895814.0
2019-03-28	4.350000	4.350000	4.350000	4.350000	6336135.0

Adj Close

Date	
2010-01-04	172.102173
2010-01-05	178.143448
2010-01-06	178.585495
2010-01-07	180.648346
2010-01-08	177.652298
2010-01-11	178.880188

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2010-01-18	187.082550
2010-01-19	183.055054
2010-01-20	183.595322
2010-01-21	181.876251
2010-01-22	178.339905
2010-01-25	175.884109
2010-01-27	171.660141
2010-01-28	168.222031
2010-01-29	166.797684
2010-02-01	170.579575
2010-02-02	165.962708
2010-02-03	168.123795
2010-02-04	161.886078
2010-02-05	160.609055
2010-02-08	166.011826
2010-02-09	165.176849
2010-02-10	165.520660
2010-02-11	166.453842
2010-02-15	161.886078
2010-02-16	164.440094
...	...
2019-02-12	5.650000
2019-02-14	5.550000
2019-02-15	5.500000
2019-02-18	6.100000
2019-02-19	6.000000
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2019-02-25	6.000000
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2019-02-27	6.500000
2019-02-28	6.500000
2019-03-01	6.600000
2019-03-05	6.650000
2019-03-06	6.050000
2019-03-07	5.900000
2019-03-08	5.850000
2019-03-11	5.350000
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2019-03-18	4.000000

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2019-03-25	5.000000
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2019-03-27	4.550000
2019-03-28	4.350000

[2279 rows x 6 columns]

```
In [204]: openi=list(dataset['Open'])
close=list(dataset['Close'])
date=(dataset.index.tolist())
date
```

```
Out[204]: [Timestamp('2010-01-04 00:00:00'),
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```

In [205]: print(str(date[0]))
c=0
for i in range(len(date)):
    if(str(date[i])=='2014-02-17 00:00:00'):
        c=i
        break
c
```

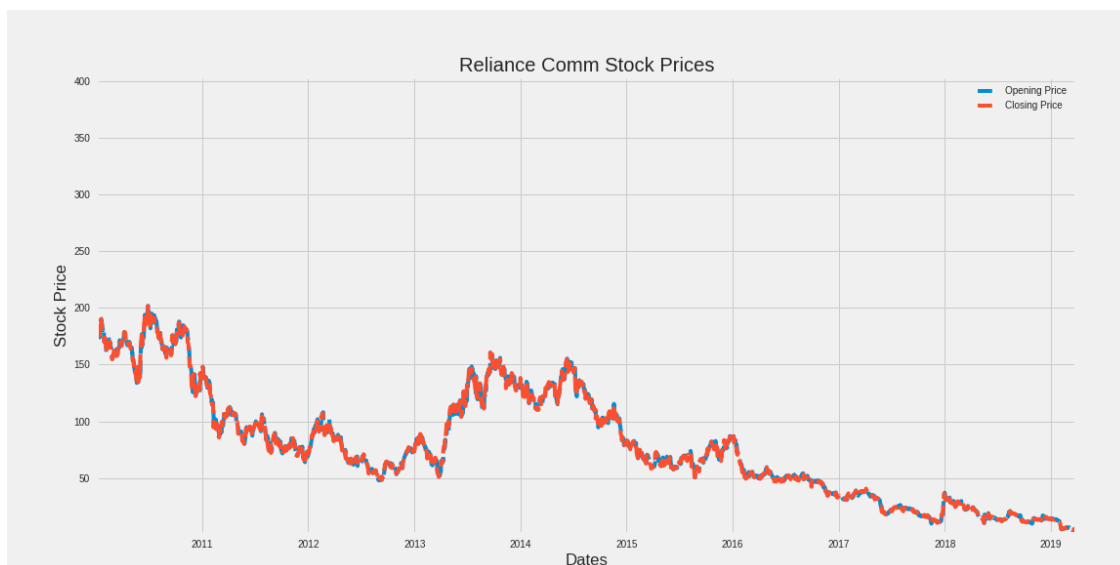
2010-01-04 00:00:00

Out[205]: 1022

```

In [206]: plt.plot(date[:,], openi[:,], '--')
plt.plot(date[:,], close[:,], '--')
plt.axis([date[0], date[-1],int(min(min(openi),min(close))/2),int(max(openi)+max(close))])

l=plt.legend(["Opening Price","Closing Price"])
plt.title("Reliance Comm Stock Prices")
#plt.xticks(rotation=90)
plt.xlabel("Dates")
plt.ylabel("Stock Price")
plt.show()
```



```
In [0]: change=[]
        for i,j in zip(openi,close):
            change.append(j-i)
```

```
In [208]: change
```

```
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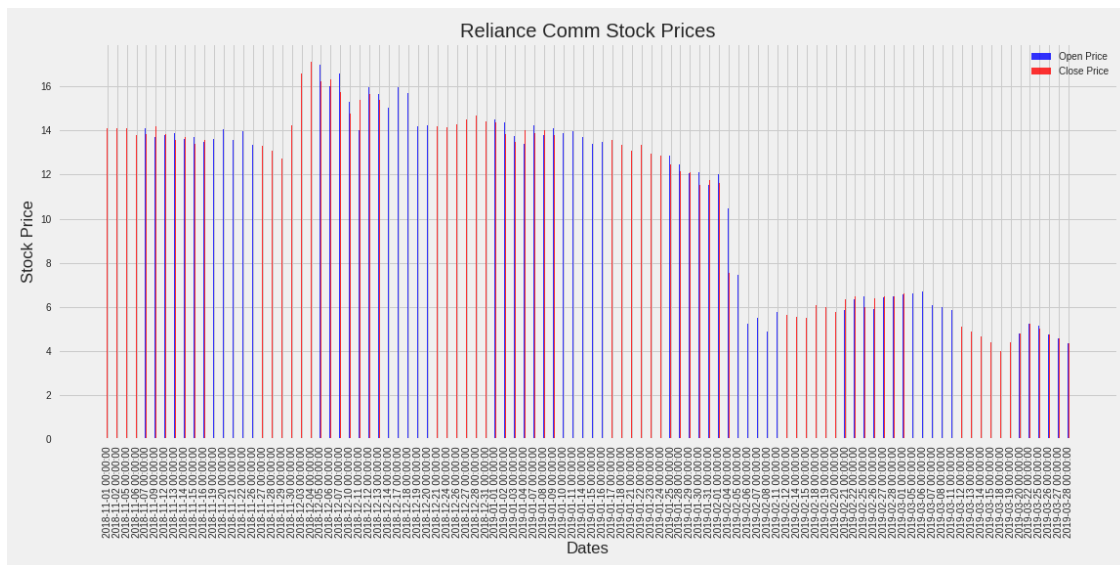
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```

```
In [0]: %matplotlib inline
```

```
%config InlineBackend.print_figure_kwargs = {'bbox_inches':None}  
plt.style.use('fivethirtyeight')  
%config InlineBackend.rc = {'font.size': 10, 'figure.figsize': (16, 8.0), 'figure.facecolor': 'white'}  
import numpy as np  
import pandas as pd  
import matplotlib.pyplot as plt
```

```
In [210]: import numpy as np  
import matplotlib.pyplot as plt
```

```
# data to plot  
n_groups=len(date[-100:])  
op = openi[-100:]  
cl=close[-100:]  
  
# create plot  
fig, ax = plt.subplots()  
index = np.arange(n_groups)  
bar_width = 0.07  
opacity = 0.8  
  
rects1 = plt.bar(index, op, bar_width,  
alpha=opacity,  
color='b',  
label='Open Price')  
  
rects2 = plt.bar(index + bar_width, cl, bar_width,  
alpha=opacity,  
color='r',  
label='Close Price')  
  
plt.xlabel('Dates')  
plt.ylabel('Stock Price')  
plt.title('Reliance Comm Stock Prices')  
plt.xticks(rotation=90)  
plt.xticks(index + bar_width, date[-100:])  
plt.legend()  
  
plt.tight_layout()  
plt.show()
```



```
In [211]: plt.plot(date[1022:], change[1022:], '--',linewidth=1.0)
#plt.plot(date[1022:], close[1022:], '--')
plt.axis([date[1022], date[-1],int(min(change)*1.5),int(max(change)+max(change))])

l=plt.legend(["Change between opening and closing price"])
plt.title("Reliance Comm Stock Prices")
#plt.xticks(rotation=90)
plt.xlabel("Dates")
plt.ylabel("Change between opening and closing price")
plt.show()
```

