Straight_Line_Stock_Historical_Data

September 29, 2021

1 Straight Line of Stock Histocial Data

[1]:
```
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
import pandas as pd

import warnings
warnings.filterwarnings("ignore")

# yfinance is used to fetch data
import yfinance as yf
yf.pdr_override()
```

[2]:
```
# input
symbol = 'AMD'
start = '2017-01-01'
end = '2019-01-01'

# Read data
dataset = yf.download(symbol,start,end)['Adj Close']

# View Columns
dataset.head()
```

```
[**********100%**********]  1 of 1 completed
```

[2]:
```
Date
2017-01-03    11.43
2017-01-04    11.43
2017-01-05    11.24
2017-01-06    11.32
2017-01-09    11.49
Name: Adj Close, dtype: float64
```

[3]:
```
df = dataset.reset_index()
```

[4]:
```
df.head()
```

[4]:
```
        Date  Adj Close
0 2017-01-03      11.43
1 2017-01-04      11.43
2 2017-01-05      11.24
3 2017-01-06      11.32
4 2017-01-09      11.49
```

[5]:
```
df.tail()
```

[5]:
```
           Date  Adj Close
497 2018-12-24  16.650000
498 2018-12-26  17.900000
499 2018-12-27  17.490000
500 2018-12-28  17.820000
501 2018-12-31  18.459999
```

[6]:
```
max_p = df['Adj Close'].max()
min_p = df['Adj Close'].min()
avg_p = df['Adj Close'].mean()
```

[16]:
```
data = df.drop(['Date'], axis=1)
data
```

[16]:
```
     Adj Close
0    11.430000
1    11.430000
2    11.240000
3    11.320000
4    11.490000
5    11.440000
6    11.200000
7    10.760000
8    10.580000
9     9.820000
10    9.880000
11    9.770000
12    9.750000
13    9.910000
14   10.440000
15   10.350000
16   10.520000
17   10.670000
18   10.610000
19   10.370000
20   12.060000
```

```
21   12.280000
22   12.240000
23   13.630000
24   13.290000
25   13.560000
26   13.420000
27   13.580000
28   13.490000
29   13.260000
..         …
472  21.490000
473  20.660000
474  19.110001
475  19.209999
476  18.730000
477  19.379999
478  20.080000
479  21.049999
480  21.340000
481  21.430000
482  21.299999
483  23.709999
484  21.120001
485  21.299999
486  19.459999
487  19.990000
488  19.980000
489  20.480000
490  19.860001
491  19.900000
492  18.830000
493  19.500000
494  18.160000
495  17.940001
496  16.930000
497  16.650000
498  17.900000
499  17.490000
500  17.820000
501  18.459999

[502 rows x 1 columns]
```

[17]:
```
data = data.reset_index()
```

[18]:
```
data.as_matrix()
```

[18]:
```
array([[  0.        ,  11.43000031],
       [  1.        ,  11.43000031],
       [  2.        ,  11.23999977],
       …,
       [499.        ,  17.48999977],
       [500.        ,  17.81999969],
       [501.        ,  18.45999908]])
```

[8]:
```
from numpy import ones,vstack
from numpy.linalg import lstsq
```

[19]:
```
points = data.as_matrix()
```

[20]:
```
x_coords, y_coords = zip(*points)
A = vstack([x_coords,ones(len(x_coords))]).T
m, c = lstsq(A, y_coords)[0]
```

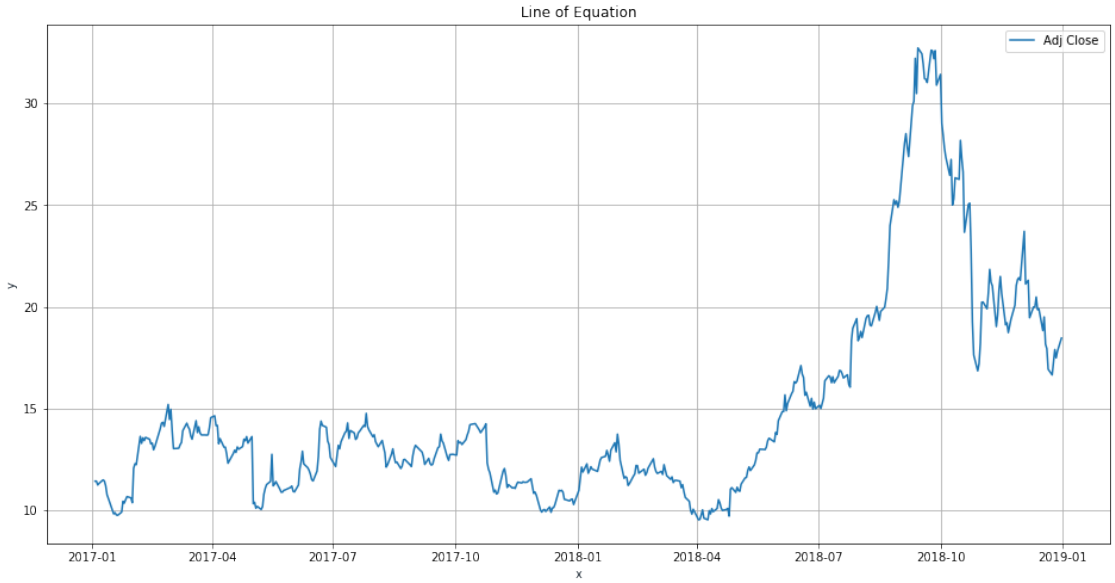
[21]:
```
print("Line Equation is y = {m}x + {c}".format(m=m,c=c))
```

```
Line Equation is y = 0.021718614923358824x + 9.372574584656498
```

[25]:
```
equation_of_line = print("y = {m}x + {c}".format(m=m,c=c))
```

```
y = 0.021718614923358824x + 9.372574584656498
```

[28]:
```
plt.figure(figsize=(16,8))
plt.plot(dataset)
plt.title('Line of Equation', equation_of_line)
plt.xlabel('x', color='#1C2833')
plt.ylabel('y', color='#1C2833')
plt.legend(loc='best')
plt.grid()
plt.show()
```


Line of Equation
Adj Close
30
25
20
15
10
y
2017-01
2017-04
2017-07
2017-10
2018-01
2018-04
2018-07
2018-10
2019-01
x