```
### load data set
import pandas as pd
import numpy as np

df=pd.read_csv('/content/TITAN.csv')
print (df)


####display first 10 numbers
df.head(10)
```

	Date	Symbol	Series	Prev Close	Open	High	Low	Last	Close	VWAP	Volume
0	2000-01-03	TITAN	EQ	144.95	146.0	156.45	146.00	155.00	155.70	154.36	23000
1	2000-01-04	TITAN	EQ	155.70	152.0	152.00	144.00	148.05	147.40	146.72	26300
2	2000-01-05	TITAN	EQ	147.40	144.0	148.80	136.00	139.95	138.40	142.95	20600
3	2000-01-06	TITAN	EQ	138.40	142.0	149.50	141.00	149.50	149.50	147.87	31600
4	2000-01-07	TITAN	EQ	149.50	149.5	153.00	145.00	147.75	146.35	148.63	36600
5	2000-01-10	TITAN	EQ	146.35	150.0	150.00	141.05	144.65	144.90	145.28	33100

```
###display last 6 records
df.tail(6)
```

	Date	Symbol	Series	Prev Close	Open	High	Low	Last	Close	VWA
5300	2021-04-23	TITAN	EQ	1480.85	1478.0	1496.90	1451.60	1468.00	1461.45	1475.8
5301	2021-04-26	TITAN	EQ	1461.45	1470.0	1489.75	1465.15	1478.95	1479.85	1479.5
5302	2021-04-27	TITAN	EQ	1479.85	1485.0	1503.55	1482.00	1498.00	1495.10	1494.2
5303	2021-04-28	TITAN	EQ	1495.10	1505.0	1514.90	1491.70	1509.00	1508.85	1504.7

```
###shape
df.shape
```

```
(5306, 15)
```

```
##size
df.size
```

```
     79590
```

```
#######display column names
df.keys()
```

```
     Index(['Date', 'Symbol', 'Series', 'Prev Close', 'Open', 'High', 'Low', 'Last',
            'Close', 'VWAP', 'Volume', 'Turnover', 'Trades', 'Deliverable Volume',
            '%Deliverble'],
           dtype='object')
```

```
#######datatypes
df.dtypes
```

```
     Date                  object
     Symbol                object
     Series                object
     Prev Close           float64
     Open                 float64
     High                 float64
     Low                  float64
     Last                 float64
     Close                float64
     VWAP                 float64
     Volume                 int64
     Turnover             float64
     Trades               float64
     Deliverable Volume   float64
     %Deliverble          float64
     dtype: object
```

```
#######no of missing values
df.isnull()
```

```
####8.describe
df.describe()
```

	Prev Close	Open	High	Low	Last	Close	
count	5306.000000	5306.000000	5306.000000	5306.000000	5306.000000	5306.000000	53
mean	709.230692	709.989926	723.312816	696.430767	709.449114	709.484499	7
std	785.170900	785.435092	799.085424	772.183889	784.995523	785.206121	7
min	27.500000	27.000000	28.800000	27.000000	27.750000	27.500000	
25%	192.262500	192.625000	198.800000	189.500000	192.837500	193.412500	1
50%	396.150000	398.250000	404.525000	391.125000	397.025000	396.350000	3
75%	1017.725000	1018.925000	1046.500000	991.187500	1020.000000	1019.000000	10
max	4714.600000	4730.000000	4754.950000	4559.900000	4734.000000	4714.600000	46

```
######duplicates
df.duplicated()
```

```
0       False
1       False
2       False
3       False
4       False
        ...
5301    False
5302    False
5303    False
5304    False
5305    False
Length: 5306, dtype: bool
```

```
######drop duplicates
df.drop_duplicates()
```

	Date	Symbol	Series	Prev Close	Open	High	Low	Last	Close	VWA
0	2000-01-03	TITAN	EQ	144.95	146.0	156.45	146.00	155.00	155.70	154.3
1	2000-	TITAN	EQ	155.70	152.0	152.00	144.00	148.05	147.40	146.7

```
######mean
a=df.mean()
print(a)
```

```
Prev Close            7.092307e+02
Open                  7.099899e+02
High                  7.233128e+02
Low                   6.964308e+02
Last                  7.094491e+02
Close                 7.094845e+02
VWAP                  7.104154e+02
Volume                1.172596e+06
Turnover              7.796053e+13
Trades                4.724186e+04
Deliverable Volume    4.408763e+05
%Deliverble           3.679444e-01
dtype: float64
```

```
###median
b=df.median()
print(b)
```

```
Prev Close            3.961500e+02
Open                  3.982500e+02
High                  4.045250e+02
Low                   3.911250e+02
Last                  3.970250e+02
Close                 3.963500e+02
VWAP                  3.980950e+02
Volume                5.491360e+05
Turnover              2.785515e+13
Trades                3.507650e+04
Deliverable Volume    2.012115e+05
%Deliverble           3.524000e-01
dtype: float64
```

```
##### mode
df.mode()
```

	Date	Symbol	Series	Prev Close	Open	High	Low	Last	Close	VWAP	Volume	
0	2000-01-03	TITAN	EQ	223.95	230.0	70.0	69.0	55.0	223.95	221.9	4141.0	8.
1	2000-01-04	NaN	NaN	NaN	NaN	NaN	NaN	70.0	NaN	NaN	5050.0	2.
2	2000-01-05	NaN	NaN	NaN	NaN	NaN	NaN	79.0	NaN	NaN	6273.0	4.
3	2000-01-06	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	7818.0	4.
4	2000-01-07	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	14343.0	6.
...	...	...	...	...	...	...	...	...	...	...	...	
5301	2021-04-26	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1.
5302	2021-04-27	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1.

```
##variance
np.var(df)
```

```
Prev Close            6.163772e+05
Open                  6.167920e+05
High                  6.384172e+05
Low                   5.961556e+05
Last                  6.161018e+05
Close                 6.164325e+05
VWAP                  6.180986e+05
Volume                3.110610e+12
Turnover              1.900019e+28
Trades                1.876849e+09
Deliverable Volume    4.929827e+11
%Deliverble           2.720917e-02
dtype: float64
```

```
### standard deviation
c=np.std(df)
print(c)
```

```
Prev Close            7.850969e+02
Open                  7.853611e+02
High                  7.990101e+02
Low                   7.721111e+02
Last                  7.849215e+02
Close                 7.851321e+02
VWAP                  7.861925e+02
Volume                1.763692e+06
Turnover              1.378412e+14
Trades                4.332262e+04
Deliverable Volume    7.021272e+05
%Deliverble           1.649520e-01
dtype: float64
```

```
df.max()
```

```
Date                   2021-04-30
Symbol                      TITAN
Series                         EQ
Prev Close                 4714.6
Open                         4730
High                       4754.95
Low                         4559.9
Last                         4734
Close                      4714.6
VWAP                       4647.54
Volume                    33276611
Turnover              2.45134e+15
Trades                     536406
Deliverable Volume    2.16991e+07
%Deliverble                     1
dtype: object
```

```
df.min()
```

```
Date                   2000-01-03
Symbol                      TITAN
Series                         EQ
Prev Close                  27.5
Open                          27
High                        28.8
Low                           27
Last                       27.75
Close                       27.5
VWAP                       27.88
Volume                       200
Turnover               8.125e+08
Trades                       993
Deliverable Volume           360
%Deliverble               0.0236
dtype: object
```

```
###range
df['Open'].max() - df['Open'].min()
```

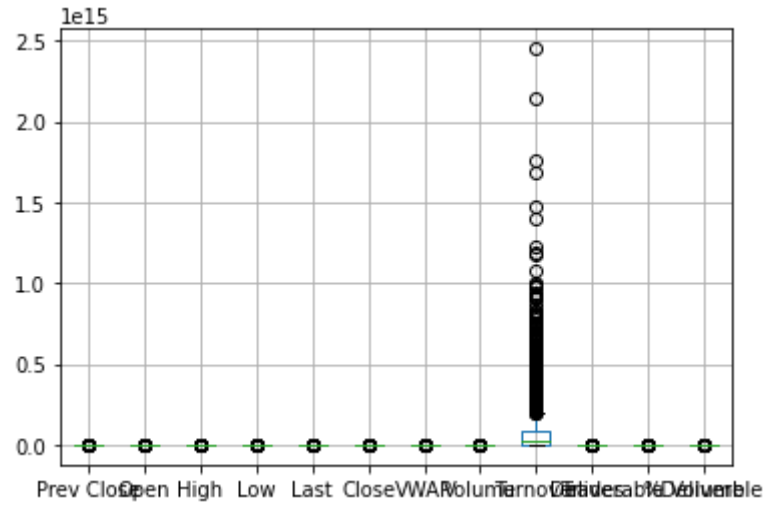
```
4703.0
```

```
####IQR
data['Open'].quantile([.25,.5,.75])
```

```
0.25     192.625
0.50     398.250
0.75    1018.925
Name: Open, dtype: float64
```

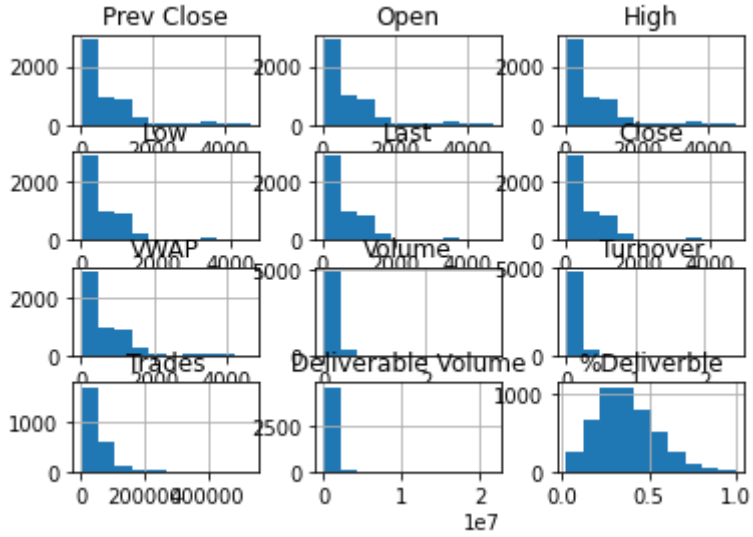
```
#####boxplot
import  matplotlib.pyplot
df.boxplot()
```

```
/usr/local/lib/python3.7/dist-packages/numpy/core/_asarray.py:83: VisibleDeprecationW
  return array(a, dtype, copy=False, order=order)
<matplotlib.axes._subplots.AxesSubplot at 0x7faaad202bd0>
```




```
######histogram
df.hist()
```

```
array([[<matplotlib.axes._subplots.AxesSubplot object at 0x7faaa82e32d0>,
        <matplotlib.axes._subplots.AxesSubplot object at 0x7faaa82fe250>,
        <matplotlib.axes._subplots.AxesSubplot object at 0x7faaa8262150>],
       [<matplotlib.axes._subplots.AxesSubplot object at 0x7faaa82997d0>,
        <matplotlib.axes._subplots.AxesSubplot object at 0x7faaa824de50>,
        <matplotlib.axes._subplots.AxesSubplot object at 0x7faaa8210510>],
       [<matplotlib.axes._subplots.AxesSubplot object at 0x7faaa81c5c10>,
        <matplotlib.axes._subplots.AxesSubplot object at 0x7faaa8189210>,
        <matplotlib.axes._subplots.AxesSubplot object at 0x7faaa8189250>],
       [<matplotlib.axes._subplots.AxesSubplot object at 0x7faaa81409d0>,
        <matplotlib.axes._subplots.AxesSubplot object at 0x7faaa80b5610>,
        <matplotlib.axes._subplots.AxesSubplot object at 0x7faaa806dc90>]],
      dtype=object)
```




```
#####skewness
df.skew()
```

```
Prev Close            2.269237
Open                  2.268736
```

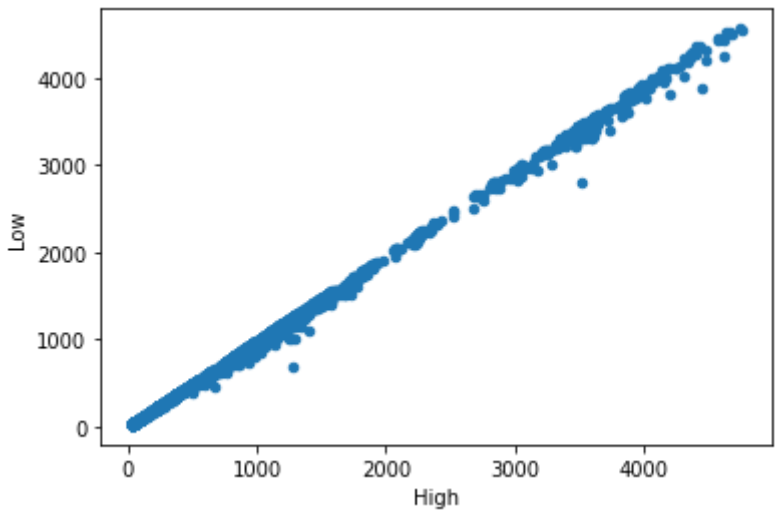
```
High                 2.263434
Low                  2.273513
Last                 2.266928
Close                2.268218
VWAP                 2.267454
Volume               5.081300
Turnover             4.891056
Trades               3.034686
Deliverable Volume   9.581433
%Deliverble          0.480147
dtype: float64
```

```
####kurtosois
df.kurtosis()
```

```
Prev Close             6.121581
Open                   6.130397
High                   6.101268
Low                    6.133979
Last                   6.110089
Close                  6.117145
VWAP                   6.104379
Volume                54.142543
Turnover              45.635142
Trades                18.182870
Deliverable Volume   220.034892
%Deliverble            0.003015
dtype: float64
```

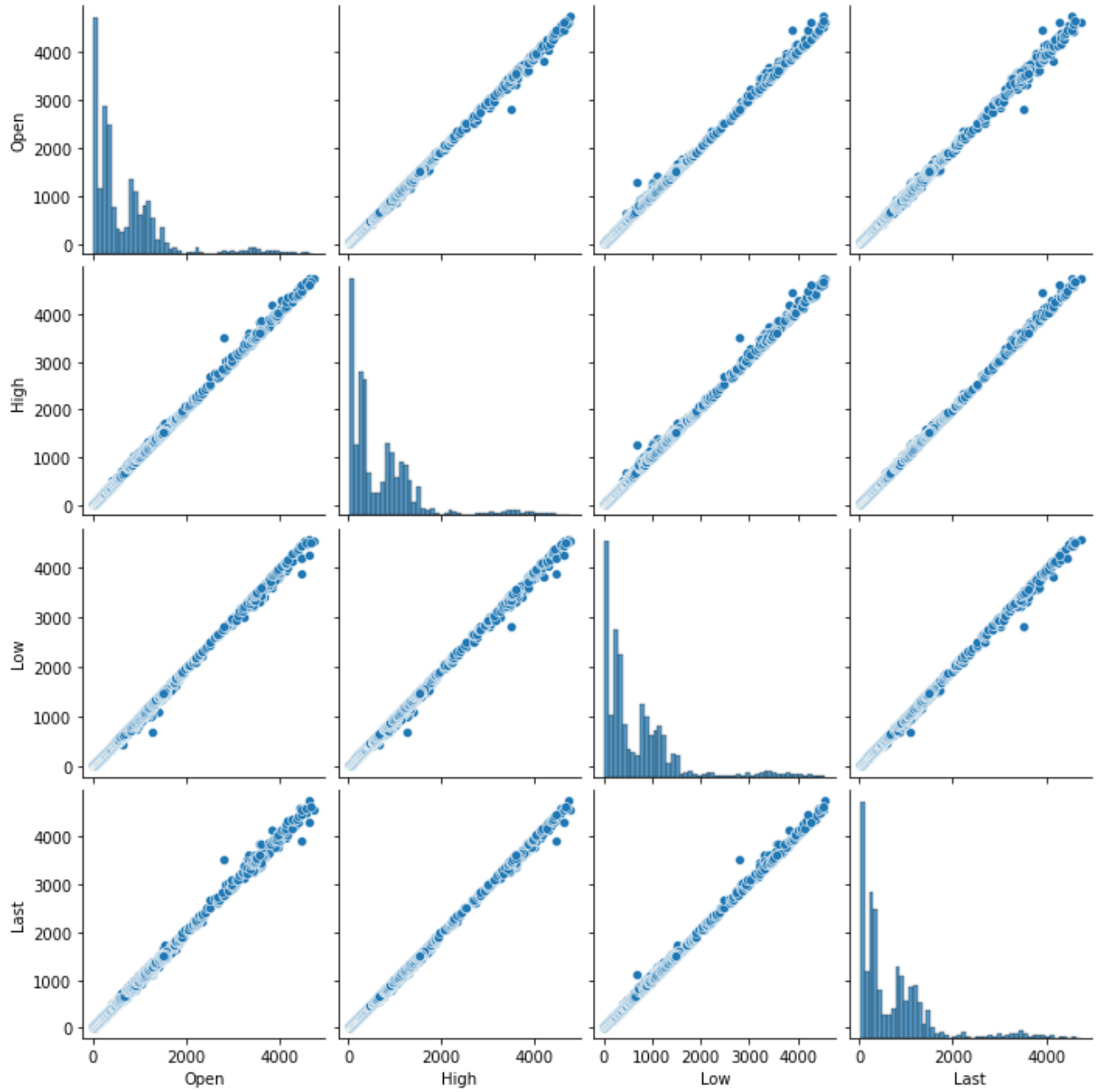
```
######scatterplot
df.plot.scatter('High','Low')
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7ff279328ad0>
```




```
####pairplot
import seaborn as sns
sns.pairplot(df[['Open','High','Low','Last']])
```

```
<seaborn.axisgrid.PairGrid at 0x7ff26b2e4650>
```




```
####highest data
max_price = df["Close"].max()
print(max_price)
```

```
4714.6
```

```
###### lowest data
min_price = df['Close'].min()
print(min_price)
```

```
27.5
```

```
#######highest open price data
max_price = df['Open'].max()
print(max_price)
```

```
4730.0
```