

Module 1

-By Suprateek Halsana

```
In [1]: import numpy as np
import pandas as pd
import warnings
warnings.filterwarnings('ignore')
```

Problem [1.1] Reading the Dataset

```
In [2]: data=pd.read_csv(r"C:\Users\Suprateek Halsana\Documents\Python Scripts\Aspiring Mind Internship\LALPATHLAB\INDUSFTR - CHOSEN\LALPATHLAB.csv")
data
```

	Symbol	Series	Date	Prev Close	Open Price	High Price	Low Price	Last Price	Close Price	Average Price	Total Traded Quantity	Turnover	No. of Trades	Deliverable Qty
0	LALPATHLAB	EQ	15-May-2017	891.15	895.0	914.15	881.00	912.00	900.60	889.35	257655	2.291453e+08	15451	1747
1	LALPATHLAB	EQ	16-May-2017	900.60	910.0	925.00	895.05	909.40	910.95	914.57	104896	9.593430e+07	13001	758
2	LALPATHLAB	EQ	17-May-2017	910.95	913.0	925.00	909.00	912.05	911.70	917.19	72460	6.645960e+07	2802	538
3	LALPATHLAB	EQ	18-May-2017	911.70	908.0	919.35	903.05	906.00	909.75	914.12	37707	3.446889e+07	2731	248
4	LALPATHLAB	EQ	19-May-2017	909.75	917.0	917.00	905.80	910.00	910.25	910.61	81082	7.383375e+07	4430	696
...
490	LALPATHLAB	EQ	07-May-2019	1024.95	1015.7	1031.95	1006.90	1013.00	1013.10	1020.66	20113	2.052851e+07	3628	115
491	LALPATHLAB	EQ	08-May-2019	1013.10	1014.0	1019.85	1001.90	1002.00	1006.10	1010.90	18048	1.824473e+07	4175	112
492	LALPATHLAB	EQ	09-May-2019	1006.10	1014.0	1014.00	977.70	979.90	982.90	987.36	60539	5.977355e+07	8169	373
493	LALPATHLAB	EQ	10-May-2019	982.90	989.9	994.30	963.60	980.00	980.65	980.71	30568	2.997840e+07	4618	190
494	LALPATHLAB	EQ	13-May-2019	980.65	970.8	996.00	960.00	975.00	976.25	974.21	37187	3.622810e+07	6798	237
495 rows x 15 columns														

```
In [3]: data.describe()
```

Removal of non EQ Series

```
data=data[data["Series"]=="EQ"]

data.shape

(494, 15)

data.describe()
```

	Prev Close	Open Price	High Price	Low Price	Last Price	Close Price	Average Price	Total Traded Quantity	Turnover	No. of Tr
count	494.000000	494.000000	494.000000	494.000000	494.000000	494.000000	494.000000	4.940000e+02	4.940000e+02	494.00
mean	908.446457	909.126113	922.827834	894.347978	907.374494	908.618725	900.155061	8.664805e+04	7.770704e+07	5471.98
std	80.013571	79.758601	83.856648	77.389389	80.109065	80.067847	81.071000	1.390295e+05	1.173751e+08	4100.42
min	737.350000	748.450000	749.000000	723.050000	739.000000	737.350000	734.620000	3.903000e+03	3.460254e+06	284.00
25%	857.762500	857.625000	872.050000	840.437500	854.062500	857.762500	859.447500	2.944900e+04	2.731938e+07	2863.50

```
In [4]: data.isnull().sum()
```

	Symbol	Series	Date	Prev Close	Open Price	High Price	Low Price	Last Price	Close Price	Average Price	Total Traded Quantity	Turnover	No. of Trades	Deliverable Qty
count	495	0	0	0	0	0	0	0	0	0	0	0	0	0
date	495	0	0	0	0	0	0	0	0	0	0	0	0	0
prev_close	495	0	0	0	0	0	0	0	0	0	0	0	0	0
open_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
high_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
low_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
last_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
close_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
average_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
total_traded_quantity	495	0	0	0	0	0	0	0	0	0	0	0	0	0
turnover	495	0	0	0	0	0	0	0	0	0	0	0	0	0
no_of_trades	495	0	0	0	0	0	0	0	0	0	0	0	0	0
deliverable_qty	495	0	0	0	0	0	0	0	0	0	0	0	0	0
dtype	object	object	object	float64	float64	float64	float64	float64	float64	float64	float64	float64	float64	float64

```
In [5]: data['Series'].isnull().sum()
```

	Symbol	Series	Date	Prev Close	Open Price	High Price	Low Price	Last Price	Close Price	Average Price	Total Traded Quantity	Turnover	No. of Trades	Deliverable Qty
count	495	0	0	0	0	0	0	0	0	0	0	0	0	0
date	495	0	0	0	0	0	0	0	0	0	0	0	0	0
prev_close	495	0	0	0	0	0	0	0	0	0	0	0	0	0
open_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
high_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
low_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
last_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
close_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
average_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
total_traded_quantity	495	0	0	0	0	0	0	0	0	0	0	0	0	0
turnover	495	0	0	0	0	0	0	0	0	0	0	0	0	0
no_of_trades	495	0	0	0	0	0	0	0	0	0	0	0	0	0
deliverable_qty	495	0	0	0	0	0	0	0	0	0	0	0	0	0
dtype	object	object	object	float64	float64	float64	float64	float64	float64	float64	float64	float64	float64	float64

```
In [6]: (data['Series']=="EQ").sum()
```

	Symbol	Series	Date	Prev Close	Open Price	High Price	Low Price	Last Price	Close Price	Average Price	Total Traded Quantity	Turnover	No. of Trades	Deliverable Qty
count	495	0	0	0	0	0	0	0	0	0	0	0	0	0
date	495	0	0	0	0	0	0	0	0	0	0	0	0	0
prev_close	495	0	0	0	0	0	0	0	0	0	0	0	0	0
open_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
high_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
low_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
last_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
close_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
average_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
total_traded_quantity	495	0	0	0	0	0	0	0	0	0	0	0	0	0
turnover	495	0	0	0	0	0	0	0	0	0	0	0	0	0
no_of_trades	495	0	0	0	0	0	0	0	0	0	0	0	0	0
deliverable_qty	495	0	0	0	0	0	0	0	0	0	0	0	0	0
dtype	object	object	object	float64	float64	float64	float64	float64	float64	float64	float64	float64	float64	float64

```
In [7]: (data['Series']=="BU").sum()
```

	Symbol	Series	Date	Prev Close	Open Price	High Price	Low Price	Last Price	Close Price	Average Price	Total Traded Quantity	Turnover	No. of Trades	Deliverable Qty
count	495	0	0	0	0	0	0	0	0	0	0	0	0	0
date	495	0	0	0	0	0	0	0	0	0	0	0	0	0
prev_close	495	0	0	0	0	0	0	0	0	0	0	0	0	0
open_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
high_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
low_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
last_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
close_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
average_price	495	0	0	0	0	0	0	0	0	0	0	0	0	0
total_traded_quantity	495	0	0	0	0	0	0	0	0	0	0	0	0	0
turnover	495	0	0	0	0	0	0	0	0	0	0	0	0	0
no_of_trades	495	0	0	0	0	0	0	0	0	0	0	0	0	0
deliverable_qty	495	0	0	0	0	0	0	0	0	0	0	0	0	0
dtype	object	object	object	float64	float64	float64	float64	float64	float64	float64	float64	float64	float64	float64

```
Out[7]: 1
```

Removal of non EQ Series

```
In [8]: data=data[data['Series']=="EQ"]
```

```
In [9]: data.shape
```

```
Out[9]: (494, 15)
```

```
In [10]: data.describe()
```

	Prev Close	Open Price	High Price	Low Price	Last Price	Close Price	Average Price	Total Traded Quantity	Turnover	No. of Tr
count	494.000000	494.000000	494.000000	494.000000	494.000000	494.000000	494.000000	4.940000e+02	4.940000e+02	494.00
mean	908.446467	909.126113	922.827834	894.349798	907.374494	908.616725	909.155061	8.664805e+04	7.770704e+07	5471.96
std	80.610357	79.758601	83.856648	77.389389	80.109065	80.067847	81.071000	1.390295e+05	1.173757e+08	4100.42
min	737.350000	748.450000	749.000000	723.050000	739.000000	737.350000	734.620000	3.903000e+03	3.460254e+06	284.00
25%	857.762500	857.825000	872.050000	844.637500	854.062500	857.762500	859.447500	2.944900e+04	2.731598e+07	2863.50
50%	896.650000	897.950000	907.950000	882.025000	896.000000	897.150000	895.120000	4.722250e+04	4.462565e+07	4475.50
75%	957.050000	953.037500	973.562500	939.675000	955.000000	957.962500	956.885000	9.080075e+04	8.202401e+07	7041.25
max	1089.500000	1100.000000	1125.000000	1071.300000	1096.000000	1089.500000	1096.910000	2.047290e+06	1.603652e+09	42803.00

Problem [1.2] last 90 days data

```
In [11]: l90data=data.iloc[404:495,:]
```

```
Out[11]: l90data.describe()
```

490	LALPATHLAB	EQ	2019-05-07	1024.95	1015.70	1031.95	1006.90	1013.00	1013.10	1020.66	20113	2.052851e+07	3628	11
491	LALPATHLAB	EQ	2019-05-08	1013.10	1014.00	1019.85	1001.90	1002.00	1006.10	1010.90	18048	1.824473e+07	4175	11
492	LALPATHLAB	EQ	2019-05-09	1006.10	1014.00	1014.00	977.70	979.90	982.90	987.36	60539	5.977355e+07	8169	37
493	LALPATHLAB	EQ	2019-05-10	982.90	989.90	994.30	963.60	980.00	980.65	980.71	30568	2.997840e+07	4618	15
494	LALPATHLAB	EQ	2019-05-13	980.65	970.80	996.00	960.00	975.00	976.25	974.21	37187	3.622810e+07	6798	23

90 rows × 15 columns

```
d=data.copy()
d['Month']=pd.DatetimeIndex(d['Date']).month
d['Year']=pd.DatetimeIndex(d['Date']).year
d
```

	Symbol	Series	Date	Prev Close	Open Price	High Price	Low Price	Last Price	Close Price	Average Price	Total Traded Quantity	Turnover	No. of Trades	Delivered C
0	LALPATHLAB	EQ	2017-05-15	891.15	895.0	914.15	881.00	912.00	900.60	889.35	257655	2.291453e+08	15451	1747
1	LALPATHLAB	EQ	2017-05-16	900.60	910.0	925.00	895.05	909.40	910.95	914.57	104896	9.593430e+07	13001	758
2	LALPATHLAB	EQ	2017-05-17	910.95	913.0	925.00	909.00	912.05	911.70	917.19	72460	6.645960e+07	2802	538
3	LALPATHLAB	EQ	2017-05-18	911.70	908.0	919.35	903.05	906.00	909.75	914.12	37707	3.446680e+07	2731	246
4	LALPATHLAB	EQ	2017-05-19	909.75	917.0	917.00	905.80	910.00	910.25	910.61	81082	7.383375e+07	4430	696
...
490	LALPATHLAB	EQ	2019-05-07	1024.95	1015.7	1031.95	1006.90	1013.00	1013.10	1020.66	20113	2.052851e+07	3628	115
491	LALPATHLAB	EQ	2019-05-08	1013.10	1014.0	1019.85	1001.90	1002.00	1006.10	1010.90	18048	1.824473e+07	4175	112
492	LALPATHLAB	EQ	2019-05-09	1006.10	1014.0	1014.00	977.70	979.90	982.90	987.36	60539	5.977355e+07	8169	373
493	LALPATHLAB	EQ	2019-05-10	982.90	989.9	994.30	963.60	980.00	980.65	980.71	30568	2.997840e+07	4618	190