nifty

August 10, 2024

[18]:
```
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
```

[19]:
```
df=pd.read_csv("National_Stock_Exchange_of_India_Ltd.csv")
```

[20]:
```
df
```

[20]:

	Symbol	Open	High	Low	LTP	Chng	% Chng	\
0	ADANIPORTS	750	766	713.25	715	-47.45	-6.22	
1	ASIANPAINT	3,101.00	3,167.35	3,091.00	3,138.00	-6.25	-0.20	
2	AXISBANK	669	674.9	660.45	661	-18.90	-2.78	
3	BAJAJ-AUTO	3,370.00	3,383.50	3,320.00	3,335.00	-56.70	-1.67	
4	BAJAJFINSV	17,200.00	17,237.20	16,610.00	16,684.00	-684.85	-3.94	
5	BAJFINANCE	7,021.00	7,047.90	6,775.00	6,780.00	-345.80	-4.85	
6	BHARTIARTL	763	763	733.1	735.85	-29.30	-3.83	
7	BPCL	397.15	397.2	375	377.4	-22.70	-5.67	
8	BRITANNIA	3,560.00	3,635.10	3,533.95	3,566.60	-6.80	-0.19	
9	CIPLA	892	976.05	890.65	965	65.05	7.23	
10	COALINDIA	157.75	159.4	155.35	155.9	-2.65	-1.67	
11	DIVISLAB	4,770.00	5,077.70	4,756.75	4,940.00	140.20	2.92	
12	DRREDDY	4,580.00	4,820.00	4,576.15	4,750.00	158.40	3.45	
13	EICHERMOT	2,495.00	2,506.10	2,421.50	2,440.75	-79.65	-3.16	
14	GRASIM	1,757.30	1,757.85	1,679.00	1,685.80	-80.95	-4.58	
15	HCLTECH	1,120.00	1,126.00	1,103.30	1,111.65	-13.15	-1.17	
16	HDFC	2,820.35	2,856.00	2,723.00	2,745.00	-122.75	-4.28	
17	HDFCBANK	1,500.00	1,506.70	1,485.00	1,489.50	-36.45	-2.39	
18	HDFCLIFE	685	689	667.1	669.75	-19.05	-2.77	
19	HEROMOTOCO	2,580.00	2,589.70	2,505.15	2,526.80	-67.90	-2.62	
20	HINDALCO	441.8	442.7	414.7	417.7	-29.35	-6.57	
21	HINDUNILVR	2,344.00	2,365.00	2,325.20	2,340.90	-8.15	-0.35	
22	ICICIBANK	739	742.05	718.6	720.45	-30.60	-4.07	
23	INDUSINDBK	951	956.95	898	899.95	-59.35	-6.19	
24	INFY	1,702.55	1,718.35	1,684.00	1,689.55	-32.85	-1.91	
25	IOC	125.6	125.6	120.5	121.15	-4.50	-3.58	
26	ITC	228.9	230.05	223.1	223.6	-7.70	-3.33	

27	JSWSTEEL	668.25	672.55	624.25	630	-50.90	-7.48
28	KOTAKBANK	2,002.00	2,007.00	1,955.10	1,960.00	-75.10	-3.69
29	LT	1,820.00	1,841.75	1,768.60	1,781.00	-68.90	-3.72
30	M&M	885	885	843	855.05	-36.15	-4.06
31	MARUTI	7,520.00	7,520.00	7,130.00	7,150.00	-422.50	-5.58
32	NESTLEIND	19,148.85	19,434.10	18,982.50	19,250.00	71.95	0.38
33	NTPC	133.2	134.05	128	128.65	-6.55	-4.84
34	ONGC	152.25	152.25	146.25	147.75	-7.35	-4.74
35	POWERGRID	204.05	204.95	200.8	202.5	-1.75	-0.86
36	RELIANCE	2,467.80	2,477.60	2,401.50	2,405.10	-87.85	-3.52
37	SBILIFE	1,154.00	1,154.00	1,105.25	1,130.85	-28.65	-2.47
38	SBIN	486.25	487.9	467.1	470	-20.55	-4.19
39	SHREECEM	26,450.00	26,539.90	25,812.00	25,900.00	-770.50	-2.89
40	SUNPHARMA	775	798.9	762	767.25	-15.65	-2.00
41	TATACONSUM	800.2	805	763.15	769.9	-37.90	-4.69
42	TATAMOTORS	486	486.75	458	459.4	-33.35	-6.77
43	TATASTEEL	1,157.90	1,159.50	1,106.25	1,110.25	-63.40	-5.40
44	TCS	3,425.00	3,490.00	3,411.90	3,439.20	-6.70	-0.19
45	TECHM	1,544.00	1,550.00	1,510.15	1,519.00	-40.35	-2.59
46	TITAN	2,377.80	2,385.10	2,285.05	2,293.00	-104.80	-4.37
47	ULTRACEMCO	7,550.00	7,599.00	7,370.10	7,398.45	-210.35	-2.76
48	UPL	726	726	701	703.5	-23.80	-3.27
49	WIPRO	632	634.4	619.65	621.3	-15.40	-2.42

	Volume (lacs)	Turnover (crs.)	52w H	52w L	365 d % chng	\
0	72.20	532.63	901	384.4	79.22	
1	10.29	322.53	3,505.00	2,117.15	45.66	
2	102.53	684	866.9	568.4	10.19	
3	3.42	114.59	4,361.40	3,041.00	9.30	
4	3.42	576.79	19,325.00	8,273.70	91.38	
5	16.89	1,161.63	8,050.00	4,362.00	44.57	
6	111.43	830.06	781.8	454.11	58.55	
7	100.23	383.54	503	357	-1.22	
8	3.73	133.23	4,153.00	3,317.30	0.30	
9	144.59	1,380.90	1,005.00	726.5	31.89	
10	118.30	185.5	203.8	123.25	25.78	
11	15.71	775.37	5,425.10	3,153.30	42.39	
12	10.72	508.97	5,614.60	4,135.00	-1.17	
13	5.55	136.56	3,037.00	2,303.70	-5.95	
14	7.48	127.84	1,893.00	840.05	99.95	
15	22.07	246.06	1,377.75	814.35	34.79	
16	33.53	927.88	3,021.10	2,179.30	25.27	
17	93.12	1,394.10	1,725.00	1,342.00	6.18	
18	22.37	151.4	775.65	617.4	0.70	
19	6.85	174.04	3,629.05	2,505.15	-16.02	
20	148.26	631.93	551.85	220.35	86.93	
21	24.51	572.85	2,859.30	2,120.00	9.60	

22	189.88	1,385.86	867	465.8	52.41
23	67.46	622.74	1,242.00	789	5.25
24	44.94	764.67	1,848.00	1,091.00	51.44
25	77.25	94.57	141.5	84	41.28
26	270.27	610.54	265.3	192.4	15.35
27	89.22	574.61	776.5	336	86.25
28	26.48	522.52	2,253.00	1,626.00	5.24
29	27.97	502.81	1,981.75	1,092.00	59.59
30	39.34	338.08	979	660.25	18.77
31	11.55	840.81	8,368.00	6,400.00	1.34
32	0.56	108.61	20,609.15	16,002.10	9.87
33	133.24	173.94	152.1	88.15	36.93
34	231.36	344.33	172.75	77.05	82.86
35	96.11	195.09	209.95	136.88	3.69
36	72.75	1,770.19	2,751.35	1,830.00	23.48
37	23.16	262.43	1,273.90	825.2	33.19
38	263.06	1,249.55	542.3	240.15	93.42
39	0.30	76.94	32,048.00	22,531.00	9.29
40	54.33	424.05	851	502.3	51.57
41	26.17	203.32	889	505.05	49.55
42	517.88	2,430.36	536.7	156.7	167.95
43	106.46	1,200.79	1,534.50	539.5	105.13
44	19.41	670.58	3,989.90	2,624.45	27.32
45	15.22	232.97	1,630.00	846.7	76.17
46	12.89	298.54	2,677.90	1,300.35	75.45
47	2.66	198.32	8,269.00	4,770.00	53.50
48	24.82	176.35	864.7	414.15	68.06
49	41.39	259.37	739.85	346.25	77.51

	30 d % chng
0	-4.65
1	5.66
2	-21.49
3	-12.05
4	-9.10
5	-13.69
6	5.70
7	-12.45
8	-3.42
9	6.34
10	-10.94
11	-1.57
12	1.80
13	-5.77
14	-3.08
15	-4.73
16	-5.72

```
17        -9.88
18        -2.94
19        -6.43
20       -14.06
21        -3.94
22       -13.14
23       -22.08
24        -0.83
25        -7.87
26        -5.53
27        -9.27
28       -11.35
29        -0.85
30        -4.42
31        -2.02
32         0.17
33       -10.16
34        -9.41
35         6.36
36        -9.62
37        -3.52
38        -8.30
39        -6.76
40        -5.69
41        -4.82
42        -9.68
43       -17.37
44        -1.25
45        -2.83
46        -6.59
47         1.78
48        -1.37
49        -7.01
```

[21]:
```
df.shape
```

[21]:
```
(50, 13)
```

[22]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 50 entries, 0 to 49
Data columns (total 13 columns):
 #   Column           Non-Null Count  Dtype 
---  ------           --------------  ----- 
 0   Symbol           50 non-null     object
 1   Open             50 non-null     object
```

```
 2   High             50 non-null     object
 3   Low              50 non-null     object
 4   LTP              50 non-null     object
 5   Chng             50 non-null     float64
 6   % Chng           50 non-null     float64
 7   Volume (lacs)    50 non-null     float64
 8   Turnover (crs.)  50 non-null     object
 9   52w H            50 non-null     object
 10  52w L            50 non-null     object
 11  365 d % chng     50 non-null     float64
 12  30 d % chng      50 non-null     float64
dtypes: float64(5), object(8)
memory usage: 5.2+ KB
```

[23]:
```
df.describe(include=object)
```

[23]:

	Symbol	Open	High	Low	LTP	Turnover (crs.)	52w H	52w L
count	50	50	50	50	50	50	50	50
unique	50	50	50	50	50	50	50	50
top	HINDALCO	775	1,159.50	6,775.00	16,684.00	76.94	776.5	825.2
freq	1	1	1	1	1	1	1	1

[24]:
```
df.describe(include=float)
```

[24]:

	Chng	% Chng	Volume (lacs)	365 d % chng	30 d % chng
count	50.000000	50.000000	50.000000	50.000000	50.000000
mean	-70.133000	-2.930200	71.266600	41.203000	-5.996800
std	163.203678	2.677007	93.462062	37.358646	6.322546
min	-770.500000	-7.480000	0.300000	-16.020000	-22.080000
25%	-66.775000	-4.527500	13.472500	9.375000	-9.665000
50%	-29.975000	-3.300000	30.750000	35.860000	-5.705000
75%	-7.812500	-1.932500	99.200000	65.942500	-2.222500
max	158.400000	7.230000	517.880000	167.950000	6.360000

[25]:
```
df.head()
```

[25]:

	Symbol	Open	High	Low	LTP	Chng	% Chng
0	ADANIPORTS	750	766	713.25	715	-47.45	-6.22
1	ASIANPAINT	3,101.00	3,167.35	3,091.00	3,138.00	-6.25	-0.20
2	AXISBANK	669	674.9	660.45	661	-18.90	-2.78
3	BAJAJ-AUTO	3,370.00	3,383.50	3,320.00	3,335.00	-56.70	-1.67

```
4  BAJAJFINSV  17,200.00  17,237.20  16,610.00  16,684.00 -684.85   -3.94

   Volume (lacs) Turnover (crs.)      52w H     52w L  365 d % chng  \
0          72.20          532.63        901     384.4         79.22
1          10.29          322.53   3,505.00  2,117.15         45.66
2         102.53             684      866.9     568.4         10.19
3           3.42          114.59   4,361.40  3,041.00          9.30
4           3.42          576.79  19,325.00  8,273.70         91.38

   30 d % chng
0        -4.65
1         5.66
2       -21.49
3       -12.05
4        -9.10
```

[26]:
```
# type casting of open, high, LTP,low
```

[27]:
```
df['Open'] = df['Open'].str.replace(',','')
df['Open'] = df['Open'].astype(float)

df['High'] = df['High'].str.replace(',','')
df['High'] = df['High'].astype(float)

df['Low'] = df['Low'].str.replace(',','')
df['Low'] = df['Low'].astype(float)

df['LTP'] = df['LTP'].str.replace(',','')
df['LTP'] = df['LTP'].astype(float)

df['Turnover (crs.)'] = df['Turnover (crs.)'].str.replace(',','')
df['Turnover (crs.)'] = df['Turnover (crs.)'].astype(float)

df['52w H'] = df['52w H'].str.replace(',','')
df['52w H'] = df['52w H'].astype(float)

df['52w L'] = df['52w L'].str.replace(',','')
df['52w L'] = df['52w L'].astype(float)
```

[28]:
```
df.head()
```

[28]:
```
       Symbol     Open      High       Low      LTP    Chng  % Chng  \
0  ADANIPORTS    750.0    766.00    713.25    715.0  -47.45   -6.22
1  ASIANPAINT   3101.0   3167.35   3091.00   3138.0   -6.25   -0.20
2    AXISBANK    669.0    674.90    660.45    661.0  -18.90   -2.78
3  BAJAJ-AUTO   3370.0   3383.50   3320.00   3335.0  -56.70   -1.67
4  BAJAJFINSV  17200.0  17237.20  16610.00  16684.0 -684.85   -3.94
```

	Volume (lacs)	Turnover (crs.)	52w H	52w L	365 d % chng	30 d % chng
0	72.20	532.63	901.0	384.40	79.22	-4.65
1	10.29	322.53	3505.0	2117.15	45.66	5.66
2	102.53	684.00	866.9	568.40	10.19	-21.49
3	3.42	114.59	4361.4	3041.00	9.30	-12.05
4	3.42	576.79	19325.0	8273.70	91.38	-9.10

[29]:
```
df
```

[29]:

	Symbol	Open	High	Low	LTP	Chng	% Chng	\
0	ADANIPORTS	750.00	766.00	713.25	715.00	-47.45	-6.22	
1	ASIANPAINT	3101.00	3167.35	3091.00	3138.00	-6.25	-0.20	
2	AXISBANK	669.00	674.90	660.45	661.00	-18.90	-2.78	
3	BAJAJ-AUTO	3370.00	3383.50	3320.00	3335.00	-56.70	-1.67	
4	BAJAJFINSV	17200.00	17237.20	16610.00	16684.00	-684.85	-3.94	
5	BAJFINANCE	7021.00	7047.90	6775.00	6780.00	-345.80	-4.85	
6	BHARTIARTL	763.00	763.00	733.10	735.85	-29.30	-3.83	
7	BPCL	397.15	397.20	375.00	377.40	-22.70	-5.67	
8	BRITANNIA	3560.00	3635.10	3533.95	3566.60	-6.80	-0.19	
9	CIPLA	892.00	976.05	890.65	965.00	65.05	7.23	
10	COALINDIA	157.75	159.40	155.35	155.90	-2.65	-1.67	
11	DIVISLAB	4770.00	5077.70	4756.75	4940.00	140.20	2.92	
12	DRREDDY	4580.00	4820.00	4576.15	4750.00	158.40	3.45	
13	EICHERMOT	2495.00	2506.10	2421.50	2440.75	-79.65	-3.16	
14	GRASIM	1757.30	1757.85	1679.00	1685.80	-80.95	-4.58	
15	HCLTECH	1120.00	1126.00	1103.30	1111.65	-13.15	-1.17	
16	HDFC	2820.35	2856.00	2723.00	2745.00	-122.75	-4.28	
17	HDFCBANK	1500.00	1506.70	1485.00	1489.50	-36.45	-2.39	
18	HDFCLIFE	685.00	689.00	667.10	669.75	-19.05	-2.77	
19	HEROMOTOCO	2580.00	2589.70	2505.15	2526.80	-67.90	-2.62	
20	HINDALCO	441.80	442.70	414.70	417.70	-29.35	-6.57	
21	HINDUNILVR	2344.00	2365.00	2325.20	2340.90	-8.15	-0.35	
22	ICICIBANK	739.00	742.05	718.60	720.45	-30.60	-4.07	
23	INDUSINDBK	951.00	956.95	898.00	899.95	-59.35	-6.19	
24	INFY	1702.55	1718.35	1684.00	1689.55	-32.85	-1.91	
25	IOC	125.60	125.60	120.50	121.15	-4.50	-3.58	
26	ITC	228.90	230.05	223.10	223.60	-7.70	-3.33	
27	JSWSTEEL	668.25	672.55	624.25	630.00	-50.90	-7.48	
28	KOTAKBANK	2002.00	2007.00	1955.10	1960.00	-75.10	-3.69	
29	LT	1820.00	1841.75	1768.60	1781.00	-68.90	-3.72	
30	M&M	885.00	885.00	843.00	855.05	-36.15	-4.06	
31	MARUTI	7520.00	7520.00	7130.00	7150.00	-422.50	-5.58	
32	NESTLEIND	19148.85	19434.10	18982.50	19250.00	71.95	0.38	
33	NTPC	133.20	134.05	128.00	128.65	-6.55	-4.84	
34	ONGC	152.25	152.25	146.25	147.75	-7.35	-4.74	
35	POWERGRID	204.05	204.95	200.80	202.50	-1.75	-0.86	

36	RELIANCE	2467.80	2477.60	2401.50	2405.10	-87.85	-3.52
37	SBILIFE	1154.00	1154.00	1105.25	1130.85	-28.65	-2.47
38	SBIN	486.25	487.90	467.10	470.00	-20.55	-4.19
39	SHREECEM	26450.00	26539.90	25812.00	25900.00	-770.50	-2.89
40	SUNPHARMA	775.00	798.90	762.00	767.25	-15.65	-2.00
41	TATACONSUM	800.20	805.00	763.15	769.90	-37.90	-4.69
42	TATAMOTORS	486.00	486.75	458.00	459.40	-33.35	-6.77
43	TATASTEEL	1157.90	1159.50	1106.25	1110.25	-63.40	-5.40
44	TCS	3425.00	3490.00	3411.90	3439.20	-6.70	-0.19
45	TECHM	1544.00	1550.00	1510.15	1519.00	-40.35	-2.59
46	TITAN	2377.80	2385.10	2285.05	2293.00	-104.80	-4.37
47	ULTRACEMCO	7550.00	7599.00	7370.10	7398.45	-210.35	-2.76
48	UPL	726.00	726.00	701.00	703.50	-23.80	-3.27
49	WIPRO	632.00	634.40	619.65	621.30	-15.40	-2.42

	Volume (lacs)	Turnover (crs.)	52w H	52w L	365 d % chng	\
0	72.20	532.63	901.00	384.40	79.22	
1	10.29	322.53	3505.00	2117.15	45.66	
2	102.53	684.00	866.90	568.40	10.19	
3	3.42	114.59	4361.40	3041.00	9.30	
4	3.42	576.79	19325.00	8273.70	91.38	
5	16.89	1161.63	8050.00	4362.00	44.57	
6	111.43	830.06	781.80	454.11	58.55	
7	100.23	383.54	503.00	357.00	-1.22	
8	3.73	133.23	4153.00	3317.30	0.30	
9	144.59	1380.90	1005.00	726.50	31.89	
10	118.30	185.50	203.80	123.25	25.78	
11	15.71	775.37	5425.10	3153.30	42.39	
12	10.72	508.97	5614.60	4135.00	-1.17	
13	5.55	136.56	3037.00	2303.70	-5.95	
14	7.48	127.84	1893.00	840.05	99.95	
15	22.07	246.06	1377.75	814.35	34.79	
16	33.53	927.88	3021.10	2179.30	25.27	
17	93.12	1394.10	1725.00	1342.00	6.18	
18	22.37	151.40	775.65	617.40	0.70	
19	6.85	174.04	3629.05	2505.15	-16.02	
20	148.26	631.93	551.85	220.35	86.93	
21	24.51	572.85	2859.30	2120.00	9.60	
22	189.88	1385.86	867.00	465.80	52.41	
23	67.46	622.74	1242.00	789.00	5.25	
24	44.94	764.67	1848.00	1091.00	51.44	
25	77.25	94.57	141.50	84.00	41.28	
26	270.27	610.54	265.30	192.40	15.35	
27	89.22	574.61	776.50	336.00	86.25	
28	26.48	522.52	2253.00	1626.00	5.24	
29	27.97	502.81	1981.75	1092.00	59.59	
30	39.34	338.08	979.00	660.25	18.77	

31	11.55	840.81	8368.00	6400.00	1.34
32	0.56	108.61	20609.15	16002.10	9.87
33	133.24	173.94	152.10	88.15	36.93
34	231.36	344.33	172.75	77.05	82.86
35	96.11	195.09	209.95	136.88	3.69
36	72.75	1770.19	2751.35	1830.00	23.48
37	23.16	262.43	1273.90	825.20	33.19
38	263.06	1249.55	542.30	240.15	93.42
39	0.30	76.94	32048.00	22531.00	9.29
40	54.33	424.05	851.00	502.30	51.57
41	26.17	203.32	889.00	505.05	49.55
42	517.88	2430.36	536.70	156.70	167.95
43	106.46	1200.79	1534.50	539.50	105.13
44	19.41	670.58	3989.90	2624.45	27.32
45	15.22	232.97	1630.00	846.70	76.17
46	12.89	298.54	2677.90	1300.35	75.45
47	2.66	198.32	8269.00	4770.00	53.50
48	24.82	176.35	864.70	414.15	68.06
49	41.39	259.37	739.85	346.25	77.51

	30 d % chng
0	-4.65
1	5.66
2	-21.49
3	-12.05
4	-9.10
5	-13.69
6	5.70
7	-12.45
8	-3.42
9	6.34
10	-10.94
11	-1.57
12	1.80
13	-5.77
14	-3.08
15	-4.73
16	-5.72
17	-9.88
18	-2.94
19	-6.43
20	-14.06
21	-3.94
22	-13.14
23	-22.08
24	-0.83
25	-7.87

```
26        -5.53
27        -9.27
28       -11.35
29        -0.85
30        -4.42
31        -2.02
32         0.17
33       -10.16
34        -9.41
35         6.36
36        -9.62
37        -3.52
38        -8.30
39        -6.76
40        -5.69
41        -4.82
42        -9.68
43       -17.37
44        -1.25
45        -2.83
46        -6.59
47         1.78
48        -1.37
49        -7.01
```

[30]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 50 entries, 0 to 49
Data columns (total 13 columns):
 #   Column           Non-Null Count  Dtype
---  ------           --------------  -----
 0   Symbol           50 non-null     object
 1   Open             50 non-null     float64
 2   High             50 non-null     float64
 3   Low              50 non-null     float64
 4   LTP              50 non-null     float64
 5   Chng             50 non-null     float64
 6   % Chng           50 non-null     float64
 7   Volume (lacs)    50 non-null     float64
 8   Turnover (crs.)  50 non-null     float64
 9   52w H            50 non-null     float64
 10  52w L            50 non-null     float64
 11  365 d % chng     50 non-null     float64
 12  30 d % chng      50 non-null     float64
dtypes: float64(12), object(1)
memory usage: 5.2+ KB
```

[31]:
```
# Create the list of the string and numerical columns
```

[32]:
```
num_cols = df.select_dtypes(exclude=['object']).columns
num_cols
```

[32]:
```
Index(['Open', 'High', 'Low', 'LTP', 'Chng', '% Chng', 'Volume (lacs)',
       'Turnover (crs.)', '52w H', '52w L', '365 d % chng', '30 d % chng'],
      dtype='object')
```

[33]:
```
str_cols= df.select_dtypes(exclude=['float']).columns
str_cols
```

[33]:
```
Index(['Symbol'], dtype='object')
```

[34]:
```
df.isnull().sum()
```

[34]:
```
Symbol             0
Open               0
High               0
Low                0
LTP                0
Chng               0
% Chng             0
Volume (lacs)      0
Turnover (crs.)    0
52w H              0
52w L              0
365 d % chng       0
30 d % chng        0
dtype: int64
```

[40]:
```
for col in num_cols:
    print('columns:',col)
    print(f"value counts {col} :",df[col].value_counts().sum())
    print(f"unique values {col} :",df[col].nunique())
    print()
```

```
columns: Open
value counts Open : 50
unique valuesOpen : 50

columns: High
value counts High : 50
unique valuesHigh : 50

columns: Low
value counts Low : 50
```

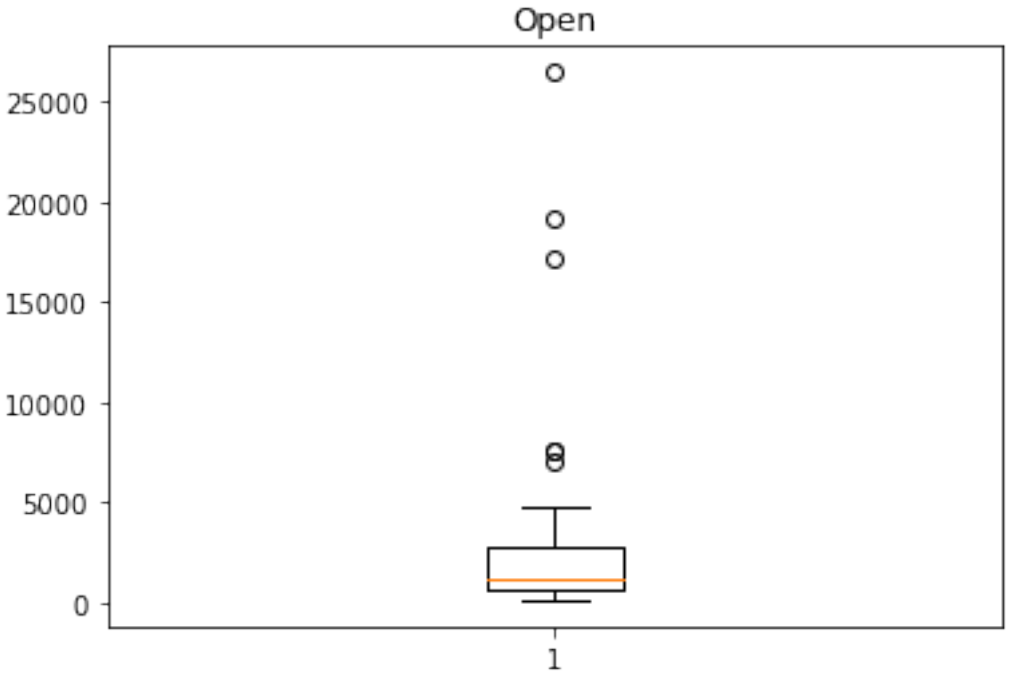
```
unique valuesLow : 50

columns: LTP
value counts LTP : 50
unique valuesLTP : 50

columns: Chng
value counts Chng : 50
unique valuesChng : 50

columns: % Chng
value counts % Chng : 50
unique values% Chng : 48

columns: Volume (lacs)
value counts Volume (lacs) : 50
unique valuesVolume (lacs) : 49

columns: Turnover (crs.)
value counts Turnover (crs.) : 50
unique valuesTurnover (crs.) : 50

columns: 52w H
value counts 52w H : 50
unique values52w H : 50

columns: 52w L
value counts 52w L : 50
unique values52w L : 50

columns: 365 d % chng
value counts 365 d % chng : 50
unique values365 d % chng : 50

columns: 30 d % chng
value counts 30 d % chng : 50
unique values30 d % chng : 50
```

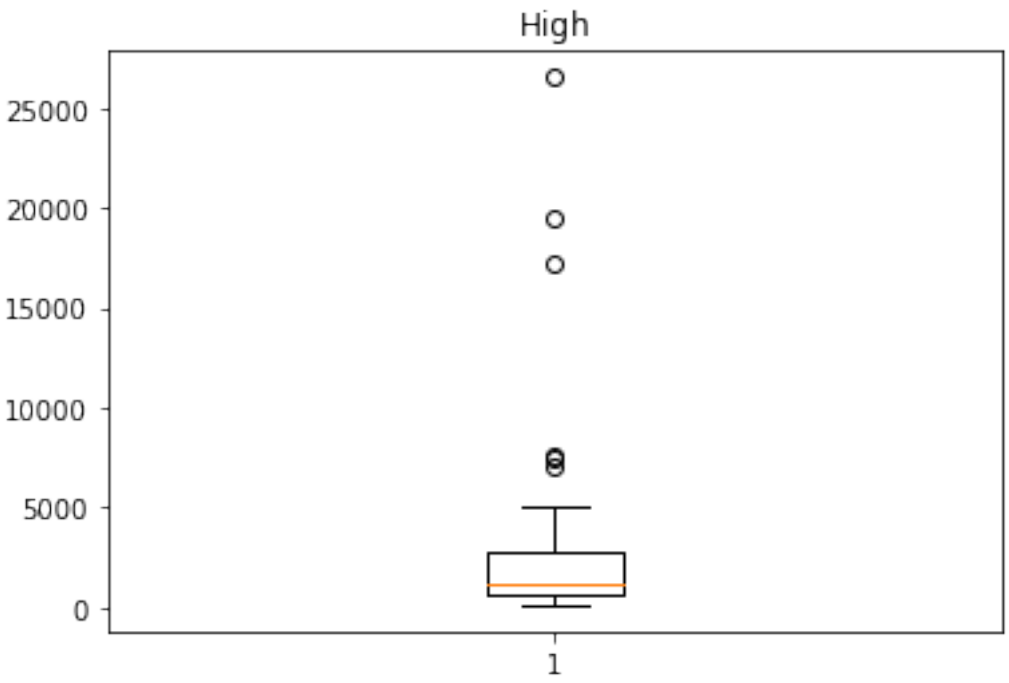
[41]:
```
for str in str_cols:
    print("column name :", str)
    print(f"value count {str}:", df[str].value_counts().sum())
    print(f"unique values {str}:", df[str].nunique())
```

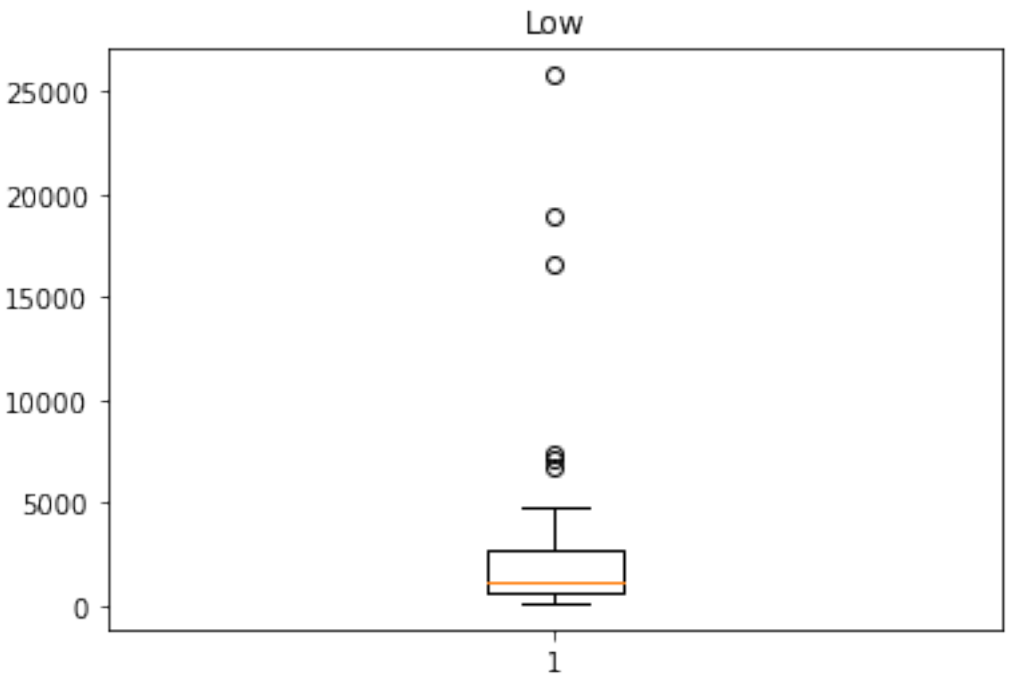
```
column name : Symbol
value count Symbol: 50
unique values Symbol: 50
```

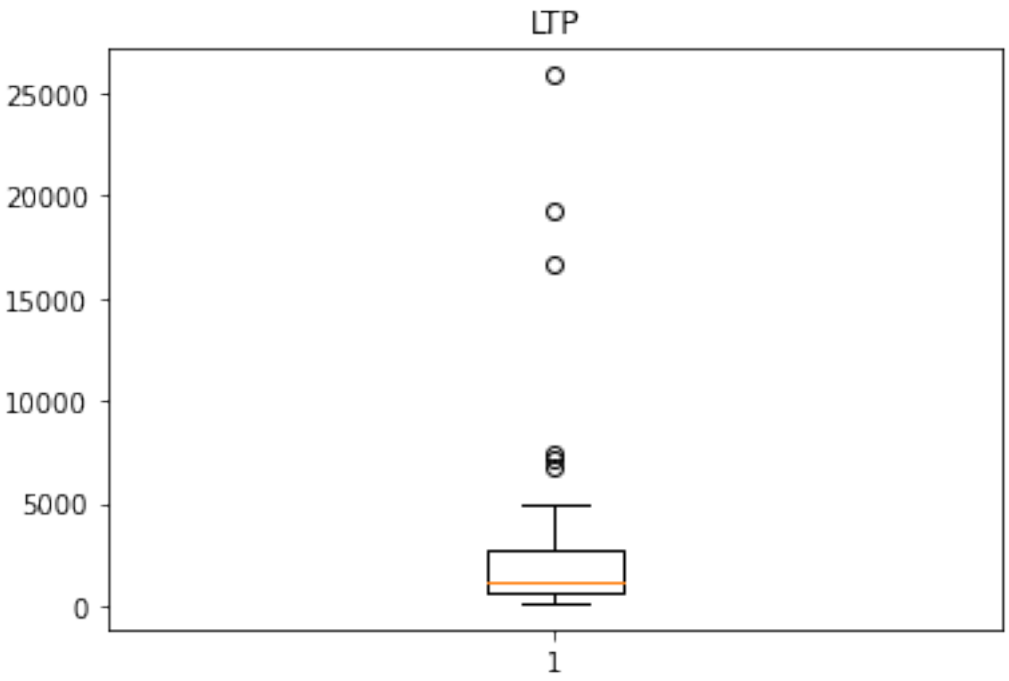
[42]:
```
# BoxPlot Visualization
```

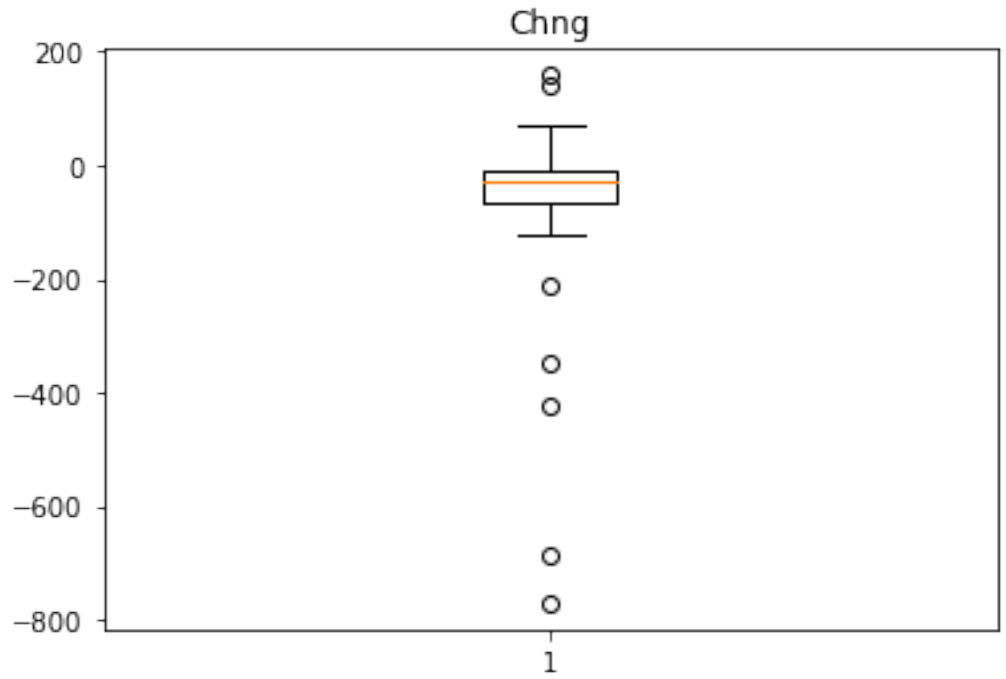
[48]:
```
for col in num_cols:
    plt.figure() # plot figure for each iteration
    plt.boxplot(df[col])
    plt.title(col)
```

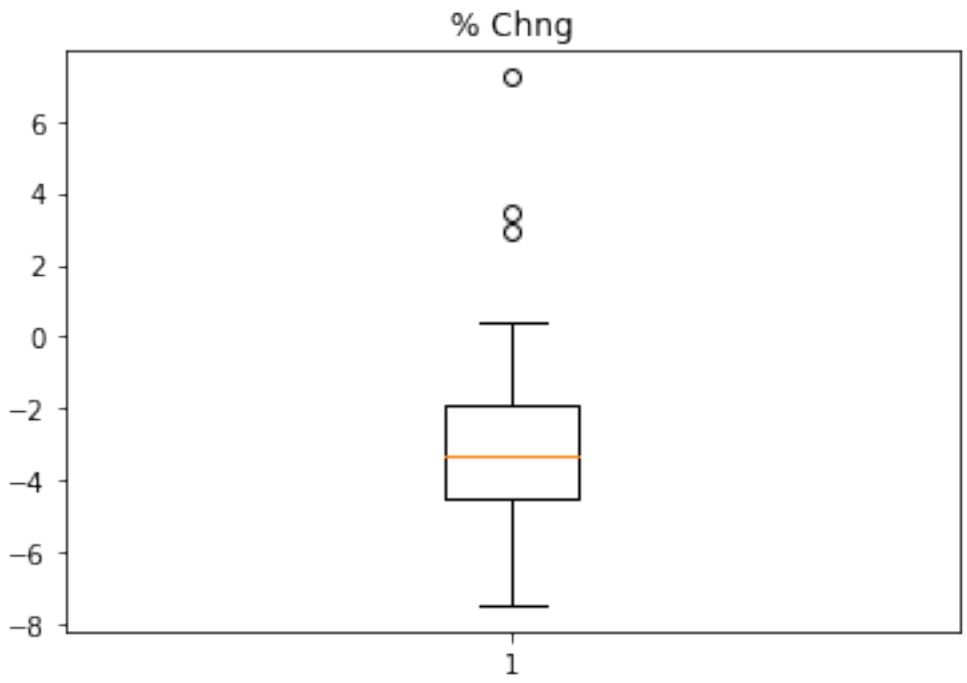


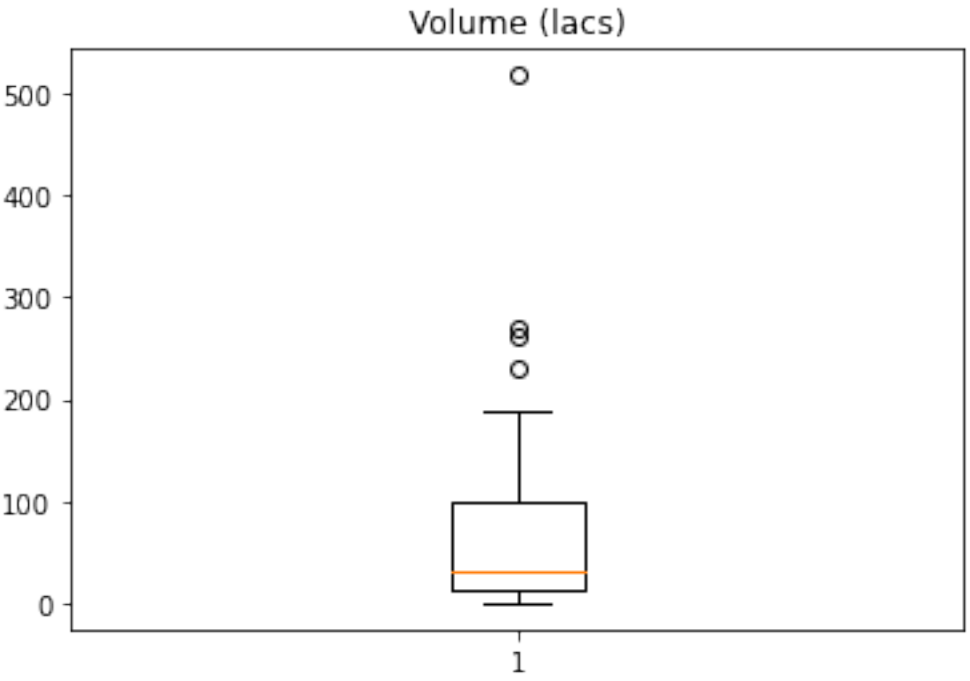

High
25000
20000
15000
10000
5000
0
1

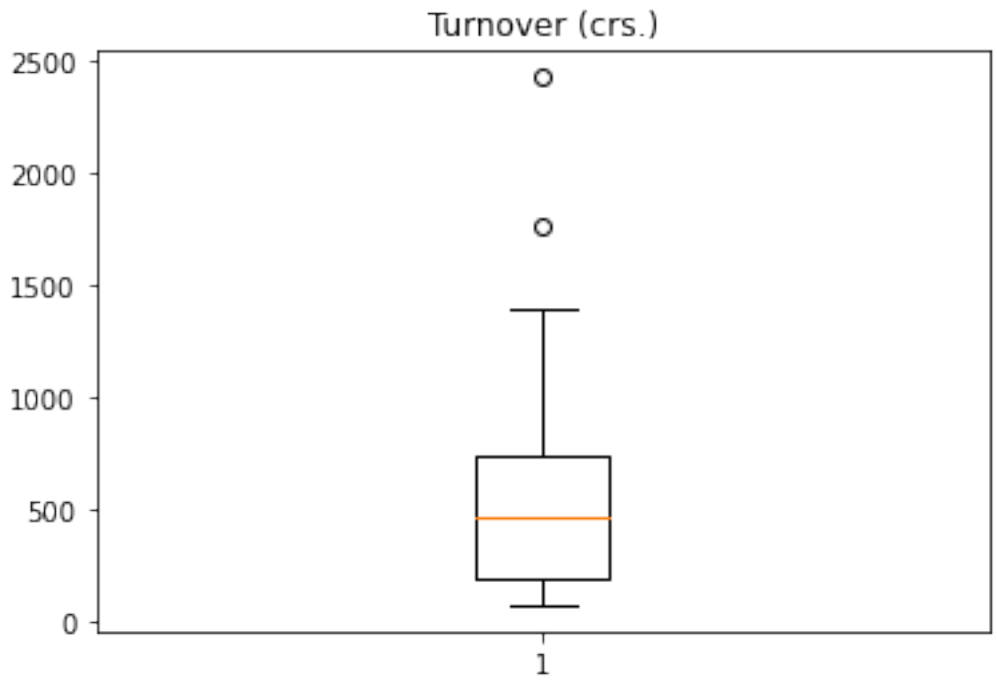

Low
25000
20000
15000
10000
5000
0
1

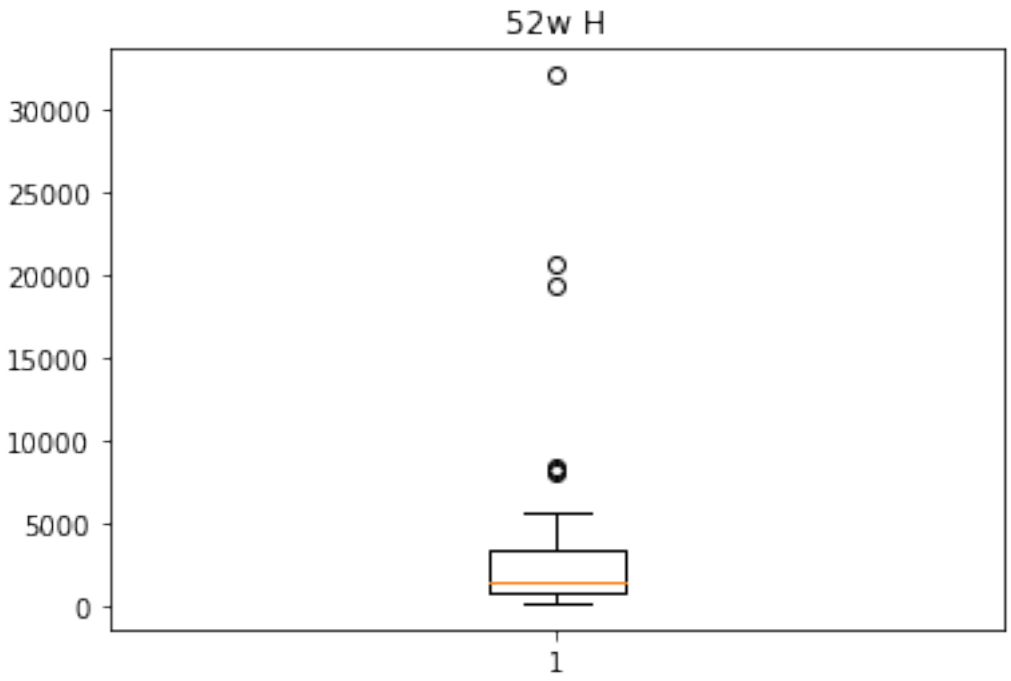

LTP
25000
20000
15000
10000
5000
0
1

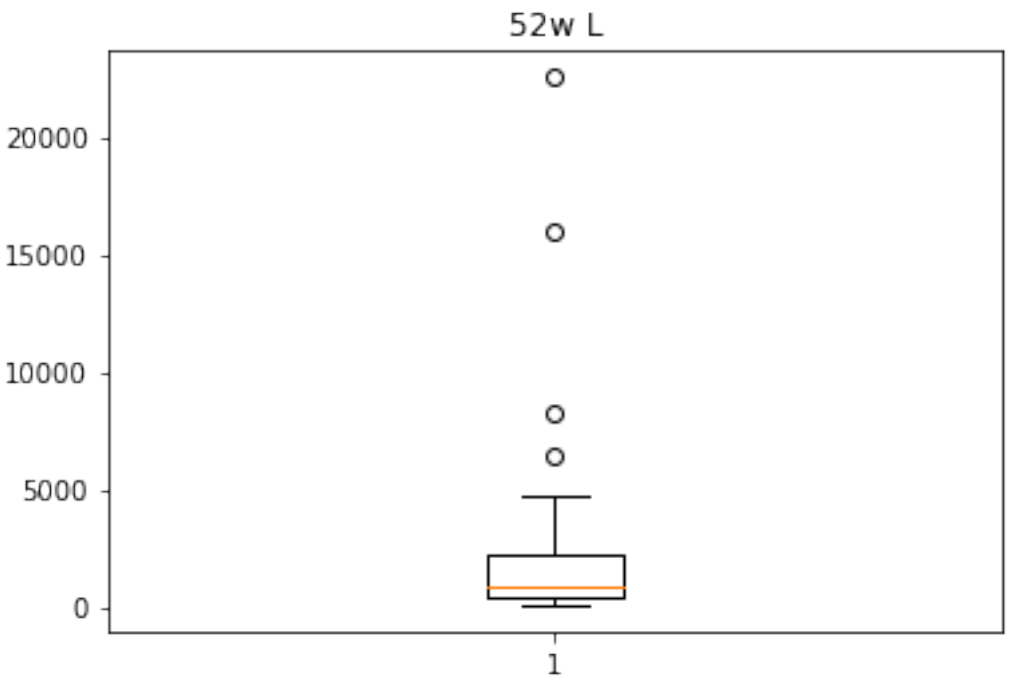

Chng
200
0
−200
−400
−600
−800
1

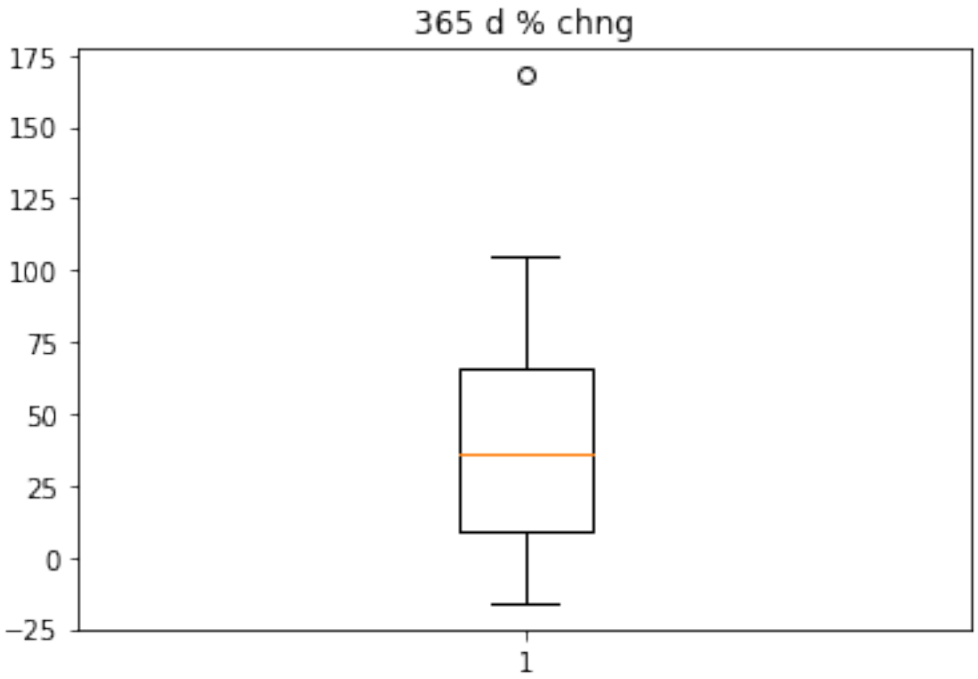

% Chng
6
4
2
0
−2
−4
−6
−8
1

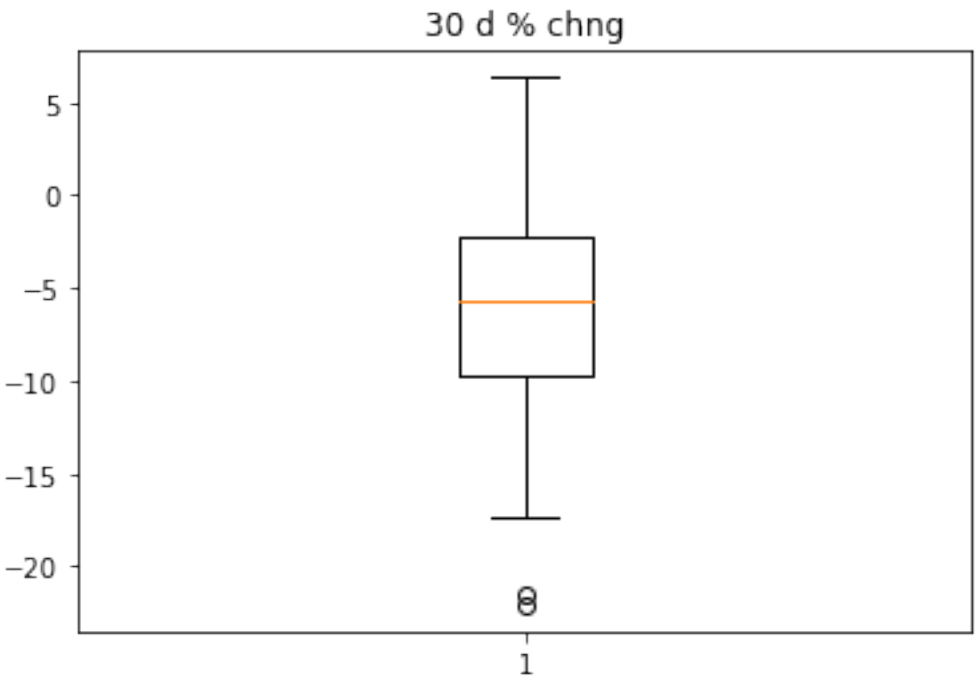

Volume (lacs)
500
400
300
200
100
0
1


Turnover (crs.)
2500
2000
1500
1000
500
0
1


52w H
30000
25000
20000
15000
10000
5000
0
1


52w L
20000
15000
10000
5000
0
1

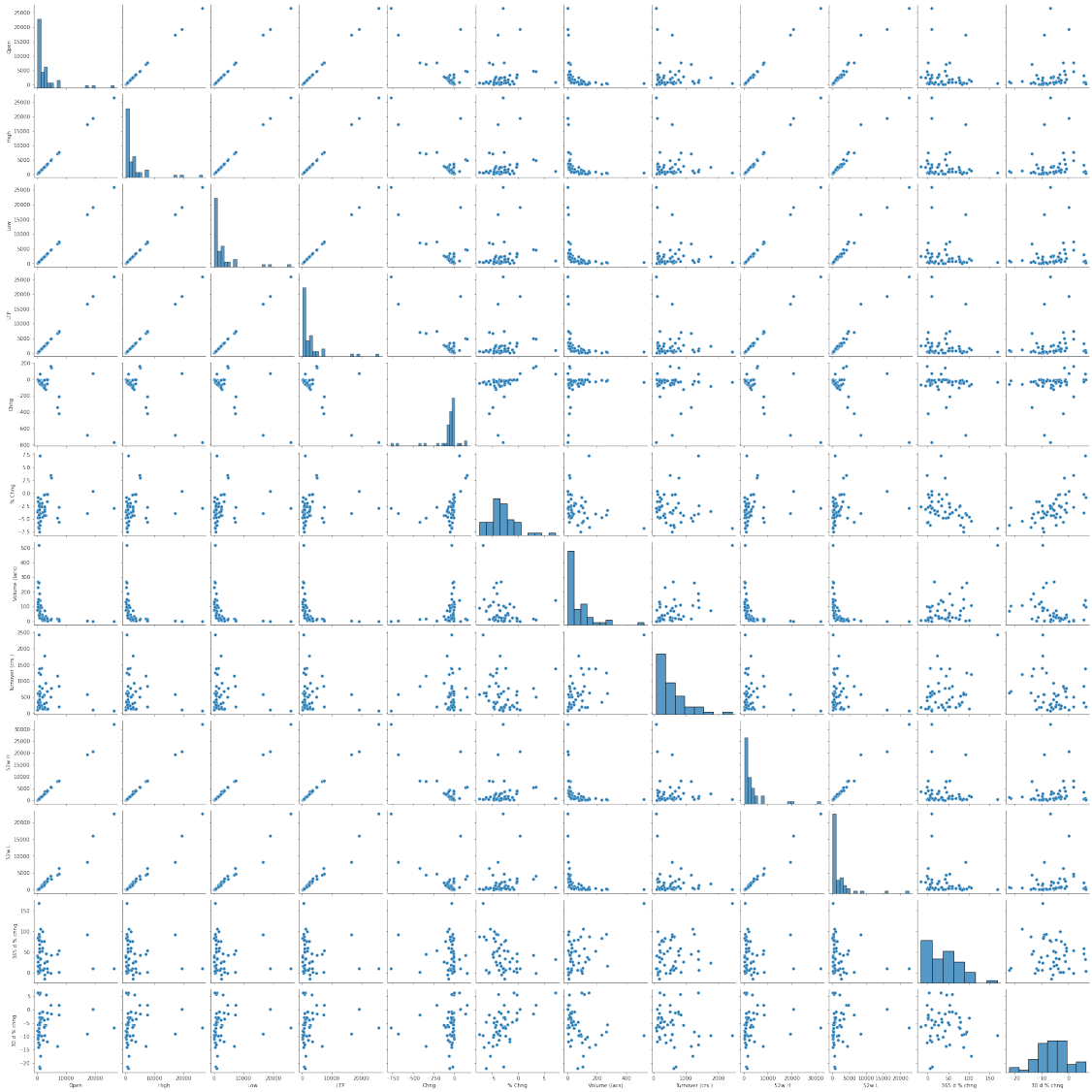

365 d % chng
175
150
125
100
75
50
25
0
−25
1



[50]:
```
# PairPlot Visualization
```

[51]:
```
sns.pairplot(df)
```

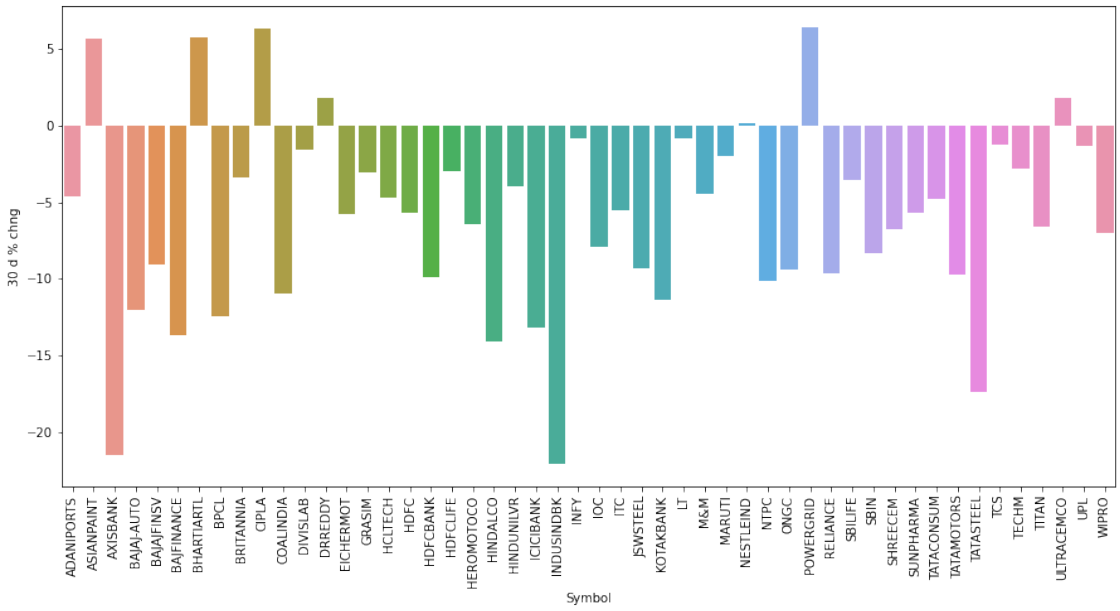
[51]: <seaborn.axisgrid.PairGrid at 0x1207bf97340>



[52]:
```
# BarPlot Visualization
```

[53]:
```
plt.figure(figsize=(15,7))
plt.xticks(rotation=90)


sns.barplot(data = df, x = 'Symbol', y = '30 d % chng')
plt.show
```

[53]:
```
<function matplotlib.pyplot.show(close=None, block=None)>
```



[54]:
```
# Plotting BarPlot, we can find that majority of the companies have shown␣
↪negative returns if stayed invested for a month in it.
#
# Hence investment period should be more than a month.
```

[55]:
```
df.head()
```

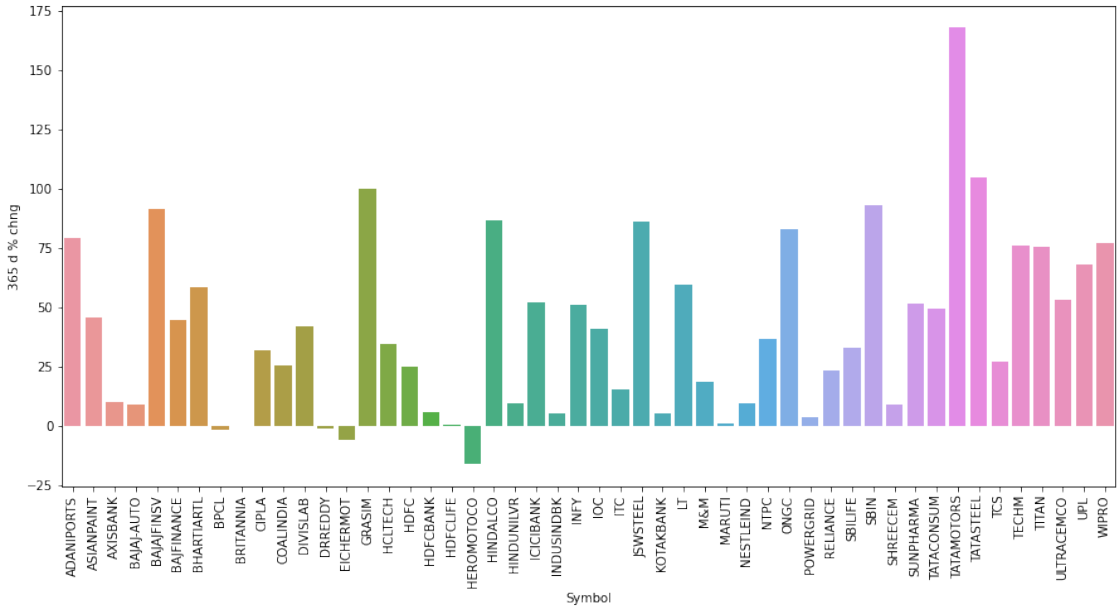
[55]:

	Symbol	Open	High	Low	LTP	Chng	% Chng	\
0	ADANIPORTS	750.0	766.00	713.25	715.0	-47.45	-6.22	
1	ASIANPAINT	3101.0	3167.35	3091.00	3138.0	-6.25	-0.20	
2	AXISBANK	669.0	674.90	660.45	661.0	-18.90	-2.78	
3	BAJAJ-AUTO	3370.0	3383.50	3320.00	3335.0	-56.70	-1.67	
4	BAJAJFINSV	17200.0	17237.20	16610.00	16684.0	-684.85	-3.94	

	Volume (lacs)	Turnover (crs.)	52w H	52w L	365 d % chng	30 d % chng
0	72.20	532.63	901.0	384.40	79.22	-4.65
1	10.29	322.53	3505.0	2117.15	45.66	5.66
2	102.53	684.00	866.9	568.40	10.19	-21.49
3	3.42	114.59	4361.4	3041.00	9.30	-12.05
4	3.42	576.79	19325.0	8273.70	91.38	-9.10

[60]:
```
plt.figure(figsize=(15,7))
plt.xticks(rotation=90)
sns.barplot(x='Symbol', y='365 d % chng',data=df)
```

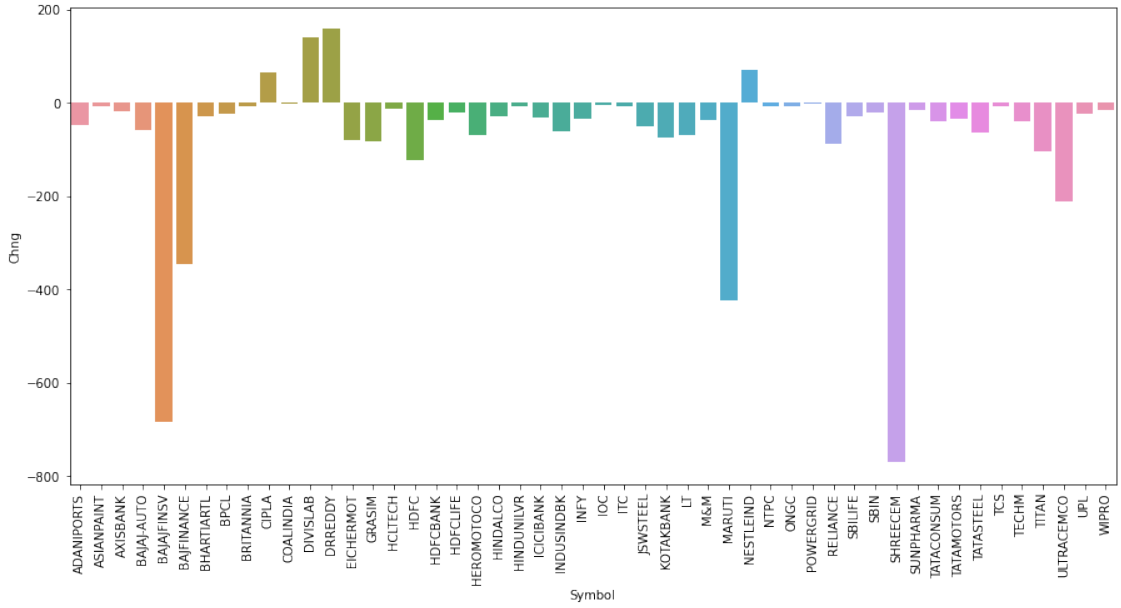
[60]:
```
<AxesSubplot:xlabel='Symbol', ylabel='365 d % chng'>
```



[61]:
```
# Plotting BarPlot, we can find that majority of the companies have shown␣
↪atleast 10% returns if stayed invested for a year in it
```

[63]:
```
plt.figure(figsize=(15,7))
plt.xticks(rotation=90)
sns.barplot(x='Symbol', y="Chng", data=df)
```

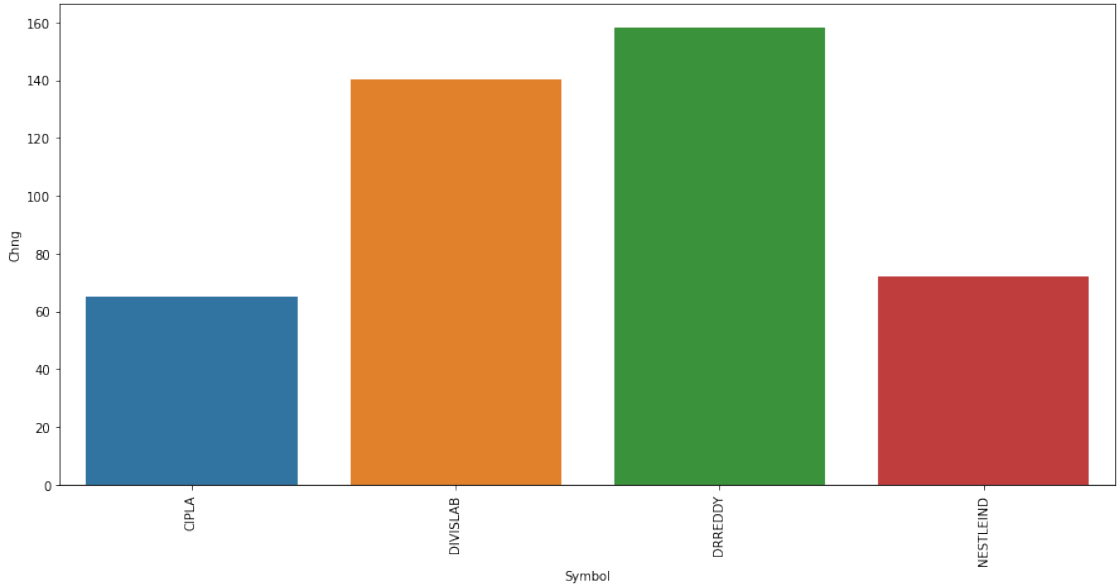
[63]: <AxesSubplot:xlabel='Symbol', ylabel='Chng'>



[64]:
```
# On the day for which the data is recorded, we can see that majority of the␣
↪companies gave negative returns
```

[65]:
```
plt.figure(figsize=(15,7))
plt.xticks(rotation=90)
sns.barplot(x='Symbol', y="Chng", data=df[df['Chng']>0])
```

[65]:
```
<AxesSubplot:xlabel='Symbol', ylabel='Chng'>
```



[66]:
```
# On the day for which the data is recorded, only 4 companies gave positive␣
↪returns
```

[67]:
```
bank_df = df['Symbol'].
↪isin(['AXISBANK','HDFCBANK','ICICIBANK','INDUSINDBK','KOTAKBANK','SBIN','HDFC','BAJAJFINSV'
bank_table = df[bank_df].pivot_table(values␣
↪=['Open','High','Low','LTP','Chng','Volume (lacs)','52w H','52w L','Turnover␣
↪(crs.)','365 d % chng','30 d % chng'], index= ['Symbol'])
bank_table.reset_index( inplace=True)
bank_table
```

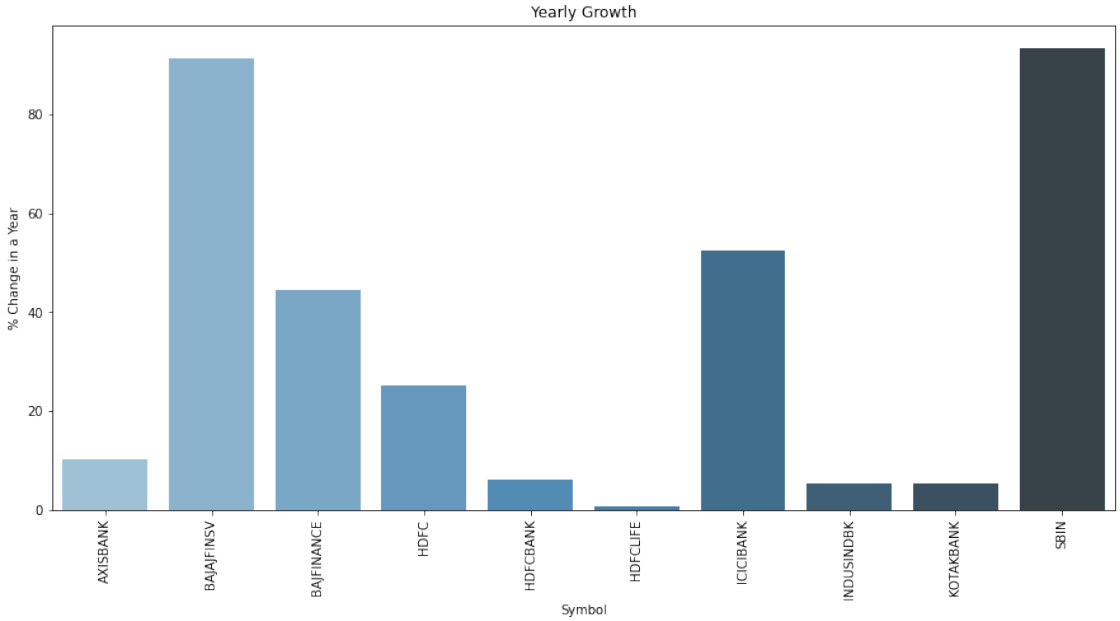
[67]:

	Symbol	30 d % chng	365 d % chng	52w H	52w L	Chng	High
0	AXISBANK	-21.49	10.19	866.90	568.40	-18.90	674.90
1	BAJAJFINSV	-9.10	91.38	19325.00	8273.70	-684.85	17237.20
2	BAJFINANCE	-13.69	44.57	8050.00	4362.00	-345.80	7047.90
3	HDFC	-5.72	25.27	3021.10	2179.30	-122.75	2856.00
4	HDFCBANK	-9.88	6.18	1725.00	1342.00	-36.45	1506.70

5	HDFCLIFE	-2.94	0.70	775.65	617.40	-19.05	689.00
6	ICICIBANK	-13.14	52.41	867.00	465.80	-30.60	742.05
7	INDUSINDBK	-22.08	5.25	1242.00	789.00	-59.35	956.95
8	KOTAKBANK	-11.35	5.24	2253.00	1626.00	-75.10	2007.00
9	SBIN	-8.30	93.42	542.30	240.15	-20.55	487.90

	LTP	Low	Open	Turnover (crs.)	Volume (lacs)
0	661.00	660.45	669.00	684.00	102.53
1	16684.00	16610.00	17200.00	576.79	3.42
2	6780.00	6775.00	7021.00	1161.63	16.89
3	2745.00	2723.00	2820.35	927.88	33.53
4	1489.50	1485.00	1500.00	1394.10	93.12
5	669.75	667.10	685.00	151.40	22.37
6	720.45	718.60	739.00	1385.86	189.88
7	899.95	898.00	951.00	622.74	67.46
8	1960.00	1955.10	2002.00	522.52	26.48
9	470.00	467.10	486.25	1249.55	263.06

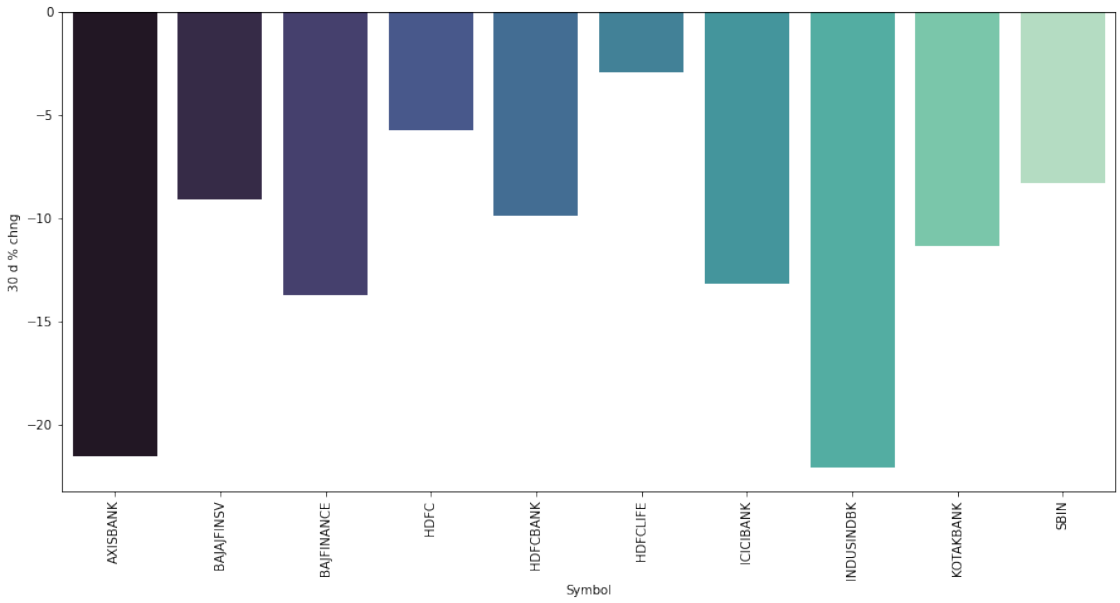
[70]:
```
plt.figure(figsize=(15,7))
plt.xticks(rotation=90)

sns.barplot(data = bank_table, x = 'Symbol', y = '365 d % chng',␣
 ↪palette='Blues_d')

plt.xlabel("Symbol")
plt.ylabel('% Change in a Year')
plt.title("Yearly Growth")

plt.show()
```



[71]:
```
# BajajFinsv, BajajFinance,IciciBank,SBIN outperformed in Banking sector,␣
 ↪giving more than 40% returns in a Year
```

[72]:
```
plt.figure(figsize=(15,7))
plt.xticks(rotation=90)


sns.barplot(data = bank_table, x = 'Symbol', y = '30 d % chng',palette='mako')
```

[72]: <AxesSubplot:xlabel='Symbol', ylabel='30 d % chng'>



[73]:
```
# AxisBank and IndusInd Bank are the worst performers with more than 20% loss␣
 ↪of the investors in a single month.
```

[74]:
```
sort_yearly=df.sort_values('365 d % chng')
sort_yearly
```

[74]:

	Symbol	Open	High	Low	LTP	Chng	% Chng	\
19	HEROMOTOCO	2580.00	2589.70	2505.15	2526.80	-67.90	-2.62	
13	EICHERMOT	2495.00	2506.10	2421.50	2440.75	-79.65	-3.16	
7	BPCL	397.15	397.20	375.00	377.40	-22.70	-5.67	
12	DRREDDY	4580.00	4820.00	4576.15	4750.00	158.40	3.45	
8	BRITANNIA	3560.00	3635.10	3533.95	3566.60	-6.80	-0.19	
18	HDFCLIFE	685.00	689.00	667.10	669.75	-19.05	-2.77	
31	MARUTI	7520.00	7520.00	7130.00	7150.00	-422.50	-5.58	

35	POWERGRID	204.05	204.95	200.80	202.50	-1.75	-0.86
28	KOTAKBANK	2002.00	2007.00	1955.10	1960.00	-75.10	-3.69
23	INDUSINDBK	951.00	956.95	898.00	899.95	-59.35	-6.19
17	HDFCBANK	1500.00	1506.70	1485.00	1489.50	-36.45	-2.39
39	SHREECEM	26450.00	26539.90	25812.00	25900.00	-770.50	-2.89
3	BAJAJ-AUTO	3370.00	3383.50	3320.00	3335.00	-56.70	-1.67
21	HINDUNILVR	2344.00	2365.00	2325.20	2340.90	-8.15	-0.35
32	NESTLEIND	19148.85	19434.10	18982.50	19250.00	71.95	0.38
2	AXISBANK	669.00	674.90	660.45	661.00	-18.90	-2.78
26	ITC	228.90	230.05	223.10	223.60	-7.70	-3.33
30	M&M	885.00	885.00	843.00	855.05	-36.15	-4.06
36	RELIANCE	2467.80	2477.60	2401.50	2405.10	-87.85	-3.52
16	HDFC	2820.35	2856.00	2723.00	2745.00	-122.75	-4.28
10	COALINDIA	157.75	159.40	155.35	155.90	-2.65	-1.67
44	TCS	3425.00	3490.00	3411.90	3439.20	-6.70	-0.19
9	CIPLA	892.00	976.05	890.65	965.00	65.05	7.23
37	SBILIFE	1154.00	1154.00	1105.25	1130.85	-28.65	-2.47
15	HCLTECH	1120.00	1126.00	1103.30	1111.65	-13.15	-1.17
33	NTPC	133.20	134.05	128.00	128.65	-6.55	-4.84
25	IOC	125.60	125.60	120.50	121.15	-4.50	-3.58
11	DIVISLAB	4770.00	5077.70	4756.75	4940.00	140.20	2.92
5	BAJFINANCE	7021.00	7047.90	6775.00	6780.00	-345.80	-4.85
1	ASIANPAINT	3101.00	3167.35	3091.00	3138.00	-6.25	-0.20
41	TATACONSUM	800.20	805.00	763.15	769.90	-37.90	-4.69
24	INFY	1702.55	1718.35	1684.00	1689.55	-32.85	-1.91
40	SUNPHARMA	775.00	798.90	762.00	767.25	-15.65	-2.00
22	ICICIBANK	739.00	742.05	718.60	720.45	-30.60	-4.07
47	ULTRACEMCO	7550.00	7599.00	7370.10	7398.45	-210.35	-2.76
6	BHARTIARTL	763.00	763.00	733.10	735.85	-29.30	-3.83
29	LT	1820.00	1841.75	1768.60	1781.00	-68.90	-3.72
48	UPL	726.00	726.00	701.00	703.50	-23.80	-3.27
46	TITAN	2377.80	2385.10	2285.05	2293.00	-104.80	-4.37
45	TECHM	1544.00	1550.00	1510.15	1519.00	-40.35	-2.59
49	WIPRO	632.00	634.40	619.65	621.30	-15.40	-2.42
0	ADANIPORTS	750.00	766.00	713.25	715.00	-47.45	-6.22
34	ONGC	152.25	152.25	146.25	147.75	-7.35	-4.74
27	JSWSTEEL	668.25	672.55	624.25	630.00	-50.90	-7.48
20	HINDALCO	441.80	442.70	414.70	417.70	-29.35	-6.57
4	BAJAJFINSV	17200.00	17237.20	16610.00	16684.00	-684.85	-3.94
38	SBIN	486.25	487.90	467.10	470.00	-20.55	-4.19
14	GRASIM	1757.30	1757.85	1679.00	1685.80	-80.95	-4.58
43	TATASTEEL	1157.90	1159.50	1106.25	1110.25	-63.40	-5.40
42	TATAMOTORS	486.00	486.75	458.00	459.40	-33.35	-6.77

	Volume (lacs)	Turnover (crs.)	52w H	52w L	365 d % chng	\
19	6.85	174.04	3629.05	2505.15	-16.02	
13	5.55	136.56	3037.00	2303.70	-5.95	

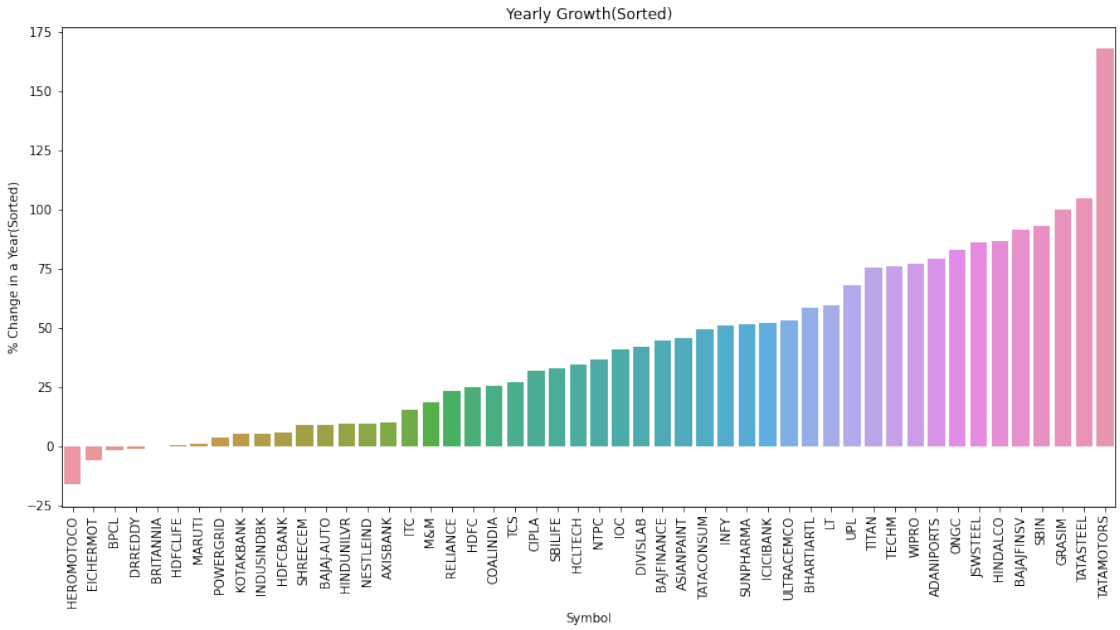
7	100.23	383.54	503.00	357.00	-1.22
12	10.72	508.97	5614.60	4135.00	-1.17
8	3.73	133.23	4153.00	3317.30	0.30
18	22.37	151.40	775.65	617.40	0.70
31	11.55	840.81	8368.00	6400.00	1.34
35	96.11	195.09	209.95	136.88	3.69
28	26.48	522.52	2253.00	1626.00	5.24
23	67.46	622.74	1242.00	789.00	5.25
17	93.12	1394.10	1725.00	1342.00	6.18
39	0.30	76.94	32048.00	22531.00	9.29
3	3.42	114.59	4361.40	3041.00	9.30
21	24.51	572.85	2859.30	2120.00	9.60
32	0.56	108.61	20609.15	16002.10	9.87
2	102.53	684.00	866.90	568.40	10.19
26	270.27	610.54	265.30	192.40	15.35
30	39.34	338.08	979.00	660.25	18.77
36	72.75	1770.19	2751.35	1830.00	23.48
16	33.53	927.88	3021.10	2179.30	25.27
10	118.30	185.50	203.80	123.25	25.78
44	19.41	670.58	3989.90	2624.45	27.32
9	144.59	1380.90	1005.00	726.50	31.89
37	23.16	262.43	1273.90	825.20	33.19
15	22.07	246.06	1377.75	814.35	34.79
33	133.24	173.94	152.10	88.15	36.93
25	77.25	94.57	141.50	84.00	41.28
11	15.71	775.37	5425.10	3153.30	42.39
5	16.89	1161.63	8050.00	4362.00	44.57
1	10.29	322.53	3505.00	2117.15	45.66
41	26.17	203.32	889.00	505.05	49.55
24	44.94	764.67	1848.00	1091.00	51.44
40	54.33	424.05	851.00	502.30	51.57
22	189.88	1385.86	867.00	465.80	52.41
47	2.66	198.32	8269.00	4770.00	53.50
6	111.43	830.06	781.80	454.11	58.55
29	27.97	502.81	1981.75	1092.00	59.59
48	24.82	176.35	864.70	414.15	68.06
46	12.89	298.54	2677.90	1300.35	75.45
45	15.22	232.97	1630.00	846.70	76.17
49	41.39	259.37	739.85	346.25	77.51
0	72.20	532.63	901.00	384.40	79.22
34	231.36	344.33	172.75	77.05	82.86
27	89.22	574.61	776.50	336.00	86.25
20	148.26	631.93	551.85	220.35	86.93
4	3.42	576.79	19325.00	8273.70	91.38
38	263.06	1249.55	542.30	240.15	93.42
14	7.48	127.84	1893.00	840.05	99.95
43	106.46	1200.79	1534.50	539.50	105.13

```
42         517.88          2430.36    536.70    156.70         167.95

    30 d % chng
19        -6.43
13        -5.77
7        -12.45
12         1.80
8         -3.42
18        -2.94
31        -2.02
35         6.36
28       -11.35
23       -22.08
17        -9.88
39        -6.76
3        -12.05
21        -3.94
32         0.17
2        -21.49
26        -5.53
30        -4.42
36        -9.62
16        -5.72
10       -10.94
44        -1.25
9          6.34
37        -3.52
15        -4.73
33       -10.16
25        -7.87
11        -1.57
5        -13.69
1          5.66
41        -4.82
24        -0.83
40        -5.69
22       -13.14
47         1.78
6          5.70
29        -0.85
48        -1.37
46        -6.59
45        -2.83
49        -7.01
0         -4.65
34        -9.41
27        -9.27
```

```
20       -14.06
4         -9.10
38        -8.30
14        -3.08
43       -17.37
42        -9.68
```

[77]:
```
plt.figure(figsize=(15,7))
plt.xticks(rotation=90)
sns.barplot(data=sort_yearly, x='Symbol', y='365 d % chng')
plt.xlabel("Symbol")
plt.ylabel('% Change in a Year(Sorted)')
plt.title("Yearly Growth(Sorted)")
plt.show
```

[77]:
```
<function matplotlib.pyplot.show(close=None, block=None)>
```

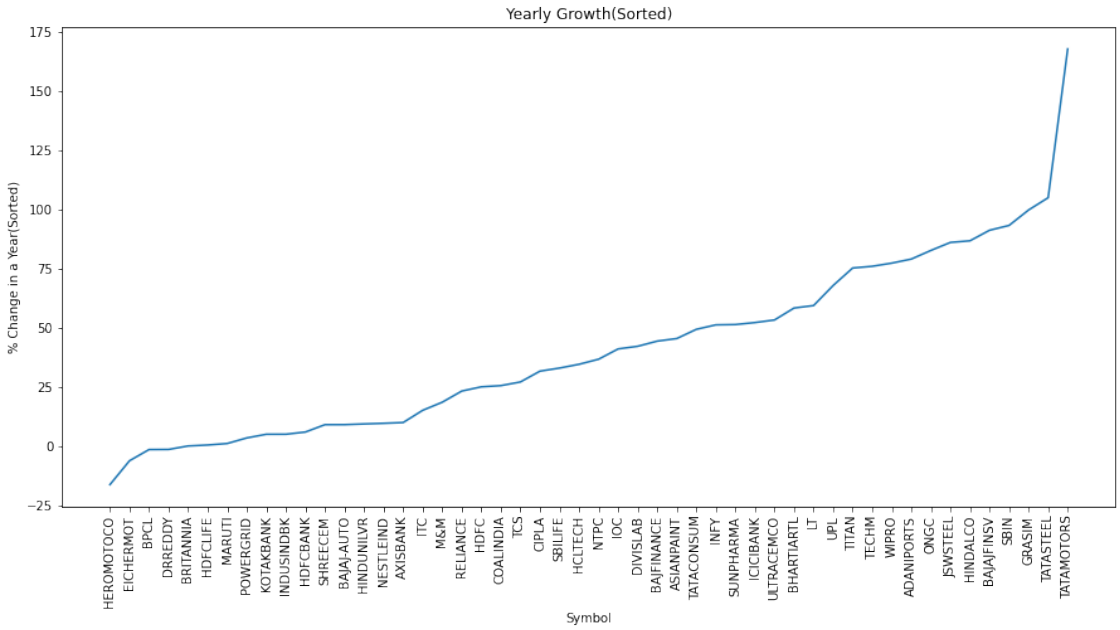


[79]:
```
# TataMotors gave the highest returns in a year, more than 167.95%

# HeroMotoCo gave the lowest returns in a year, less than -16.02%
```

[80]:
```
plt.figure(figsize=(15,7))
plt.xticks(rotation=90)


sns.lineplot(data = sort_yearly, x = 'Symbol', y = '365 d % chng')
```

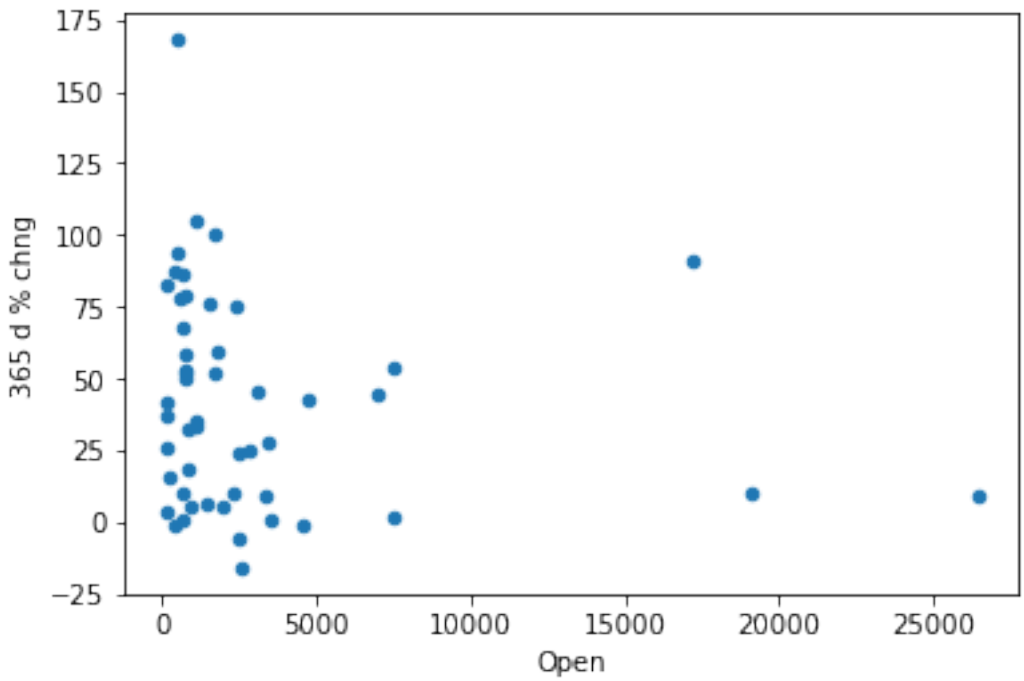
```
plt.xlabel("Symbol")
plt.ylabel('% Change in a Year(Sorted)')
plt.title("Yearly Growth(Sorted)")
plt.show
```

[80]: <function matplotlib.pyplot.show(close=None, block=None)>



[81]:
```
df.plot.scatter(x='Open',y='365 d % chng')
```

[81]: <AxesSubplot:xlabel='Open', ylabel='365 d % chng'>



[82]:
```
df.corr()
```

[82]:

	Open	High	Low	LTP	Chng	% Chng
Open	1.000000	0.999933	0.999911	0.999801	-0.711266	0.137551
High	0.999933	1.000000	0.999953	0.999934	-0.704402	0.145005
Low	0.999911	0.999953	1.000000	0.999967	-0.702262	0.144788
LTP	0.999801	0.999934	0.999967	1.000000	-0.697198	0.149876
Chng	-0.711266	-0.704402	-0.702262	-0.697198	1.000000	0.314513
% Chng	0.137551	0.145005	0.144788	0.149876	0.314513	1.000000
Volume (lacs)	-0.337150	-0.338299	-0.337562	-0.338124	0.208215	-0.273596
Turnover (crs.)	-0.154185	-0.153951	-0.156095	-0.156173	0.020564	-0.098820
52w H	0.998134	0.997879	0.997875	0.997577	-0.724202	0.135535
52w L	0.976253	0.976641	0.977532	0.977705	-0.632414	0.169505
365 d % chng	-0.145522	-0.147258	-0.148293	-0.149456	-0.038896	-0.393705
30 d % chng	0.103614	0.107515	0.107065	0.109937	0.149898	0.560149

	Volume (lacs)	Turnover (crs.)	52w H	52w L
Open	-0.337150	-0.154185	0.998134	0.976253
High	-0.338299	-0.153951	0.997879	0.976641
Low	-0.337562	-0.156095	0.997875	0.977532
LTP	-0.338124	-0.156173	0.997577	0.977705
Chng	0.208215	0.020564	-0.724202	-0.632414
% Chng	-0.273596	-0.098820	0.135535	0.169505
Volume (lacs)	1.000000	0.623093	-0.335760	-0.328567

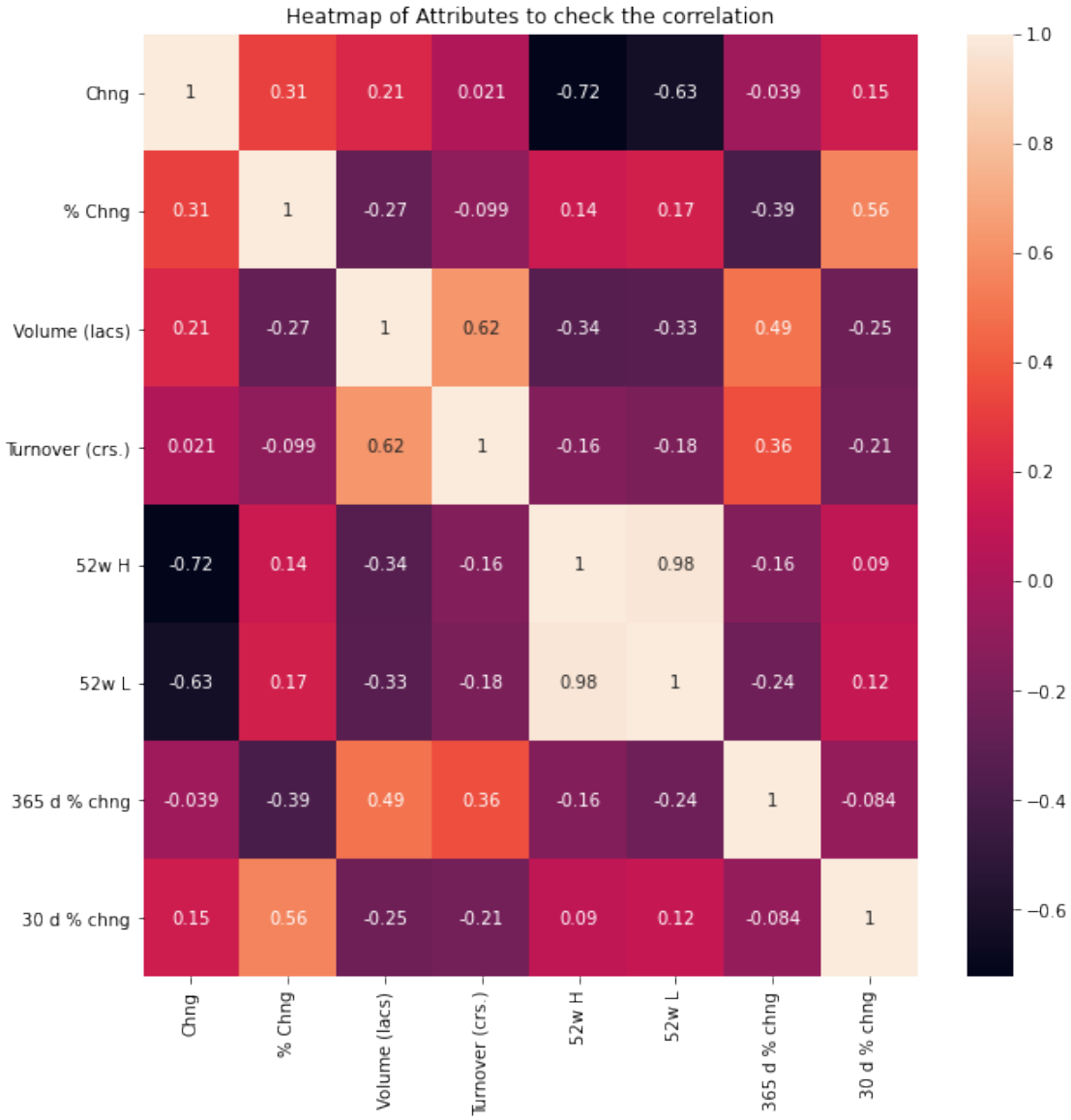
```
Turnover (crs.)       0.623093         1.000000 -0.158218 -0.179158
52w H                -0.335760        -0.158218  1.000000  0.979263
52w L                -0.328567        -0.179158  0.979263  1.000000
365 d % chng          0.490092         0.361395 -0.155586 -0.238595
30 d % chng          -0.245722        -0.212421  0.089951  0.117266
```

```
                 365 d % chng  30 d % chng
Open                -0.145522     0.103614
High                -0.147258     0.107515
Low                 -0.148293     0.107065
LTP                 -0.149456     0.109937
Chng                -0.038896     0.149898
% Chng              -0.393705     0.560149
Volume (lacs)        0.490092    -0.245722
Turnover (crs.)      0.361395    -0.212421
52w H               -0.155586     0.089951
52w L               -0.238595     0.117266
365 d % chng         1.000000    -0.083572
30 d % chng         -0.083572     1.000000
```

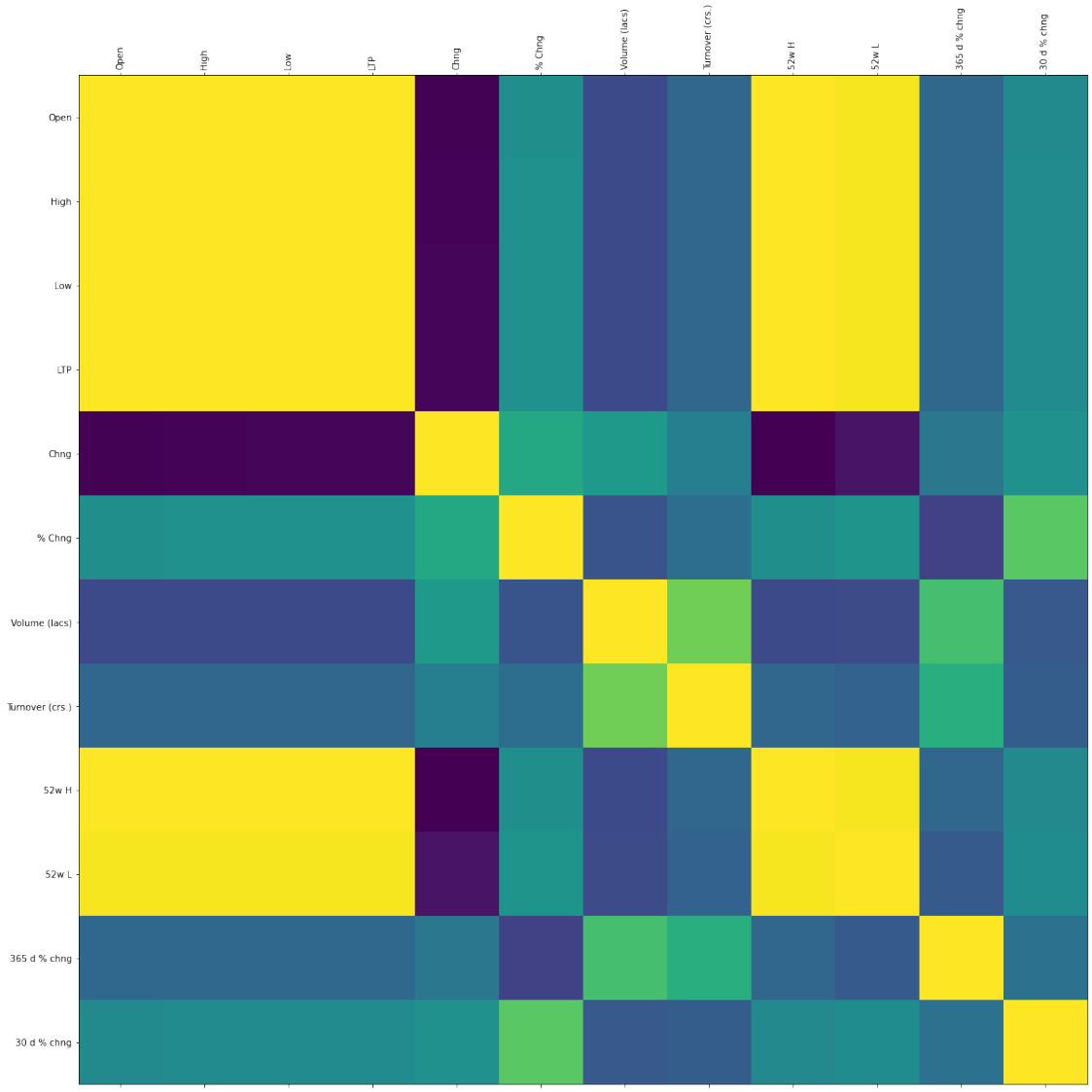
[83]:
```
# Heatmap of dataset
```

[84]:
```
nifty_50=df.iloc[:,5:]

nifty_50_corr=nifty_50.corr()
plt.figure(figsize=(10, 10))
sns.heatmap(nifty_50_corr,annot=True)
plt.title("Heatmap of Attributes to check the correlation")
```

[84]:
```
Text(0.5, 1.0, 'Heatmap of Attributes to check the correlation')
```



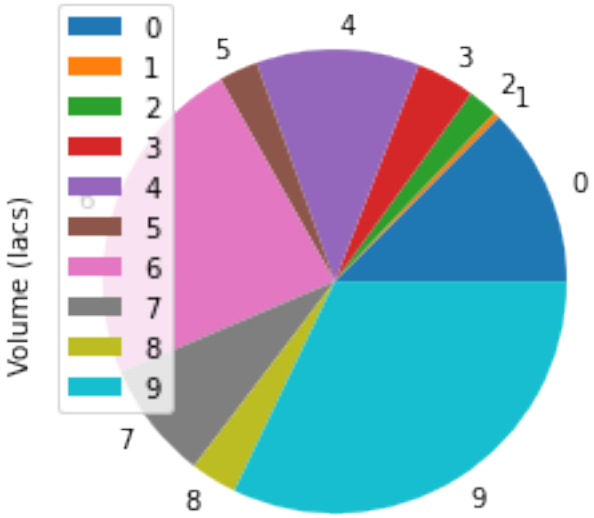
[85]:
```
f = plt.figure(figsize = (20, 20))
plt.matshow(df.corr(), fignum = f.number)
plt.xticks(range(df.select_dtypes(['number']).shape[1]), df.
  ↪select_dtypes(['number']).columns, rotation=90)
plt.yticks(range(df.select_dtypes(['number']).shape[1]), df.
  ↪select_dtypes(['number']).columns)
plt.show()
```



[86]:
```
# pie chart
```

[87]:
```
bank_table.plot.pie(x='Symbol',y='Volume (lacs)')
```

[87]: <AxesSubplot:ylabel='Volume (lacs)'>


Volume (lacs)
0
1
2
3
4
5
6
7
8
9