Introduction

The NIFTY 50 index is National Stock Exchange of India's benchmark stock market index for Indian equity market. It is a well diversified 50 stock index accounting for 22 sectors of the economy. It is used for a variety of purposes such as bench-marking fund portfolios, index based derivatives and index funds.

Bank Nifty represents the 12 most liquid and large capitalized stocks from the banking sector which trade on the National Stock Exchange (NSE). It provides investors and market intermediaries a benchmark that captures the capital market performance of Indian banking sector.

In [1]:

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

In [2]:

```
df=pd.read_csv(r"C:\Users\hp-laptop\Downloads\National_Stock_Exchange_of_India_Ltd.csv
df
```

Out[2]:

	Symbol	Open	High	Low	LTP	Chng	% Chng	Volume (lacs)	Turnov (cr
0	ADANIPORTS	750	766	713.25	715	-47.45	-6.22	72.20	532.
1	ASIANPAINT	3,101.00	3,167.35	3,091.00	3,138.00	-6.25	-0.20	10.29	322.
2	AXISBANK	669	674.9	660.45	661	-18.90	-2.78	102.53	6
3	BAJAJ-AUTO	3,370.00	3,383.50	3,320.00	3,335.00	-56.70	-1.67	3.42	114.
4	BAJAJFINSV	17,200.00	17,237.20	16,610.00	16,684.00	-684.85	-3.94	3.42	576.
5	BAJFINANCE	7,021.00	7,047.90	6,775.00	6,780.00	-345.80	-4.85	16.89	1,161.
6	BHARTIARTL	763	763	733.1	735.85	-29.30	-3.83	111.43	830.
7	BPCL	397.15	397.2	375	377.4	-22.70	-5.67	100.23	383.
8	BRITANNIA	3,560.00	3,635.10	3,533.95	3,566.60	-6.80	-0.19	3.73	133.
9	CIPLA	892	976.05	890.65	965	65.05	7.23	144.59	1,380.
10	COALINDIA	157.75	159.4	155.35	155.9	-2.65	-1.67	118.30	185
11	DIVISLAB	4,770.00	5,077.70	4,756.75	4,940.00	140.20	2.92	15.71	775.
12	DRREDDY	4,580.00	4,820.00	4,576.15	4,750.00	158.40	3.45	10.72	508.
13	EICHERMOT	2,495.00	2,506.10	2,421.50	2,440.75	-79.65	-3.16	5.55	136.
14	GRASIM	1,757.30	1,757.85	1,679.00	1,685.80	-80.95	-4.58	7.48	127.
15	HCLTECH	1,120.00	1,126.00	1,103.30	1,111.65	-13.15	-1.17	22.07	246.
16	HDFC	2,820.35	2,856.00	2,723.00	2,745.00	-122.75	-4.28	33.53	927.
17	HDFCBANK	1,500.00	1,506.70	1,485.00	1,489.50	-36.45	-2.39	93.12	1,394.
18	HDFCLIFE	685	689	667.1	669.75	-19.05	-2.77	22.37	151
19	HEROMOTOCO	2,580.00	2,589.70	2,505.15	2,526.80	-67.90	-2.62	6.85	174.
20	HINDALCO	441.8	442.7	414.7	417.7	-29.35	-6.57	148.26	631.
21	HINDUNILVR	2,344.00	2,365.00	2,325.20	2,340.90	-8.15	-0.35	24.51	572.
22	ICICIBANK	739	742.05	718.6	720.45	-30.60	-4.07	189.88	1,385.
23	INDUSINDBK	951	956.95	898	899.95	-59.35	-6.19	67.46	622.
24	INFY	1,702.55	1,718.35	1,684.00	1,689.55	-32.85	-1.91	44.94	764.
25	IOC	125.6	125.6	120.5	121.15	-4.50	-3.58	77.25	94.
26	ITC	228.9	230.05	223.1	223.6	-7.70	-3.33	270.27	610.
27	JSWSTEEL	668.25	672.55	624.25	630	-50.90	-7.48	89.22	574.
28	KOTAKBANK	2,002.00	2,007.00	1,955.10	1,960.00	-75.10	-3.69	26.48	522.
29	LT	1,820.00	1,841.75	1,768.60	1,781.00	-68.90	-3.72	27.97	502.
30	M&M	885	885	843	855.05	-36.15	-4.06	39.34	338.
31	MARUTI	7,520.00	7,520.00	7,130.00	7,150.00	-422.50	-5.58	11.55	840.
32	NESTLEIND	19,148.85	19,434.10	18,982.50	19,250.00	71.95	0.38	0.56	108.
33	NTPC	133.2	134.05	128	128.65	-6.55	-4.84	133.24	173.

	Symbol	Open	High	Low	LTP	Chng	% Chng	Volume (lacs)	Turnov (cr
34	ONGC	152.25	152.25	146.25	147.75	-7.35	-4.74	231.36	344.
35	POWERGRID	204.05	204.95	200.8	202.5	-1.75	-0.86	96.11	195.
36	RELIANCE	2,467.80	2,477.60	2,401.50	2,405.10	-87.85	-3.52	72.75	1,770.
37	SBILIFE	1,154.00	1,154.00	1,105.25	1,130.85	-28.65	-2.47	23.16	262.
38	SBIN	486.25	487.9	467.1	470	-20.55	-4.19	263.06	1,249.
39	SHREECEM	26,450.00	26,539.90	25,812.00	25,900.00	-770.50	-2.89	0.30	76.
40	SUNPHARMA	775	798.9	762	767.25	-15.65	-2.00	54.33	424.
41	TATACONSUM	800.2	805	763.15	769.9	-37.90	-4.69	26.17	203.
42	TATAMOTORS	486	486.75	458	459.4	-33.35	-6.77	517.88	2,430.
43	TATASTEEL	1,157.90	1,159.50	1,106.25	1,110.25	-63.40	-5.40	106.46	1,200.
44	TCS	3,425.00	3,490.00	3,411.90	3,439.20	-6.70	-0.19	19.41	670.
45	TECHM	1,544.00	1,550.00	1,510.15	1,519.00	-40.35	-2.59	15.22	232.
46	TITAN	2,377.80	2,385.10	2,285.05	2,293.00	-104.80	-4.37	12.89	298.
47	ULTRACEMCO	7,550.00	7,599.00	7,370.10	7,398.45	-210.35	-2.76	2.66	198.
48	UPL	726	726	701	703.5	-23.80	-3.27	24.82	176.
49	WIPRO	632	634.4	619.65	[illegible]	-15.40	-2.42	[illegible]	[illegible]

Sorting the data such as removing special characters,changing datatype to numeric (wherever necessary) for further analysis.

In [3]:

```
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
```

In [4]:

```
df.isnull().sum()
```

Out[4]:

```
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
```

In [5]:

```
df.columns
```

Out[5]:

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

In [6]:

```
df['Open']=df['Open'].str.replace(',','')
df['High']=df['High'].str.replace(',','')
df['Low']=df['Low'].str.replace(',','')
df['LTP']=df['LTP'].str.replace(',','')
df['52w H']=df['52w H'].str.replace(',','')
df['52w L']=df['52w L'].str.replace(',','')
df['Turnover (crs.)']=df['Turnover (crs.)'].str.replace(',','')
```

In [7]:

```
df.head()
```

Out[7]:

	Symbol	Open	High	Low	LTP	Chng	% Chng	Volume (lacs)	Turnover (crs.)
0	ADANIPORTS	750	766	713.25	715	-47.45	-6.22	72.20	532.63
1	ASIANPAINT	3101.00	3167.35	3091.00	3138.00	-6.25	-0.20	10.29	322.53
2	AXISBANK	669	674.9	660.45	661	-18.90	-2.78	102.53	684
3	BAJAJ-AUTO	3370.00	3383.50	3320.00	3335.00	-56.70	-1.67	3.42	114.59
4	BAJAJFINSV	17200.00	17237.20	16610.00	16684.00	-684.85	-3.94	3.42	576.79

In [8]:

```
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
```

If you have numeric data stored as strings in an "object" type, you won't be able to perform mathematical operations directly on that data. By converting it to a "float" type, you can perform arithmetic calculations like addition, subtraction, multiplication, and division.

To convert data from "object" to "float," you can use the astype() method in pandas.

In [9]:

```
df['Open']=df['Open'].astype(float)
df['High']=df['High'].astype(float)
df['Low']=df['Low'].astype(float)
df['LTP']=df['LTP'].astype(float)
df['Turnover (crs.)']=df['Turnover (crs.)'].astype(float)
df['52w H']=df['52w H'].astype(float)
df['52w L']=df['52w L'].astype(float)
```

In [10]:

```
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
```

Framing Questions on dataset

In [11]:

```
# Q1. Display Highest LTP
df['LTP'].max()
```

Out[11]:

```
25900.0
```

If we want to fetch a particular column/row it can be done either with help of index number or by giving value of that particular column/row using---- loc/iloc

Here, we have used loc to find out full information of max LTP so we can see that which company as max LTP

In [12]:

```
# Q2.Display full info of max LTP
df.loc[df['LTP']==25900.0]
```

Out[12]:

	Symbol	Open	High	Low	LTP	Chng	% Chng	Volume (lacs)	Turnover (crs.)	52w H
39	SHREECEM	26450.0	26539.9	25812.0	25900.0	-770.5	-2.89	0.3	76.94	32048.(

In [13]:

```
# Q3.Display info of Max turnover made by company
tn=df['Turnover (crs.)'].max()
df.loc[df['Turnover (crs.)']==tn]
```

Out[13]:

	Symbol	Open	High	Low	LTP	Chng	% Chng	Volume (lacs)	Turnover (crs.)	52w H	52w L
42	TATAMOTORS	486.0	486.75	458.0	459.4	-33.35	-6.77	517.88	2430.36	536.7	156.7

In [14]:

```
# Q4.Display info of lowest LTP made by company
a=df['LTP'].min()
df.loc[df['LTP']==a]
```

Out[14]:

	Symbol	Open	High	Low	LTP	Chng	% Chng	Volume (lacs)	Turnover (crs.)	52w H	52w L	365 d % chng
25	IOC	125.6	125.6	120.5	121.15	-4.5	-3.58	77.25	94.57	141.5	84.0	41.28

In [15]:

```
# Q5. Find all records whose volumes crossed 100 lacs
df.loc[df['Volume (lacs)']>100]
```

Out[15]:

	Symbol	Open	High	Low	LTP	Chng	% Chng	Volume (lacs)	Turnover (crs.)	52w
2	AXISBANK	669.00	674.90	660.45	661.00	-18.90	-2.78	102.53	684.00	866.9
6	BHARTIARTL	763.00	763.00	733.10	735.85	-29.30	-3.83	111.43	830.06	781.8
7	BPCL	397.15	397.20	375.00	377.40	-22.70	-5.67	100.23	383.54	503.0
9	CIPLA	892.00	976.05	890.65	965.00	65.05	7.23	144.59	1380.90	1005.0
10	COALINDIA	157.75	159.40	155.35	155.90	-2.65	-1.67	118.30	185.50	203.8
20	HINDALCO	441.80	442.70	414.70	417.70	-29.35	-6.57	148.26	631.93	551.8
22	ICICIBANK	739.00	742.05	718.60	720.45	-30.60	-4.07	189.88	1385.86	867.0
26	ITC	228.90	230.05	223.10	223.60	-7.70	-3.33	270.27	610.54	265.3
33	NTPC	133.20	134.05	128.00	128.65	-6.55	-4.84	133.24	173.94	152.1
34	ONGC	152.25	152.25	146.25	147.75	-7.35	-4.74	231.36	344.33	172.7
38	SBIN	486.25	487.90	467.10	470.00	-20.55	-4.19	263.06	1249.55	542.3
42	TATAMOTORS	486.00	486.75	458.00	459.40	-33.35	-6.77	517.88	2430.36	536.7
43	TATASTEEL	1157.90	1159.50	1106.25	1110.25	-63.40	-5.40	106.46	1200.79	1534.5

In [16]:

```
# Q.6 Display details of company whose turnover as crossed 500 crs but not 1000 crs

df.loc[(df['Turnover (crs.)']>500) & (df['Turnover (crs.)']<1000)]
```

Out[16]:

	Symbol	Open	High	Low	LTP	Chng	% Chng	Volume (lacs)	Turnover (crs.)
0	ADANIPORTS	750.00	766.00	713.25	715.00	-47.45	-6.22	72.20	532.63
2	AXISBANK	669.00	674.90	660.45	661.00	-18.90	-2.78	102.53	684.00
4	BAJAJFINSV	17200.00	17237.20	16610.00	16684.00	-684.85	-3.94	3.42	576.79
6	BHARTIARTL	763.00	763.00	733.10	735.85	-29.30	-3.83	111.43	830.06
11	DIVISLAB	4770.00	5077.70	4756.75	4940.00	140.20	2.92	15.71	775.37
12	DRREDDY	4580.00	4820.00	4576.15	4750.00	158.40	3.45	10.72	508.97
16	HDFC	2820.35	2856.00	2723.00	2745.00	-122.75	-4.28	33.53	927.88
20	HINDALCO	441.80	442.70	414.70	417.70	-29.35	-6.57	148.26	631.93
21	HINDUNILVR	2344.00	2365.00	2325.20	2340.90	-8.15	-0.35	24.51	572.85
23	INDUSINDBK	951.00	956.95	898.00	899.95	-59.35	-6.19	67.46	622.74
24	INFY	1702.55	1718.35	1684.00	1689.55	-32.85	-1.91	44.94	764.67
26	ITC	228.90	230.05	223.10	223.60	-7.70	-3.33	270.27	610.54
27	JSWSTEEL	668.25	672.55	624.25	630.00	-50.90	-7.48	89.22	574.61
28	KOTAKBANK	2002.00	2007.00	1955.10	1960.00	-75.10	-3.69	26.48	522.52
29	LT	1820.00	1841.75	1768.60	1781.00	-68.90	-3.72	27.97	502.81
31	MARUTI	7520.00	7520.00	7130.00	7150.00	-422.50	-5.58	11.55	840.81
44	TCS	3425.00	3490.00	3411.90	3439.20	-6.70	-0.19	19.41	670.58

In [17]:

```
# Q7. Calculate mean of 3 simple moving average.
a=3
df['SMA']=df['LTP'].rolling(window=a).mean()
df
```

Out[17]:

	Symbol	Open	High	Low	LTP	Chng	% Chng	Volume (lacs)	Turnover (crs.)
0	ADANIPORTS	750.00	766.00	713.25	715.00	-47.45	-6.22	72.20	532.63
1	ASIANPAINT	3101.00	3167.35	3091.00	3138.00	-6.25	-0.20	10.29	322.53
2	AXISBANK	669.00	674.90	660.45	661.00	-18.90	-2.78	102.53	684.00
3	BAJAJ-AUTO	3370.00	3383.50	3320.00	3335.00	-56.70	-1.67	3.42	114.59
4	BAJAJFINSV	17200.00	17237.20	16610.00	16684.00	-684.85	-3.94	3.42	576.79
5	BAJFINANCE	7021.00	7047.90	6775.00	6780.00	-345.80	-4.85	16.89	1161.63
6	BHARTIARTL	763.00	763.00	733.10	735.85	-29.30	-3.83	111.43	830.06
7	BPCL	397.15	397.20	375.00	377.40	-22.70	-5.67	100.23	383.54
8	BRITANNIA	3560.00	3635.10	3533.95	3566.60	-6.80	-0.19	3.73	133.23
9	CIPLA	892.00	976.05	890.65	965.00	65.05	7.23	144.59	1380.90
10	COALINDIA	157.75	159.40	155.35	155.90	-2.65	-1.67	118.30	185.50
11	DIVISLAB	4770.00	5077.70	4756.75	4940.00	140.20	2.92	15.71	775.37
12	DRREDDY	4580.00	4820.00	4576.15	4750.00	158.40	3.45	10.72	508.97
13	EICHERMOT	2495.00	2506.10	2421.50	2440.75	-79.65	-3.16	5.55	136.56
14	GRASIM	1757.30	1757.85	1679.00	1685.80	-80.95	-4.58	7.48	127.84
15	HCLTECH	1120.00	1126.00	1103.30	1111.65	-13.15	-1.17	22.07	246.06
16	HDFC	2820.35	2856.00	2723.00	2745.00	-122.75	-4.28	33.53	927.88
17	HDFCBANK	1500.00	1506.70	1485.00	1489.50	-36.45	-2.39	93.12	1394.10
18	HDFCLIFE	685.00	689.00	667.10	669.75	-19.05	-2.77	22.37	151.40
19	HEROMOTOCO	2580.00	2589.70	2505.15	2526.80	-67.90	-2.62	6.85	174.04
20	HINDALCO	441.80	442.70	414.70	417.70	-29.35	-6.57	148.26	631.93
21	HINDUNILVR	2344.00	2365.00	2325.20	2340.90	-8.15	-0.35	24.51	572.85
22	ICICIBANK	739.00	742.05	718.60	720.45	-30.60	-4.07	189.88	1385.86
23	INDUSINDBK	951.00	956.95	898.00	899.95	-59.35	-6.19	67.46	622.74
24	INFY	1702.55	1718.35	1684.00	1689.55	-32.85	-1.91	44.94	764.67
25	IOC	125.60	125.60	120.50	121.15	-4.50	-3.58	77.25	94.57
26	ITC	228.90	230.05	223.10	223.60	-7.70	-3.33	270.27	610.54
27	JSWSTEEL	668.25	672.55	624.25	630.00	-50.90	-7.48	89.22	574.61
28	KOTAKBANK	2002.00	2007.00	1955.10	1960.00	-75.10	-3.69	26.48	522.52
29	LT	1820.00	1841.75	1768.60	1781.00	-68.90	-3.72	27.97	502.81
30	M&M	885.00	885.00	843.00	855.05	-36.15	-4.06	39.34	338.08
31	MARUTI	7520.00	7520.00	7130.00	7150.00	-422.50	-5.58	11.55	840.81
32	NESTLEIND	19148.85	19434.10	18982.50	19250.00	71.95	0.38	0.56	108.61
33	NTPC	133.20	134.05	128.00	128.65	-6.55	-4.84	133.24	173.94

	Symbol	Open	High	Low	LTP	Chng	% Chng	Volume (lacs)	Turnover (crs.)
34	ONGC	152.25	152.25	146.25	147.75	-7.35	-4.74	231.36	344.33
35	POWERGRID	204.05	204.95	200.80	202.50	-1.75	-0.86	96.11	195.09
36	RELIANCE	2467.80	2477.60	2401.50	2405.10	-87.85	-3.52	72.75	1770.19
37	SBILIFE	1154.00	1154.00	1105.25	1130.85	-28.65	-2.47	23.16	262.43
38	SBIN	486.25	487.90	467.10	470.00	-20.55	-4.19	263.06	1249.55
39	SHREECEM	26450.00	26539.90	25812.00	25900.00	-770.50	-2.89	0.30	76.94
40	SUNPHARMA	775.00	798.90	762.00	767.25	-15.65	-2.00	54.33	424.05
41	TATACONSUM	800.20	805.00	763.15	769.90	-37.90	-4.69	26.17	203.32
42	TATAMOTORS	486.00	486.75	458.00	459.40	-33.35	-6.77	517.88	2430.36
43	TATASTEEL	1157.90	1159.50	1106.25	1110.25	-63.40	-5.40	106.46	1200.79
44	TCS	3425.00	3490.00	3411.90	3439.20	-6.70	-0.19	19.41	670.58
45	TECHM	1544.00	1550.00	1510.15	1519.00	-40.35	-2.59	15.22	232.97
46	TITAN	2377.80	2385.10	2285.05	2293.00	-104.80	-4.37	12.89	298.54
47	ULTRACEMCO	7550.00	7599.00	7370.10	7398.45	-210.35	-2.76	2.66	198.32
48	UPL	726.00	726.00	701.00	703.50	-23.80	-3.27	24.82	176.35
49	WIPRO	632.00	634.40	619.65	621.30	-15.40	-2.42	41.39	259.37

Calculating average returns measures the average performance or profitability of an investment over a certain period of time.

In [18]:

```
# Q8. Calculate avearge returns of all the company
df['avg_returns']=(df['Open']-df['LTP'])/df['Open']
df
```

Out[18]:

	Symbol	Open	High	Low	LTP	Chng	% Chng	Volume (lacs)	Turnover (crs.)
0	ADANIPORTS	750.00	766.00	713.25	715.00	-47.45	-6.22	72.20	532.63
1	ASIANPAINT	3101.00	3167.35	3091.00	3138.00	-6.25	-0.20	10.29	322.53
2	AXISBANK	669.00	674.90	660.45	661.00	-18.90	-2.78	102.53	684.00
3	BAJAJ-AUTO	3370.00	3383.50	3320.00	3335.00	-56.70	-1.67	3.42	114.59
4	BAJAJFINSV	17200.00	17237.20	16610.00	16684.00	-684.85	-3.94	3.42	576.79
5	BAJFINANCE	7021.00	7047.90	6775.00	6780.00	-345.80	-4.85	16.89	1161.63
6	BHARTIARTL	763.00	763.00	733.10	735.85	-29.30	-3.83	111.43	830.06
7	BPCL	397.15	397.20	375.00	377.40	-22.70	-5.67	100.23	383.54
8	BRITANNIA	3560.00	3635.10	3533.95	3566.60	-6.80	-0.19	3.73	133.23
9	CIPLA	892.00	976.05	890.65	965.00	65.05	7.23	144.59	1380.90
10	COALINDIA	157.75	159.40	155.35	155.90	-2.65	-1.67	118.30	185.50
11	DIVISLAB	4770.00	5077.70	4756.75	4940.00	140.20	2.92	15.71	775.37
12	DRREDDY	4580.00	4820.00	4576.15	4750.00	158.40	3.45	10.72	508.97
13	EICHERMOT	2495.00	2506.10	2421.50	2440.75	-79.65	-3.16	5.55	136.56
14	GRASIM	1757.30	1757.85	1679.00	1685.80	-80.95	-4.58	7.48	127.84
15	HCLTECH	1120.00	1126.00	1103.30	1111.65	-13.15	-1.17	22.07	246.06
16	HDFC	2820.35	2856.00	2723.00	2745.00	-122.75	-4.28	33.53	927.88
17	HDFCBANK	1500.00	1506.70	1485.00	1489.50	-36.45	-2.39	93.12	1394.10
18	HDFCLIFE	685.00	689.00	667.10	669.75	-19.05	-2.77	22.37	151.40
19	HEROMOTOCO	2580.00	2589.70	2505.15	2526.80	-67.90	-2.62	6.85	174.04
20	HINDALCO	441.80	442.70	414.70	417.70	-29.35	-6.57	148.26	631.93
21	HINDUNILVR	2344.00	2365.00	2325.20	2340.90	-8.15	-0.35	24.51	572.85
22	ICICIBANK	739.00	742.05	718.60	720.45	-30.60	-4.07	189.88	1385.86
23	INDUSINDBK	951.00	956.95	898.00	899.95	-59.35	-6.19	67.46	622.74
24	INFY	1702.55	1718.35	1684.00	1689.55	-32.85	-1.91	44.94	764.67
25	IOC	125.60	125.60	120.50	121.15	-4.50	-3.58	77.25	94.57
26	ITC	228.90	230.05	223.10	223.60	-7.70	-3.33	270.27	610.54
27	JSWSTEEL	668.25	672.55	624.25	630.00	-50.90	-7.48	89.22	574.61
28	KOTAKBANK	2002.00	2007.00	1955.10	1960.00	-75.10	-3.69	26.48	522.52
29	LT	1820.00	1841.75	1768.60	1781.00	-68.90	-3.72	27.97	502.81
30	M&M	885.00	885.00	843.00	855.05	-36.15	-4.06	39.34	338.08
31	MARUTI	7520.00	7520.00	7130.00	7150.00	-422.50	-5.58	11.55	840.81
32	NESTLEIND	19148.85	19434.10	18982.50	19250.00	71.95	0.38	0.56	108.61
33	NTPC	133.20	134.05	128.00	128.65	-6.55	-4.84	133.24	173.94

	Symbol	Open	High	Low	LTP	Chng	% Chng	Volume (lacs)	Turnover (crs.)
34	ONGC	152.25	152.25	146.25	147.75	-7.35	-4.74	231.36	344.33
35	POWERGRID	204.05	204.95	200.80	202.50	-1.75	-0.86	96.11	195.09
36	RELIANCE	2467.80	2477.60	2401.50	2405.10	-87.85	-3.52	72.75	1770.19
37	SBILIFE	1154.00	1154.00	1105.25	1130.85	-28.65	-2.47	23.16	262.43
38	SBIN	486.25	487.90	467.10	470.00	-20.55	-4.19	263.06	1249.55
39	SHREECEM	26450.00	26539.90	25812.00	25900.00	-770.50	-2.89	0.30	76.94
40	SUNPHARMA	775.00	798.90	762.00	767.25	-15.65	-2.00	54.33	424.05
41	TATACONSUM	800.20	805.00	763.15	769.90	-37.90	-4.69	26.17	203.32
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44	TCS	3425.00	3490.00	3411.90	3439.20	-6.70	-0.19	19.41	670.58
45	TECHM	1544.00	1550.00	1510.15	1519.00	-40.35	-2.59	15.22	232.97
46	TITAN	2377.80	2385.10	2285.05	2293.00	-104.80	-4.37	12.89	298.54
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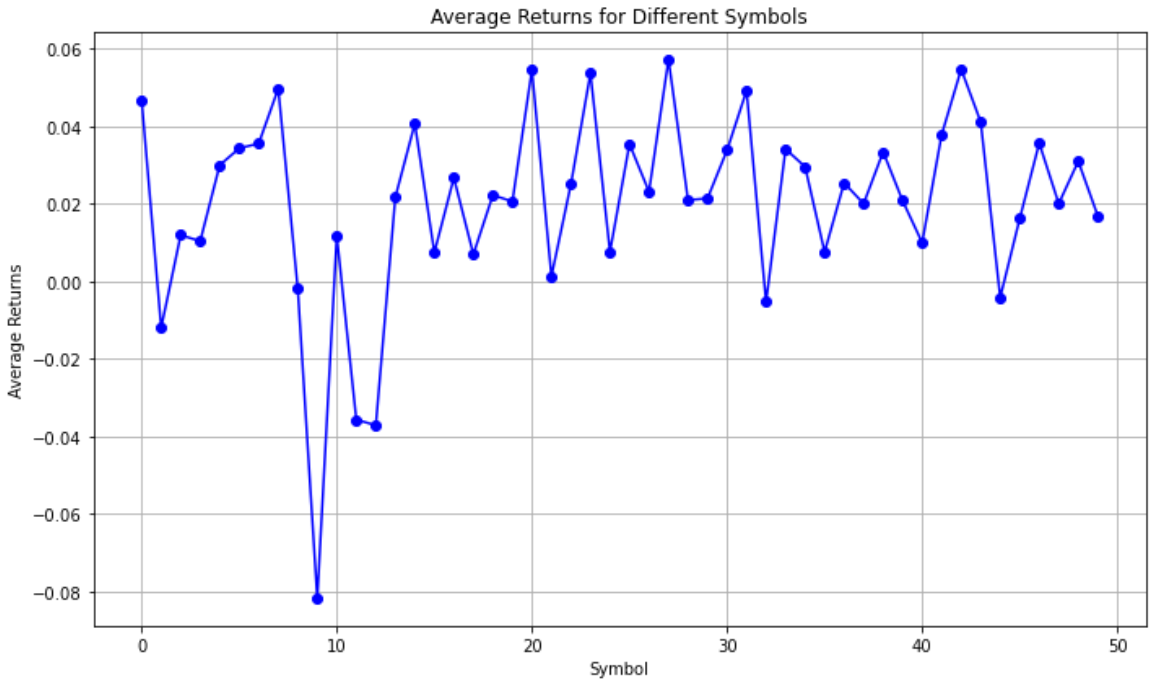
48	UPL	726.00	726.00	701.00	703.50	-23.80	-3.27	24.82	176.35
49	WIPRO	634.00	634.40	619.65	621.30	-15.40	-2.42	41.39	259.37

Graph Plotting

Showing Avg_returns using line plot for differnt company

In [19]:

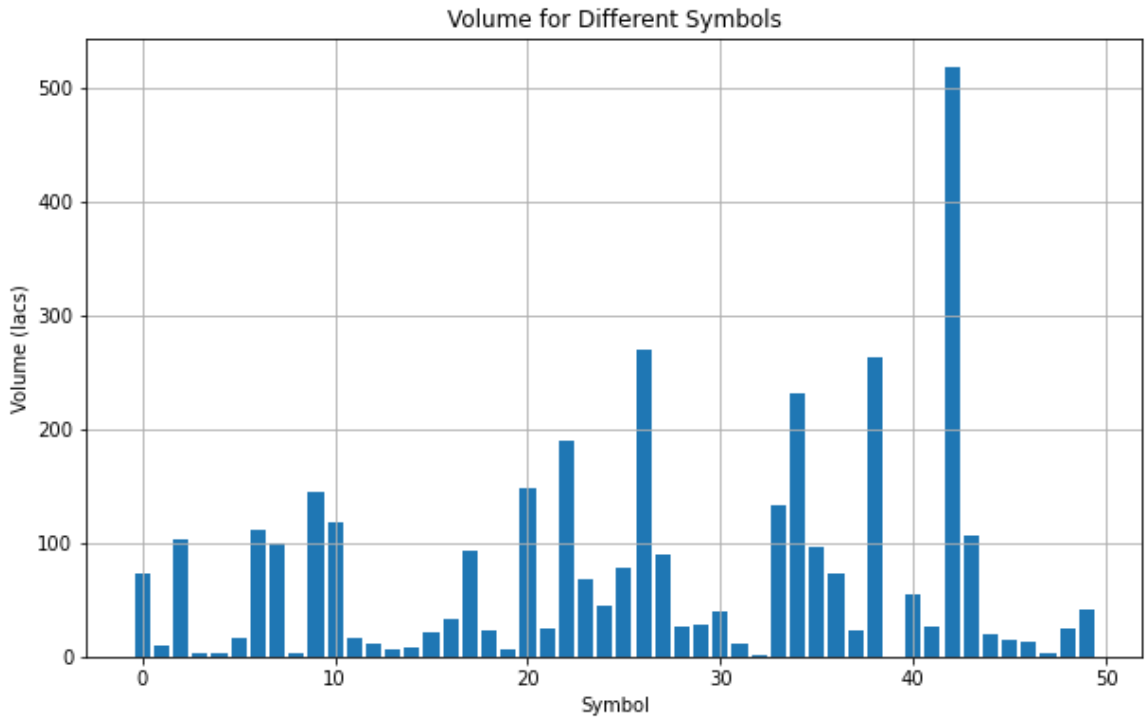
```
# Create a simple line plot for the 'avg_returns'
avg_returns=df['avg_returns']
plt.figure(figsize=(10, 6))
plt.plot(avg_returns,marker='o',linestyle='-',color='b')
plt.xlabel('Symbol')
plt.ylabel('Average Returns')
plt.title('Average Returns for Different Symbols')
plt.grid(True)
plt.tight_layout()
plt.show()
```



Displaying a Bar garph to show volumne(Lacs) for different symbol

In [27]:

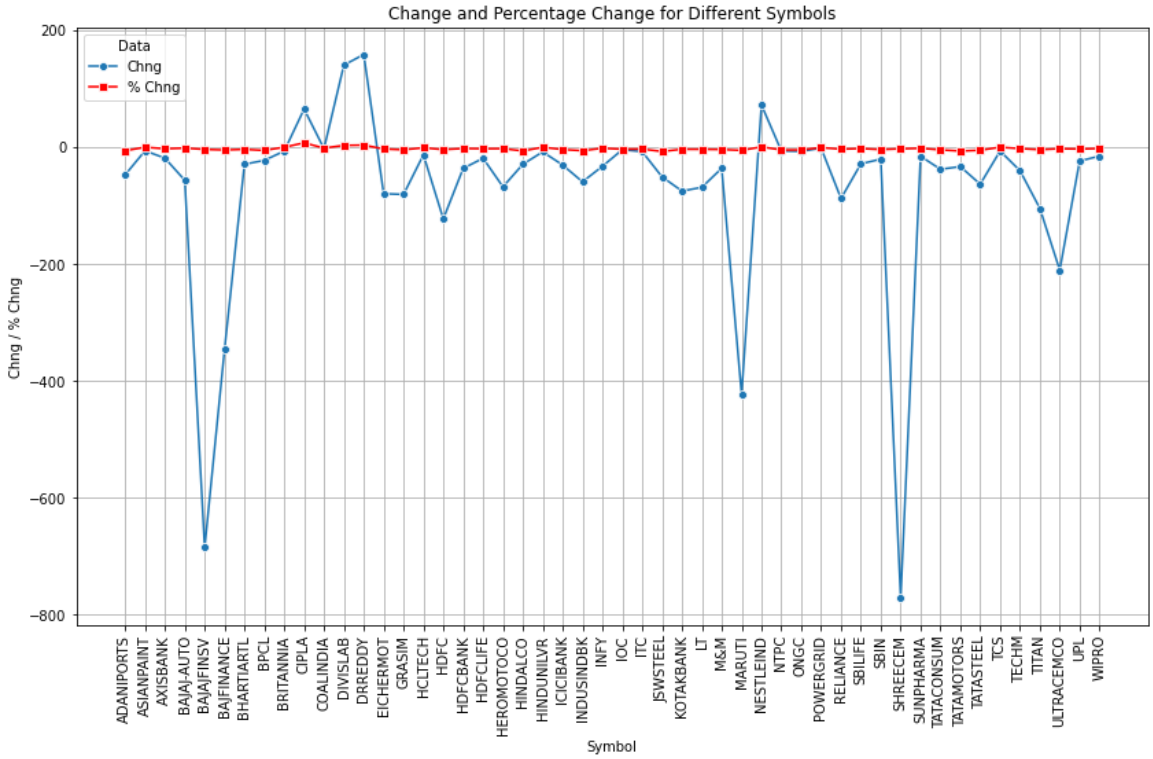
```
plt.figure(figsize=(10, 6))
plt.bar(df.index, df['Volume (lacs)'])
plt.xlabel('Symbol')
plt.ylabel('Volume (lacs)')
plt.title('Volume for Different Symbols')
plt.grid(True)
plt.show()
```



Displaying Lineplot to show change and Percentage change for different companies using seaborn

In [21]:

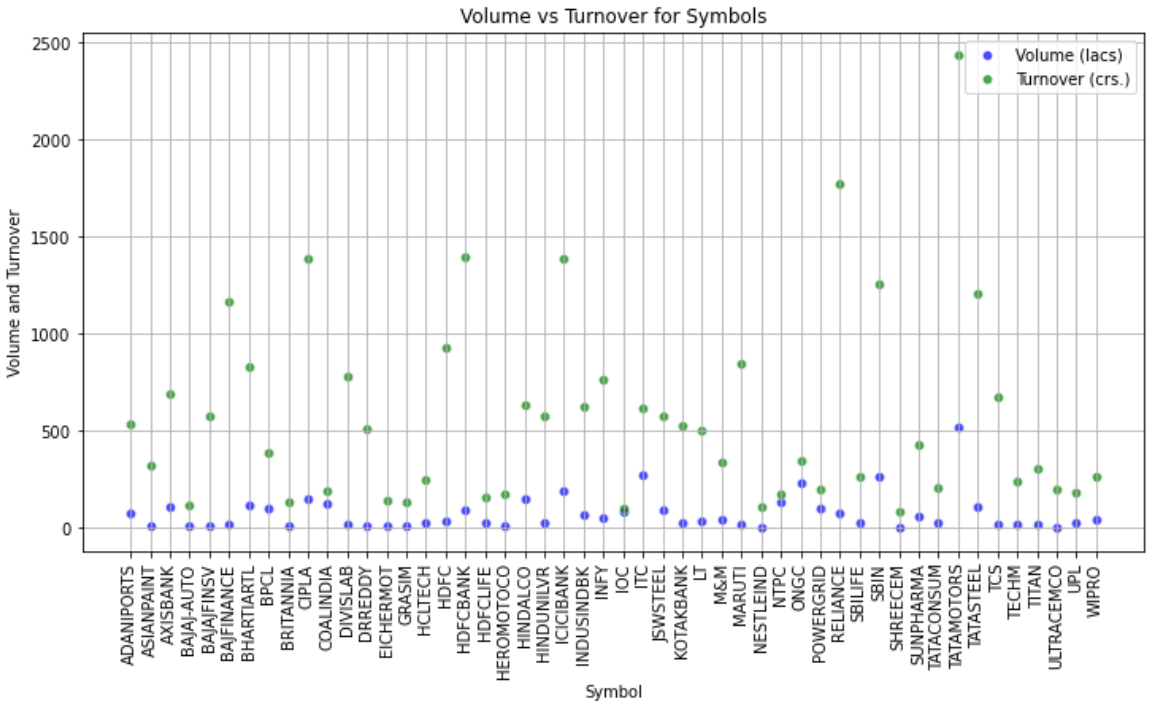
```
# Create the plot using Seaborn
plt.figure(figsize=(14,8))
sns.lineplot(data=df, x='Symbol',y='Chng', marker='o', label='Chng')
sns.lineplot(data=df, x='Symbol', y='% Chng', marker='s', color='r', label='% Chng')
plt.xlabel('Symbol')
plt.ylabel('Chng / % Chng')
plt.title('Change and Percentage Change for Different Symbols')
plt.xticks(rotation=90)
plt.grid(True)
plt.legend(loc='upper left', title='Data')
plt.show()
```



Displaying Scatterplot and LinePlot to compare volume(Lacs) and Turnover(crs) using seaborn

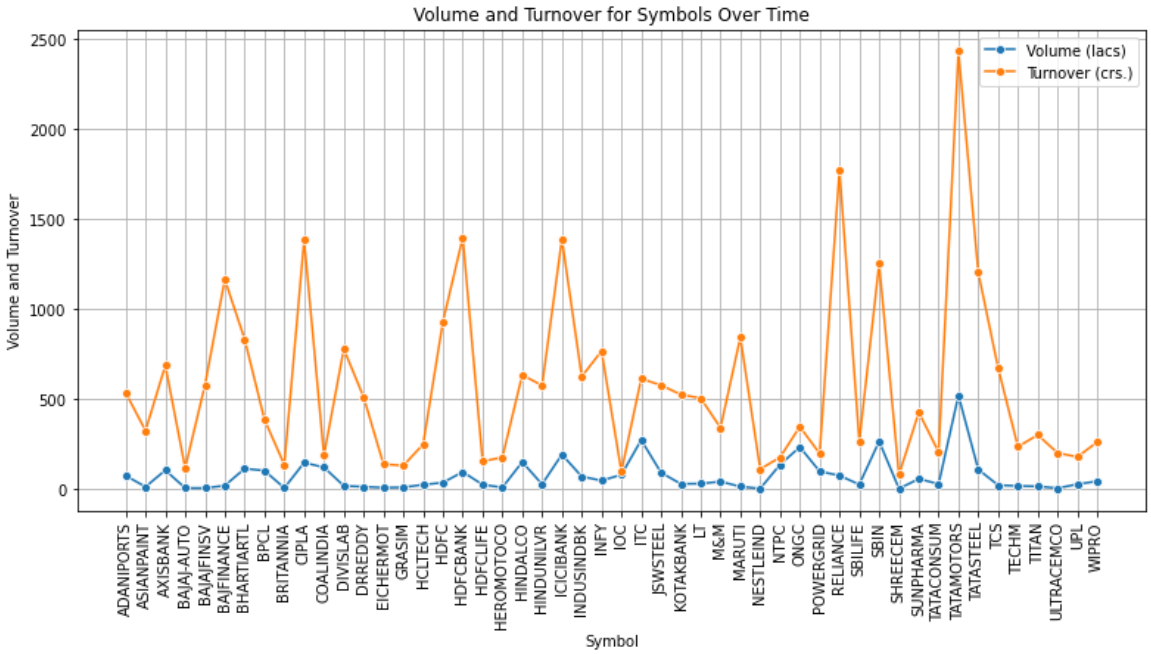
In [26]:

```
plt.figure(figsize=(12,6))
sns.scatterplot(x='Symbol', y='Volume (lacs)', data=df, color='blue', alpha=0.7, label
sns.scatterplot(x='Symbol', y='Turnover (crs.)', data=df, color='green', alpha=0.7, la
plt.title('Volume vs Turnover for Symbols')
plt.xlabel('Symbol')
plt.ylabel('Volume and Turnover')
plt.xticks(rotation=90)  # Rotate the x-axis labels for better visibility
plt.legend()
plt.grid(True)
plt.show()
```



In [25]:

```
plt.figure(figsize=(13, 6))
sns.lineplot(x='Symbol', y='Volume (lacs)', data=df, marker='o', label='Volume (lacs)
sns.lineplot(x='Symbol', y='Turnover (crs.)', data=df, marker='o', label='Turnover (c
plt.title('Volume and Turnover for Symbols Over Time')
plt.xlabel('Symbol')
plt.ylabel('Volume and Turnover')
plt.xticks(rotation=90)  # Rotate the x-axis labels for better visibility
plt.legend()
plt.grid(True)
plt.show()
```

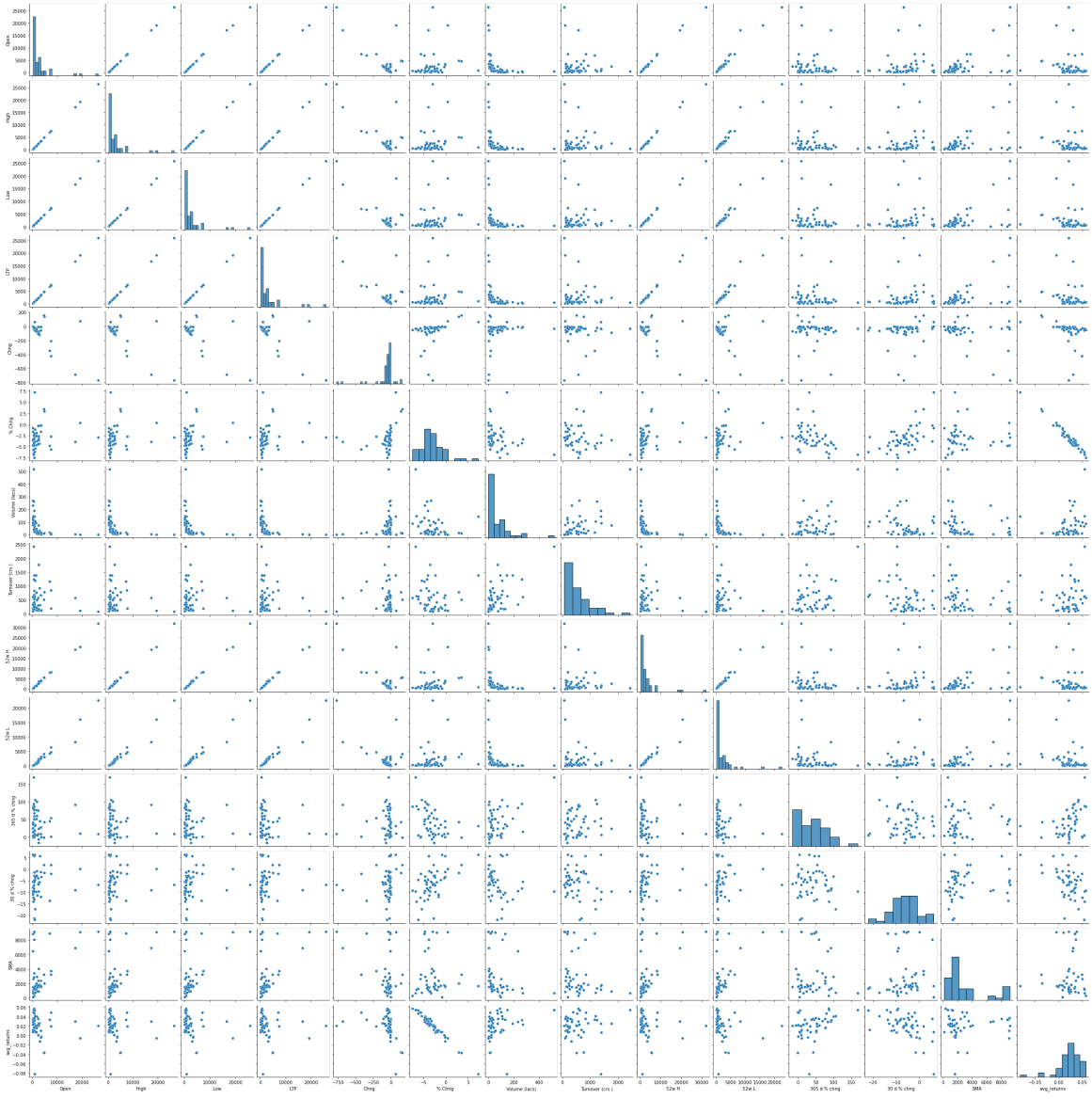


In [24]:

```
sns.pairplot(df)
```

Out[24]:

```
<seaborn.axisgrid.PairGrid at 0x2619cf39d00>
```



In [ ]: