

EDA REPORT



GROUP NUMBER:11

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NIFTY50 dataset from the last 5 years (2017-2022)

History of data set:

What is NIFTY?

NIFTY is a market index introduced by the National Stock Exchange. It is a blended word – National Stock Exchange and Fifty coined by NSE on 21st April 1996. NIFTY 50 is a benchmark based index and also the flagship of NSE, which showcases the top 50 equity stocks traded in the stock exchange out of a total of 1600 stocks.

The NIFTY 50 is a benchmark Indian stock market index that represents the weighted average of 50 of the largest Indian companies listed on the National Stock Exchange.

Nifty 50 is owned and managed by NSE Indices (previously known as India Index Services & Products Limited), which is a wholly owned subsidiary of the NSE Strategic Investment Corporation Limited. NSE Indices had a marketing and licensing agreement with Standard & Poor's for co-branding equity indices until 2013. The Nifty 50 index was launched on 22 April 1996, and is one of the many stock indices of Nifty.

The NIFTY 50 index has shaped up to be the largest single financial product in India, with an ecosystem consisting of exchange-traded funds (onshore and offshore), exchange-traded options at NSE, and futures and options abroad at the SGX. NIFTY 50 is the world's most actively traded contract. WFE, IOM and FIA surveys endorse NSE's leadership position.

The NIFTY 50 index covers 13 sectors (as on 30 April 2021) of the Indian economy and offers investment managers exposure to the Indian market in one portfolio. Between 2008 & 2012, the NIFTY 50 index's share of NSE's market capitalisation fell from 65% to 29% due to the rise of sectoral indices like NIFTY Bank, NIFTY IT, NIFTY Pharma, NIFTY SERV SECTOR, NIFTY Next 50, etc. The NIFTY 50 Index gives a weightage of 39.47% to financial services, 15.31% to Energy, 13.01% to IT, 12.38% to consumer goods, 6.11% to Automobiles and 0% to the agricultural sector.

Objective of choosing this data:

The objective is to explore NIFTY data along with the sectoral indices and visualize them to obtain important information. In our Jupyter notebook we will try to analyze the effect of the worldwide pandemic on different sectors of Indian Economy. We have chosen 5 major sectors which include: Finance, IT, Oil and Energy, Pharma and Automobile.

Description about the Dataset chosen:

The dataset contains 2 files. Of the two datasets:

One is the NIFTY50 data from 2017-2022 and the second is the data of individual stocks of NIFTY50.

1. NIFTY50 dataset:

.csv file - 113Kb

It contains 1402 rows X 7 columns

Data looks like the attached image below:

```
df.head()
```

	Date	Open	High	Low	Close	Adj Close	Volume
0	2017-01-02	8210.099609	8212.000000	8133.799805	8179.500000	8179.500000	118300.0
1	2017-01-03	8196.049805	8219.099609	8148.600098	8192.250000	8192.250000	127300.0
2	2017-01-04	8202.650391	8218.500000	8180.899902	8190.500000	8190.500000	132400.0
3	2017-01-05	8226.650391	8282.650391	8223.700195	8273.799805	8273.799805	159100.0
4	2017-01-06	8281.849609	8306.849609	8233.250000	8243.799805	8243.799805	139400.0

2. Data of individual stocks of NIFTY50:

.csv file 2 - 862Kb

It contains 1172 rows X 49 columns

Data looks like the attached image below:

```
df_new.head()
```

	DATE	TATASTEEL	WIPRO	TITAN	ULTRACEMO	TECHM	RELIANCE	SHREECEM	SUNPHARMA	TATAMOTORS	...	ADANIPTS	BAJAJFINSERV	BAJAJF
0	2017-01-02	474.60	456.00	369.95	4079.95	449.70	1049.65	15937.65	625.55	542.25	...	127.95	3328.40	
1	2017-01-03	500.35	488.55	438.15	3570.55	499.75	1234.50	16126.30	694.65	449.45	...	135.00	3923.85	
2	2017-01-06	497.15	541.15	470.70	4177.80	397.70	1328.25	17666.75	507.45	476.65	...	149.75	4205.60	
3	2017-01-08	572.40	294.80	539.35	3918.20	402.45	1603.60	18631.70	533.80	446.90	...	146.45	5067.25	
4	2017-01-09	651.20	296.45	613.50	4179.45	423.40	1610.10	17795.40	486.20	390.85	...	155.40	5495.30	

How to download the dataset:

We have downloaded this dataset from Yahoo finance website which allows us to download the data between any two date ranges. Given below is the link to download our data from yahoo finance.

<https://finance.yahoo.com/quote/%5ENSEI/history?period1=1483228800&period2=1662076800&interval=1d&filter=history&frequency=1d&includeAdjustedClose=true>

For individual stocks of NIFTY50 we downloaded the dataset from kaggle, below is the link to download this dataset.

<https://www.kaggle.com/datasets/setseries/nifty50-stocks-dataset20102021>

Paragraph on dataset:

The stocks span across 12 sectors of the Indian economy which include – information technology, financial services, consumer goods, entertainment and media, financial services, metals, pharmaceuticals, telecommunications, cement and its products, automobiles, pesticides and fertilizers, energy, and other services. NIFTY 50 follows the trends and patterns of blue-chip companies, i.e. the most liquid and largest Indian securities.

The NIFTY 50 index is a free float market capitalisation weighted index. The index was initially calculated on a full market capitalisation methodology. On 26 June 2009, the computation was changed to a free-float methodology. The base period for the NIFTY 50 index is 3 November 1995, which marked the completion of one year of operations of the National Stock Exchange Equity Market Segment. The base value of the index has been set at 1000 and a base capital of ₹ 2.06 trillion.

Conclusions:

Through graph analysis, we conclude the following:

- Linear, steady growth observed in NIFTY50 over the last 5 years. Sharp dip during March 2020 (Covid outbreak).
- Average high of NIFTY 50 index over the last 5 years has been maximum in 2022.
- The volume of NIFTY50 stocks traded was highest right after the covid outbreak.
- In the Finance sector, Bajaj Finserv has shown a huge growth in stock price over the last 5 years.
- In the IT sector, TCS has seen maximum growth over the last 5 years.
- The Oil and energy sector has had no notable growth in the last 5 years.
- In the Pharma sector, Dr Reddy's has had maximum growth in the last 5 years.
- In the Automobile sector, Eicher Motor has seen the maximum decline in stock price.
- Energy and automobile sectors have taken a big hit Steady growth for Finance, Pharma and IT.
- Correlation conclusion:
 - Strong -ve corr between Automobiles and Year
 - Strong -ve corr between Energy and Year
 - Strong +ve corr between Automobiles and Energy
 - Strong +ve corr between Finance and Year
 - Strong +ve corr between Pharma and Year
 - Healthy corr between Finance and IT

References:

- <https://finance.yahoo.com/quote/%5ENSEI/history?period1=1483228800&period2=1662076800&interval=1d&filter=history&frequency=1d&includeAdjustedClose=true>
- <https://www.kaggle.com/datasets/setseries/nifty50-stocks-dataset20102021>
- <https://stackoverflow.com/questions/22408237/named-colors-in-matplotlib>
- https://en.wikipedia.org/wiki/NIFTY_50
- <https://www.investopedia.com/articles/stocks/09/indian-stock-market.asp>
- <https://stableinvestor.com/2019/09/explained-nifty-indices-nifty50.html>