

# Data Manipulation Tasks

## Task 1: Data Manipulation

Created a new sub-sheet and named it "Filterd Data".

Fetching data using the Query function: In the new Filterd Datasheet, in the first cell (A1), enter the following formula using the Query function:

```
=QUERY('Data Set'!A1:J,"SELECT * WHERE D is not null AND D < 100 ORDER BY B DESC", 1)
```

By this, you get the following result

Stock	Market Cap (In ₹)	Current price	PE Ratio	52 Week High	% Below 52 week Low	52 Week Low	% Above 52 Week Low	Yesterday's Close	% Change
Reliance	1620922.44	2467.9	25.09	2856.15	13.59%	2180	13.21%	2471.6	-0.15%
TCS	1234544.52	3374.2	30.43	4045.5	16.59%	2926	15.32%	3334.6	1.19%
HUL	616301.33	2620.6	63.81	2741.6	4.41%	1901.55	37.81%	2590.05	1.18%
SBI Bank	535431.32	600.05	13	629.65	4.70%	425	41.19%	595	0.85%
HDFC	478914.70	2619.25	19.81	2933.8	10.72%	2026	29.28%	2612.8	0.25%
LIC	450686.76	712.7	23.63	920	22.53%	588	21.21%	705.55	1.01%
Airtel	441027.40	764.6	65.86	860.55	11.15%	628.75	21.61%	756.9	1.02%
Bajaj Finance	361172.64	5977	36.52	8045	25.71%	5220	14.50%	5898.4	1.33%
Kotak Bank	354002.54	1780.5	25.87	1997.55	10.87%	1631	9.17%	1779.5	0.06%
L&T	302617.17	2153.75	31.53	2210.5	2.57%	1456.8	47.84%	2160.2	-0.30%
Axis Bank	287213.29	933.9	15.67	970	3.72%	618.25	51.06%	935.55	-0.18%
Asian Paints	278960.10	2912	76.19	3582.9	18.73%	2560	13.75%	2915.95	-0.14%
Maruti Suzuki	255438.42	8454.2	42.1	9769	13.46%	6536.55	29.34%	8369.2	1.02%
Sun pharma	247191.65	1031.05	60.4	1070.95	3.73%	784.8	31.38%	1032.85	-0.17%
Bajaj Finserv	221292.51	1391	40.48	3724.2	62.65%	1374.35	1.21%	1387.8	0.23%
Titan	214719.01	2417.65	68.59	2790	13.35%	1827.15	32.32%	2445.65	-1.14%
Ultratech Cement	208975.80	7244.95	31.35	7946	8.82%	5157.05	40.49%	7153.35	1.28%
Nestle	190752.20	19782.3	88.1	21050	6.02%	16000	23.64%	19873.25	-0.46%
M&M	158785.37	1327.55	16.12	1366.55	2.85%	671.15	97.80%	1319.9	0.58%
Tata Steel	147293.60	120.45	5.13	138.63	13.11%	82.71	45.63%	118.05	2.03%
SBI life Insurance	130568.99	1307	78.07	1340.35	2.49%	1003.5	30.24%	1315.7	-0.66%
HDFC life Insurance	129917.60	604	85.12	678.8	11.02%	497.05	21.52%	598.4	0.94%
Pidilite Industries	127340.00	2513	98.38	2918.95	13.91%	1988.55	26.37%	2495.5	0.70%
IET Infotech	126813.40	1200.8	34.73	1203.25	0.08%	1117.15	2.42%	1270.2	0.95%

## Task 2: Creating Industry and NSE/BSE Code Columns

Create two columns: In a new sheet or a separate section of the existing sheet, create two columns named "Industry" and "NSE/BSE Code". These columns will be used to fetch data from the second sheet using the Vlookup formula.

Use Vlookup with ARRAYFORMULA and IF conditions: In the first cell of the "Industry" column ENTER the following formula:

**=ArrayFormula(IF(A2:A <> "", VLOOKUP(A2:A, 'NSE/BSE Code'!\$A\$3:\$B\$219, 2, FALSE), ""))**

This formula checks if the corresponding cell in column B is not blank. If it's not blank, it applies the Vlookup formula to fetch the value from the "Second Sheet" in column A and populates it in the "Industry" column. Otherwise, it leaves the cell empty.

Enter the formula for NSE/BSE Code: In the first cell of the "NSE/BSE Code" column (let's say cell C2), enter the following formula:

**=ArrayFormula(IF(A2:A <> "", VLOOKUP(A2:A, 'NSE/BSE Code'!\$A:\$C, 3, FALSE), ""))**

Similarly, this formula checks if the corresponding cell in column B is not blank. If it's not blank, it applies the Vlookup formula to fetch the value from the "Second Sheet" in column A and populates it in the "NSE/BSE Code" column. Otherwise, it leaves the cell empty.

Since we used ARRAYFORMULA in the formulas, the Vlookup formulas will be applied automatically throughout the respective columns as you enter data in the cells below. The IF condition ensures that the formulas are only applied when there is data in the corresponding row of the NSE/BSE Code column.

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K2 =ArrayFormula(IF(A2:A <> "", VLOOKUP(A2:A, 'NSE/BSE Code'!\$A\$3:\$B\$219, 2, FALSE), ""))

	B	C	D	E	F	G	H	I	J	K	L
1	Market Cap (In ₹)	Current price	PE Ratio	52 Week High	% Below 52 we	52 Week Low	% Above 52 We	Yesterday Closi	% Change	Industry	NSE/BSE Code
2	1620922.44	2467.9	25.09	2856.15	13.59%	2180	13.21%	2471.6	-0.15%	Telecom and oil	RELIANCE
3	1234544.52	3374.2	30.43	4045.5	16.59%	2926	15.32%	3334.6	1.19%	IT	BOM:532540
4	616301.33	2620.6	63.81	2741.6	4.41%	1901.55	37.81%	2590.05	1.18%	FMCG	HINDUNILVR
5	535431.32	600.05	13	629.65	4.70%	425	41.19%	595	0.85%	Bank	BOM:500112
6	478914.70	2619.25	19.81	2933.8	10.72%	2026	29.28%	2612.8	0.25%	Financial Services	HDFC
7	450686.76	712.7	23.63	920	22.53%	588	21.21%	705.55	1.01%	Insurance	BOM:543526
8	441027.40	764.6	65.86	860.55	11.15%	628.75	21.61%	756.9	1.02%	Telecom	BHARTIARTL
9	361172.64	5977	36.52	8045	25.71%	5220	14.50%	5898.4	1.33%	NBFC	BAJFINANCE
10	354002.54	1780.5	25.87	1997.55	10.87%	1631	9.17%	1779.5	0.06%	Bank	KOTAKBANK
11	302617.17	2153.75	31.53	2210.5	2.57%	1456.8	47.84%	2160.2	-0.30%	Infrastructure	BOM:500510
12	287213.29	933.9	15.67	970	3.72%	618.25	51.06%	935.55	-0.18%	Bank	AXISBANK
13	278960.10	2912	76.19	3582.9	18.73%	2560	13.75%	2915.95	-0.14%	Paint	ASIANPAINT
14	255438.42	8454.2	42.1	9769	13.46%	6536.55	29.34%	8369.2	1.02%	Automobile	MARUTI
15	247191.65	1031.05	60.4	1070.95	3.73%	784.8	31.38%	1032.85	-0.17%	Pharma	SUNPHARMA
16	221292.51	1391	40.48	3724.2	62.65%	1374.35	1.21%	1387.8	0.23%	Financial Scrvies	BAJAJFINSV
17	214719.01	2417.65	68.59	2790	13.35%	1827.15	32.32%	2445.65	-1.14%	Retail	BOM:500114
18	208975.80	7244.95	31.35	7946	8.82%	5157.05	40.49%	7153.35	1.28%	Cement	ULTRACEMCO
19	190752.20	19782.3	88.1	21050	6.02%	16000	23.64%	19873.25	-0.46%	FMCG	NESTLEIND
20	158785.37	1327.55	16.12	1366.55	2.85%	671.15	97.80%	1319.9	0.58%	Automobile	M&M
21	147293.60	120.45	5.13	138.63	13.11%	82.71	45.63%	118.05	2.03%	Infrastructure	BOM:500470
22	130568.99	1307	78.07	1340.35	2.49%	1003.5	30.24%	1315.7	-0.66%	Insurance	SBILIFE
23	129917.60	604	85.12	678.8	11.02%	497.05	21.52%	598.4	0.94%	Insurance	HDFCLIFE
24	127340.00	2513	98.38	2918.95	13.91%	1988.55	26.37%	2495.5	0.70%	Chemical	PIDILITIND
25	126813.40	4289.8	34.73	4293.25	0.08%	4147.45	3.43%	4279.2	0.25%	IT	BOM:540005
26	104442.90	4328	65.9	4537	4.61%	3050	41.90%	4299.25	0.67%	FMCG	BRITANNIA
27	102995.36	518.7	57.36	598.15	13.28%	274	89.31%	510.4	1.63%	Cement	BOM:500425

+ Data Set NSE/BSE Code Filtered Data TASK 5 Sheet 9

### Task 3: Creating Bear Mode 1 and Bear Create two additional columns

Start by adding two columns in the new sheet to accommodate the "Bear Mode 1" and "Bear Mode 2" values.

**Bear Mode 1 Condition:** Use an IF condition to check if the percentage change from the 52-week high is greater than 30%. If it is, assign the value "Yes" in the corresponding cell; otherwise, assign "No". This condition helps identify stocks that have experienced a significant decline from their recent highs.

=ArrayFormula(IF((E2-C2)/C2\*100 > 30, "Yes", "No"))

**Bear Mode 2 Condition:** Apply another IF condition to determine if the percentage change from the 52-week low is less than 30%. If it is, assign the value "Yes" in the corresponding cell; otherwise, assign "No". This condition helps identify stocks that are relatively close to their recent lows.

=ArrayFormula(IF((C2-G2)/G2\*100 < 30, "Yes", "No"))

By implementing these conditions, you can quickly assess whether a stock is exhibiting bearish market characteristics based on its performance relative to the 52-week high and low levels. The "Bear Mode 1" and "Bear Mode 2" columns provide a simple way to categorize stocks accordingly.

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## **Task 4: Creating Stock Status and Cap Size Columns**

In this task, we will create two additional columns named "Stock Status" and "Cap Size" to further analyze and categorize the stocks. Here's an explanation of each step:

1. Creating a Stock Status column: Add a new column named "Stock Status" in the new sheet to indicate whether a stock is considered a "Good Stock" based on specific criteria.

2. Applying multiple IF conditions: Utilize multiple IF conditions to evaluate the following criteria simultaneously:

- Check if the PE Ratio is less than 65.
- Verify that both "Bear Mode 1" and "Bear Mode 2" are equal to "No".

If all these conditions are met, assign the value "Good Stock" in the corresponding cell. Otherwise, leave the cell empty.

The formula for Stock Status:

```
=ArrayFormula(IF(AND(D2<65, M2="No", N2="No"), "Good Stock", ""))
```

3. Categorize cap sizes: Using percentage thresholds to categorize the stocks into different cap sizes., if a stock's Market Cap is 60% or above of the highest Market Cap value, assign the value "Large Cap". If it falls between 40% and 60%, categorize it as "Medium Cap". If it is below 40%, assign the value "Low Cap".

The formula for Cap Size:

```
=ArrayFormula(IF(B2="", "", IF(B2>=MAX($B$2:$B)*0.6, "Large Cap", IF(B2>=MAX($B$2:$B)*0.4, "Medium Cap", "Low Cap"))))
```

By implementing these steps, we can identify and categorize stocks based on their PE Ratio, bear market conditions, and Market Cap. The "Stock Status" column helps determine if a stock meets the specified criteria to be considered a "Good Stock", while the "Cap Size" column provides additional insights into the size classification of the stocks.

O2	=ArrayFormula(IF(AND(C2<=65, M2="No", N2="No"), "Good Stock", ""))														
	C	D	E	F	G	H	I	J	K	L	M	N	O		
1	Current price	PE Ratio	52 Week High	% Below 52 woe	52 Week Low	% Above 52 We	Yesterday	Closin	% Change	Industry	NSE/BSE Code	Bear mode 1	Bear mode 2	Stock Status	
2	2467.9	25.09	2856.15	13.59%	2180	13.21%	2471.6	-0.15%	Telecom and oil	RELIANCE	No	Yes			
3	3374.2	30.43	4045.5	16.59%	2926	15.32%	3334.6	1.19%	IT	BOM:532540	No	Yes			
4	2620.6	63.81	2741.6	4.41%	1901.55	37.81%	2590.05	1.18%	FMCG	HINDUNILVR	No	No		Good Stock	
5	600.05	13	629.65	4.70%	425	41.19%	595	0.85%	Bank	BOM:500112	No	No		Good Stock	
6	2619.25	19.81	2933.8	10.72%	2026	29.28%	2612.8	0.25%	Financial Services	HDFC	No	Yes			
7	712.7	23.63	920	22.53%	588	21.21%	705.55	1.01%	Insurance	BOM:543526	No	Yes			
8	764.6	65.86	860.55	11.15%	628.75	21.61%	756.9	1.02%	Telecom	BHARTIARTL	No	Yes			
9	5977	36.52	8045	25.71%	5220	14.50%	5898.4	1.33%	NBFC	BAJFINANCE	Yes	Yes			
10	1780.5	25.87	1997.55	10.87%	1631	9.17%	1779.5	0.06%	Bank	KOTAKBANK	No	Yes			
11	2153.75	31.53	2210.5	2.57%	1456.8	47.84%	2160.2	-0.30%	Infrastructure	BOM:500510	No	No		Good Stock	
12	933.9	15.67	970	3.72%	618.25	51.06%	935.55	-0.18%	Bank	AXISBANK	No	No		Good Stock	
13	2912	76.19	3582.9	18.73%	2560	13.75%	2915.95	-0.14%	Paint	ASIANPAINT	No	Yes			
14	8454.2	42.1	9769	13.46%	6536.55	29.34%	8369.2	1.02%	Automobile	MARUTI	No	Yes			
15	1031.05	60.4	1070.95	3.73%	784.8	31.38%	1032.85	-0.17%	Pharma	SUNPHARMA	No	No		Good Stock	
16	1391	40.48	3724.2	62.65%	1374.35	1.21%	1387.8	0.23%	Financial Services	BAJAJFINSV	Yes	Yes			
17	2417.65	68.59	2790	13.35%	1827.15	32.32%	2445.65	-1.14%	Retail	BOM:500114	No	No			
18	7244.95	31.35	7946	8.82%	5157.05	40.49%	7153.35	1.28%	Cement	ULTRACEMCO	No	No		Good Stock	
19	19782.3	88.1	21050	6.02%	16000	23.64%	19873.25	-0.46%	FMCG	NESTLEIND	No	Yes			
20	1327.55	16.12	1366.55	2.85%	671.15	97.80%	1319.9	0.58%	Automobile	M&M	No	No		Good Stock	
21	120.45	5.13	138.63	13.11%	82.71	45.63%	118.05	2.03%	Infrastructure	BOM:500470	No	No		Good Stock	
22	1307	78.07	1340.35	2.49%	1003.5	30.24%	1315.7	-0.66%	Insurance	SBILIFE	No	No			
23	604	85.12	678.8	11.02%	497.05	21.52%	598.4	0.94%	Insurance	HDFCLIFE	No	Yes			
24	2513	98.38	2918.95	13.91%	1988.55	26.37%	2495.5	0.70%	Chemical	PIDILITIND	No	Yes			
25	4289.8	34.73	4293.25	0.08%	4147.45	3.43%	4279.2	0.25%	IT	BOM:540005	No	Yes			
26	4328	65.9	4537	4.61%	3050	41.90%	4299.25	0.67%	FMCG	BRITANNIA	No	No			
27	518.7	57.36	598.15	13.28%	274	89.31%	510.4	1.63%	Cement	BOM:500425	No	No		Good Stock	

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## Task 5: Creating Final Organized Data Source and Applying Conditional Formatting

In this task, we will create a new sheet to serve as the final organized data source and apply appropriate conditional formatting to enhance data visualization.

Here's an explanation of each step along with the formula:

1. Create a new sheet: Add a new sheet to your Google Sheets workbook and named it TASK 5

2. Fetch "Good Stock" data: Copy and paste the relevant data from the original sheet into the TASK 5 sheet. Only copy the rows where the "Stock Status" column contains the "Good Stock" value.

Formula to fetch "Good Stock" data:

3 Apply conditional formatting: Use conditional formatting to add color scales to the relevant columns, such as Market Cap, PE Ratio, or any other columns we wish to highlight.

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A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
1	=ArrayFormula(QUERY('Filtered Data!A:P','SELECT * WHERE O = 'Good Stock ' , 1)))															
								Yesterday Closing Price	% Change	Industry	NSE/ISIN Code	Bear mode 1	Bear mode 2	Stock Status	Cap Size	
1	IRIL	610501.33	2002.0	63.81	2741.8	4.41%	1901.58	37.81%	2590.05	1.18% FMCG	HINDUNILVR	No	No	Good Stock	Low Cap	
2	SEB Bank	63431.37	800.06	13	625.65	4.70%	426	41.10%	566	0.85% Bank	BOM:500112	No	No	Good Stock	Low Cap	
3	LAT	320211.17	2163.75	31.63	2210.5	2.87%	1468.8	47.84%	2160.2	-0.30% Infrastructure	BOM:500510	No	No	Good Stock	Low Cap	
4	Axis Bank	208721.39	933.29	15.97	970	3.72%	818.25	51.00%	935.55	-0.18% Bank	AXISBANK	No	No	Good Stock	Low Cap	
5	Sun pharma	247195.05	50.4	174.3	72.79	107.95	10.81	103.28	-0.17% Pharma	SUNPHARMA	No	No	Good Stock	Low Cap		
6	Ultratech Cement	220975.90	7244.95	31.35	7490	8.82%	5167.05	40.40%	7153.35	1.28% Cement	ULTRACEMCO	No	No	Good Stock	Low Cap	
7	M&M	168785.37	1327.55	18.12	1360.85	2.85%	871.15	0.85% Automobile	MM	No	No	No	No	Good Stock	Low Cap	
8	Tata Steel	147200.80	120.45	5.13	138.63	11.11%	62.71	45.93%	118.05	2.03% Infrastructure	BOM:500470	No	No	Good Stock	Low Cap	
9	Aditya Cement	102696.38	516.87	87.36	568.15	13.28%	2714	1.83%	910.5	1.88% Cement	BOM:500455	No	No	Good Stock	Low Cap	
10	Bank of Baroda	65595.85	9.72	124.5	89.6	10.67%	81.9	18.4%	17.1%	Bank	BOM:521314	No	No	Good Stock	Low Cap	
11	Godrej Consumer	93675.86	916.76	58.81	955.65	4.07%	880.2	38.86%	914.9	0.20% FMCG	BOM:522424	No	No	Good Stock	Low Cap	
12	Shree Cement	87008.03	24025.5	41.11	27036.75	14.00%	17085.2	34.48%	23854.85	0.71% Cement	SHREECEM	No	No	Good Stock	Low Cap	
13	Eicher Motor	85543.32	3164.9	37.12	3889.65	18.63%	2159.55	45.55%	3103.25	1.95% Automobile	EICHERMOTO	No	No	Good Stock	Low Cap	
14	Vedanta Resources	73565.45	51.22	1432.05	20.76%	557.23	103.65%	1187.3	-4.42% Food	BOM:540130	No	No	Good Stock	Low Cap		
15	Yesbank	67437.04	20.15	45.52	24.75	18.56%	12.11	65.36%	19.9	1.20% Bank	BOM:520548	No	No	Good Stock	Low Cap	
16	PI industries	10475.63	32.92	48.33	3986.45	11.80%	2333.55	39.76%	3202.85	-0.93% Agrochemical	PIIND	No	No	Good Stock	Low Cap	
17	TVS	47610.88	900.5	39.03	1177	9.91%	910	94.83%	1005.2	-0.87% Automobile	BOM:523243	No	No	Good Stock	Low Cap	
18	Abbott India	47346.12	22241	53.9	22499	1.16%	15514	43.36%	22163.55	0.38% Pharma	ABBOTINDIA	No	No	Good Stock	Low Cap	
19	Balkrishna Industries	41165.87	2220	30.72	2517.45	12.10%	1590.55	31.85%	2214.25	0.87% Tyre	BALKRISHNO	No	No	Good Stock	Low Cap	
20	Polyvac	39945.40	3022	35.5	3025	12.00%	2043.85	30.24%	2677.05	-0.56% Consumer Ele	POLYVAC	No	No	Good Stock	Low Cap	
21	Solar Industries	38589.14	4338	63.86	4535.95	4.39%	2180.05	100.83%	4340.15	-0.05% Defence	BOM:520725	No	No	Good Stock	Low Cap	
22	APL Apollo	31477.05	1136	54.9	1116.85	4.85%	737	26.47%	112							



# Report Dashboarding

## *Insights from the Stock Analysis Dashboard:*

**Stocks Analyzed:** The dashboard provides a count of the stocks analyzed, offering an overview of the total number of stocks included in the analysis. This insight helps assess the scope and breadth of the analysis, providing an understanding of the sample size.

**Total Market Cap:** The total market capitalization scorecard displays the aggregate value of all the stocks analyzed. This insight provides an overview of the overall size and value of the market represented by the selected stocks. It helps gauge the magnitude and significance of the included stocks in terms of their market capitalization.

**Average PE Ratio:** The average PE ratio scorecard showcases the average Price-to-Earnings ratio of the selected stocks. This insight enables an assessment of the valuation levels of the stocks in the analysis. A higher average PE ratio may indicate a relatively higher valuation, while a lower ratio may suggest potentially undervalued stocks.

**Closing Price (Yesterday):** The closing price scorecard presents the sum of the closing prices of the selected stocks from the previous day. This insight provides a cumulative view of the total value of the stocks based on their closing prices. It helps understand the overall value and performance of the selected stocks in the recent trading session.

### **Top 5 Stocks by Market Cap:**

- This section highlights the top stocks based on market capitalization.
- It may include a bar chart visualizing the industries on the x-axis and the corresponding market capitalization on the y-axis in descending order.

- The chart provides insights into the industries with the highest market capitalization.

**Industry vs. Market Cap Bar Chart:** The bar chart illustrates the industry-wise distribution of market capitalization in descending order. This insight allows for a comparison of market cap across different industries, providing an understanding of which industries have larger market capitalizations. It helps identify the sectors that contribute significantly to the overall market value.

**Industry Insights Stacked Combo Chart:** The stacked combo chart showcases the price performance of stocks across industries by comparing the current price with the 52-week high and low values. This insight enables the identification of potential trends, volatility, and relative performance within different industries. It helps spot industries that have experienced significant price growth or decline over the past year.

Overall, the Stock Analysis Dashboard provides insights into the count of analyzed stocks, total market capitalization, average PE ratio, closing prices, industry-wise market cap distribution, and price performance across different industries. These insights will aid in making informed decisions, identifying market trends, and assessing the relative performance of stocks within specific sectors.



# Stock Analysis Dashboard

Total Stock  
43

Total Market Cap  
₹3,677,862.99

Average PE Ratio  
35.45

Closing  
₹107,542.35

## TOP STOCK'S

Market Cap (In Rs Cr.)

1.	HUL	616,301.33
2.	SBI Bank	535,431.32
3.	L&T	302,617.17
4.	Axis Bank	287,213.29
5.	Sun pharma	247,191.65

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Industry



Stock

