



# **BUSINESS DATA MANAGEMENT**

## **MIDTERM SUBMISSION**

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## **EXECUTIVE SUMMARY**

This report presents an analysis of vegetable shop data collected for the months of January, February, and March. The goal of this analysis is to identify sales patterns, evaluate inventory management practices, and provide data-driven recommendations to optimize profitability in the vegetable business. The data was gathered daily, providing valuable insights into the purchasing, selling, and remaining stock of various vegetables.

The data was collected from Mr. Rahul, the shop owner, and then cleaned to ensure accuracy and consistency. Missing values were imputed, errors were corrected, and the data was sorted for further analysis. The cleaned data was entered into two Excel sheets, one containing the daily details of vegetable purchases, sales, and remaining stock, and the other capturing the average purchasing and selling prices for each vegetable.

The analysis process involved utilizing Microsoft Excel's powerful tools, including pivot tables, charts, and graphs. Pivot tables enabled efficient grouping, filtering, and analysis of the data, while charts and graphs helped visualize patterns and relationships in the data.

Key findings from the analysis indicate that onions, lady finger, and tomatoes were the top revenue-generating vegetables, highlighting their popularity and profitability. Conversely, fenugreek leaf (methi) showed lower revenue compared to other vegetables. Furthermore, Saturdays and Sundays emerged as the peak sales days, suggesting higher consumer demand on weekends.

## **PROOF OF ORIGINALITY OF THE DATA**

All the data is provided by Mr Rahul who is a proud owner of a vegetable shop. Please find below the letter given by him to validate the authenticity of the data

[https://drive.google.com/file/d/1eddjyozZfQlv12FbvSTCg4UWh4Gqpv\\_a/view?usp=drive\\_link](https://drive.google.com/file/d/1eddjyozZfQlv12FbvSTCg4UWh4Gqpv_a/view?usp=drive_link)

Link of video

[https://drive.google.com/file/d/1eySU26cyyn-G9eCFErPggyrAcNo1Y6PV/view?usp=drive\\_link](https://drive.google.com/file/d/1eySU26cyyn-G9eCFErPggyrAcNo1Y6PV/view?usp=drive_link)

Link of Image

[https://drive.google.com/file/d/1f0xW\\_QXaSvqMkCLphQRun0RC28icW4jx/view?usp=drive\\_link](https://drive.google.com/file/d/1f0xW_QXaSvqMkCLphQRun0RC28icW4jx/view?usp=drive_link)

## METADATA

Sales data was collected for the month of January, February, and March we went to the Salar every day so the data is date wise

Date	Potato			Onion			Tomato			Cauliflower			Brinjal			Ladyfinger			Bottle Gourd			Fenugreek leaf (methi)			Cabbage			Cinger		
	Avcham	Sells	Sn Stock	Avcham	Sells	Sn Stock	Avcham	Sells	Sn Stock	Avcham	Sells	Sn Stock	Avcham	Sells	Sn Stock	Avcham	Sells	Sn Stock	Avcham	Sells	Sn Stock	Avcham	Sells	Sn Stock	Avcham	Sells	Sn Stock	Avcham	Sells	Sn Stock
14-1-23	125	100	25	80	54	21	60	47	13	60	47	13	50	35	15	25	16	9	10	6	4	8	5	3	30	18	12	15	8	7
15-1-23	Na	120	5	60	18	13	60	52	21	50	47	16	40	31	24	22	19	12	5	8	1	5	7	1	25	22	15	8	10	5
16-1-23	70	55	20	40	30	23	35	30	26	30	26	20	0	18	6	10	11	11	15	11	5	10	7	4	10	12	13	5	3	7
17-1-23	50	60	10	50	40	33	25	35	16	30	30	20	30	22	14	15	15	11	10	8	7	5	3	6	10	16	7	0	5	2
18-1-23	80	75	15	55	45	43	20	41	5	30	37	13	25	24	15	15	12	14	5	11	1	5	5	6	15	22	0	8	7	5
19-1-23	80	67	28	40	35	48	50	47	8	50	42	21	35	26	24	10	13	11	15	13	3	8	9	5	25	14	11	7	6	4
20-1-23	50	60	18	0	40	8	50	36	22	40	33	28	40	17	47	12	17	6	10	10	3	5	4	6	15	25	1	7	8	3
21-1-23	100	110	8	70	67	11	50	58	14	50	53	25	0	38	9	20	23	3	5	7	1	0	6	0	25	25	1	10	22	1
22-1-23	130	115	23	70	60	21	60	63	11	50	57	18	40	32	17	25	21	7	8	5	4	6	4	2	30	28	3	10	8	3
23-1-23	70	60	33	50	33	38	40	33	18	40	36	22	10	24	3	10	15	2	15	15	4	12	10	4	20	11	12	5	5	3
24-1-23	50	73	10	50	39	49	40	42	16	35	31	26	35	21	17	20	19	3	10	12	2	5	6	3	15	15	12	8	3	8
25-1-23	100	80	30	0	49	0	35	48	3	30	45	11	30	28	14	20	14	9	10	9	3	5	4	4	15	17	10	0	7	1
26-1-23	50	70	10	50	45	5	60	44	19	30	28	13	20	26	13	15	16	10	15	14	4	8	8	4	15	13	12	10	5	6
27-1-23	75	58	27	60	50	15	40	37	22	40	34	19	40	19	34	10	11	9	5	7	2	6	3	6	15	20	7	5	8	3
28-1-23	110	95	42	65	53	27	50	59	13	50	45	24	15	36	13	15	14	10	5	7	0	5	5	6	25	24	6	10	11	2
29-1-23	120	90	72	50	58	19	60	48	25	60	58	26	40	40	13	10	11	9	8	6	2	0	6	0	25	23	8	12	7	7
30-1-23	45	70	47	50	38	51	25	38	22	0	24	0	30	20	23	20	24	5	15	12	5	12	7	5	15	15	8	5	4	0
31-1-23	55	78	24	50	42	39	40	32	30	50	40	10	6	23	0	20	18	7	10	10	5	5	5	5	18	22	4	5	7	6
1-2-23	100	70	54	30	50	19	25	40	15	50	48	12	40	26	14	15	12	10	8	12	1	3	4	4	20	24	0	5	6	5
2-2-23	50	75	29	30	34	15	50	45	20	40	35	17	35	27	22	0	10	0	13	10	4	8	10	2	25	14	11	5	4	6
3-2-23	50	56	23	30	45	0	45	50	15	35	30	22	20	22	20	20	16	40	12	11	5	5	3	4	15	21	5	0	3	3
4-2-23	120	105	38	80	64	16	60	67	8	50	52	20	30	37	13	15	10	9	05	8	2	5	4	5	25	27	3	8	9	2
5-2-23	110	95	53	60	75	1	70	64	14	55	48	27	40	31	22	12	19	2	5	7	0	3	7	1	30	30	5	10	12	0
6-2-23	30	53	30	50	29	22	45	31	28	0	27	0	0	17	5	20	22	0	15	15	0	10	9	2	15	12	6	10	5	5
7-2-23	75	60	45	30	36	16	30	43	15	30	28	62	30	20	15	25	22	3	10	9	1	5	2	5	15	18	3	5	8	2
8-2-23	100	50	95	50	43	23	50	37	28	50	34	13	30	22	23	18	13	8	12	8	5	5	4	6	20	15	8	8	6	4
9-2-23	0	76	19	50	45	28	50	33	45	40	31	22	20	23	20	10	18	0	10	13	2	8	7	7	15	10	13	6	4	6
10-2-23	150	65	54	30	37	21	0	40	5	25	24	13	16	27	8	20	13	7	15	11	6	0	6	1	10	17	6	5	3	8
11-2-23	100	120	34	60	55	26	70	56	19	60	56	17	40	35	13	10	15	2	5	5	6	5	4	2	25	24	7	5	8	5
12-2-23	120	85	69	60	60	26	65	60	24	55	51	21	40	38	15	15	10	7	5	6	5	5	6	1	30	29	8	8	10	3
													25	10	15	18	4	10	11	4	10	8	3	20	13	15	5	5	3	

## **Original Data Contains**

- The table consists of data related to vegetable purchases and sales.
- The columns in the table are: "date," "vegetable," "purchases," "sell," and "instock."
- The "date" column represents the date of the transaction.
- The "vegetable" column represents the type of vegetable involved in the transaction.
- The "purchases" column represents the quantity of the vegetable purchased.
- The "sell" column represents the quantity of the vegetable sold.
- The "instock" column represents the quantity of the vegetable currently in stock.

## **Cleaned Data**

The data which we collected has been entered into two Excel sheets

The first sheet contains the Date, the vegetable name, amount of vegetables in kilograms he purchased for that date, amount of vegetables in kilograms he sold for that date, and the amount of vegetables in kilograms remained in Stock for that date

[https://docs.google.com/spreadsheets/d/1i6nYAla5BQKdis6UIUhZCIPvSvExmh7nLsqhtDekXn8/edit?usp=drive\\_link](https://docs.google.com/spreadsheets/d/1i6nYAla5BQKdis6UIUhZCIPvSvExmh7nLsqhtDekXn8/edit?usp=drive_link)

The second sheet contains the vegetable name along with its average purchasing price and average selling price

[https://docs.google.com/spreadsheets/d/10ole5EIlIjmsLpQcCYRilW\\_eommbLuKA0oGh4dP5Qe8/edit?usp=drive\\_link](https://docs.google.com/spreadsheets/d/10ole5EIlIjmsLpQcCYRilW_eommbLuKA0oGh4dP5Qe8/edit?usp=drive_link)

## **DESCRIPTIVE STATISTICS**

### Range:

The range of potatoes purchased is from 0 to 130, sales are from 50 to 120, and inventory is from 5 to 95. the range of tomatoes purchased is from 0 to 75, sales are from 28 to 68, and inventory is from 3 to 45. the range of onion purchased is from 0 to 80, sales are from 28 to 75, and inventory is from 0 to 49. the range of cauliflower purchased is from 0 to 60, sales are from 10 to 30, and inventory is from 0 to 32. the range of Brinjal purchased is from 0 to 50, sales are from 17 to 40, and inventory is from 0 to 47. the range of Ladyfinger purchased is from 0 to 25, sales are from 9 to 24, and inventory is from 0 to 14. the range of bottle guards purchased is from 5 to 15, sales are from 5 to 15, and inventory is from 0 to 7. The range of fenugreek leaf(methi) purchased is from 0 to 12, sales are from 2 to 10, and inventory is from 0 to 7. The range of Cabbage purchased is from 10 to 30, sales are from 10 to 30, and inventory is from 0 to 15. the range of Ginger purchased is from 0 to 15, sales are from 3 to 12, and inventory is from 0 to 8.

### Mean:

The mean of potatoes purchased is 77.58, sales is 76.93, and inventory is 35.15. the mean of tomatoes purchased is 44.75, sales is 44.15, and inventory is 18.63. the mean of onions purchased is 47.25, sales is 47.15, and inventory is 18.41. the mean of cauliflower purchased is 39.41, sales is 39.41, and inventory is 15.88. the mean of Brinjal purchased is 26.75, sales is 26.51, and inventory is 15.76. the mean of Ladyfinger purchased is 15.65, sales is 15.48, and inventory is 5.9. the mean of bottle guard purchased is 9.53, sales is 9.51, and inventory is 3.16. the mean of fenugreek leaf(methi) purchased is 5.81, sales is 5.73, and inventory is

3.21. the mean of Cabbage purchased is 19.13, sales is 19.13, and inventory is 6.55. the mean of Ginger purchased is 6.75. sales is 6.71, and inventory is 4.23.

## **ANALYSIS PROCESS/METHOD**

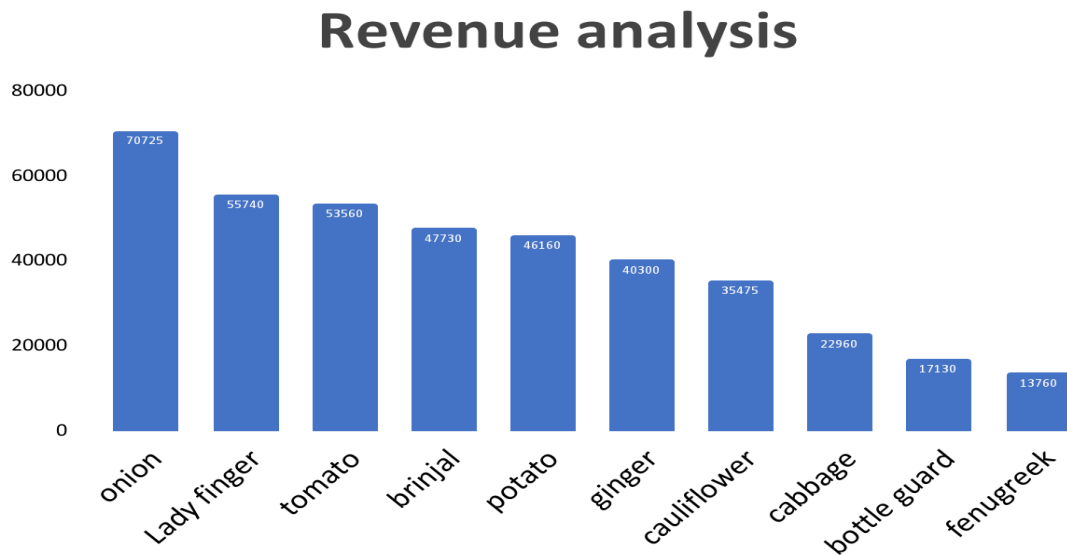
Microsoft Excel is a powerful tool for analyzing data and it is widely used in businesses researches and analysis to analyze, manipulate and visualize data. process of analyzing data begins with entering the raw data which we collect from the owner of the shop 'Mr. Rahul' into an Excel sheet before conducting the analysis it is essential for us to perform basic preprocessing tasks like imputing missing values, correcting errors, and sorting the data to ensure the data is clean.

After pre-processing the analysis can be started excel provides numerous tools and features to help us analyze the data. In order to analyze in an efficient manner, we have to derive new columns from the entered data or remove unnecessary columns to focus on relevant information.

Then we create a pivot table. It is one of the most popular features of Excel which allow us to group filter and analyze a large amount of data in a simple manner. It summarises and organizes data, and allows for quick and insightful analysis. we perform many pivot tables some of them are weak sales analysis, sales analysis of vegetables, revenue analysis

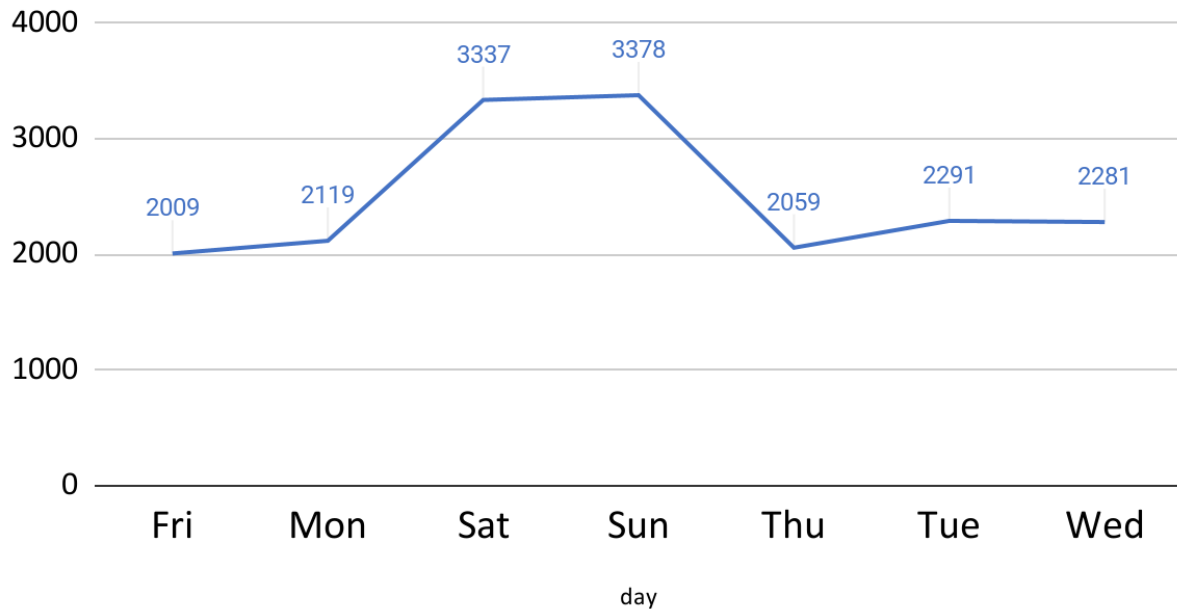
Excel's charting and graphing are particularly useful for visualizing patterns and trends in the data. Charts and graphs are used to identify relationships between variables, visualize patterns, and highlight key insights. Excel provides a wide range of chart types and customization options making it easy for us to create high-quality charts that effectively communicate the data.

## RESULT AND FINDINGS(MID-TERM RESULT)



The chart allows us to compare the revenue generated by different vegetables. It is evident that onions have the highest revenue, followed by lady finger. This information provides an understanding of the relative profitability of each vegetable. Based on the revenue figures, we can infer the popularity of certain vegetables. Onions, lady finger, and tomatoes stand out as the top three revenue-generating vegetables, indicating that they are likely in high demand among consumers, and fenugreek leaf (methi) has the lowest revenue. This revenue chart used vegetable data and corresponding pricing data, which were present on separate sheets. We used the VLOOKUP formula for extracted the average selling price from the pricing data and match it with the vegetable name. Then, we calculated the revenue by multiplying the quantity of sales and the average selling price. Finally, with the help of a pivot table, we produced a chart by putting vegetable names in columns and revenue in values.

## Week-Wise Sales Analysis



Analyzing the weekly sales data can help identify trends and patterns, optimize staffing and inventory management, and plan promotional activities to maximize sales during peak days. The weekly sales data provides insights into the sales patterns and helps identify the most and least favorable days for sales. This information can be used to optimize staffing, inventory management, and marketing strategies. Additionally, it can guide decision-making related to promotions or special offers targeted at boosting sales on slower days or maximizing profitability on peak sales days. Saturdays and Sundays emerge as the peak sales days. This suggests that weekends are generally more favorable for sales compared to weekdays. This week-wise sales analysis chart used vegetable data first we create a days column from the date column using the formula =Text then with the help of a pivot table, we produced a chart by putting days in columns and sales in values.



**Thank you**