BUSINESS DATA MANAGEMENT

Analyzing The Business Model of Hostel Canteen

IIT Madras

BS Degree

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Introduction To The Business

- Business Name: Hostel canteen at Boy's Hostel 6 (Teja Singh Hostel), Punjab University

- Business Owner: Mr. Santokh Singh

- Tender System: Annual tender process in June,

- Year of Establishment: 2019

- Type of Business: B2C

- Dealing in: Variety of food items for students

- Number of Products Analyzed: 30 (primary data)

Sales Data Overview

I collected data for 74 days and merge it into Excel/Zoho. It contains 30 different items, and below is a sample of the data.

Price			30Rs		13Rs		10Rs	
Date	Total Number of Items sold	Total Amount	Milk QTY	Milk Amount	Paratha QTY	Paratha Amount	Chai QTY	Chai Amount
2024-02-02	1705	29742	150	4500	269	3497	279	2790
2024-03-02	1633	26783	155	4650	250	3250	256	2560
2024-04-02	1519	25487	155	4650	243	3159	239	2390
2024-05-02	1579	26475	155	4650	233	3029	300	3000
2024-06-02	1473	25427	155	4650	243	3159	239	2390
2024-07-02	1633	26783	155	4650	250	3250	256	2560
2024-08-02	1555	25994	150	4500	256	3328	256	2560
2024-09-02	1633	26783	155	4650	250	3250	256	2560
2024-10-02	1633	26783	155	4650	250	3250	256	2560
2024-11-02	1715	28143	150	4500	266	3458	300	3000
2024-12-02	3172	52232	148	4440	230	2990	267	2670
13/2/2024	1532	25816	140	4200	260	3380	256	2560
14/2/2024	1549	25774	145	4350	220	2860	256	2560
15/2/2024	1564	26270	155	4650	270	3510	256	2560
16/2/2024	1675	28758	160	4800	256	3328	245	2450
17/2/2024	1506	25360	140	4200	220	2860	240	2400
18/2/2024	1633	26783	155	4650	250	3250	256	2560

| 25Rs		25Rs		25Rs		25Rs	
Allu paties QTY	Allu paties Amount	Pastry Cake QTY	Pastry Cake Amount	Cold Coffe QTY	Cold Coffe Amount	Paneer paties QTY	Paneer paties Amount
15	225	9	225	5	125	5	125
18	270	37	925	3	75	4	100
22	330	29	725	2	50	4	100
20	300	29	725	2	50	0	0
22	330	29	725	2	50	4	100
18	270	37	925	3	75	4	100
18	270	37	925	3	75	2	50
18	270	37	925	3	75	4	100
18	270	37	925	3	75	4	100
25	375	37	925	5	125	4	100
18	270	37	925	0	0	6	150
18	270	23	575	3	75	4	100
18	270	23	575	3	75	3	75
18	270	37	925	3	75	5	125
24	360	34	850	0	0	2	50
23	345	23	575	2	50	5	125

Problem's faced by hostel canteen

1. No Proper Menu Card available in hostel canteen.

2. Limited Seating Space.

3. Low Sales of Certain Items.

4. High Price of Some items.

5. Some Time Items goes Out of Stock.

# Different Types of Graphs Used for Analysis of Different Problems
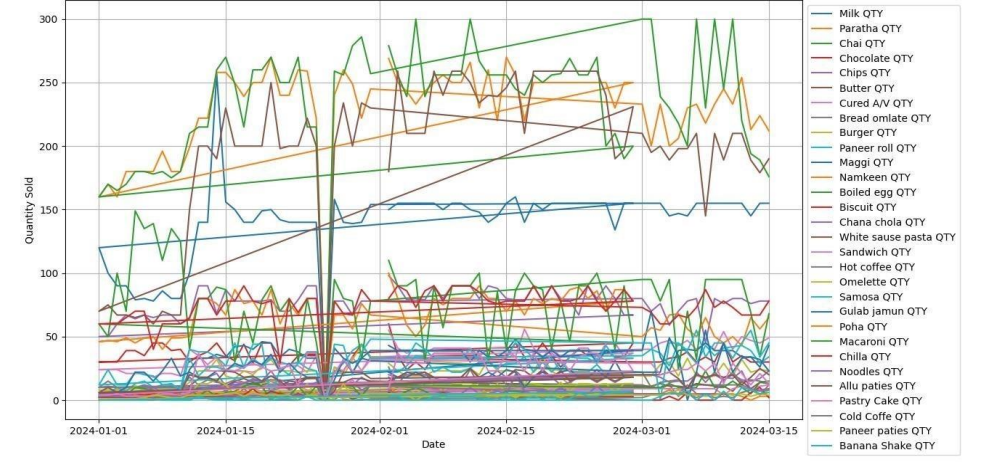
- **Top Sellers:** Milk, Paratha, Chai, and Butter have consistently high sales.
- **Moderate Sellers:** Paneer Roll and Maggi show moderate, fluctuating sales.
- **Low Sellers:** Banana Shake, Cold Coffee, Chilla, and Paneer Patties have very low sales.
- **Specialty Items:** Sandwich, Noodles, and Macaroni also have lower sales, likely appealing to a niche market
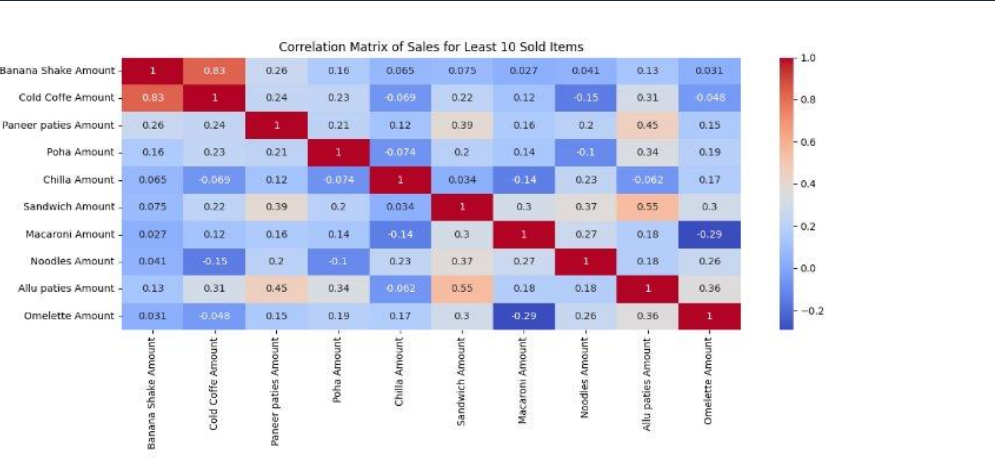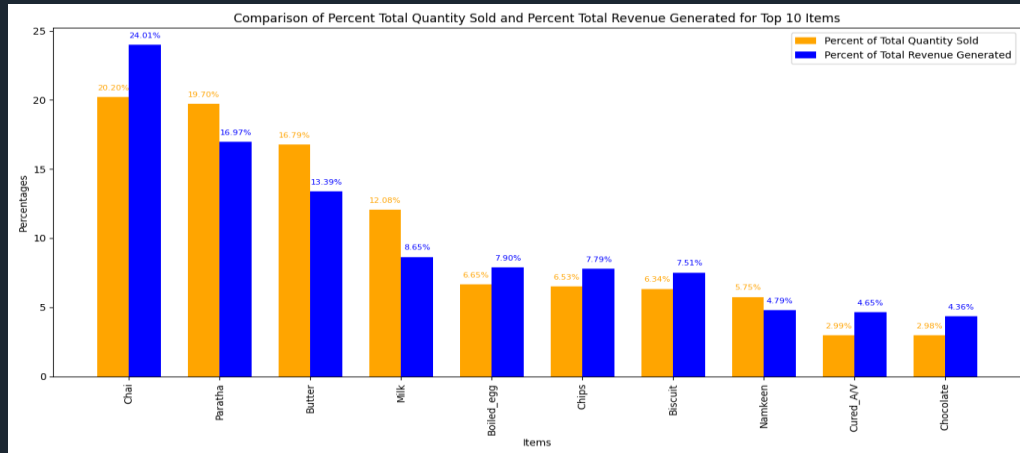

- **Strong Positive:** Banana Shake and Cold Coffee (0.83), Paneer Patties and Allu Patties (0.45).
- **Weak/No Correlation:** Banana Shake and Noodles (0.041), Chilla and Allu Patties (-0.062).
- **Negative Correlation:** Macaroni and Sandwich (-0.29).
- **Item Relationships:** Sandwich with Paneer Patties (0.39) and Macaroni (-0.29); Allu Patties with Paneer Patties (0.45) and Sandwich (0.55).

Quantity Sold for Each Item
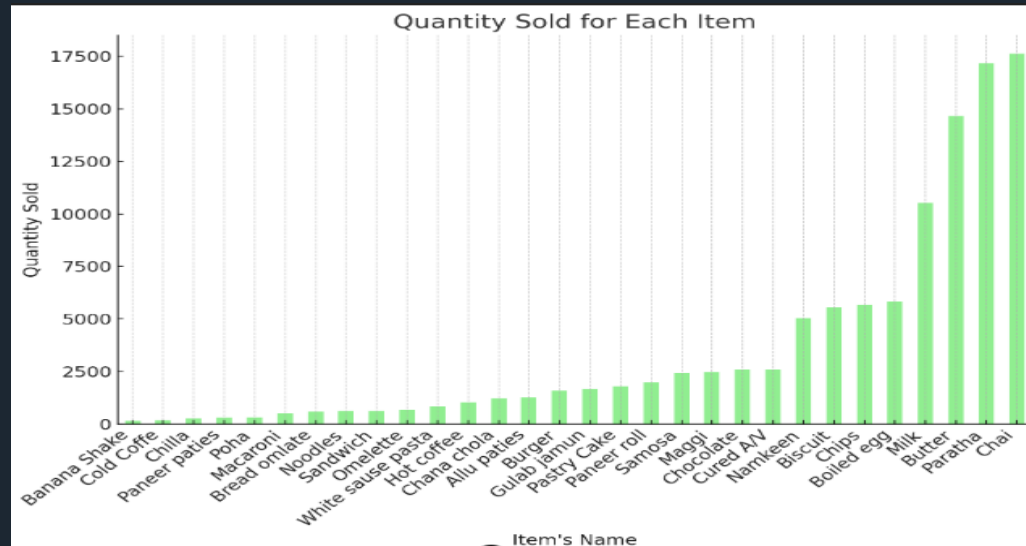
- **Top Performers**: Milk, Paratha, and Chai are the top three items in terms of sales amount, significantly higher than the others.
- **Middle Performers**: Items like Chips, Chocolate, and Butter have moderate sales amounts.
- **Lower Performers**: Items such as Poha, Paneer patties, and Banana Shake have relatively low sales amounts


Total Sales Amount for Each Item
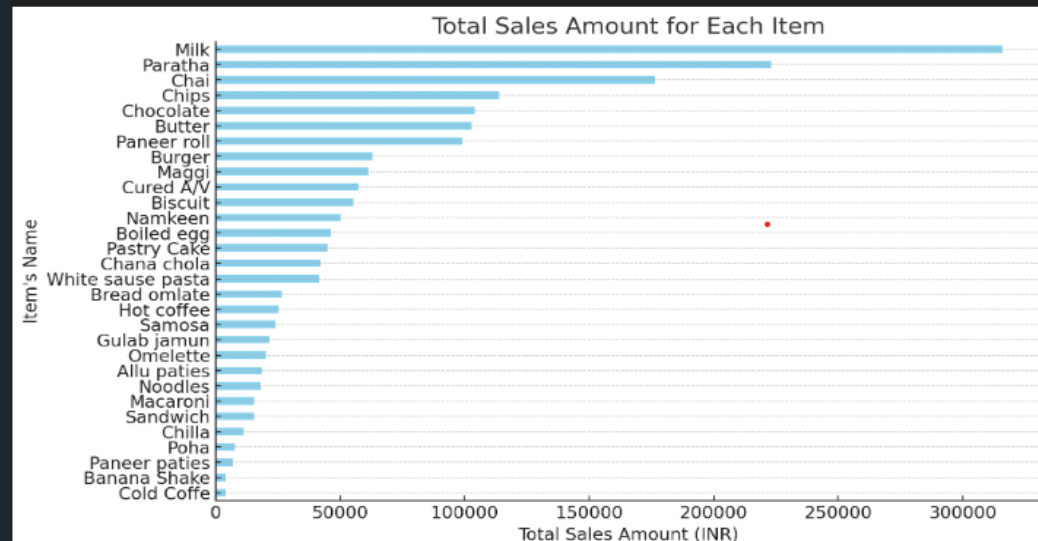
- **Milk as Revenue Leader:** High demand makes Milk critical for inventory and sales strategies.
- **Strong Traditional Items:** Paratha, Chai, and Chips are key for steady revenue due to high demand or pricing.
- **Steady Snack Revenue:** Burger, Maggi, and Biscuit are important for consistent revenue.
- **Boost Low Revenue Items:** Improve marketing and pricing for Gulab Jamun, Omelette, and Cold Coffee to increase sales.

Comparison of Percent Total Quantity Sold and Percent Total Revenue Generated for Top 10 Items

Comparison of Percent Total Quantity Sold and Percent Total Revenue Generated for Least 10 Items

- **High Revenue Items:** Chai, Biscuit, Curd (A/V), and Chocolate generate higher revenue percentages compared to their quantity sold, indicating higher prices or profit margins.
- **High Quantity, Lower Revenue:** Milk, Paratha, and Butter sell in high quantities but have lower revenue percentages, suggesting lower prices or frequent discounts.
- **Balanced Items:** Boiled Egg and Chips have consistent percentages, indicating a balanced relationship between sales volume and revenue.
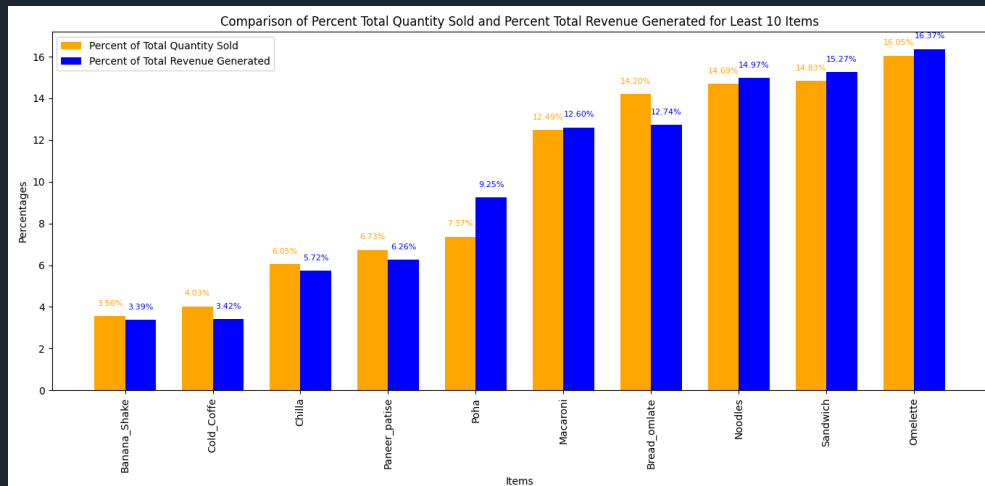
- **Price Consistency:** Macaroni, Noodles, Sandwich, and Omelette show balanced sales and revenue percentages, indicating consistent pricing.
- **Higher Revenue:** Poha generates higher revenue compared to sales volume, suggesting higher profitability.
- **Lower Revenue:** Cold Coffee and Bread Omelette have lower revenue percentages, indicating potential pricing issues or frequent discounts.

Revenue Generated by Top 5 Items
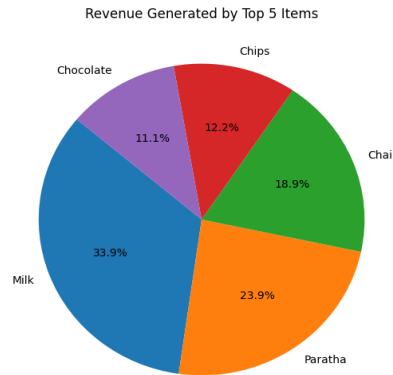
- **Milk:** Highest revenue generator (33.9%), 4th highest-selling item.
- **Paratha:** Second highest revenue (23.9%), 2nd most sold item.
- **Chai:** Third highest revenue (18.9%), most sold item but lower revenue due to low price.
- **Chips:** Fourth highest revenue (12.2%), 6th most sold item.
- **Chocolate:** Fifth highest revenue (11.1%), 10th most sold item.

Milk and Biscuit Sales Over Time
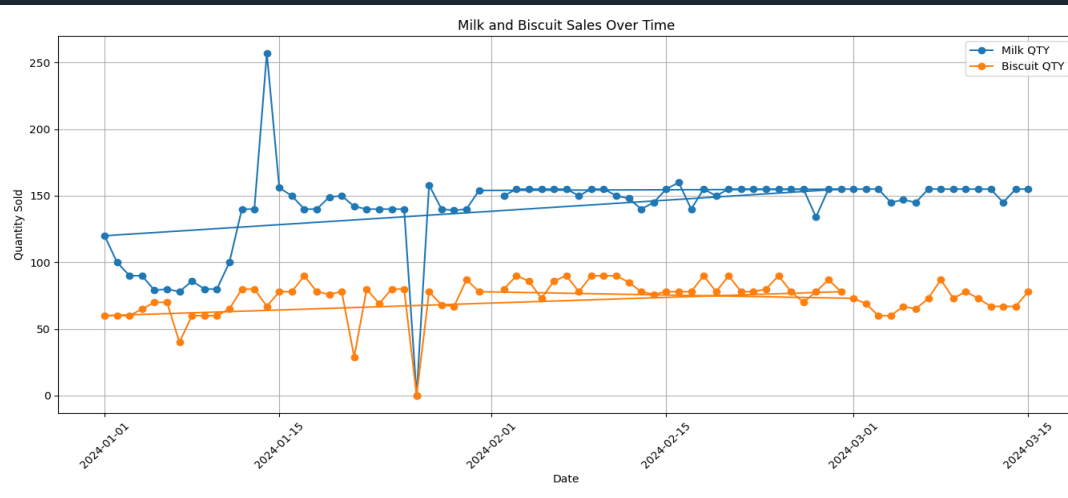
- **Milk Sales Trend:** Initial decrease, sharp increase mid-January, peaking at over 250 units, then stabilizing around 150 units per day. Overall, slight increase.
- **Biscuit Sales Trend:** Relatively stable with minor fluctuations, starting around 50 units per day, peaking at 75 units. Overall, slight increase.
- **Key Observations:** Milk sales are more volatile with significant peaks and troughs, while biscuit sales are steadier. Both show an upward trend over time.
- **Conclusion:** These insights assist in inventory management and planning for future demand in the hostel canteen.

Results and Key Findings

Sales Trends: Milk sales showed significant Inconsistency but ultimately increased, while biscuit sales remained stable with a slight increase. Both items experienced stockouts, emphasizing the need for better inventory management.

Item Performance: Top-selling items include Milk, Paratha, Chai, and Butter.

Revenue Generation: Milk, Paratha, and Chai were top revenue generators, with items like Poha and Bread Omelette yielding higher revenue relative to sales quantity, indicating higher profit margins.

Correlation Analysis: High positive correlation between Banana Shake and Cold Coffee suggests they are often sold together, relevant for inventory and promotion planning.

Price and Sales Relationship: High-priced items like Bread Omelette, Noodles, Macaroni, and Chilla had low sales, indicating that re-evaluating pricing strategies could boost their sales.

Recommendations for Improvement

Focus on High-Revenue Items: Promote high-revenue items like Milk, Paratha, and Chai to maximize profitability.

Inventory Management: Ensure high-demand items like Milk and Biscuits are always in stock to prevent shortages and minimize waste.

Proper Menu Card: Develop a clear menu card to improve customer experience and help customers make informed choices.

Limited Seating Space: Optimize seating space to enhance customer comfort and prevent loss of business during peak hours.

Menu Adjustments: Adjust the menu based on item popularity and introduce new items similar to high-selling ones.

Create a feedback form to collect valuable customer feedback for business improvement.