



Business Data Management



Project Proposal

GrocerAnalytics:

Grocery Insights Deep Dive

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Declaration Statement

I express my gratitude to Kamal Store for their support in providing the necessary resources for the completion of my project titled **“GrocerAnalytics: Grocery Insights Deep Dive”**.

I affirm that all data presented and analyzed in this project report is authentic and accurate to the best of my knowledge and capabilities. The data has been collected from primary sources and subjected to thorough analysis to ensure its reliability.

Furthermore, I confirm that all methods employed for data collection and analysis are comprehensively described in this report. The conclusions and insights drawn from the data represent an honest reflection of the findings obtained through rigorous analytical processes.

I am committed to upholding the principles of academic honesty and integrity, and I am open to any further scrutiny or validation of the data presented in this project report.

I acknowledge that this project is intended for individual completion and has not involved any collaborative efforts with other individuals. All work presented in this report has been conducted solely by me. In the event of any detected plagiarism in the report during any stage of the project's completion, I am fully prepared to accept any disciplinary measures imposed by the relevant authority.

I understand that all recommendations provided in this project report are made within the context of academic requirements for the BS Degree Program offered by IIT Madras. The institution does not endorse any claims or opinions expressed herein.

Signature of Candidate: 

Name: SHIVANI GUPTA

Date: 05/06/2024

Executive Summary:

The data for this project was collected from a medium-sized B2C business located in Narela, Delhi, with an annual turnover of ₹1.2 crore. The decision to select this particular business was influenced by several factors:

- The business is owned by my father, who consented to share the necessary data.
- It is a prominent supplier of grocery products in the local area.
- The owner possesses a sufficient level of education to understand the project proposal.

Data Collection:

Data collection involved personally gathering information from the owner's unorganized records, utilizing methods such as:

- Reviewing book-keeping records in the bill book.
- Examining previously issued bills stored in an unorganized manner.

The collected data spans a period of two months, from April to May, with an initial stock recorded as of March 31st. Data collection will continue until sufficient information is gathered to draw meaningful conclusions for the business model.

The following products were included in the data collection process:

CHAKKI ATTA, MILL ATTA, RAW RICE, SELA RICE, ARHAR DAL, URAD DAL,
MOONG DAL, CHOLE, RAJMA, COOKING OIL, REFINED, GHEE, CASHEW,
MAKHANA, ELAICHI

Organization Background:

Name: KAMAL STORE

Owner: Mr. Kamal Gupta

Address: Gautam Colony, Safiabad Road, Narela, Delhi-110040

- Established in 2014, KAMAL STORE is an enterprise dedicated to distributing a diverse range of grocery products, including Dal, Rice, Ghee, Atta, and more.
- The business ventured into retail with an initial working capital of Rs 22 lakh. This capital was allocated toward acquiring fixed assets such as a godown and furniture, as well as variable assets to ensure a strong foundation.

After discussions with the business owner and conducting a thorough analysis, it became evident that KAMAL STORE experienced significant growth and success initially. However, in recent times, there has been a noticeable decline in sales and profit margins across several key products. This decline can be primarily attributed to the emergence and increasing popularity of online marketing platforms. As a result, there is a pressing need for strategic adjustments to regain and enhance the store's competitive position in the market.

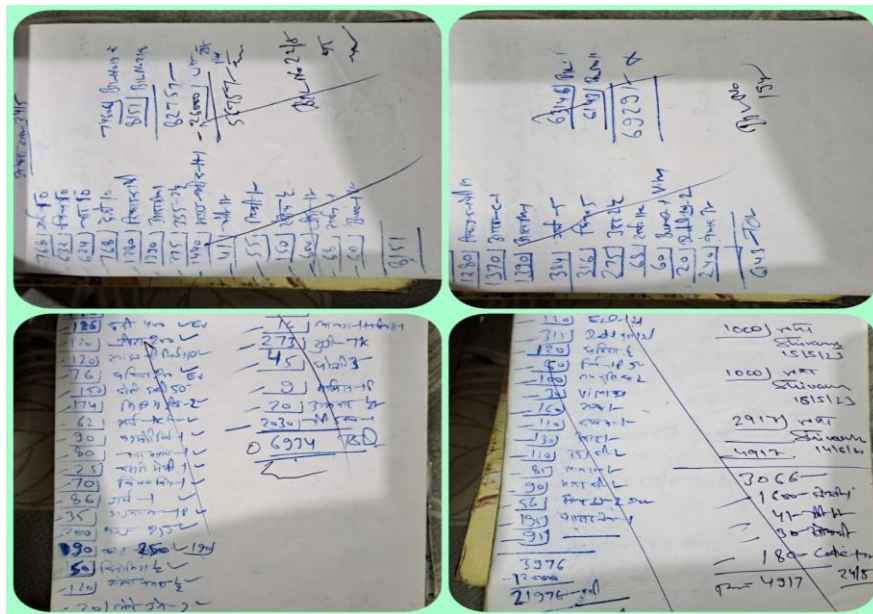


Figure-1: Sales record (informal)

(Here, cut lines indicate that the corresponding bills have been cleared and there is no borrowing associated with those bills)



Figure-2: Shop View

Problem Statement (Listed as Objectives):

Based on my discussions with the business proprietor and observations of the business's operations, it's apparent that while the business has successfully cultivated strong customer relationships and achieved satisfactory sales figures, there are areas of concern:

- Certain products are not meeting profit expectations.
- There's an issue of overstocked inventory, which poses risks such as product damage and subsequent financial losses, potentially burdening the business with significant expenses.

As a result, the problem statement can be summarized as follows:

- Inventory Optimization: This involves analyzing inventory using sales data and intake patterns to ensure optimal stock levels.
- Profit Margin Analysis: This entails identifying areas where efficiencies can be enhanced and costs managed more effectively to improve overall profitability.

Background of the Problem:

After extensive discussions with the owner, it's evident that the business performed well prior to rise of online shopping. Despite its advantageous location surrounded by residential buildings, ensuring a steady customer flow, the business has faced challenges in expanding or modernizing its facilities.

Upon closer examination,

- Inadequate sales forecasting and improper inventory management emerged as significant contributors to the current situation.
- Furthermore, some products at this establishment are priced lower compared to competitors.

Based on these findings, I believe that applying the knowledge, skills, and tools gained in the course is best achieved by conducting a comprehensive analysis of the business to identify practical and effective solutions.

Problem Solving Approach:

Details about the methods used with Justification:

- Utilization of Time-Series Data: This allows for effective plotting of trend lines, scatter plots, and pivot tables to identify patterns and trends over time.
- Use of Pivot Tables: Pivot tables enable efficient computation and visualization of insights through pie charts and stacked histograms, facilitating a clearer understanding of the data.

- Application of Financial Metrics: Implementing financial metrics such as gross profit, net profit, and profit margins helps in addressing business challenges effectively by providing a clear picture of the business's financial health.

Details about the intended data collection with Justification:

- Focusing on a selected set of 15 products ensures a detailed and manageable analysis, facilitating targeted problem-solving efforts.
- Variables for above products including purchasing price, selling price, quantity sold, quantity purchased, and opening stock as of April 1st are gathered.
- Planning to compute key financial quantities like revenue, expenditure, gross profit, net profit, profit margin, average inventory, wastage due to damage and of financial metrics like Gross Profit Ratio, Net Profit Ratio, Assets Turnover Ratio, Return on Capital Employed and Return on Assets etc.

Details about the analysis tools with Justification:

- Utilizing Excel as the primary analysis tool for data processing and manipulation.
- Leveraging various Excel functions such as SUM, AVERAGE, VLOOKUP for data computation and pivot tables for filtering & computing the data row/column wise.
- For data visualization, using Excel's charting capabilities (line, column, combo, pie, histogram charts) which facilitates clear visualization of trends & patterns for informed decision-making.

Expected Timeline:

Work Breakdown Structure:

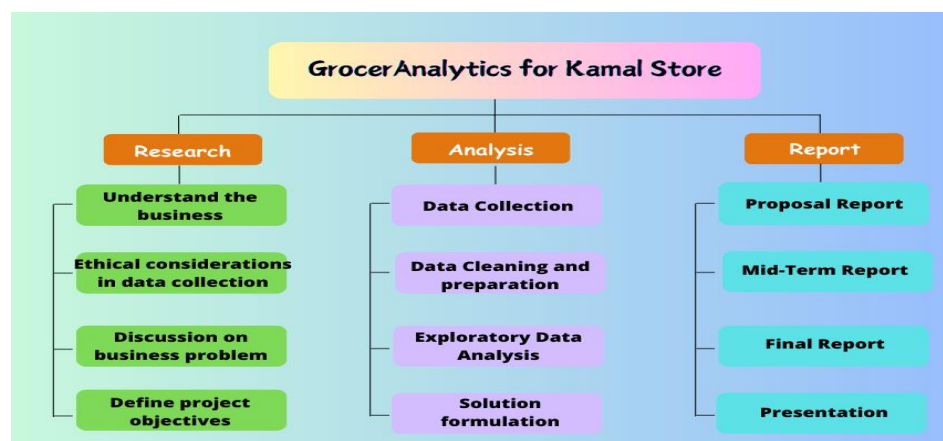


Figure-3: Work Breakdown Structure

Gantt Chart:

This Gantt chart outlines a six-week plan for the GrocerAnalytics project. Each task is represented by a bar indicating its duration and progress.

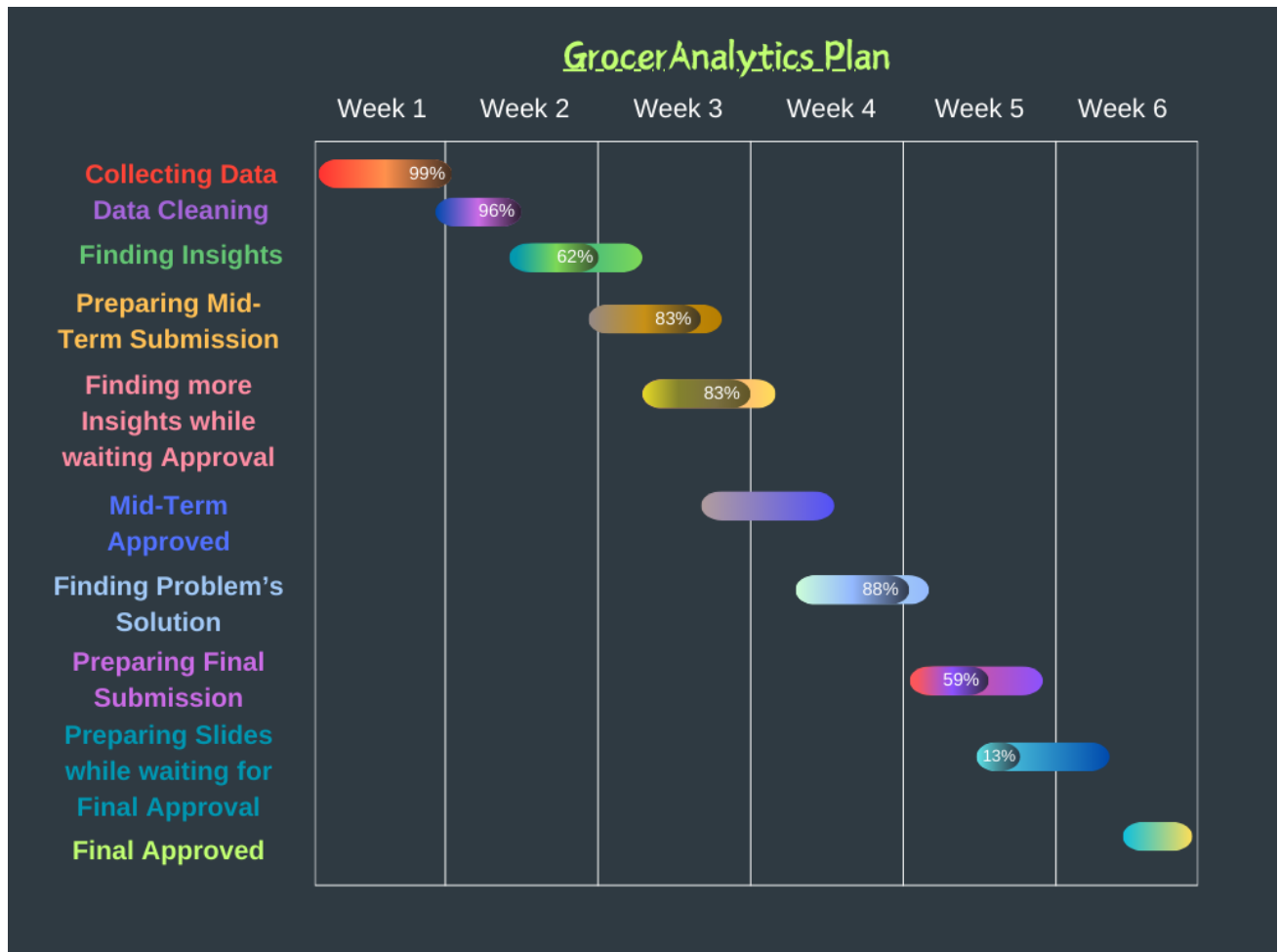


Figure-4: Gantt Chart

The "Mid-Term Approved" and "Final Approved" tasks are shown as blank since they depend on external approval and are not in my control.

Expected Outcome:

- Assist the owner in optimizing business operations through the creation of pivot tables and graphs for better organization.
- Propose optimal solutions for inventory management to address existing challenges.
- Develop a comprehensive business plan aimed at increasing profit margins and resolving the aforementioned issues.