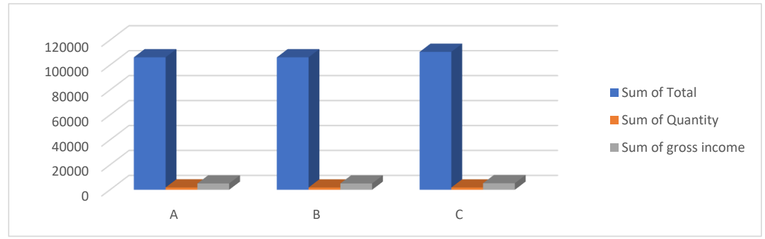
Introduction

The ability to analyze supermarket sales data effectively is essential for gaining valuable insights into customer behavior, product performance, and overall business operations. This project focuses on exploring a comprehensive dataset of supermarket sales to answer critical business questions, as outlined in the accompanying project document. By addressing these questions, we aim to uncover actionable trends and patterns to support strategic decision-making.

The scope of this project encompasses several key areas of analysis, including customer demographics, product and pricing performance, sales trends, profitability, and multivariate analysis. Some of the questions we aim to answer include identifying the branch with the highest sales, understanding customer purchasing behavior based on membership status, evaluating the performance of different product lines, and determining the impact of payment methods on revenue.

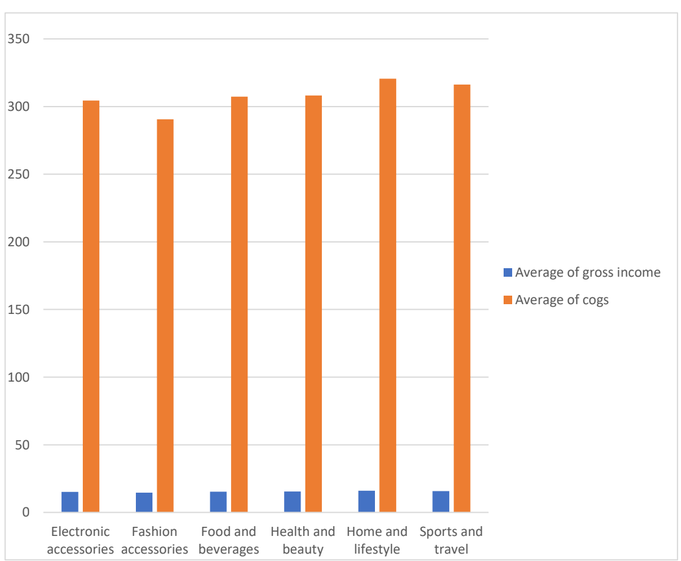
Data Collection

For this analysis we need a supermarket sales dataset. So kaggle.com is the best way to get dataset. There are hundreds of datasets uploaded here and I can create my own datasets. To collect a proper dataset I first took help from chatgpt to find out which dataset from kaggle.com is good for me. Accounting related and sales related dataset in chatgpt between kaggle.com website chatgpt gives me idea about supermarket sales report. Then I went to the kaggle.com website and searched by typing supermarket sales report and I got this dataset which link is https://www.kaggle.com/datasets/aungpyaeap/supermarket-sales. The primary dataset, containing detailed supermarket sales records, was obtained in Excel format.



SUPERMARKET SALES ANALYSIS
CREATED BY
MD TANVIR ANAYETULLA

Row Labels	Sum of gross income
Electronic accessories	**2587.5015**
A	872.2435
B	811.9735
C	903.2845
Fashion accessories	**2585.995**
A	777.7385
B	781.5865
C	1026.67
Food and beverages	**2673.564**
A	817.2905
B	724.5185
C	1131.755
Health and beauty	**2342.559**
A	599.893
B	951.46
C	791.206
Home and lifestyle	**2564.853**
A	1067.4855
B	835.6745
C	661.693
Sports and travel	**2624.8965**
A	922.5095
B	951.819
C	750.568
Grand Total	**15379.369**



Row Labels	Average of Tax 5%
A	14.87400147
B	15.2320241
C	16.05236738
Grand Total	**15.379369**

- **Descriptive Statistics:**
  - Summary statistics (e.g., mean, median, mode, and standard deviation) were calculated for key variables to understand general trends.
- **Visualization:**
  - Charts (e.g., bar charts, pie charts, and scatter plots) and graphs were used to identify patterns and trends across branches, product lines, and customer segments.

Row Labels	Sum of Total	Sum of Quantity	Sum of gross income
A	**106200.3705**	**1859**	**5057.1605**
B	**106197.672**	**1820**	**5057.032**
C	**110568.7065**	**1831**	**5265.1765**

Row Labels	Average of Rating
A	**7.027058824**
Electronic accessories	6.911666667
Fashion accessories	6.878431373
Food and beverages	7.253448276
Health and beauty	6.9
Home and lifestyle	6.930769231
Sports and travel	7.257627119
B	**6.818072289**
Electronic accessories	7.116363636
Fashion accessories	6.722580645
Food and beverages	6.994
Health and beauty	7.1
Home and lifestyle	6.516
Sports and travel	6.509677419
C	**7.072865854**
Electronic accessories	6.747272727
Fashion accessories	7.44
Food and beverages	7.08030303
Health and beauty	6.998076923
Home and lifestyle	7.06
Sports and travel	7.028888889
Grand Total	**6.9727**