

## Data Collection and Preprocessing Phase

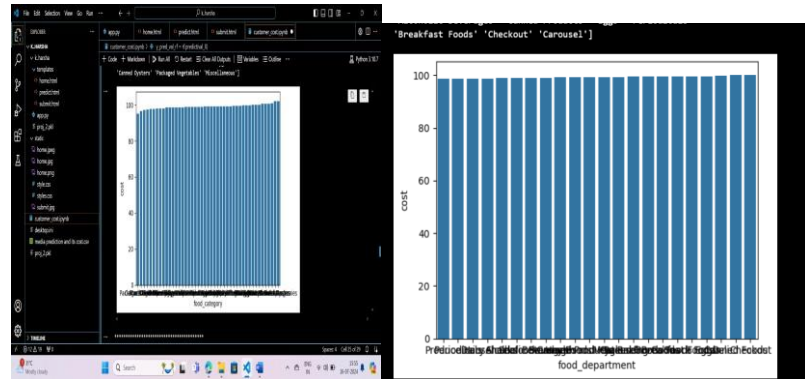
Date	20 June 2024
Team ID	740038
Project Title	Customer Acquisition cost estimation using Machine Learning.
Maximum Marks	6 Marks

### Data Exploration and Preprocessing Report

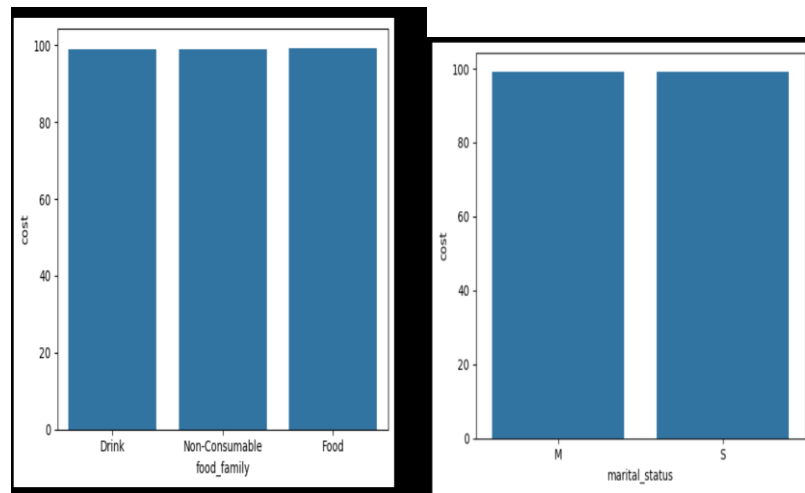
Dataset variables will be statistically analysed to identify patterns and outliers, with Python employed for preprocessing tasks like normalization and feature engineering. Data cleaning will address missing values and outliers, ensuring quality for subsequent analysis and modeling, and forming a strong foundation for insights and predictions.

Section	Description																																																																																																			
Data Overview	<table><tr><th></th><th>store_sales(in millions)</th><th>store_cost(in millions)</th><th>unit_sales(in millions)</th><th>total_children</th><th>avg_cars_at home(approx)</th><th>num_children_at home</th><th>avg_cars_at home(approx).1</th></tr><tr><td>count</td><td>60428.000000</td><td>60428.000000</td><td>60428.000000</td><td>60428.000000</td><td>60428.000000</td><td>60428.000000</td><td>60428.000000</td></tr><tr><td>mean</td><td>6.541031</td><td>2.619460</td><td>3.093169</td><td>2.533875</td><td>2.200271</td><td>0.829351</td><td>2.200271</td></tr><tr><td>std</td><td>3.463047</td><td>1.453009</td><td>0.827677</td><td>1.490165</td><td>1.109644</td><td>1.303424</td><td>1.109644</td></tr><tr><td>min</td><td>0.510000</td><td>0.163200</td><td>1.000000</td><td>0.000000</td><td>0.000000</td><td>0.000000</td><td>0.000000</td></tr><tr><td>25%</td><td>3.810000</td><td>1.500000</td><td>3.000000</td><td>1.000000</td><td>1.000000</td><td>0.000000</td><td>1.000000</td></tr><tr><td>50%</td><td>5.940000</td><td>2.385600</td><td>3.000000</td><td>3.000000</td><td>2.000000</td><td>0.000000</td><td>2.000000</td></tr><tr><td>75%</td><td>8.670000</td><td>3.484025</td><td>4.000000</td><td>4.000000</td><td>3.000000</td><td>1.000000</td><td>3.000000</td></tr><tr><td>max</td><td>22.920000</td><td>9.726500</td><td>6.000000</td><td>5.000000</td><td>4.000000</td><td>5.000000</td><td>4.000000</td></tr><tr><td colspan="8">8 rows × 23 columns</td></tr></table>		store_sales(in millions)	store_cost(in millions)	unit_sales(in millions)	total_children	avg_cars_at home(approx)	num_children_at home	avg_cars_at home(approx).1	count	60428.000000	60428.000000	60428.000000	60428.000000	60428.000000	60428.000000	60428.000000	mean	6.541031	2.619460	3.093169	2.533875	2.200271	0.829351	2.200271	std	3.463047	1.453009	0.827677	1.490165	1.109644	1.303424	1.109644	min	0.510000	0.163200	1.000000	0.000000	0.000000	0.000000	0.000000	25%	3.810000	1.500000	3.000000	1.000000	1.000000	0.000000	1.000000	50%	5.940000	2.385600	3.000000	3.000000	2.000000	0.000000	2.000000	75%	8.670000	3.484025	4.000000	4.000000	3.000000	1.000000	3.000000	max	22.920000	9.726500	6.000000	5.000000	4.000000	5.000000	4.000000	8 rows × 23 columns																										
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## Univariate Analysis



## Bivariate Analysis



## Outliers and Anomalies

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## Data Preprocessing Code Screenshots

Loading Data	<pre>dataset=pd.read_csv("media prediction and its cost.csv") dataset.head()</pre> <div>Python</div>								
		food_category	food_department	food_family	store_sales(in millions)	store_cost(in millions)	unit_sales(in millions)	promotion_name	sales_country
	0	Breakfast Foods	Frozen Foods	Food	7.36	2.7232	4.0	Bag Stuffers	USA
	1	Breakfast Foods	Frozen Foods	Food	5.52	2.5944	3.0	Cash Register Lottery	USA
	2	Breakfast Foods	Frozen Foods	Food	3.68	1.3616	2.0	High Roller Savings	USA
	3	Breakfast Foods	Frozen Foods	Food	3.68	1.1776	2.0	Cash Register Lottery	USA
	4	Breakfast Foods	Frozen Foods	Food	4.08	1.4280	3.0	Double Down Sale	USA
	5 rows × 40 columns								
Handling Missing Data									
Data Transformation	-----								
Feature Engineering	Attached the codes in final submission.								
Save Processed Data	-								