Topic: Regression with a Tabular Media Campaign Cost Dataset

1. Introduction:

Food Mart (CFM) is a chain of convenience stores in the United States. The private company's headquarters are located in Mentor, Ohio, and currently, approximately 325 stores are located in the US. Convenient Food Mart operates on the franchise system.

Food Mart was the nation's third-largest chain of convenience stores as of 1988. The NASDAQ exchange dropped Convenient Food Mart the same year when the company failed to meet financial reporting requirements.

Carden & Cherry advertised Convenient Food Mart with the Ernest character in the 1980s. The task is to devise a Machine Learning Model that helps us predict the cost of media campaigns in the food marts on the basis of the features provided.

2. A few of the Data Sets going to be used:

1. store_sales(in millions) ---- store_sales(in million dollars)
2. unit_sales(in millions) ---- unit_sales(in millions) in stores Quantity
3. Total_children ---- total children in home
4. avg_cars_at home(approx) ---- avg_cars_at home(approx)
5. Num_children_at_home ---- num_children_at_home AS PER CUSTOMERS FILLED DETAILS

3. Description of datasets: The dataset offers a rich resource for analyzing consumer behavior, preferences, and the impact of various store attributes on sales performance. By examining these variables, businesses can tailor their strategies to better meet customer needs, optimize inventory management, and enhance overall profitability. Additionally, insights derived from this dataset can inform targeted marketing campaigns, product development efforts, and operational decisions aimed at improving customer satisfaction and driving growth in the retail sector.

5. Algorithm Used: Linear Regression

Linear regression is a statistical approach for modeling the relationship between a dependent variable and one or more independent variables. By fitting a linear equation to observed data, it enables the prediction of the dependent variable's values based on the independent variables. Widely utilized across disciplines, linear regression aids in understanding and quantifying the associations between variables, facilitating predictive analysis and decision-making.

6. Conclusion: The task involves creating a linear regression model to predict media campaign costs for Food Mart stores based on features such as store sales, unit sales, and demographic data like total and household children. This model aims to establish a relationship between these variables to forecast campaign expenses accurately.