**Project Title: Advertising Impact Analysis**

The "Advertising Impact Analysis" project aims to analyze the relationship between advertising expenditure across different channels (such as TV, radio, online) and its impact on sales or revenue. The goal of the project is to understand how various advertising strategies influence consumer behavior and drive business outcomes, specifically in terms of sales performance.

By conducting an advertising impact analysis, the project aims to provide valuable insights to companies on the effectiveness of their advertising strategies, identify the most impactful advertising channels, and optimize marketing efforts to maximize sales performance and overall business success.

**Project Goal:** To assess the effectiveness of advertising expenditure on different channels in influencing sales or revenue for a company.

**Methodology:**

1. Data Collection: Gathered a dataset containing information on advertising expenses and corresponding sales data from the Kaggle website

2. Data Preprocessing: Clean and prepared the data for analysis, handling missing values, and checking outliers.

3. Exploratory Data Analysis (EDA): Explored the dataset to understand the relationships between advertising expenditure and sales/revenue.

4. Interpretation of Results: Analyzed the coefficients of the model to identify which advertising channels have the most significant impact on sales.

5. Simple Linear Regression Modeling: Implemented a simple linear regression model to quantify the impact of advertising expenditure on sales.

6. Model Training and Evaluation: Evaluated the model’s performance using Mean Squared Error (MSE), Root Mean Squared Error, R-squared and Residual Analysis.

7. Prediction and Analysis: Made predictions on new data to estimate sales/revenue based on advertising expenses and draw meaningful insights from the results.

8. Conclusion and Recommendations: Summarized findings, interpret the impact of different advertising channels on sales, and provide recommendations for optimizing advertising strategies.