**Advertising Sales Prediction Using Linear Regression**

**1. Introduction**

This project focuses on predicting **sales revenue** based on advertising expenditures for **TV, Radio, and Newspapers**. Using a **Linear Regression** model, we aim to analyze the impact of different media channels on sales and develop a predictive model.

**2. Dataset and Preprocessing**

The dataset, Advertising.csv, contains **200 observations** with the following features:

* **TV**: Budget spent on TV advertisements
* **Radio**: Budget spent on Radio advertisements
* **Newspaper**: Budget spent on Newspaper advertisements
* **Sales (Target Variable)**: Sales revenue generated

The dataset was **split into training (80%) and testing (20%)** to evaluate model performance.

**3. Model Training**

We applied **Linear Regression** using LinearRegression() and trained the model on the **training dataset**.

**4. Model Evaluation**

The model was tested on unseen **test data**, and its performance was measured using the **R² score**:

* **R² Score:** The model achieved an accuracy between **0.80 to 0.93**, indicating a **strong correlation** between advertising budgets and sales revenue.