ABSTRACT

**Big Mart Sales Prediction System**

This mini-project explores the application of machine learning techniques to predict sales for BigMart, aiming to improve forecasting accuracy and strategic decision-making. We utilize a comprehensive dataset encompassing historical sales, promotional activities, store attributes, and external economic indicators. Advanced machine learning algorithms, including Random Forest, Gradient Boosting Machines, and Neural Networks, are employed to model complex relationships and patterns in the data. Feature engineering is appliedto incorporate variables such as store locations and product categories, enhancing model performance.

The predictive models are evaluated using metrics such as Mean Absolute Error (MAE) and Root Mean Squared Error (RMSE), demonstrating improved accuracyover traditional methods. The results offer actionable insights for optimizing inventory management and marketing strategies, supporting better financial planning and operational efficiency for BigMart.

This mini-project demonstrates that integrating advanced analytical techniques and machine learning into sales forecasting can significantly improve accuracy and provide valuable insights. By adopting these methods, BigMart can make more informed decisions, optimize operations, and enhance overall financial performance.

# Technologies:

HTML, CSS, Python

# Group Members:

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