

Forecasting Big Mart Sales: A Machine Learning Approach

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Abstract: *In modern supermarkets like Big Marts, meticulous tracking of sales data for each item is pivotal for projecting latent consumer demand and streamlining operational strategies. This entails anticipating product demand for inventory management, logistics, and optimal resource allocation. By strategically dissecting the vast reservoir of sales data, insights are consistently root out, revealing anomalies and overarching trends. Employing a deliberate entanglement of data warehousing, the data store continually exposes nuanced patterns. Establishments like Big Mart harness this trove of information to predict forthcoming transaction volumes through diverse machine learning methodologies, akin to the practices observed in prominent retail giants such as big bazaars. The prevailing machine learning algorithms have reached a pinnacle of sophistication, furnishing tools to predict or comprehend transactions of various natures. This capability proves invaluable in shaping and honing marketing strategies, extremely through more precise and informed forecasting. This study introduces a predictive model, leveraging advanced methods involves linear regression and Ridge regression, for dissecting the transactional dynamics of an enterprise like Big Mart. Notably, this model's performance surpassed standalone methodologies.*

Keywords: Polynomial Regression, Linear Regression, Mean Absolute Error, XgBoost Regression, Ridge Regression

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