

Project Initialization and Planning Phase

Date	06 May 2024
Team ID	722312
Project Title	Walmart Sales Analysis For Retail Industry With Machine Learning
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) template

Suggests using data analysis and machine learning to help Walmart managers make better decisions about sales and inventory, including creating a user-friendly dashboard for easy access to insights.

Project Overview	
Objective	utilize data analysis and machine learning to provide Walmart managers with actionable insights for optimizing sales strategies and inventory management.
Scope	the analysis of historical sales data from Walmart stores, the development and evaluation of machine learning models for sales forecasting, and the creation of a user-friendly dashboard for accessing sales insights. The project's scope extends to providing actionable recommendations for optimizing sales strategies and inventory management based on the insights derived from the data analysis and machine learning models.
Problem Statement	
Description	<p>Clearly articulate the problem to be addressed</p> <p>the ineffective sales forecasting and inventory management at Walmart stores due to limited insights from historical sales data.</p>
Impact	<p>Explain the implications of solving the problem</p> <p>Solving the problem leads to enhanced operational efficiency, optimized inventory levels, increased sales revenue, and improved customer satisfaction through data-driven decision-making and better product availability.</p>
Proposed Solution	
Approach	<p>Outline the methodology and techniques to be used</p> <p>The methodology involves data collection, preprocessing, and exploration, followed by the development and evaluation of machine learning models for sales forecasting. Techniques include statistical analysis, feature engineering, regression modeling, and evaluation metrics such as RMSE and MAE.</p>
Key Features	<p>Highlight the unique aspects of the proposed solution</p> <p>The proposed solution offers a comprehensive approach by combining advanced data analysis techniques with machine learning algorithms tailored specifically for Walmart's sales data. Additionally, the development of a user-friendly dashboard provides easy access to actionable insights, setting it apart from traditional methods of sales analysis.</p>

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	2 x NVIDIA V100 GPUs
Memory	RAM specifications	32 GB
Storage	Disk space for data, models, and logs	2 TB SSD
Software		
Frameworks	Python frameworks	Flask, TensorFlow, scikit-learn
Libraries	Additional libraries	scikit-learn, pandas, numpy, matplotlib
Development Environment	IDE, version control	Jupyter Notebook, Git
Data		
Data	Source, size, format	Walmart sales dataset, CSV format