

**Project Design Phase- 2**  
**Proposed Solution Template**

Date	9-11-2023
Team ID	TEAM-591736
Project Name	<b>Project - Walmart Store Sales Forecasting</b>
Maximum Marks	2 Marks

**Proposed Solution Template:**

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The problem is to accurately forecast the impact of holidays on the sales of Walmart stores using historical data. Specifically, the focus is on the Super Bowl, Labor Day, Thanksgiving, and Christmas holidays, which are marked by promotional markdown events.TE
2.	Idea / Solution description	Utilize advanced forecasting algorithms, including ARIMA, Random Forest, and XgBoost, to analyze historical sales data and predict the impact of holidays on store sales. Develop a comprehensive model that incorporates store information, monthly sales, and holiday-specific weights to improve accuracy. Implement Flask integration for creating a user-friendly interface to input new data and visualize predictions.
3.	Novelty / Uniqueness	The incorporation of holiday weights (five times higher for specified holidays) into the forecasting model provides a unique approach to understanding the impact of holidays on sales. Using a combination of ARIMA, Random Forest, and XgBoost allows for a more robust and accurate prediction model, capturing different aspects of the data.
4.	Social Impact / Customer Satisfaction	Accurate sales forecasting helps Walmart optimize inventory, staffing, and marketing strategies, leading to improved customer

		<p>satisfaction by ensuring product availability and better customer service.</p> <p>Efficient resource allocation based on accurate predictions contributes to a positive social impact by reducing waste and enhancing sustainability.</p>
5.	Business Model (Revenue Model)	<p>The business model involves offering the sales forecasting solution as a service to retail companies, especially those with a focus on holiday sales. Revenue can be generated through subscription models or one-time licensing fees for the predictive analytics tool.</p>
6.	Scalability of the Solution	<p>The solution is designed to be scalable, accommodating a growing number of stores and increasing data volumes. The algorithms employed are scalable, and Flask integration allows for easy deployment and scalability of the user interface.</p> <p>Integration with IBM deployment services ensures scalability in terms of hosting and managing the solution on cloud infrastructure.</p>