Project Design Phase-I
Proposed Solution Template

Date	20 September 2022
Team ID	592337 (Satvik Marwah and Himanshu Rana)
Project Name	Airline Review Classification Using Machine Learning

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 statement defines the core issue or challenge that your project addresses. In the context of "Airline Review Classification Using Machine Learning," the problem is to efficiently and accurately classify airline reviews into categories such as "Recommended" or "Not Recommended." This classification helps airlines and passengers gain insights into the quality of airline services, thereby improving customer satisfaction and business efficiency.
2.	Idea / Solution description	The idea or solution description outlines the approach or solution you propose to address the problem. In this project, the solution involves using machine learning classification models, including Decision Tree, Random Forest, and XGBoost, to analyze unstructured text data from airline reviews. By training these models, you aim to categorize reviews and provide actionable insights to airlines for enhancing their services. The project also involves sentiment analysis to convert reviews into sentiment scores, making the data more informative.
3.	Novelty / Uniqueness	The uniqueness of this project lies in its application of machine learning and natural language processing techniques to the analysis of airline reviews. It stands out for its potential to provide airlines with valuable, data-driven insights from customer feedback. The use of multiple classification models and sentiment analysis to gauge passenger sentiment is a unique feature, and the project's focus on improving the passenger experience is distinct in the airline industry.
4.	Social Impact / Customer Satisfaction	The project has a significant social impact on passengers and airlines. For passengers, it means improved customer satisfaction as airlines make data-driven decisions to enhance their services based on feedback. Passengers are more likely to have a better travel experience. For airlines, the project aids in refining services, ensuring they align with passenger expectations, and, in turn, this positively impacts customer satisfaction, loyalty, and brand reputation.

5.	Business Model (Revenue Model)	The revenue model for this project can take various forms. Airlines can benefit from insights to optimize their services, leading to increased passenger satisfaction, repeat business, and potentially higher revenues. The project can be monetized by offering airlines a subscription-based service or a one-time analysis fee. Additionally, airlines can use insights for targeted marketing or to develop premium services, generating additional revenue streams.
6.	Scalability of the Solution	The scalability of the solution refers to its ability to handle increased data and workload as the project evolves. In this context, the solution can be scaled effectively by incorporating more data sources, airline reviews, and additional machine learning models. The architecture can be designed to handle large volumes of data efficiently, making it adaptable as the project's scope expands to include multiple airlines and global reviews. The solution should be built to accommodate growth and increased demand.