

Project Design Phase-I
Proposed Solution Template

Date	18 October 2023
Team ID	Team-592779
Project Name	Machine Learning Model For Occupancy Rates And Demand In The Hospitality Industry
Maximum Marks	2 Marks

Proposed Solution Template:

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

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The problem statement is to accurately predict and manage occupancy rates and demand in the hospitality industry. Specifically, we aim to predict daily and seasonal variations in occupancy rates and demand for rooms, enabling hotels and accommodations to optimize pricing, staffing, and customer service.
2.	Idea / Solution description	Our solution involves developing a machine learning model that utilizes historical occupancy data, booking records, weather information, local events, holidays, and economic indicators. The model will provide daily and seasonal occupancy rate predictions, allowing hotels and customers to make data-driven decisions.
3.	Novelty / Uniqueness	What sets our solution apart is the incorporation of a comprehensive set of features, including external factors like weather and events, which are often overlooked in traditional occupancy prediction models. Additionally, our model will continuously adapt and learn from new data to provide dynamic pricing, improve accuracy and capture evolving trends.

4.	Social Impact / Customer Satisfaction	<p>Our solution contributes to improved customer satisfaction by helping hotels better manage their resources, leading to better service quality and lower costs. It also positively impacts job satisfaction for employees who can work more efficiently. This, in turn, enhances the overall social impact by improving the hospitality industry's attractiveness as an employer.</p> <p>Furthermore, individuals in search of a hotel room can anticipate demand and plan their bookings accordingly. This proactive approach enables them to more effectively organize their holidays and travel arrangements.</p>
5.	Business Model (Revenue Model)	<p>The revenue model involves several components:</p> <ul style="list-style-type: none"> · Licensing: Sell the predictive model and software to hotels and accommodations. · Subscription Services: Offer a subscription-based service for continuous model updates and support. · Consultancy: Provide consultancy and custom implementation services for specific hotel chains. · Advertisement: Provide advertising opportunities for other brands to publish their promotional posters/banners on the website.
6.	Scalability of the Solution	<p>Our solution is designed for scalability:</p> <ul style="list-style-type: none"> · Horizontal Scalability: The model and infrastructure can scale with increased data volume and customer demand. · Cloud-Based: Utilize cloud computing resources to easily expand as needed. · Global Reach: The solution can be applied to hospitality businesses worldwide, ensuring broad scalability.