Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	08 November 2023
Team ID	Team-592779
Project Name	Machine Learning Model For Occupancy Rates And Demand In The Hospitality Industry
Maximum Marks	4 Marks

Technical Architecture:

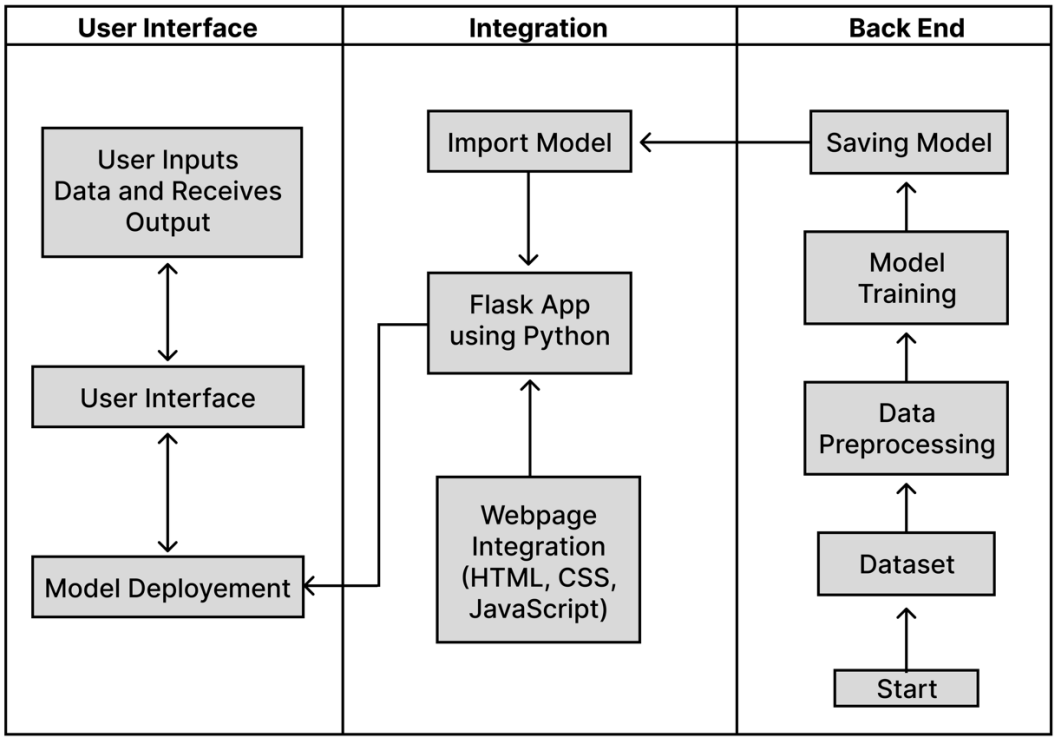

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The front-end component where users interact with the system.	HTML, CSS, JavaScript
2.	Application Logic-1	Application logic components responsible for specific tasks or functions.	Flask, Python
3.	Database	Storage for structured data, including historical data.	File Manager, MS Excel, Kaggle
4.	File Storage	Storing and managing file documents.	Amazon S3, Google Cloud Storage, Azure Blob Storage
5.	Framework	Integrating Frontend and Back End	Flask, Python
6.	Machine Learning Model	The core component for occupancy and demand prediction.	Python, scikit-learn, TensorFlow, Random Forest Classifier
7.	Infrastructure (Server / Cloud)	The server environment where the application runs.	Local System

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Utilizing open-source technologies and frameworks to build and maintain the application.	Python, scikit-learn, Flask, Tensor Flow
2.	Security Implementations	Implementing security measures to protect data and user privacy.	HTTPS
3.	Scalable Architecture	Designing the architecture to handle growth in data and user demand.	Horizontal scaling
4.	Availability	Ensuring high availability and minimizing downtime.	Redundancy, Failover systems, Load balancing
5.	Performance	Optimizing system performance to provide timely and accurate predictions.	Caching, Distributed computing, Parallel processing