

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

Date	03-11-23
Team ID	PNT2022TMID591862
Project Name	Project - IDENTIFYING AIRLINE PASSENGERS' SATISFACTION Using ML
Maximum Marks	4 Marks

### Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

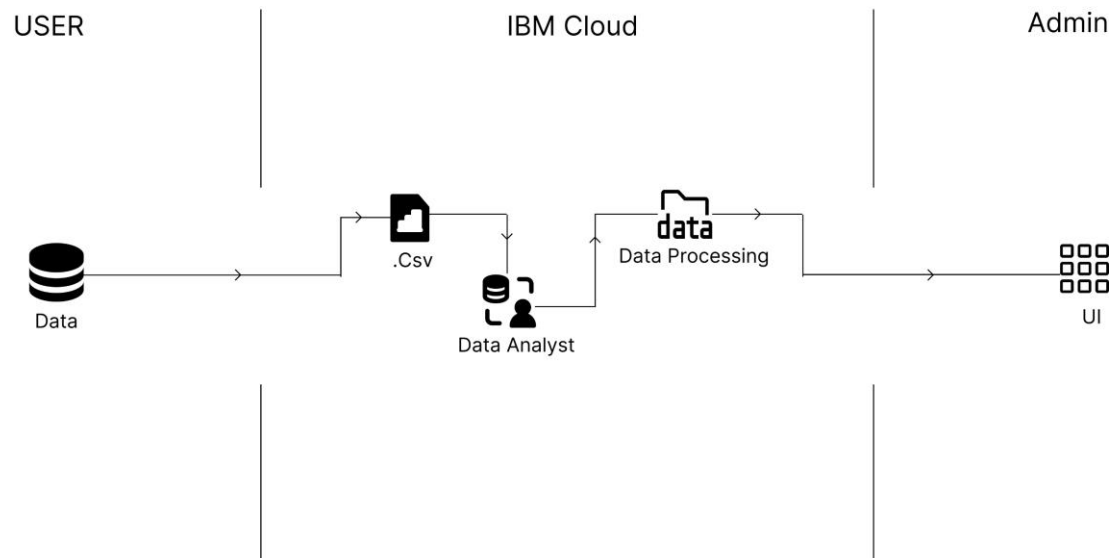


Figure 1 represents the Technical Architecture for the IDENTIFYING AIRLINE PASSENGERS' SATISFACTION Using ML

**Table-1: Components & Technologies:**

S. No	Component	Description	Technology
1	User Authentication	Handles user login and authentication	Authentication
2	Airline Selection UI	User interface for selecting airline company	Frontend
3	Flight Model Selection UI	User interface for choosing flight models	Frontend
4	Subscription Type UI	User interface for selecting subscription type	Frontend
5	Normal Dataset Collection	Logic for collecting datasets in normal subscription mode	Backend
6	Premium Dataset Collection	Logic for collecting datasets in premium subscription mode	Backend
7	Data Processing	Processes collected data (cleaning, transformation)	Backend
8	Data Analysis	Applies machine learning algorithms for data analysis	Machine Learning
9	Data Testing	Conducts testing on processed data	Backend
10	Prediction Generation	Generates predictions based on analysed data	Machine Learning
11	Overall Satisfaction Calculation	Calculates overall satisfaction percentage	Backend
12	Attribute-wise Satisfaction Calculation	Calculates satisfaction percentage for attributes	Backend

**Table-2: Application Characteristics:**

S. No	Characteristics	Description	Technology
1	User Authentication	Implements secure user login and authorization mechanisms.	Authentication protocols and libraries (e.g., OAuth)
2	User Interface	Provides intuitive interfaces for users to select airline companies, flight models, and subscription types.	Frontend frameworks and technologies (e.g., React, Angular)
3	Data Collection and Processing	Gathers, cleans, and processes datasets for analysis and prediction.	Backend technologies for data processing and transformation (e.g., Python, Java)
4	Machine Learning Integration	Integrates machine learning models for data analysis, prediction, and generating satisfaction percentages.	Machine learning frameworks and libraries (e.g., TensorFlow, Scikit-Learn)
5	Testing and Quality Assurance	Conducts testing on collected and processed data to ensure accuracy and reliability of predictions.	Testing frameworks and methodologies (e.g., Unit Testing, Integration Testing)

6	Database Management	Manages data storage, retrieval, and ensures data integrity.	Database management systems (e.g., MySQL, MongoDB)
7	Security and Access Control	Implements security measures to protect user data and restrict access based on roles and permissions.	Encryption algorithms, Access control mechanisms
8	Real-time Data Analysis	Provides real-time analysis of data to generate timely insights for airlines and passengers.	Stream processing technologies (e.g., Apache Kafka, Apache Flink)
10	Scalability and Performance	Ensures the system can handle a large volume of data and user requests efficiently.	Scalable architecture design, Load balancing, Caching mechanisms
12	Third-party Integrations	Integrates third-party APIs and services for additional data sources or functionalities.	API integration protocols (e.g., REST, GraphQL), Third-party API libraries and SDKs