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

Date	04 November 2023
Team ID	Team-592109
Project Name	Airline Review Classification Using Machine Learning
Maximum Marks	4 Marks

Technical Architecture:

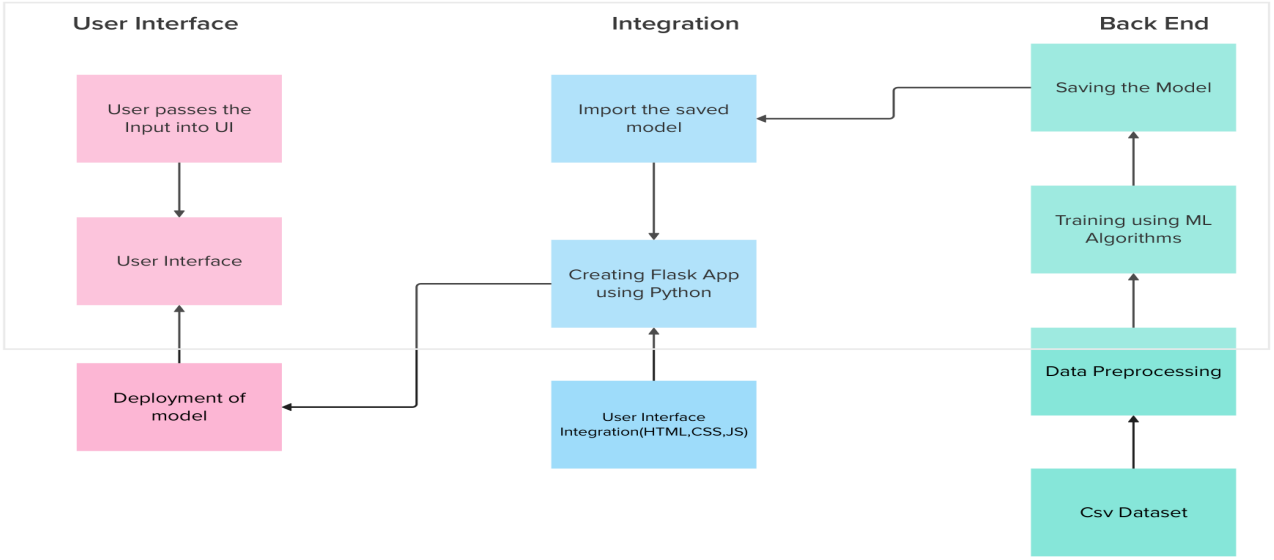

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web UI: Provides an interface where users input text for sentiment analysis or view the analysis results.	HTML, CSS, JavaScript
2.	Application Logic-1	Executes the classification models based on user input, processes the text, and returns sentiment predictions.	Python
3.	Database	Store the collected airline review dataset in a database, facilitating easy access and retrieval for model training.	File Manager
4.	File Storage/ Data	Adequate storage for storing the dataset, as well as for storing preprocessed or intermediate data during the training and testing phases.	Local System, Google Drive
5.	Frame Work	Utilize frameworks like Flask for developing the web application, integrating both the front-end (user interface) and back-end (logic and model).	Python, Flask,keras scikit learn
6.	Machine Learning Model	The machine learning model will classify the sentiments expressed in the airline reviews into positive, negative, or neutral categories based on the trained algorithms.	Machine Learning Algorithms.
7.	Infrastructure (Server / Cloud)	Installation of necessary software and tools on local machines for development and testing.	Local

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	**Flask**: For building the web application. **Scikit-learn**: Open-source machine learning frameworks for classification of airline reviews. **Pandas/Numpy**: For data pre-processing of the dataset.	Python's Flask ,Scikit Learn,Pandas/numpy
2.	Scalable Architecture	Can be used as a microservice which can be trained over the internet or a very isolated dataset.	Python,Scikit learn,etc
3.	Availability	Available freely to people which can be powered by a minimal use of ads.	Technology used
4.	Performance	Depending on the input the performance of the model will fluctuate, as a smaller isolated instance, the model can be expected to give the much sooner than a larger dataset model.	Python,Scikit learn,etc

References:

https://c4model.com/

https://www.leanix.net/en/wiki/ea/technical-architecture