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

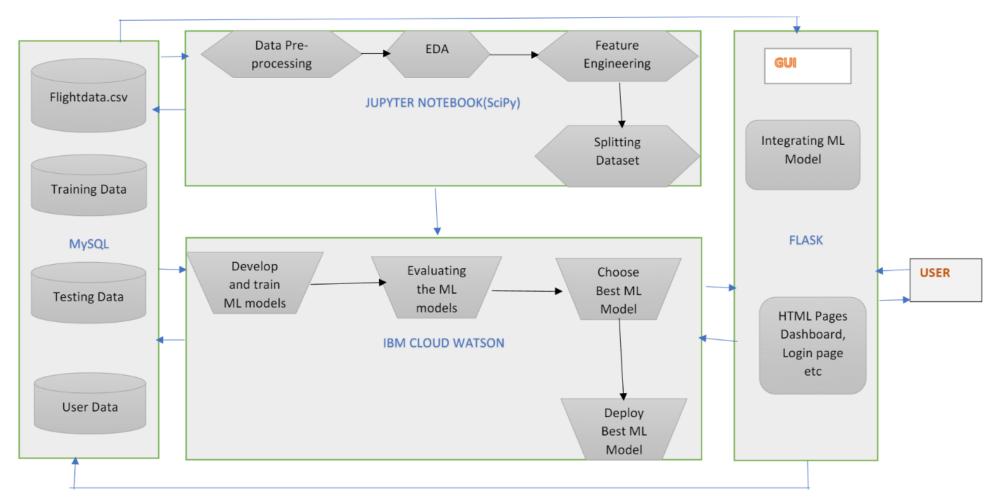| Date	03 October 2022
Team ID	PNT2022TMIDxxxxxx
Project Name	Developing a Flight Prediction Model using Machine Learning
Maximum Marks	4 Marks

Technical Architecture:

MySQL
- Flightdata.csv
- Training Data
- Testing Data
- User Data

JUPYTER NOTEBOOK(SciPy)
- Data Pre-processing → EDA → Feature Engineering → Splitting Dataset

IBM CLOUD WATSON
- Develop and train ML models → Evaluating the ML models → Choose Best ML Model → Deploy Best ML Model

FLASK
- GUI
- Integrating ML Model
- HTML Pages Dashboard, Login page etc

USER

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	Develop and train the mode;	Python
3.	Application Logic-2	Deploy the model in IBM cloud	IBM Watson STT service
4.	Application Logic-3	Integrating the python model with Flask environment	IBM Watson Assistant
5.	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	To deploy model in cloud	IBM Weather API, etc.
9.	Machine Learning Model	To perform the core concept	Object Recognition Model, etc.
10.	Infrastructure (Server / Cloud)	App deployment on cloud	Kubernetes

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Jupyter Notebook

S.No	Characteristics	Description	Technology
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	GUI
4.	Availability	Justify the availability of application (e.g. use of load balancers, distributed servers etc.)	IBM Cloud
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	IBM Watson App Service