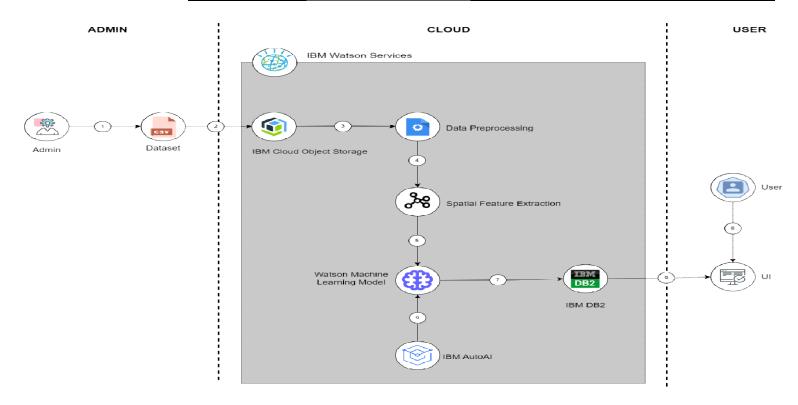# Project Design Phase-II
# Technology Stack (Architecture & Stack)

| Date | 08 November 2022 |
|------|------------------|
| Team ID | PNT2022TMID06101 |
| Project Name | Developing a flight delay prediction model using machine learning algorithm |
| Maximum Marks | 4 Marks |

| S.No | Component | Description | Technology |
|------|-----------|-------------|------------|
| 1. | User Interface | User can interacts with application through Web UI. | HTML , CSS , JavaScript , Bootstrap , Flask |
| 2. | Application Logic-1 | The user can enter the data in it is sent for the machine learning model for the prediction | Python |
| 3. | Application Logic-2 | The application is directly deployed in the IBM cloud | IBM Watson STT service |
| 4. | Database | The user credentials are stored ,which is used to send notification of any updates | MySQL |
| 5. | Cloud Database | Database Service on Cloud | IBM DB2 |
| 6. | File Storage | File storage requirements | IBM Block Storage |
| 7. | Machine Learning Model | The model is used to predict whether the Flight Delayed or not. | Prediction Model |
| 8. | Infrastructure (Server / Cloud) | Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration : | Cloud Foundry |

**Table-2: Application Characteristics:**

| S.No | Characteristics | Description | Technology |
|---|---|---|---|
| 1. | Open-Source Frameworks | Open-source frameworks used is IBM Watson | Technology of Opensource framework IBM Watson |
| 2. | Security Implementations | Authorization access scenarios and definitions, hand-over procedures for patient records between wards | IBM Watson STT service |
| 3. | Scalable Architecture | Horizontal scaling is provided by adding more machines to the pool of servers.<br>Vertical scaling is achieved by adding more CPU and RAM to the existing machines. | IBM Watson STT service |
| 4. | Availability | The Web interface is made available using load balancers, distributed servers etc. | IBM Watson |
| 5. | Performance | IBM Watson –automate processes, The deep learning model is trained using IBM Watson studio for better performance, Cache, CDN's, etc.. | IBM Watson |