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

Date	11 November 2022
Team ID	PNT2022TMID52013
Project Name	Project - Machine Learning-Based Predictive Analytics for Aircraft Engine
Maximum Marks	4 Marks

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	It can identifying and managing these interfaces the service provider will have more control over any safety risks related to the interfaces.	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Data Procesing	The aggregation of data from multiple sources onboard the aircraft, including aircraft interface devices.	Pandas, Numpy, Matplotlib, Seaborn, Python Flask
3.	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.
4.	Cloud Database	The dataset is stored on IBM Cloud.	IBM DB2, IBM Cloudant etc.
5.	Machine Learning Model		

| | | ML Models can allow software applications to become more accurate at predicting outcomes without being explicitly programmed to do so. | Sklearn, ML Algorithms- Logistic Regression, SVM, Random Forest, Decision Tree . |
| 6. | Prediction | To predict the failure of an engine by using Machine Learning to save loss of time & money thus improving productivity and send the message to the user. : | SendGrid . |

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Open-source frameworks used	SendGrid, Python Flask, BootStrap, JQuery, ReactJS
2.	Security Implementations	Request authentication using Encryptions	SSL Certificates, Encryptions
3.	Scalable Architecture	The scalability consists of 3- tiers	Web Server- HTML, CSS, Javascript Application Server- Python Flask Database Server- IBM Cloud
4.	Availability	The application is available for cloud users	IBM Cloud Hosting

S.No	Characteristics	Description	Technology
5.	Performance	5000 object read requests per second	IBM Load Balancer

Technical Architecture: