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

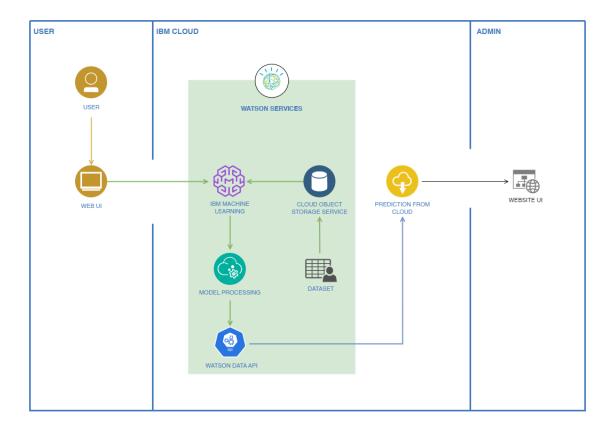| Date	30 September 2022
Team ID	PNT2022TMID21701
Project Name	Predictive Analytics for Aircraft Engines
Maximum Marks	4 marks

Technical Architecture:

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The User interacts via a web UI	HTML, CSS, JavaScript
2.	Application Logic-1	Running the web server and UI for website	Flask, Python
3.	Application Logic-2	Running the Machine Learning Model	IBM Watson Studio , Machine Learning
4.	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
6.	File Storage	Storage for storing Dataset	Cloud object storage service
7.	Internal API	API Used for getting the predicted data from machine learning model in watson	Watson Data API
8.	Machine Learning Model	Machine Learning Model for predicting Aircraft Engine Failure	Object Recognition Model, etc.
9.	Infrastructure (Server / Cloud)	Application Deployment on Cloud Cloud Server Configuration : Intel Xeon E3-1270 v6 4 Cores, 3.80 GHz 16 GB RAM 1 x 1 TB HDD CentOS 20 TB bandwidth*	Web hosting on IBM Cloud

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Python, GIt, Github, Keras, Tensorflow, Jupyter Notebooks
2.	Security Implementations	In the web server created by the team will be secure and when deployed on cloud the cloud security will cover the web app	HTTPS, IBM Cloud Web Hosting
3.	Scalable Architecture	This is a 3 Tier Architecture	IBM Watson Studio, Python,Flask
4.	Availability	Taken care by the cloud provider, availability required is high	IBM Cloud Load Balancers, Multiple Data Servers
5.	Performance	High performance rate is required to provide accurate predictions	Watson Machine Learning on Cloud Pak