

## Project Design Phase-I Solution Architecture

Date	1 October 2022
Team ID	PNT2022TMID06086
Project Name	Project - Machine Learning-Based Predictive Analytics for Aircraft Engine
Maximum Marks	4 Marks

### **Solution Architecture:**

#### **Data preprocessing using Python:**

##### **NumPy**

NumPy is a library for the Python programming language, adding support for large, multi-dimensional arrays and matrices, along with a large collection of high-level mathematical functions to operate on these arrays.

##### **Pandas**

Pandas is well-suited to working with most tabular data structures – so any company with tabular data (i.e., data that can be represented as rows and columns) would find Pandas useful.

#### **Training and Testing Model**

##### **SKlearn**

The sklearn library contains a lot of efficient tools for machine learning and statistical modeling including classification, regression, clustering and dimensionality reduction.

Algorithms to be used

- Anomaly detection
- Linear regression

#### **Integrating with WebApp**

##### **Flask**

Flask is a micro web framework written in Python. It is classified as a microframework because it does not require particular tools or libraries. It has no database abstraction layer, form validation, or any other components where pre-existing third-party libraries provide common functions.

### **Solution Architecture Diagram:**

