Project Design Phase –I

Solution Architecture

TEAM ID	***PNT2022TMID15221***
PROJECT TITLE	***Machine Learning-Based Predictive Analytics for Aircraft Engine***
DATE	***11 October 2022***

Solution Finding:

Machine learning techniques will be adopted for this project, and the we will follow a three-step methodology:

1. *Pre-process the engine dataset and discover key parameters affecting engine health.*
2. *Develop simple machine learning model to predict the RUL of engines and verify the prediction accuracy.*
3. *Introduce other advanced algorithms to further improve the prediction performance, such as involving time series analysis*.

Using Machine Learning Models:

1. ***Multiple Linear Regression :***

   Multiple linear regression attempts to model the relationship between the sensor variables of our data and the Health Index by fitting a linear equation table observed data.

2. ***K Nearest Neighbors Regressor :***

   K Nearest neighbors is a simple algorithm that stores all available cases andclassifies new cases based on a similarity measure.

3. ***Artificial Neural Networks :***

   An Artificial neural network is an attempt to simulate the network of neurons that make up a human brain so that the computer will be able to learn things and make decisions in a human-like manner. ANNs are created by programming regular computers tobehave as though they are interconnected brain cells.

Architecture: