Project Design Phase – I
Solution Architecture

Date	26 September 2022
Team ID	PNT2022TMIDD53042
Project Name	Detection of Parkinson's Disease using Machine Learning
Maximum Marks	4 marks

Solution Architecture:

Diagnosis of Parkinson's Disease (PD) is commonly based on medical observations and assessment of clinical signs, including the characterization of a variety of motor symptoms. However, traditional diagnostic approaches may suffer from subjectivity as they rely on the evaluation of movements that are sometimes subtle to human eyes and therefore difficult to classify, leading to possible misclassification. In the meantime, early non-motor symptoms of PD may be mild and can be caused by many other conditions. Therefore, these symptoms are often overlooked, making diagnosis of PD at an early stage challenging. To address these difficulties and to refine the diagnosis and assessment procedures of PD, machine learning methods have been implemented for the classification of PD and healthy controls or patients with similar clinical presentations.

- The features of this solution-based architecture would involve using classification and regression-based model to determine the prediction.
- The development phases would include data pre-processing followed by Model building - training the given dataset using Random Forest classifier and then validating the performance by using the confusion matrix.
- The major requirements in the webpage would be the registration, home, information and the prediction page. The response time of the former two should be less than 2 seconds and the for the latter, less than 10 seconds.

Solution Architecture Diagram: