**Project Design Phase-I**

**Solution Architecture**

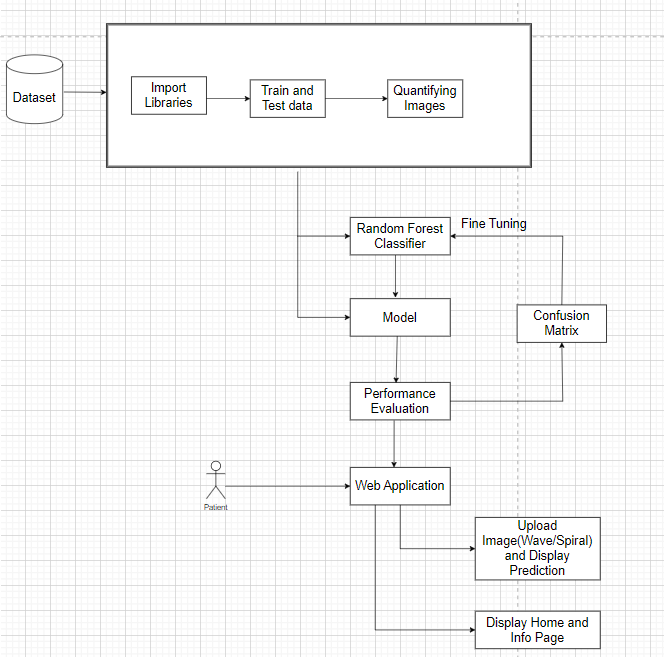
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| **Date** | 26 September 2022 |
| **Team ID** | PNT2022TMID34818 |
| **Project Name** | Detecting Parkinson’s Disease using Machine Learning |
| **Maximum Marks** | 4 Marks |

**Solution Architecture:**

Parkinson's disease (PD) is a complex neurodegenerative disease. Accurate diagnosis of this disease in the early stages is crucial for its initial treatment. 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.  The standard diagnosis of Parkinson’s disease right now is clinical. That means there’s no test, such as a blood test, that can give a conclusive result. Instead, certain physical symptoms need to be present to qualify a person’s condition as Parkinson’s disease. These 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 Logistic Regression and Random Forest classifier and then validating the performance by using the confusion matrix.
* The major requirements in the webpage would be the home, information and the prediction page.

**Solution Architecture Diagram:**

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