

Project Design Phase-I
Proposed Solution Template

Date	1 October 2022
Team ID	PNT2022TMID35502
Project Name	Detection of Parkinson's Disease Using Machine Learning
Maximum Marks	2 Marks

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	There is no definitive test for the diagnosis of PD, so the disease must be diagnosed based on clinical criteria. This restricts the common people to detect the presence of disease. It would be better if there is a technique that allows common people to predict the disease.
2.	Idea / Solution description	There's currently no cure for Parkinson's disease, but treatments are available to help relieve the symptoms and maintain your quality of life. These treatments include supportive therapies, such as physiotherapy, medication, surgery (for some people). They may not need any treatment during the early stages of Parkinson's disease as symptoms are usually mild.
3.	Novelty / Uniqueness	Doctor may suggest a specific single-photon emission computerized tomography (SPECT) scan called a dopamine transporter (DAT) scan. Although this can help support the suspicion that victim has Parkinson's disease, it is the symptoms and neurological examination that ultimately determine the correct diagnosis. So, to make ease for common people, in this project, the dataset contains the spiral and wave images which is drawn by them. They are used to train and test the model to detect the parkinson's disease. This is the uniqueness of this project.
4.	Social Impact / Customer Satisfaction	Social symptoms of PD can result in severe negative social consequences, including stigma, dehumanization, and loneliness, which might affect quality of life to an even greater extent than more well-recognized motor or cognitive symptoms. People with PD are less likely to have many close friends. Some people conceal

		themselves from others, which disrupts social connectedness.
5.	Business Model (Revenue Model)	<p>Parkinson's disease (PD) is the second most common and complex neurodegenerative disorder worldwide. Unified Parkinson's Disease Rating Scale or UPDRS, which is mainly used in tracking PD symptom progression and its severity. UPDRS is considered as the well-validated test and the most widely used clinical rating scale for patients with PD. In this project we use Machine learning (ML) approaches to detect the Parkinson disease which have demonstrated the capability of handling large volumes of medical datasets and presented perceptive directions. The use of ML-based tools could enhance the safety of individuals, enhance the quality of medical care, minimize the costs of medical care, and support physicians' efforts by manipulating big data of patients' records. ML approaches have been broadly utilized for disorders' classification and prediction. ML approaches can be utilized for designing effective CDSS (Clinical decision support system) to aid medical specialists in reaching accurate and timely predictions. CDSSs designed using machine learning approaches have played a significant part in evaluating the existence or the severity of the disease.</p>
6.	Scalability of the Solution	<p>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. So In this project ,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 (movement disorders or other Parkinsonian syndromes).</p>