

Project Design Phase-I
Proposed Solution Template

Date	3 October 2022
Team ID	PNT2022TMID52612
Project Name	Detecting Parkinsons' Disease Using Machine Learning
Maximum Marks	2 Marks

Proposed Solution:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The project aims at presenting a solution for Parkinson's disease detection using Spiral Drawings and CNN. The main idea behind the implementation is to classify a person as Healthy or having Parkinson's disease by looking at the Spiral Drawing made by the person. The Spiral Drawing created by a healthy person will look almost similar to a standard spiral shape. However, a spiral drawn by a person with Parkinson's disease will highly deviate from a perfect spiral shape and look distorted due to slow motor movements and decreased coordination between hand and brain
2.	Idea / Solution description	Spiral drawing is a skilled and complex coordinated motor activity. Therefore, it is treated as a sensitive motor assessment and a preliminary test for early symptoms of Parkinson's disease. Hence, the project aims at presents a solution for detecting Parkinson's disease using Spiral Drawings and Convolutional Neural Networks (CNN).
3.	Novelty / Uniqueness	The project aims at optimising the model to limit the number of parameters under 250k for easy deployment on edge devices. The implementation provides a solution for Parkinson's disease detection using CNN to be deployed to an edge device or less computation efficient devices.

4.	Social Impact / Customer Satisfaction	<ul style="list-style-type: none"> • Test results can be generated efficiently • Early detection of disease. • Good UI experience. • Accurate prediction at good time complexity.
5.	Business Model (Revenue Model)	<ul style="list-style-type: none"> • For use by clinics/hospitals: <ul style="list-style-type: none"> ○ Package 1: Fixed cost per use ○ Package 2: Monthly expense model ○ Package 3: Lifetime package • For use by individuals: Fixed cost per use • For people who can prove low-income levels: Free of cost
6.	Scalability of the Solution	<ul style="list-style-type: none"> • Model works same irrespective of number of users • Proper evaluation occurs during production phase to ensure it is highly scalable