Project Design Phase-I
Proposed Solution Template

Date	22 October 2022
Team ID	PNT2022TMID26099
Project Name	Project - Fertilizers Recommendation System For Disease Prediction
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)	Farmers face several challenges when growing crops like uncertain irrigation, poor soil quality, etc. Especially in India, a major fraction of farmers do not have the knowledge to select appropriate crops and fertilizers. Moreover, crop failure due to disease causes a significant loss to the farmers, as well as the consumers. While there have been recent developments in the automated detection of these diseases using Machine Learning techniques, the utilization of Deep Learning has not been fully explored. Additionally, such models are not easy to use because of the high-quality data used in their training, lack of computational power, and poor generalizability of the models. To this end, we create an open-source easy-to-use web application to address some of these issues which may help improve crop production. The study of plant diseases is important as they cause loss to the plant as well as plant produce. The various types of losses occur in the field, in storage or any time between sowing and consumption of produce. The diseases are responsible for direct monitory loss and material loss.
2.	Idea / Solution description	Agriculture is the most important sector in today's life. Most plants are affected by a wide variety of bacterial and fungal diseases. Diseases on plants placed a major constraint on the production and a major threat to food security. Hence, early and accurate identification of plant diseases is essential to ensure high quantity and best quality. In recent years, the number of diseases on plants and the degree of harm caused has increased due to the variation in pathogen varieties, changes in

		cultivation methods, and inadequate plant protection techniques. So to overcome such cases An automated system is introduced to identify different diseases on plants by checking the symptoms shown on the leaves. Deep learning techniques are used to identify the diseases and suggest the precautions that can be taken for those diseases and the suggestions for the fertilizers and pesticides are been given.
3.	Novelty / Uniqueness	The study of plant diseases is important as they cause loss to the plant as well as plant produce. The various types of losses occur in the field, in storage or any time between sowing and consumption of produce. The diseases are responsible for direct monitory loss and material loss. To minimize crops damage, farmers can adopt an advanced disease detection and identification solution Farmers can check the moisture, temperature, and humidity content of the leaf and determine nutrient deficiency and disease infection and recommended fertilizers are given.
4.	Social Impact / Customer Satisfaction	Detection and recognition of plant diseases using machine learning are very efficient in providing symptoms of identifying diseases at its earliest. Plant pathologists can analyse the digital images using digital image processing for diagnosis of plant diseases. Application of computer vision and image processing strategies simply assist farmers in all of the regions of agriculture. It reduces a large work of monitoring in big farms of crops, and at very early stage itself it detects the symptoms of diseases i.e. when they appear on plant leaves . Agriculture plays a vital role in our daily life providing us the basic essential that is the food , It is important to ensure that the farmers who practice agriculture should be benefited and gain the profits in their field without any loss or emotional break out. So to ensure all of these problems the proposed solution will be the best, creating a 360 degree value.
5.	Business Model (Revenue Model)	What do they think and feel: 1.Reduction in quantites of crops 2.Reduction in quality of crops PAIN AND GAIN: 1.Quality of the Service 2.Cost of the product 3.Natural calamities

		4.Increased profit 5.Soil fertility 6.Misprediction of the Diseases 7.plant nutrients 8.increase the productivity
6.	Scalability of the Solution	1.The scalability of our product is to find a disease in a time. 2.The cost the customer wants to spend for the fertilizers only not to predict the diseases.