

Project Design Phase-I Proposed Solution Template

Date	30 Sep. 22
Team ID	PNT2022TMID03664
Project Name	Fertilizers Recommendation System for Disease Prediction
Maximum Marks	2 Marks

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	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, based on above situation, how to help the farmers to choose the right fertilizer based upon the data given by them to promote productivity as well as eradicate the crop disease? What kind of model is suitable for this task? These are the main problems which are needed to be considered here in this scenario.
2.	Idea / Solution description	The proposed idea is based on the usage of CNN primarily. The images with respective class names are made to train using CNN to classify the disease present, then based upon the results, the required fertilizer will be suggested to the user via the web interface.
3.	Novelty / Uniqueness	The novelty of the project lies on the parameters used on the CNN model. Another aspect is the usage of both sample and real time data during model training.
4.	Social Impact / Customer Satisfaction	The proposed idea will impact the farmers a lot such that the right kind of fertilizer will be suggested to eradicate the diseases present in crops as well as increase the production by promoting their growth. The farmer can have insights about the fertilizers as well.
5.	Business Model (Revenue Model)	The proposed model can be deployed both in web as well as containerized model (docker, k8s) for enterprise usage. The web app will be

		made for free with certain limitations to all users. The enterprise app could be provided to businesses as standalone app which they could run on their own servers and then provide services to consumers for specific amount.
6.	Scalability of the Solution	At present, the model will be trained with certain crop diseases and provide suggestions on the fertilizer to use on the crops. By time, the model will be trained with more images to classify more crop diseases to predict and suggest fertilizers in efficient way.