Project Design Phase-I
Proposed Solution Template

Date	18 oct 2022
Team ID	PNT2022TMID49029
Project Name	Project – Fertilizer recommendation system for disease predication
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)	Agriculture is having a great impact on the country's economy . Different diseases affect plant that reduces their production and is a major threat to food security. The major drawbacks that the farmers of our country are currently facing inludes crop failure,lack of adequate knowledge,crop damage due to ignorance,lack of professional assistance, inaccesibility to agro-tech solutions. Most of the diseases are detected in later stage that to manually which is time consuming and results in heavy loss so it is important to build an automated system that detects disease at early stage and provides fertilizer recommendation accordingly. Farmer usually detect the crop diseases and plant disease with their naked eye which makes them take tough decisions on which fertilizer to use. It is necessary to develop crop yield prediction and fertilizer recommendation system which predicts crop yield based on soil nutrients crop yield data and recommend fertilizer for selected crop based on different dataset like fertilizer data,location data,and crop yield data.
2.	Idea / Solution description	Implementation of artificial intelligence for identification of pests and recommendation of insecticides using TPF-CNN. The combination of two major things required in farming in one system is spraying proper insecticides and adding the needed fertilizer amount to the soil.

		Implementation of soil sensor for soil NPK nutrient analysis and recommendation of fertilizers accordingly. An automated system is built that takes the input as pictures of leaves which is uploaded by the user, identifies different disease on plants by checking the symptoms shown on the leaves of the plant. Deep learning techniques are used to identify the diseases and suggest the fertilizer needed for the plant.
3.	Novelty / Uniqueness	Efficient approach for controlling the overuse of insecticides and fertilizer in farming. Time efficient aperture compared to KNN,SVM,and ANN. It can suggest and predict best and correct fertilizer for disease in the plant. It does not require user to consult any specialist for identificationfor disease that affected the leaves and the fertilizer that is required for the same. It detects plant disease at a early stage.
4.	Social Impact / Customer Satisfaction	Yield right crop at the right time , balancing the crop production,control plant disease,economic growth and planning to reduce the crop scarcity. Hence to detect and recognize the plant disease and to recommend fertilizer it is necessary to provide symptoms in identifying the disease at its earliest. Hence implemented new fertilizer recommendation system for crop disease prediction. The whole process of identifying disease and recommendation of fertilizer happens just by uploading image so it is user friendly. It helps farmers to get good yield out of the crop. People will get good quality food products.
5.	Business Model (Revenue Model)	Typically dedicate 10% of their AI investment to algorithms,20% to technoligies and 70% to embedding AI into business processes and agile waysof working. In other words, companies invest twice as much in people and processes as they do in technologies. Social media is the best way to spread the word about our application. And with influencers we can reach out to people.

		Clustering and targeting the farmers for identifying disease on their plants and recommending them fertilizers for the same.
6.	Scalability of the Solution	This can be improved by introducing online purchases crops,fertilizers , etc..,easily. It can be used in research areas to study about the diseases in plants and the best fertilizer that can be recommended for it among the list of fertilizer available. It can be used by anyone in the world.