**Project Design Phase-I**

**Proposed Solution Template**

|  |  |
| --- | --- |
| Date | 30 September 2022 |
| Team ID | PNT2022TMID19068 |
| 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** |
|  | Problem Statement (Problem to be solved) | Diseases on plants placed a major constraint on the production and a major threat to food security and for farmers. Hence, early and accurate identification of plant diseases and usage of correct fertilizers is essential to ensure high quantity and best quality of crops. |
|  | Idea / Solution description | An automated system is introduced to identify different diseases on plants by checking the symptoms shown on the plant. Deep learning techniques are used to identify the diseases and suggest the fertilizers and precautions that can be taken for those diseases. |
|  | Novelty / Uniqueness | The CNN model learns the filters whereas traditional algorithms used various activation functions to train and classify the output. Farmers can interact with the portal build  Interacts with the user interface to upload images of diseased leaf  Our model built analyses the Disease and suggests the farmer with fertilizers are to be used |
|  | Social Impact / Customer Satisfaction | The aim of this project is early prediction of crop disease with greater accuracy and prevention of further damage done to the crops. The area of the disease affected is also found so that fertilizers application can be optimized. so the Farmers can be cautious and preventive. |
|  | Business Model (Revenue Model) | This system detects the presence of disease in leaf at early stages. The camera connected to Raspberry Pi kit captures the leaf image and is processed in both anaconda navigator and ARM processor for classification of disease using CNN. Further the processed image is clustered using clustering algorithm in MATLAB to find the area affected. |
|  | Scalability of the Solution | This system will help he farmers to choose the right crop for their land and to give the suitable amount of fertilizer to produce the maximum yield. |