Project Design Phase-I
Problem – Solution Fit Template

Date	01 October 2022
Team ID	PNT2022TMID39927
Project Name	Project – Fertilizers Recommendation System For Disease Prediction
Maximum Marks	2 Marks

Problem-Solution fit canvas 2.0 — To build a Fertilizers Recommendation System For Disease Prediction

1. CUSTOMER SEGMENT(S) (CS)
Farmers are the customers who are going to use this application. 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.

6. CUSTOMER CONSTRAINTS (CC)
- It may lead to wrong prediction.
- Recommended fertilizer may not be available in the user's location.

5. AVAILABLE SOLUTIONS (AS)
- Non efficient image processing algorithms were used in earlier systems. This traditional approach gives lower accuracy and is time consuming. This drawback of the existing system propelled us towards the idea for developing a system that could ease this effort.

2. JOBS-TO-BE-DONE / PROBLEMS (J&P)
- The existing system only identifies the disease but does not recommend the remedy to be taken for the disease.
- It leads to wrong prediction.
- Recommended fertilizer may not be available in the user's location.
- It may lead to wrong prediction.

9. PROBLEM ROOT CAUSE (RC)
- Infected seed, soil crop debris Infectious plant disease are caused by pathogenic organisms such as fungi, bacteria, viruses as well as insects.
- Through the movement of contaminated soil, machinery, animals and other plant material.

7. BEHAVIOUR (BE)
- Non efficient image processing algorithms were used in earlier systems. This traditional approach gives lower accuracy and is time consuming.
- In our project we identify the plant diseases using CNN with ResNET50 we have used. Then it recommends the fertilizer to be used. Comparing to other projects our project's accuracy is more because we are using CNN with ResNET50

3. TRIGGERS (TR)
- We have combined the features of CNN and a pre-trained model resulted in an improved performance in the prediction.
- Data is fed to the CNN and, its output is sent as the input to our pre-trained model ResNet50. This increased our model's prediction accuracy to be above 85%.

4. EMOTIONS: BEFORE / AFTER (EM)
- We are going to develop a userfriendly web application. Our algorithm gives the best accuracy in identifying the plant disease and recommending the fertilizer.

10. YOUR SOLUTION (SL)
- In other projects it detects disease of only one colour using basic CNN. In our project we identify the plant diseases using CNN with ResNET50 we have used. Then it recommends the fertilizer to be used. Comparing to other projects our project's prediction accuracy is more because we are using CNN with ResNET50.

8. CHANNELS of BEHAVIOUR (CH)
- We have combined the features of CNN and a pre-trained model resulted in an improved performance in the prediction. Data is fed to the CNN and, its output is sent as the input to our pre-trained model ResNet50. This increased our model's prediction accuracy to be above 85%.
- So, it helps to identify the disease in the earlier stages itself which reduces the huge impact on economic loss.

IBM-Project-14871-1659591358