

Project Design Phase-I
Proposed Solution Template

Date	23 October 2023
Team ID	592472
Project Name	Project – Potato Disease Classification
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)	Potato disease classification is the process of identifying and categorizing various diseases that affect potato plants. Early detection allows farmers to take prompt action to prevent the spread of the disease and reduce crop damage. Statistics related to potato diseases can vary depending on the region globally, it is estimated that potato diseases cause significant yield losses, ranging from 20% to 50%, which can have a severe impact on food security and economic stability. The issue could not be identified because of lack of knowledge to farmers about the disease and its effect on the plants.
2.	Idea / Solution description	The goal of the research is to provide an end-to-end deep learning solution for dividing healthy, early blight, and late blight categories in potato leaf images. Convolutional neural networks (CNNs) are used in the proposed approach to extract pertinent features from the input photos and categorise them into one of the three categories. Since potato leaf disease can have a major influence on crop productivity and quality, early detection is essential.
3.	Novelty / Uniqueness	The distinction of this approach comes from the accurate classification of potato leaves it achieves using cutting-edge deep learning techniques like CNN. approaches such as transfer learning. Why is it unique In addition, it has the ability to constantly improve accuracy. by using data that has already been stored to learn from.
4.	Social Impact / Customer Satisfaction	A more consistent potato production can be achieved by farmers by successfully identifying and managing potato diseases. This helps to increase food security. For potato growers, accurate disease categorization can make it easier to enter markets and pursue trade opportunities while also ensuring that produce fulfils international quality and safety standards. Farmers can reduce production expenses linked to the inappropriate use of pesticides and other control measures by properly classifying diseases.
5.	Business Model (Revenue Model)	Offer a subscription-based service that will allow farmers and agricultural businesses to pay a regular charge to gain access to a thorough database and platform for classifying potato diseases. Make alliances with seed distributors, agricultural technology businesses, and input suppliers to incorporate disease categorization services into their offers. Receive a cut of the proceeds from the selling of seeds and other agricultural supplies to jointly generate income. Submit

		applications for research grants and financing from private foundations, government organisations, and agricultural research organisations.
6.	Scalability of the Solution	Invest in ongoing research and development to increase the solution's scalability by embracing the most recent developments in agricultural sciences and technology. Identify the important players, such as farmers, agricultural organisations, researchers, and policymakers, by conducting a detailed investigation. Recognise their particular requirements, issues, and expectations in relation to the suggested solution. Create strategic alliances and relationships with regional agricultural associations, universities, and governmental organisations in the new target markets.