

Project Design Phase-I
Proposed Solution Template

Date	19 September 2022
Team ID	Team-592247
Project Name	Deep Learning Model For Detecting Diseases In Tea Leaves
Maximum Marks	2 Marks

Proposed Solution Template:

S. No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Tea leaf abnormalities can signal underlying issues affecting crop health. Manual examination of tea leaves is prone to human error, and accessibility to specialized healthcare for leaf examination is limited. This manual assessment can vary in subjectivity among professionals, is time-consuming, and may not be efficient.
2.	Idea / Solution description	We propose the development of an automated system using image processing and deep learning techniques for the diagnosis of diseases affecting tea leaves. This system will accurately classify tea leaf diseases, eliminating human intervention and addressing subjectivity issues. By leveraging convolutional neural networks (CNN) and pretrained models like VGG16, VGG19, ResNetV2, DenseNet201, and InceptionV3, our model aims to identify patterns specific to various tea leaf diseases.

3.	Novelty / Uniqueness	Our approach introduces convolutional neural networks (CNN) trained on multiple tea leaf diseases, enhancing the model's ability to recognize diverse patterns. The utilization of pre-trained models and hyperparameter tuning, including VGG16, VGG19, ResNetV2, DenseNet201, and InceptionV3, contributes to a more accurate and efficient model for diagnosing tea leaf diseases.
----	----------------------	---

4.	Social Impact / Customer Satisfaction	This solution has the potential to transform the field of agriculture by enabling early and accurate detection of tea leaf diseases. Providing an accessible and non-invasive method for disease identification empowers farmers and agricultural professionals. This technology can improve crop health, increase yields, and contribute to sustainable agriculture practices.
----	---------------------------------------	---

5.	Business Model (Revenue Model)	The revenue model for this solution could involve offering the tea leaf disease prediction technology as a service to agricultural entities. Implementing a subscription-based model for ongoing support, as well as establishing partnerships with agricultural companies for research initiatives, could generate substantial revenue. Licensing the technology to agricultural technology manufacturers presents an additional opportunity for fees and royalties.
6.	Scalability of the Solution	The proposed solution demonstrates strong scalability potential, allowing seamless integration and expansion across various agricultural settings. The adaptable architecture and efficient data handling mechanisms of the deep learning model enable the system to accommodate a growing dataset without compromising performance.