

Project Design Phase-II Technology Stack (Architecture & Stack)

Technical Architecture:

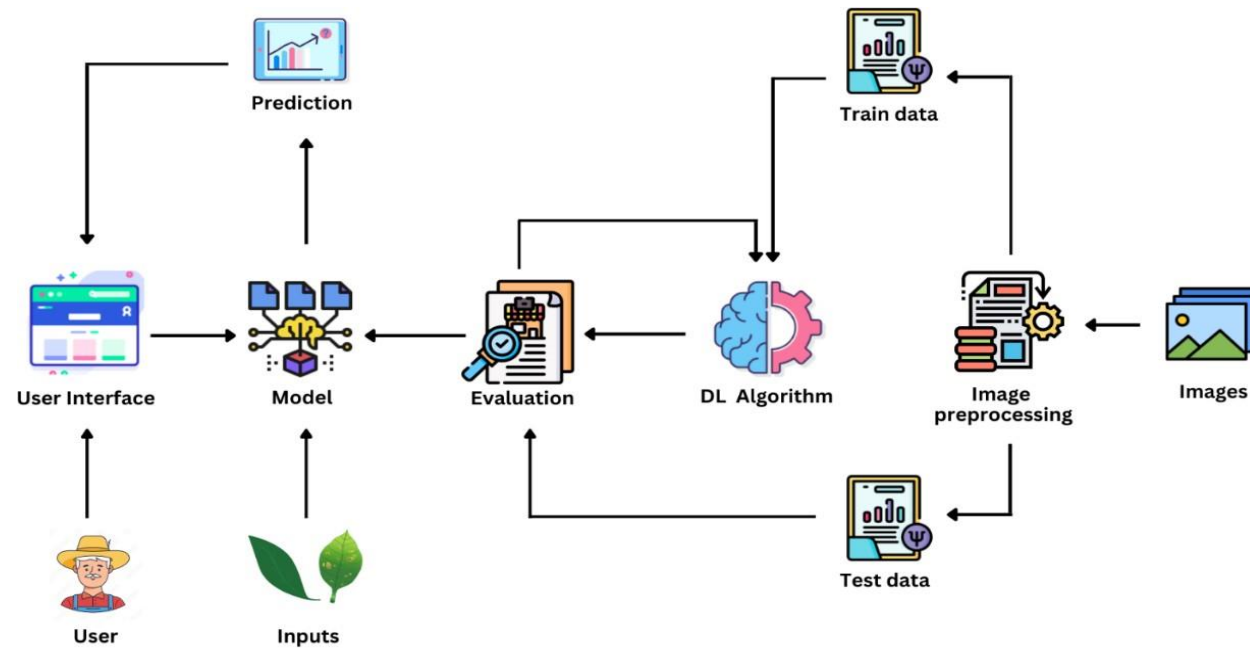


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The user interacts with the web application to get suitable fertilizer for the diseased crops.	HTML, CSS, JavaScript / React Js
2.	Application Logic-1	A Login page that allows the user to access the web application.	HTML, CSS, JavaScript / React Js
3.	Application Logic-2	A page where users can upload their crop images.	Python
4.	Application Logic-3	Model predicts the plant diseases and suggests suitable fertilizers.	Python - CNN/Keras/Tensorflow
5.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant
6.	File Storage	File storage requirements	Local File System
7.	Dataset	The training and test dataset for plant diseases - fruit and vegetable consisting data for identifying diseased crops.	Kaggle Repository, IBM
8.	Machine Learning Model	Machine learning model will make use of deep learning techniques to accurately identify diseased crops and suggest an appropriate fertilizer.	Image Recognition
9.	Infrastructure (Server / Cloud)	Application Deployment on Local System: Local Server Configuration	Local System

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List of Open source frameworks used for image recognition and integrating all modules with the user interface.	<ul style="list-style-type: none">• Flask• Anaconda Navigator• Pycharm
2.	Scalable Architecture	To further expand the scope of the web application and to deploy it to the cloud.	IBM Cloud Services
3.	Availability	The web application can be accessed by all.	N/A
4.	Performance	The application can handle a large number of requests per user.	Python