

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

Date	03 October 2022
Team ID	PNT2022TMID51948
Project Name	Project – Fertilizer Recommendation system for disease prediction
Maximum Marks	4 Marks

Technical Architecture:

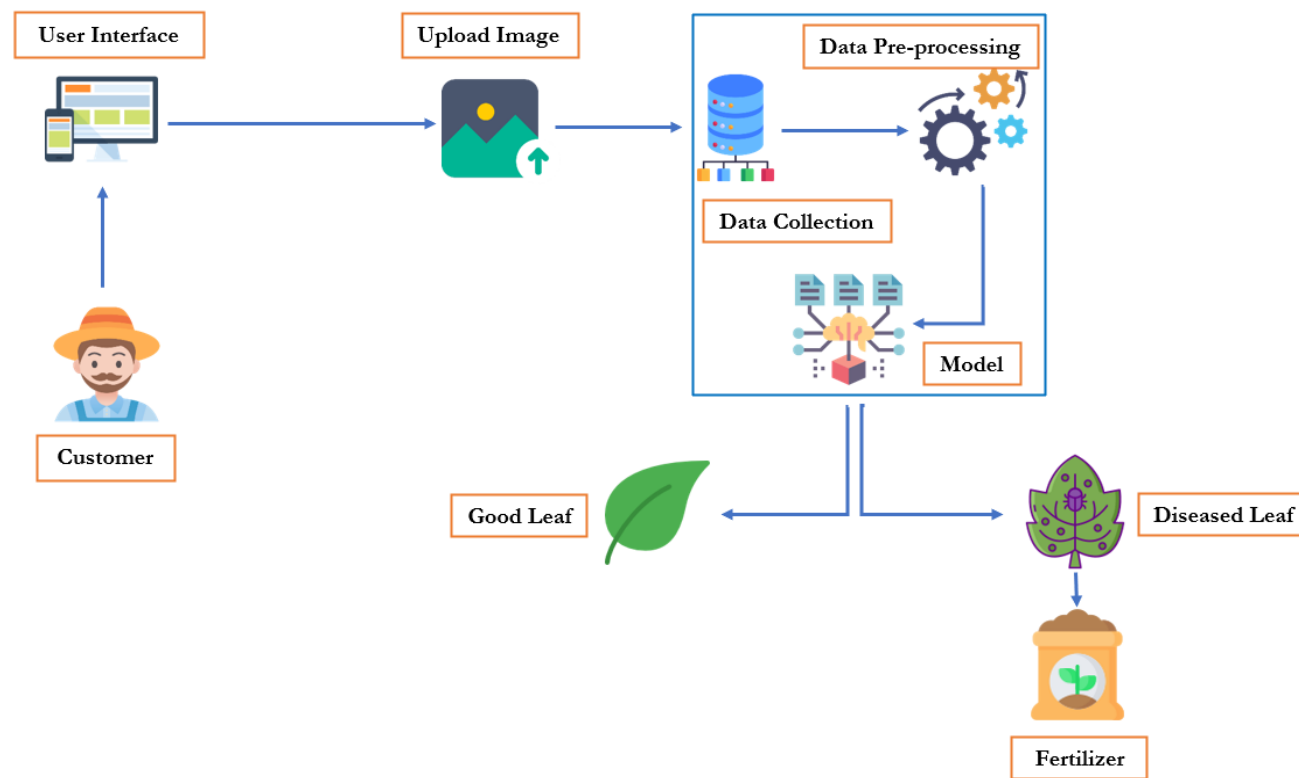


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1	User Interface	How user interacts with application e.g. Web UI, Mobile App, etc.	HTML, CSS, JavaScript
2	Application Logic-1	Uploading the pictures of leaf	Python
3	Application Logic-2	Workspace for running the Jupyter notebook, Models are deployed	IBM Watson Studio Service
4	Application Logic-3	Training the model	IBM Watson Machine Learning Service
5	Application Logic-4	Language used for the project, Flask deployment	Python
6	Dataset	The training and testing dataset for leaf diseases of fruits and vegetable used.	Kaggle , IBM Cloud Object Storage
7	Cloud Database	The dataset , Jupyter notebook is stored .	Cloud Object Storage
8	File Storage	Storing the uploaded photos	Local Filesystem
9	Machine Learning Model	The CNN model works well with the images therefore producing high accuracy The convolutional is more efficient because it reduces the number of parameters which makes different from other deep learning models.	Convolution Neural Network
10	Infrastructure(Server/Cloud)	Application Deployment on Local System	Local System

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks	Flask micro web framework	Written in Python It is classified as a microframework because it does not require particular tools or libraries. It has no database abstraction layer, form validation, or any other components where pre-existing third-party libraries provide common functions.
2	Security Implementations	With all the aspects of the job including detecting malicious attacks, analyzing the network endpoint protection and vulnerability assessment , Signin encryption	IBM Client API Key , IBM Space ID
3	Scalable Architecture	A model built to predict the disease of leaf consumes data from a large dataset and delivers prediction instantly. It serves millions of users and fits well for big data.	Flask,Python
4	Availability	Available for all data size	-
5	Performance	Can extend Storage according to our needs	Flask,Python