PROJECT DESIGN PHASE-II

TECHNOLOGY STACK (ARCHITECTURE & STACK)

Date	16 October 2022
Team ID	PNT2022TMID15933
Project Name	Fertilizers Recommendation System For Disease Prediction

TECHNICAL ARCHITECTURE:

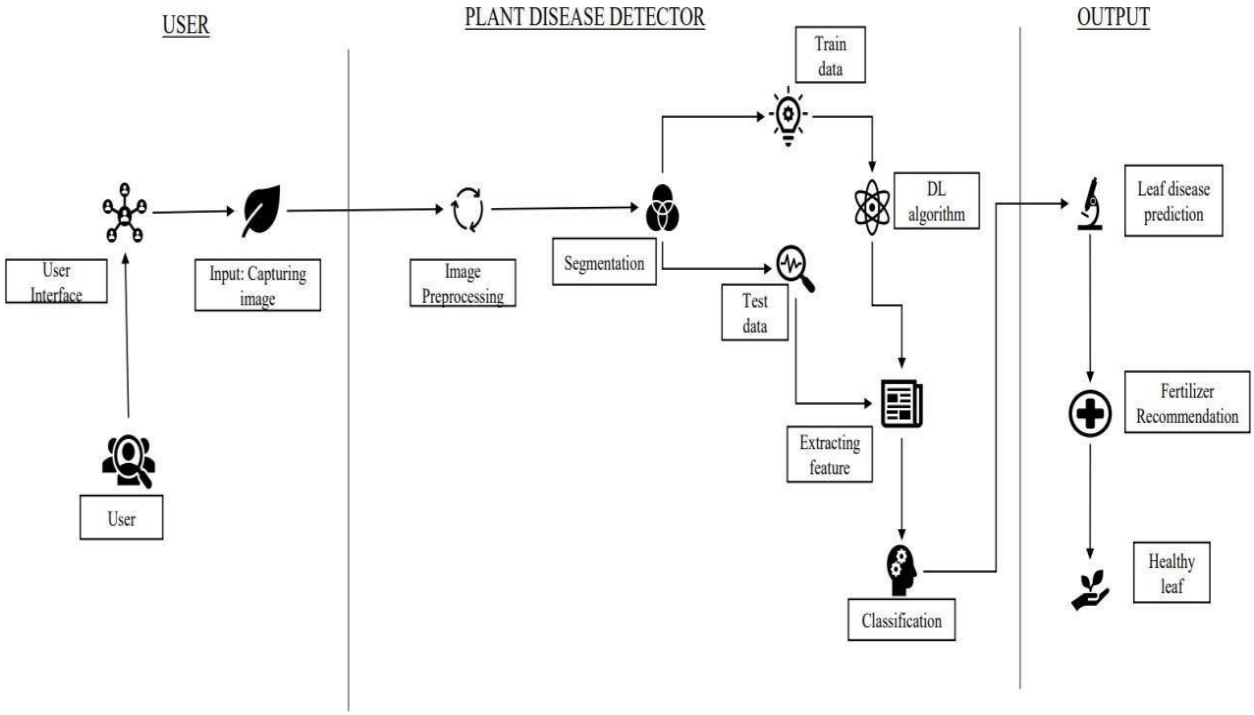

TABLE -1: COMPONENTS & TECHNOLOGIES :

S.NO	Component	Description	Technology
1,	User Interface	The user interact with the website by logging in and uploading the image (affected plant leaf).The data is sent through the Cloud by API and HTTP request ,response.	HTML, CSS, JavaScript, React, Angular, etc,.
2,	Disease Prediction	Once the image has been uploaded by the user it is then processed by the model and the model gives the name of the disease affected by the plant.	Keras, CNN, Image processing, Machine Learning Algorithm,TensorFlow,etc, .
3.	Fertilizer Recommendation	After the disease has been predicted by the model, the fertilizer is recommended for the predicted disease	User interface, HTML, CSS, JavaScript
4.	Dataset	The training and testing dataare collectively stored in the IBM Watson Cloud.	Kaggle.com, data.gov, UCI machine learning repository,etc.
5.	File Storage	File storage requirements	IBM, Local File system.
6,	Modules	Purpose of deep learningmodules	Image Recognition Modules, etc.
7.	Infrastructure(Server)	Application development on Local server configuration: 4GB RAM 512GB SSD 64-bit Operating System AMD PRO A4-3350BAPU	Local File system.

TABLE – 2: APPLICATION CHARACTERISTICS:

S.NO	Characteristics	Description	Technology
1.	Opensource Framework	List of the opensource framework used are TensorFlow, Keras, OpenCV	Open source-PyCharm, anaconda navigator, flask ,OpenCV, CNN, Keras, TensorFlow.
2.	Secure Implementation	Provides highly Secure Environment for the details provided.	Security – OWASP,SHA-256,Encryptions,etc.,
3.	Scalable Architecture	As this architecture is Scalable in nature .Whenever a new feature is added to the model, it will not decrease the performance of the model.	flask, OpenCV, CNN, TensorFlow, Keras.
4.	Availability	The website is completely available and provide 24/7 availability .The user can access the information irrespective of the location.	Web application access to all the resources.
5.	Performance	Performance of the website is high when the image that is to be processed is available in the Cache. Performance is bit low when the image to be processed is not available in the cache.	Machine Learning Algorithm,Keras, Tensorflow,CNN, etc,.