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

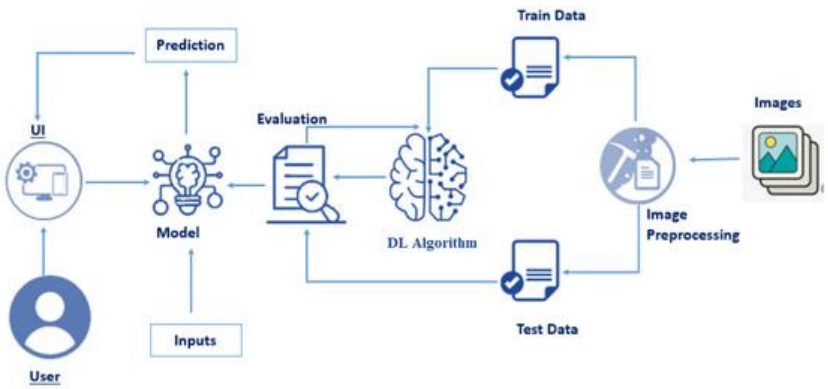
Date	15 October 2022
Team ID	PNT2022TMID32151
Project Name	Project – Fertilizer Recommendation System for Disease Prediction
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Example: Order processing during pandemics for offline mode

Reference: https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/



Guidelines:

1. Include all the processes (As an application logic / Technology Block)
2. Provide infrastructural demarcation (Local / Cloud)
3. Indicate external interfaces (third party API's etc.)
4. Indicate Data Storage components / services
5. Indicate interface to machine learning models (if applicable)

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	User interacts with application Web UI	HTML, CSS, Python flask, keras.
2.	Application Logic-1	User interface	HTML, CSS
3.	Application Logic-2	Predictive model	AI & ML
4.	Application Logic-3	Web Application	IBM Watson Assistant, Flask
5.	Database	No external databases used	No Technology Needed
6.	Cloud Database	Database Service on Cloud, Model building in cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	No actions needed	No actions needed
8.	External API-1	To predict the disease that affected on the plant	Model API.
9.	External API-2	To recommend the fertilizer for the disease	Fertilizer API.
10.	Machine Learning Model	The Purpose of Machine Learning Model is to predict the disease	Image processing model, etc.
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud	Local, IBM cloud, Flask, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Flask, IBM cloud	Jupiter notebook, pandas, CNN, ANN, etc.
2.	Security Implementations	No security actions needed.	No action.
3.	Scalable Architecture	Scalable with disease predictive efficiency.	Deep learning model.
4.	Availability	Available through all platforms as websites	IBM cloud, Flask.
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	AI & ML model, Flask.

References:

https://c4model.com/

https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/

https://www.ibm.com/cloud/architecture

https://aws.amazon.com/architecture

https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d