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

Date	16 October 2022
Team ID	IBM-Project-33601-1660224391
Project Name	Estimation of crop yield using Data analytics
Maximum Marks	4 Marks

Technical Architecture:

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

Estimation of crop yield using Data Analytics

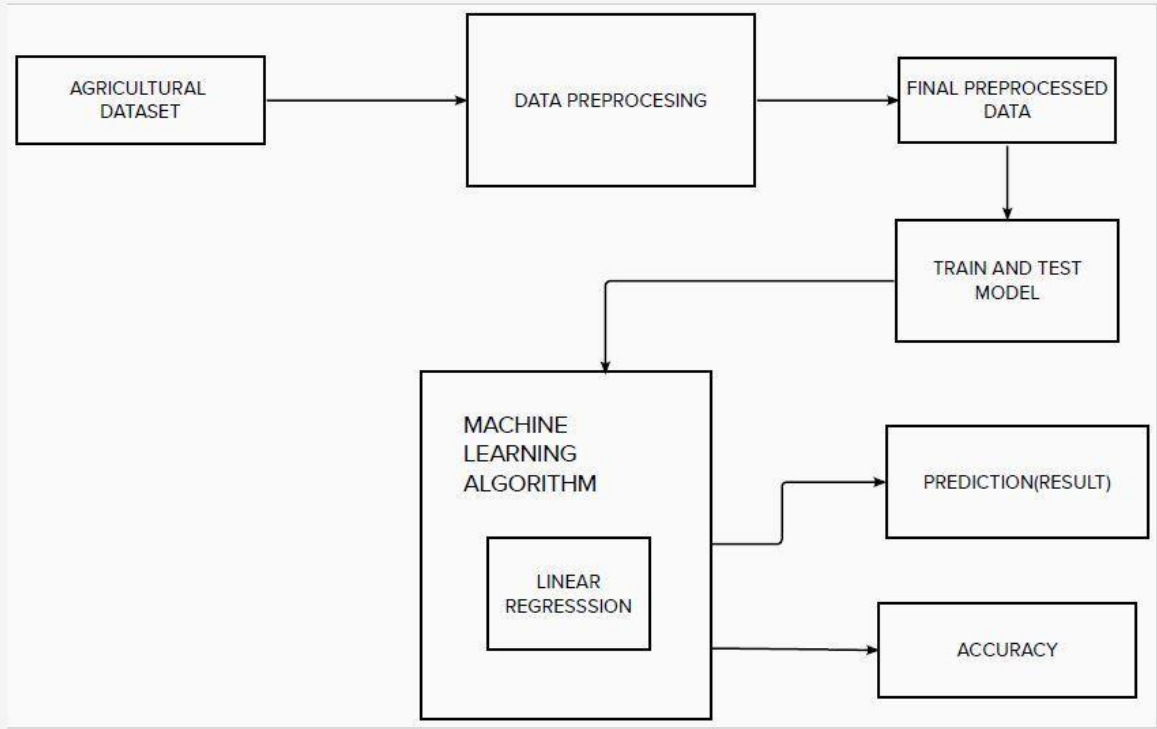

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript
2.	Application Logic-1	Login as a user(farmer) in application	Java / Python
3.	Application Logic-2	Login as admin in the application	IBM Watson STT service
4.	Application Logic-3	Login as merchant the application	IBM Watson Assistant
5.	Database	Data related to crop production in previous and also crop data	MySQL, NoSQL
6.	Cloud Database	IBM Watson cloud provides storage	IBM DB2, IBM Cognos
7.	External API-1	Weather APIs are Application Programming Interfaces that allow you to connect to large databases of weather forecast and historical information.	IBM Weather API
8.	External API-2	Soil testing is a quick and accurate method to determine the relative acidity of the soil and the level of several essential nutrients needed.	Soil Test API
9.	Machine Learning Model	It is mostly used for finding out the relationship between variables and forecasting.	Linear Regression
10.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :I1	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	A software wherein original source code is made freely available and may be redistributed and modified according to the user requirement.	Apache Spark and Hadoop
2.	Security Implementations	crop-related diseases	multispectral camera sensors mounted on drones
3.	Scalable Architecture	A 3-tier architecture wherein application gets data from various sources, manipulates it, stores them in IBM Cloud and visualize them through IBM Cognos	IBM Cloud, IBM Cognos
4.	Availability	The application being developed is made available to all users(farmers).	Cognos Analytics
5.	Performance	Multiple technologies and services that will improve the usability in agricultural activities	Robots, IoT Agriculture sensors.