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

Date	14-10-2022
Team ID	PNT2022TMID26387
Project Name	Estimate the 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

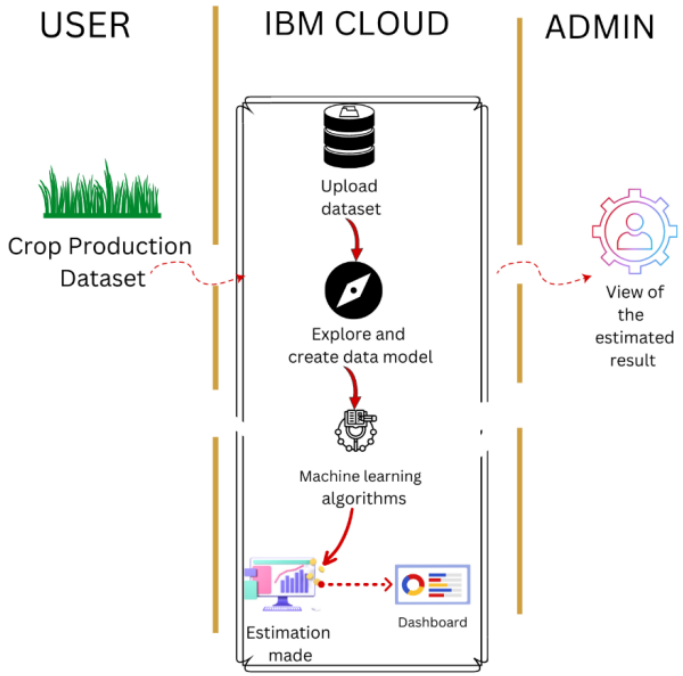

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript, IBM Cognos
2.	Remote sensing data	The data prepared to estimate the crop yield	Python
3.	Weather data	Data prepared to predict the weather during crop yield	IBM Watson STT service
4.	Crop yield data	Data set used to estimate the sample crop production	IBM Watson Assistant
5.	IBM Cognos	Data analytics platform and to create a database	IBM Assistant, Python
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	IBM Cloud	Storage of data	IBM Block Storage, Local Filesystem, IBM DB2
8.	External API-1 Crop data detected and clustered	Purpose of External API used in the application	Object Recognition Model, Weather API
9.	External API-2	The **External Data API** enables you to upload **external data** files to **CRM** Analytics.	Tableau CRM external data API
10.	Support vector machine	To choose the right crop to the area and climatic condition	IBM Assistant, Python
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	It empowers the farmers and to increase the productivity there is need to provide the best dissemination tool for their farming activities	Cognos Analytics
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	SHA-256, Encryptions
3.	Scalable Architecture	The estimate of crop yield is based on soil, meteorological, environmental, and crop parameters	Python - Machine learning
4.	Availability	Both website and mobile application interface and developed in local language and the content is available in localized language	Python- Anaconda
5.	Performance	Multiple technologies and services that will improve the usability in agricultural activities	Python and other languages