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

Date	18 October 2022
Team ID	PNT2022TMID40554
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 :

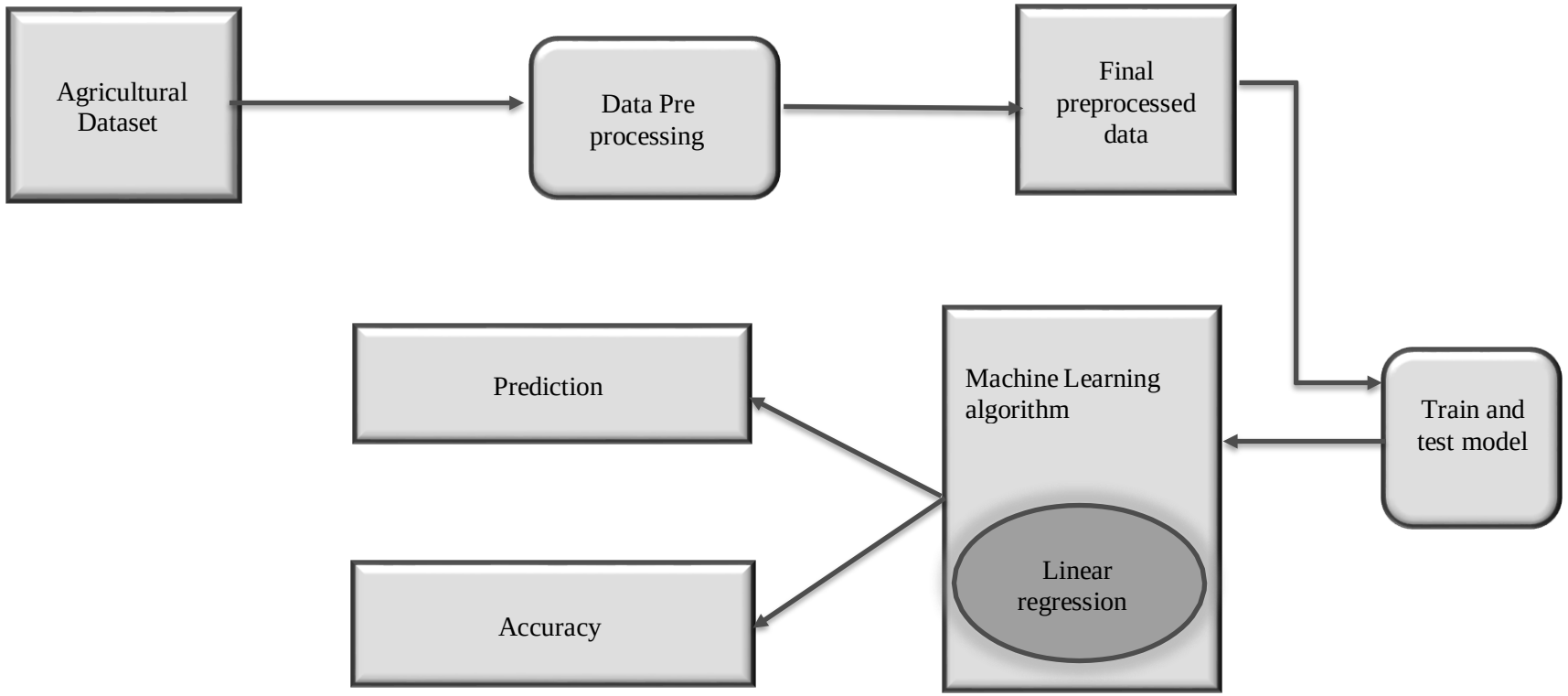

Table-1 : Components & Technologies:

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 in the application	Java / Python
3.	Application logic 2	Login as admin in the application	IBM Watson STT service
4.	Application logic 3	Login as merchants in the application	IBM Watson Assistant
5.	Database	Data related to crop production in previous and alsocrop data.	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	Weather API are application programming interfacethat allow you to connect to large databases.	IBM Weather API, etc.
9.	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 nutrient needed.	Soil API, etc.
10.	Machine Learning Model	It is mostly used for finding out the relationshipbetween variables and forecasting	Linear Regression
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / CloudLocal Server Configuration Cloud Server Configuration :l1	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Bootstrap is a free,open source front-end development framework	Bootstrap, React etc.,
2.	Security Implementations	Improves user experience and provides greater security.	Authentication etc.
3.	Scalable Architecture	A 3-tier architecture wherein application gets data from various sources, manipulates it, stores them in IBM Cloud and Cognos.	IBM Cloud, IBM Cognos.

S.No	Characteristics	Description	Technology
4.	Availability	The application is being developed is made available to all users	Cognos Analytics
5.	Performance	Multiple technologies and services that will improvethe usability in agriculture activities.	Robots, IOT agriculture sensors.

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