

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

Date	07 November 2022
Team ID	PNT2022TMID03011
Project Name	Estimation of crop yield using Data Analytics
Maximum Marks	4Marks

Technical Architecture:

The Deliverables hall include the architectural diagram as below and the information as per the table 1 & table 2.

Estimation of crop yield using Data Analytics:

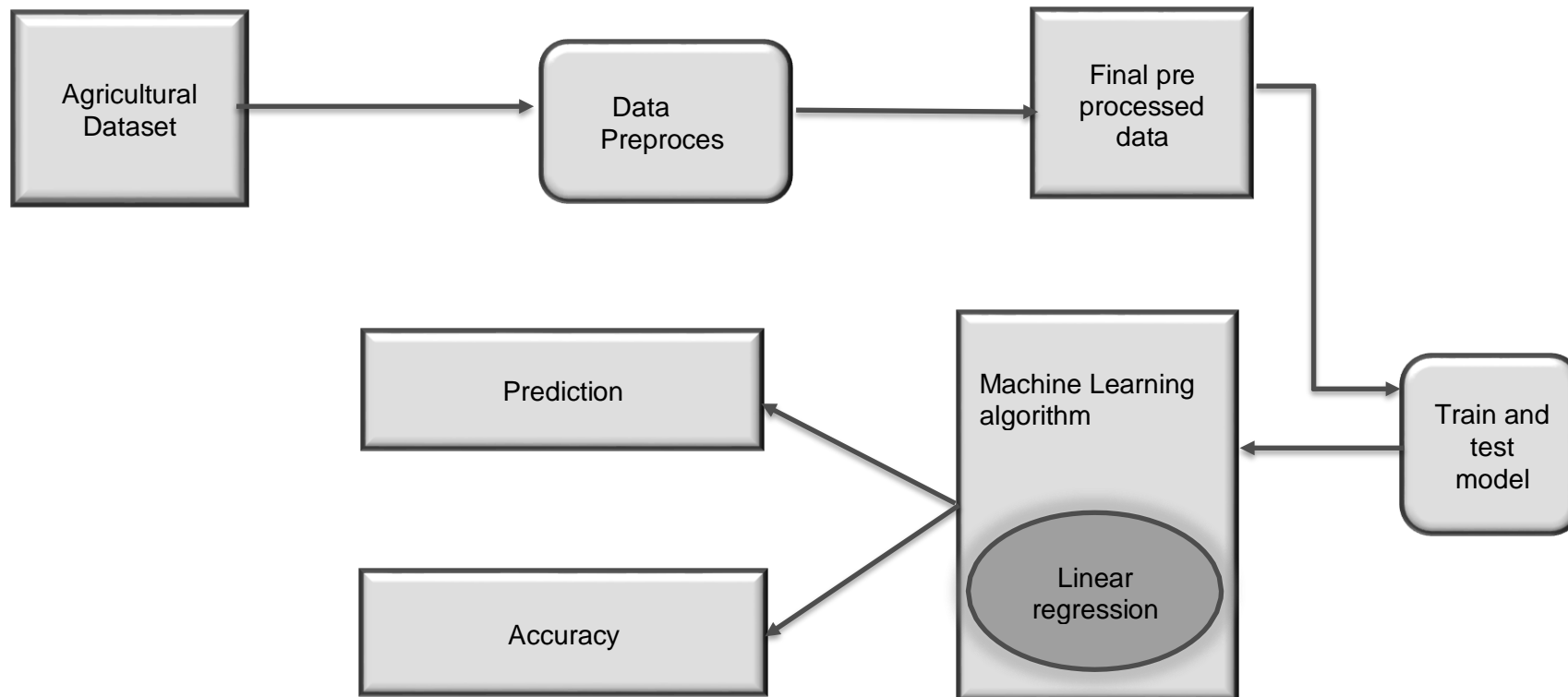


Table-1:Components&Technologies:

S. No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App ,Chat bot etc.	HTML, CSS, JavaScript.
2.	Applicationlogic1	Login as a user in the application	Java/Python
3.	Applicationlogic2	Login as admin in the application	IBM Watson STT service
4.	Applicationlogic3	Login as merchants in the application	IBM Watson Assistant
5.	Database	Data related to crop production in previous and also crop data.	MySQL , NoSQL , etc.
6.	Cloud Database	Database Service on Cloud	IBMDB2,IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local File system
8.	ExternalAPI-1	Weather API are application programming interface that allow you to connect to large databases.	IBM Weather API ,etc.
9.	ExternalAPI-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 relationship between variables and forecasting	Linear Regression
11.	Infrastructure(Server/Cloud)	Application Deployment on Local System/Cloud Local Server Configuration CloudServerConfiguration:1	Local , Cloud Foundry ,Kubernetes ,etc.

Table-2:ApplicationCharacteristics:

S. No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Bootstrap is a free ,open source front-end development frame work	Bootstrap ,React etc.,
2.	Security Implementations	Improves user experience and provides greater security.	Authentication etc.
3.	Scalable Architecture	A3-tier architecture where in application gets data from various sources ,manipulates it, stores the min 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 improve the 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>