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

Date	14 October 2022
Team ID	PNT2022TMID40545
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
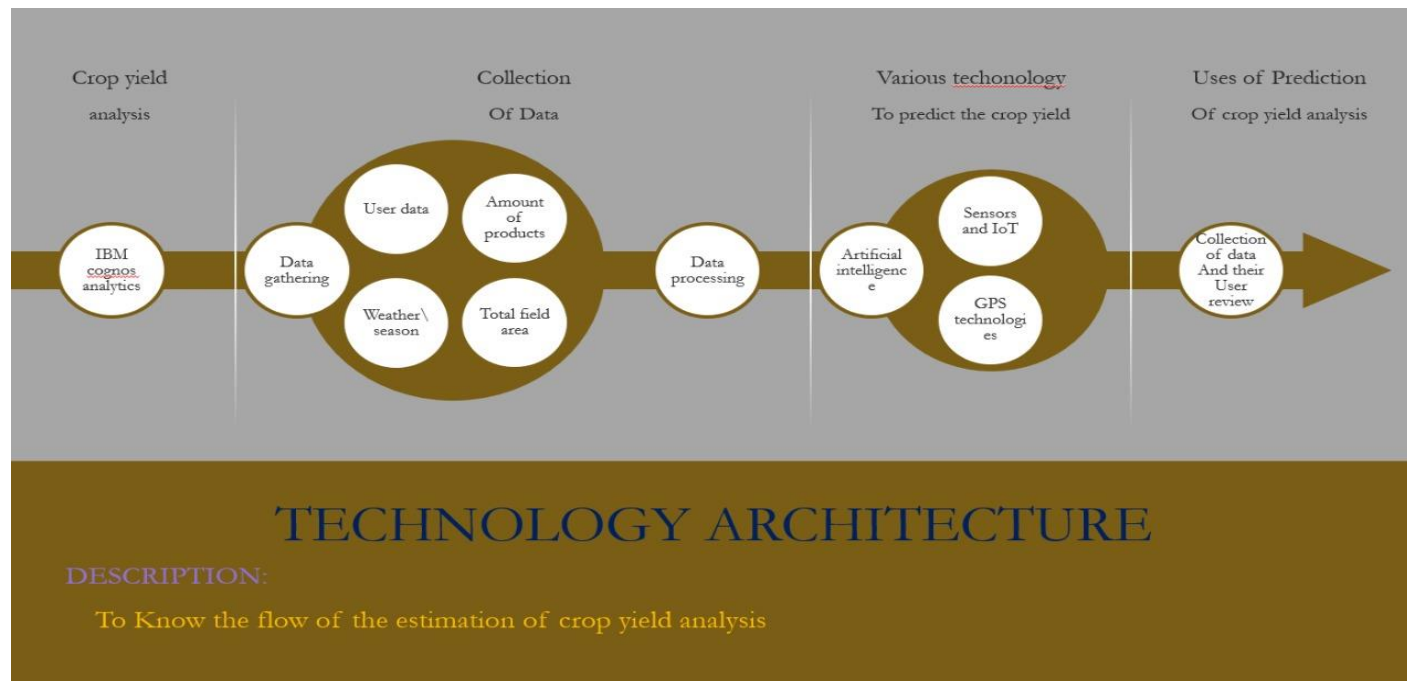

TECHNOLOGY ARCHITECTURE

DESCRIPTION:

To Know the flow of the estimation of crop yield analysis

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 / Angular Js / React Js etc.
2.	Crop management	Begins with the sowing of seeds, continues with crop maintenance during growth and development and ends with crop harvest, storage and distribution.	Digital technology is used to predict the crop.
3.	Water management	It seeks to use water in a way that provides crops and animals the amount of water they need, enhances productivity, conserves natural resources for the benefit of downstream users and ecosystem services.	Drip irrigation (is slow drop irrigation system)
4.	Pest management	Pest management system in the context of associated environment and population dynamics of the pests species utilizing all suitable technique	Conventional insecticides such as carbomates, Pyrethroids.
5.	Waste management	It helps to maintain a healthy environment for farm animals and can reduce the need for commercial fertilizers while providing other nutrients need for crop production.	Landfilling, incineration, anaerobic digestion, pyrolysis.
6.	Heads per Acre	Plant a solid foundation. From planting to stream elongation, access to phosphorus and zinc is critical in driving heads per acre production in fact, early season crop demands during the first 30 to 40 days require 1 Ib of phosphorous per day.	We need microbial action to release it for uptake again
7.	Kickstarter	It includes the power of M-struct provides phosphorus plus nitrogen, sulphur and zinc nutrients critical for early season development	Blockchain technology
8.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
9.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
10.	Machine Learning Model	Purpose of Machine Learning Model	Object Recognition Model, etc.

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.	Usability	To empower farmers and to increase the productivity there is need to provide the best dissemination tool for their farming activities.	Cognos analytics
2.	Security	The developed ICT agriculture tools focus on very important agricultural services such as crop detection ,crop predictor will help farmers to make decision in future.	Monitoring and recovery, motion sensor, pressure pads.
3.	Scability	i)Increassed productivity from warm temperature ii)Decreased moisture stress iii)Possibility of growing new crops iv)Productivity of soil and water	Harvest automation, autonomous
4.	Availability	Both website and mobile application interface and developed in local language and the content is available in localized language	Aerial images and GPS technology
5.	Performance	Multiple technologies and services that will improve the usability in agricultural activities	Robots, IoT Agriculture sensors