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

Date	22 October 2022
Team ID	PNT2022TMID41618
Project Name	Estimation of crop yield using Data analytics
Maximum Marks	4 Marks

Technical Architecture:

Estimation of Crop yield analysis

USER	IBM COGNOS ANALYTICS	PERFORMANCE
USER DATA	IBM COGNOS ANALYTICS WITH WATSON	PREDICT THE CROP YIELD LIKE RICE YIELD, RAGI YIELD.etc..
DATA SET	DATA SET UPLOAD	
RAIN FALL DATA AND CROP PRODUCTION DATA	DATA EXPLORATION	HIGH YIELD OF CROPS IN ALL SEASON WITH HIGH GAIN
	DATA VISUALIZATION	
	INTERACTING WITH ALL DATAS	
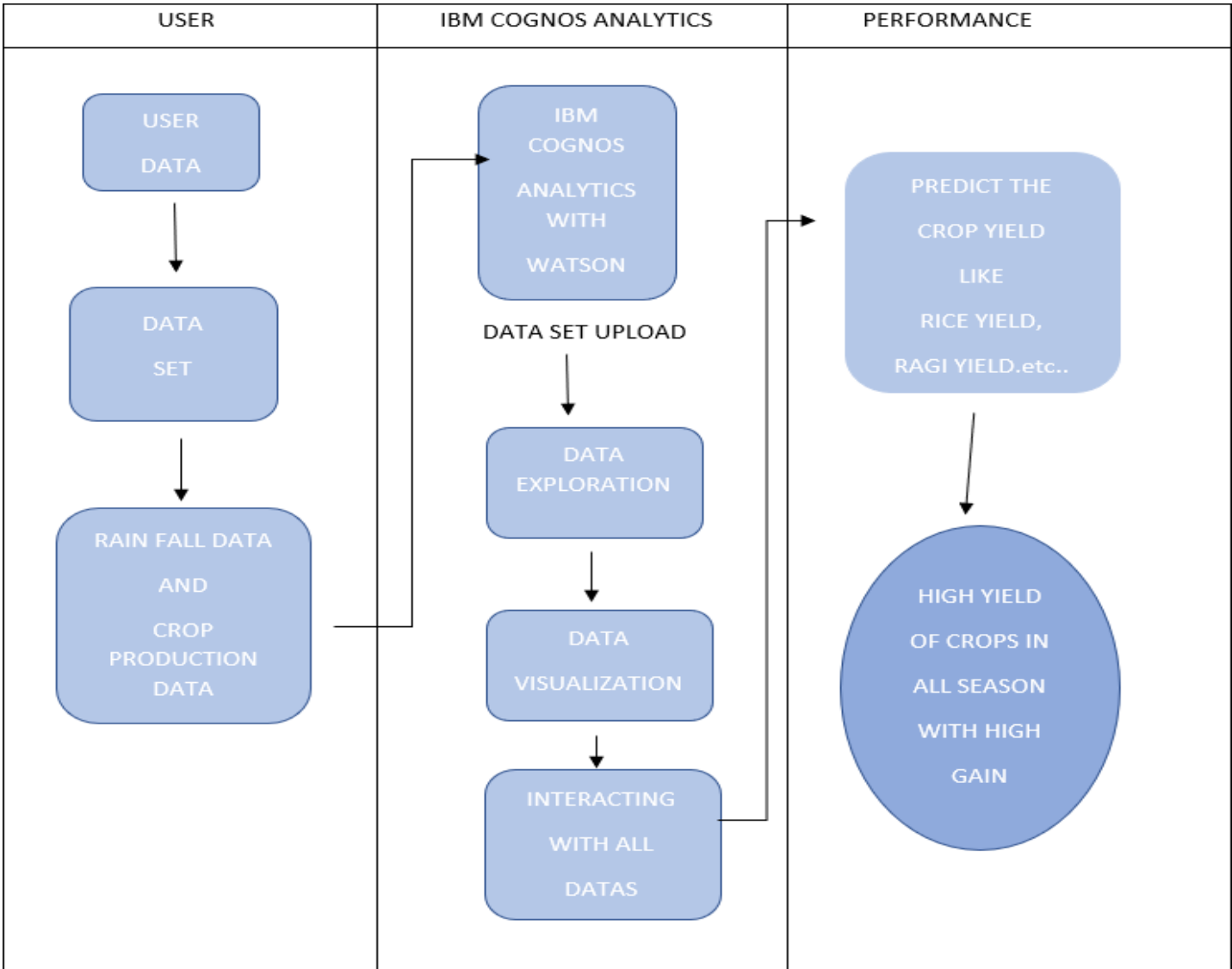
GUIDELINESS:

➢ Collect the Data from the User

➢ It may contain the crop production data and season production data

➢ Using the IBM cognos analytics with Watson

➢ Upload the Data set

➢ Explore the Data

➢ Visualize the Data

➢ Interact with all the Data connected with each other

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 irrigationsystem)
4.	Pest management	Pest management system in the context of associated environment and population dynamicsof 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, anaerobicdigestion, 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 Cloud 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 productivitythere 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, motionsensor, pressure pads.
3.	Scalability	i)Increased productivity from warm temperatureii)Decreased moisture stress iii)Possibility of growing new cropsiv)Productivity of soil and water	Harvest automation, autonomous
4.	Availability	Both website and mobile application interface anddeveloped in local language and the content is available in localized language	Aerial images and GPS technology
5.	Performance	Multiple technologies and services that will improvethe usability in agricultural activities	Robots, IoT Agriculture sensors