Project Design Phase-II

Technology Stack (Architecture & Stack)

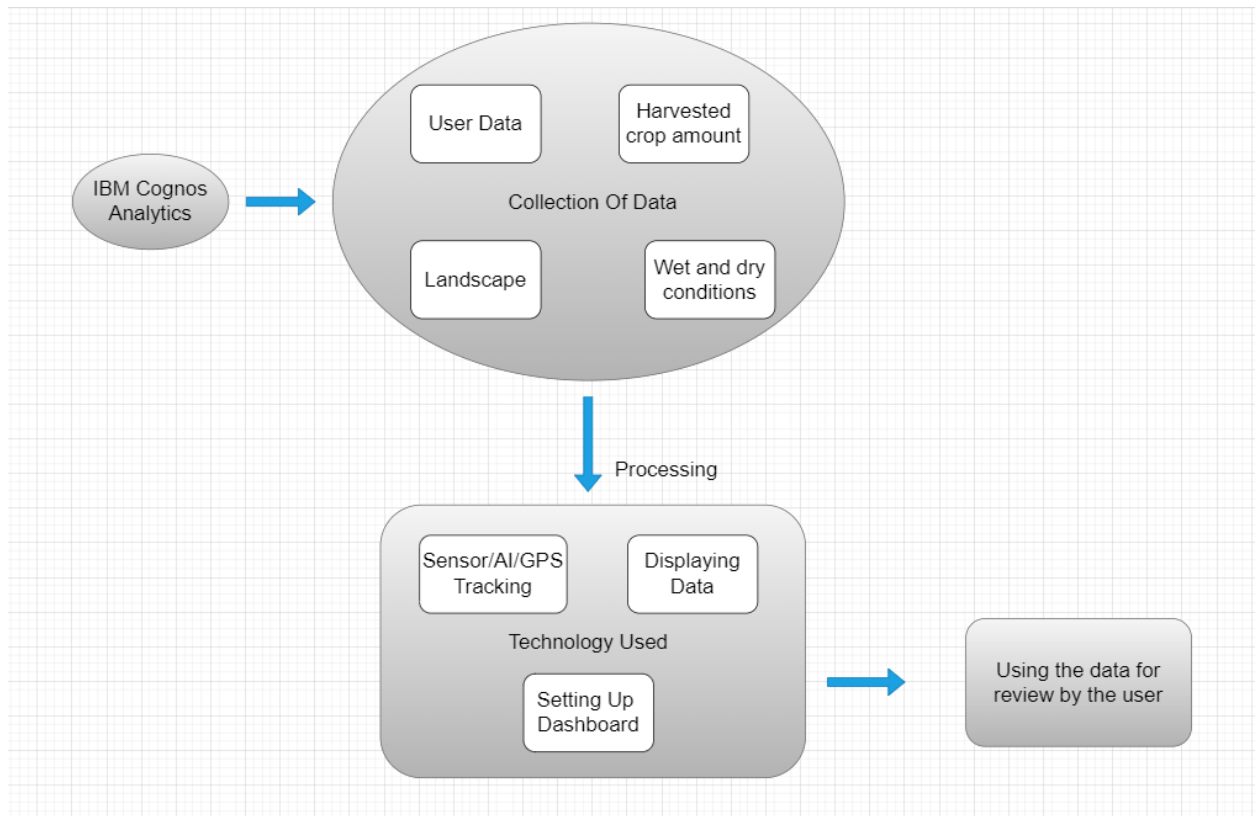| Date	15 October 2022
Team ID	PNT2022TMID20086
Project Name	Estimate the crop yield using data Analytics
Maximum Mark	4 Marks

Technical Architecture:

Table-1: Components & Technologies:

S. No	Component	Description	Technology
1.	User Interface	The most common method for providing input and interacting with an app is by touching the screen and browsing the website.	HTML, CSS, JavaScript / Angular JS / React JS etc.
2.	Controlling pests	Utilizing all suitable pest management techniques within the context of the associated environment and population dynamics of the pest species.	Carbonates, pyrethroids, and other conventional insecticides.
3.	Climate resilience forecasting	Climate change adaptation involves anticipating, preparing for, and responding to events and trends associated with climate change.	The future of climate change is enabled by AI, IoT, and blockchain.
4.	Managing farms	Planning for and implementing production and profit maximization on a farm, including making and implementing decisions.	Automation of farm operations.
5.	Database	Databases are organized collections of structured information, or data, typically stored electronically in computers.	A combination of MySQL, Amazon redshift, Big Query and PostgreSQL.
6.	Cloud Database	Service for the cloud-based database.	IBM DB2, IBM Cloudant, & Microsoft SQL Server.
7.	File Storage	Storage place requirements for files.	Block Storage from IBM Or local file system.
8.	Data API	For analysis, a broad and deep set of climate, environment, and weather APIs are available within	IBM weather API.

		the IBM Environmental Intelligence Suite to provide current and forecasted conditions, seasonal and sub-seasonal forecasts, lifestyle indices, severe weather predictions, and historical weather data.	
9.	Power API	The system allows external applications to access power Data, which is solar and meteorological data from satellite observations. This data includes long-term climatologically averaged estimates of meteorological quantities and surface solar energy fluxes over the course of a year. A second API feature is the ability to get daily meteorological and solar data time series. In addition to providing data sets for renewable energy, energy efficiency, and agriculture, NASA Earth science's power project is supported by its applied sciences program.	NASA APIS
10.	Infrastructure (Server/Cloud)	Deploying the application on a local system or on the cloud Configuration: Cloud Server	A local cloud platform, a Kubernetes platform, and a cloud foundry.

Table 2: Application Characteristics

S. No	Characteristics	Description	Technology
1.	Usability	The best dissemination tool for farmers' farming activities is necessary to empower them and increase their productivity.	Analytics using cognos.
2.	Rivalry	Trying to achieve the same goal or to achieve superiority in the same area.	Machines capable of operating autonomously on farms.
3.	Performance	Enhance the usability of agricultural activities with multiple technologies and services.	Agricultural sensors, robots, and IoT.
4.	Connectivity	An extensive process of connecting different parts of a network takes place when connectivity is established.	Technologies associated with GPS.
5.	Scalability	i) Warm temperatures result in increased productivity. ii) Moisture stress has been reduced.	Robotics and automation in the harvest.