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

Date	15October 2022
Team ID	PNT2022TMID02241
Project Name	Estimate the crop yield using data analytics
Maximum Marks	4 Marks

Technical Architecture:

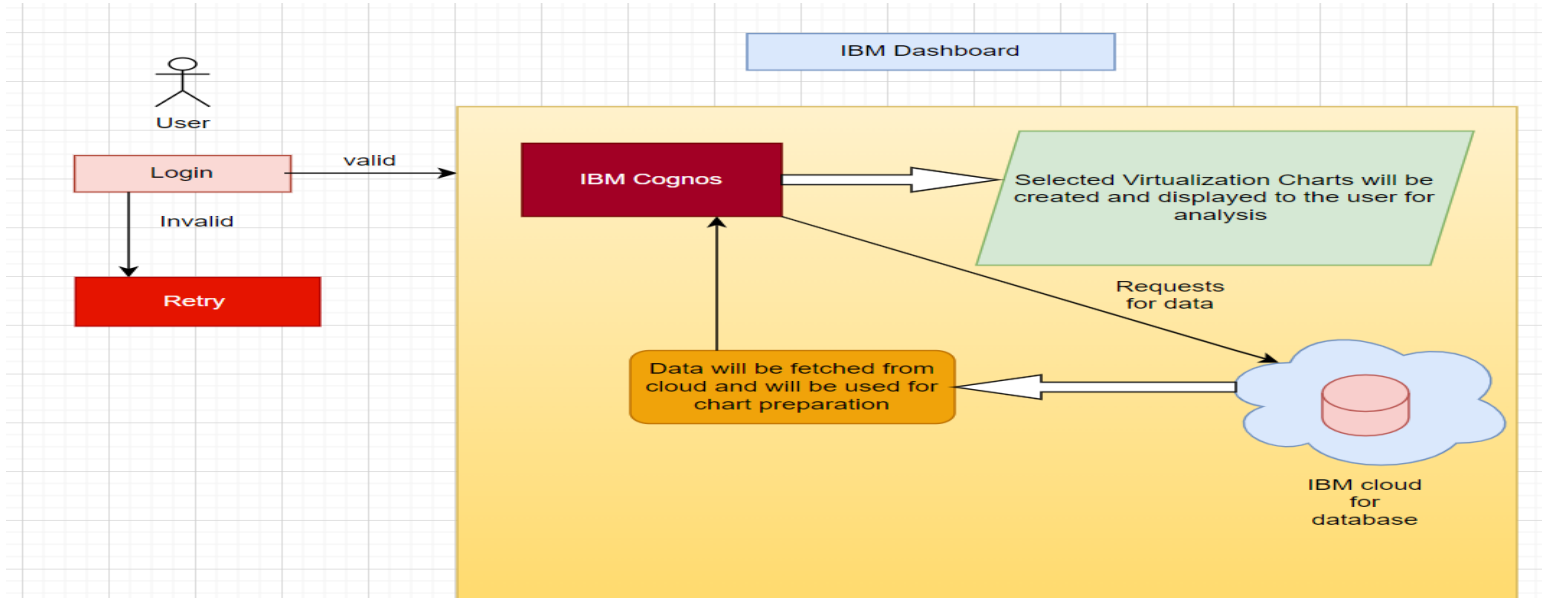

Table-1 : Components & Technologies:

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	Logic for a process in the application	Java / Python
3.	Database	Data Type, Configurations etc.	MySQL, NoSQL
4.	Cloud Database	Database Service on Cloud	IBM Cloudant
5.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
6.	External API-1	Deliver a rich set of accurate and precise weather data	IBM Weather API
7.	External API-2	soil data helps to manage and monitor the soil quality for better crop yields, operational efficiency, and increased profits	Soil API
8.	Machine Learning Model	Linear regression analysis is used to predict the value of a variable based on the value of another variable	Linear regression
9.	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.	Open-Source Frameworks	Bootstrap is the easy understanding open-source framework available to work.	Bootstrap
2.	Security Implementations	Provides security to the system by giving access to only the authorised users.	User Authentication
3.	Scalable Architecture	A 3-tier architecture is used to retrieve, modify and store the data into cloud and cognos.	IBM Cloud and IBM Cognos

S.No	Characteristics	Description	Technology
4.	Availability	It integrates reporting, modeling, analysis, dashboards, stories, and event management and also available for all the users	Cognos Analytics
5.	Performance	Designing the dashboard to analyse a wide range of crop yield	IBM Instance

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