

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

Date	12 October 2022
Team ID	PNT2022TMID27824
Project Name	Estimate Crop Yield Using Data Analytics
Maximum Marks	4 Marks

Technical Architecture:

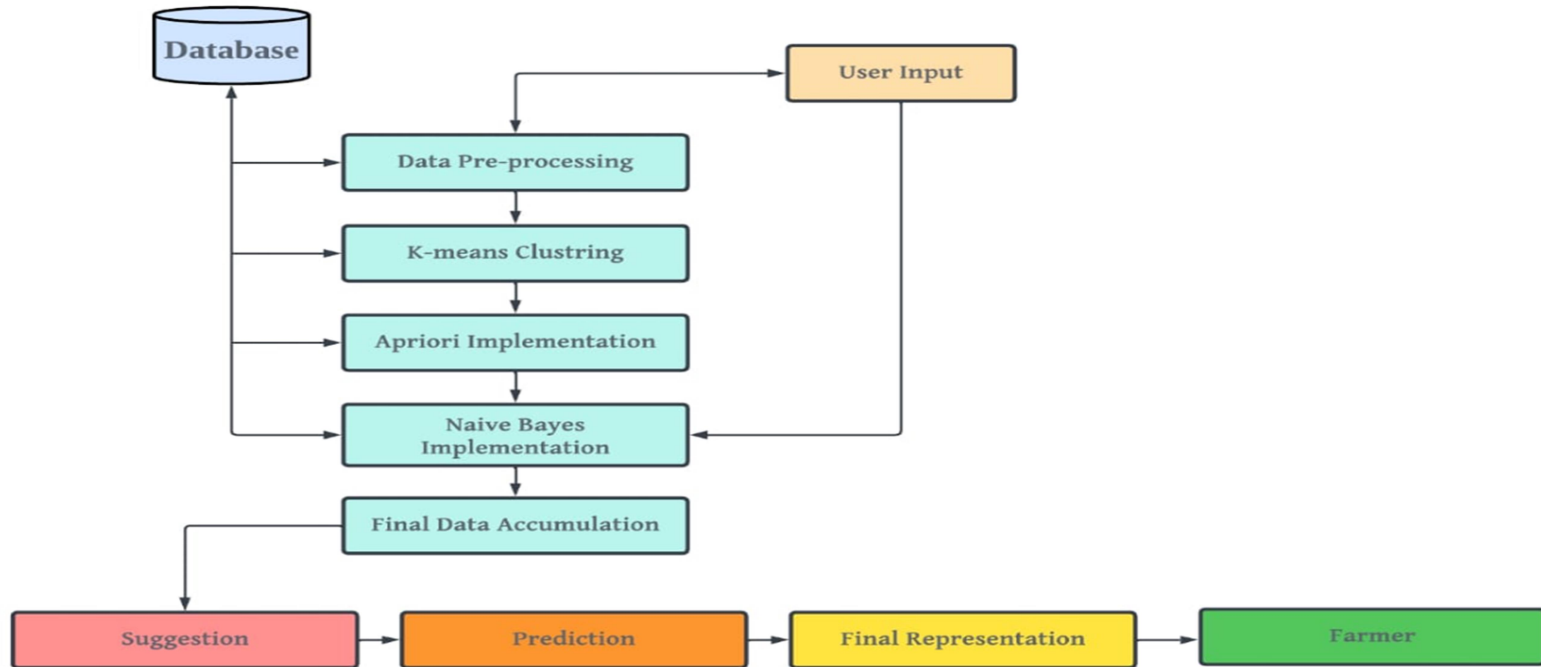


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with website e.g. Web UI	HTML, CSS, JavaScript
2.	Website Logic	Logic for a process in the website	Python
3.	Database	Data Type, Configurations etc.	MySQL etc.
4.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cognos etc.
5.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local File system
6.	External API-1	Purpose of External API used in the website	Weather API, etc.
7.	External API-2	Purpose of External API used in the website	Soil Test API, etc.
8.	Machine Learning Model	Purpose of Machine Learning Model	K-means Clustering, Naive Bayes Algorithm etc.
9.	Infrastructure (Server / Cloud)	Website Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	IBM Cloud Kubernetes Service, Cloud Foundry, Cloud Functions, etc.

Table-2: Website Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Technology of Open source framework Bootstrap, React etc.,
2.	Security Implementations	List all the security / access controls implemented.	e.g. Authentication etc.
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	K-means Clustering (Machine Learning Approach), MySQL
4.	Availability	Justify the availability of website	SLB (Server Load Balancer)etc.,
5.	Performance	Design consideration for the performance of the website (number of requests per sec, use of Cache) etc.	Cloud APM (Application Performance Monitoring)etc.,

References:

<https://c4model.com/>

<https://www.ibm.com/cloud/architecture>

<https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d>

<https://towardsdatascience.com/k-means-clustering-algorithm-applications-evaluation-methods-and-drawbacks-aa03e644b48a>

<https://towardsdatascience.com/the-apriori-algorithm-5da3db9aea95>

<https://towardsdatascience.com/naive-bayes-classifier-81d512f50a7c>

<https://www.ibm.com/docs/en/cam-r?topic=cloud-application-performance-management-cloud-apm>