

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

Date	15 October 2022
Team ID	PNT2022TMID32817
Project Name	Estimate the crop yield using Data Analytics
Maximum Marks	4 Marks

Technical Architecture:

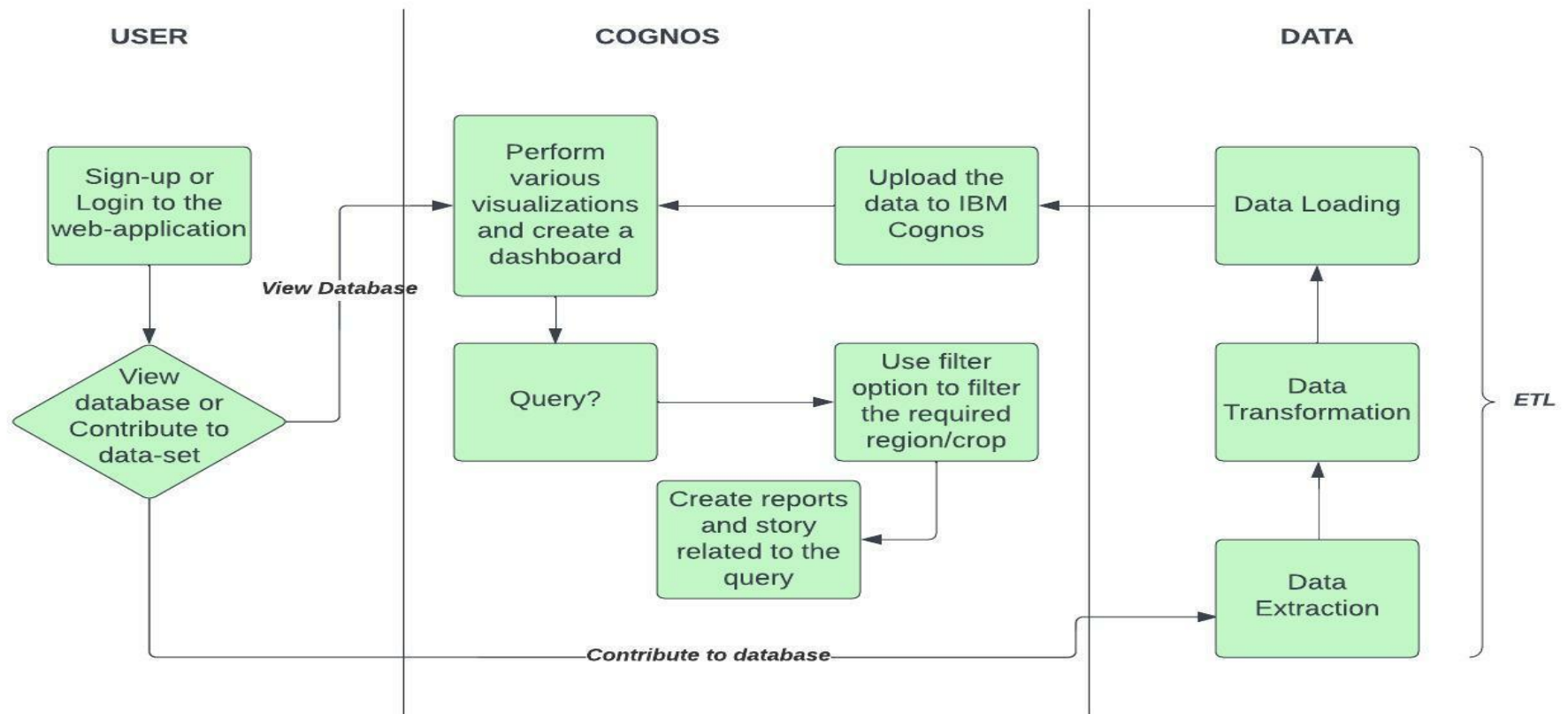


Table-1: Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, Bootstrap, JavaScript
2.	Data Cleaning	There is no one absolute way to prescribe the exact steps in the data cleaning process because the processes will vary from dataset to dataset.	Pandas package available in Python, Jupyter Notebook
3.	Data Manipulation	Manipulation of data is the process of manipulating or changing information to make it more organized and readable.	Pandas package available in Python, Jupyter Notebook
4.	Data Visualization	Data visualization is the representation of data through use of common graphics, such as charts, plots, infographics, and even animations.	IBM Cognos Analytics
5.	Database	Relational Database Management System	MySQL, SQL
6.	External API	Used to visualize various graphs and gain insights from the visualizations and also allows us to create a dashboard/Report/Story as we wish	IBM Cognos Analytics
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	Machine Learning Model	Purpose of this Machine Learning Model is to analyse the dataset and predict a better suitable crop to the farmer	Multiple Regression Model
9.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Bootstrap
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	WAF, IPS
3.	Scalable Architecture	Micro-services	Python
4.	Availability	It will be available in any device that meets up with the specifications	Web-browsers
5.	Performance	Refers to the quality and the efficiency at which a web-application functions	Google PageSpeed Insights