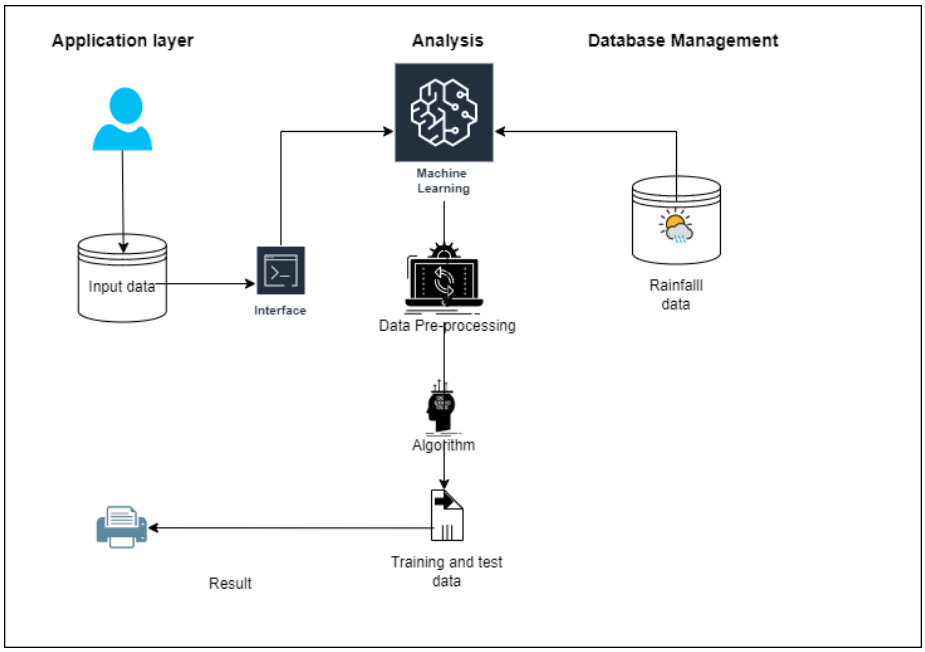
Project Design Phase- II

Technology Stack(Architecture & Stack)

Date	20 October 2022
Team ID	
Project Name	Exploratory Analysis on Rainfall Data in India for Agriculture
Maximum marks	4 marks

Technical Architecture:



Components and technologies:

S.No	Component	Description	Technology
1.	User Interface	User interacts with the application using the web UI .	HTML, CSS, Python and flask
2.	Registration	Registration of the user to the application	Python
3.	Login	Login of user to the application	Python
4.	Integration	Integrating machine learning model and the web page	Flask
5.	Database	Numeric data stored in the form of tables	MySQL
6.	Cloud Storage	Database service on cloud	IBM, DB2, IBM cloudant etc

7.	Data Pre-processing	Data is processed to remove outliers and missing values, so that the data can be used for training the model	Pandas, Numpy, Keras, Matplotlib modules of python
8.	Machine learning model	Random forest, KNN, CNN are used to improve the accuracy of the model.	Sklearn, Seaborn
9.	Result	This application shows the predicted rainfall data with the crops's sugesstions.	Python Flask
10 .	Crops	This shows the list of crops and details about it.	HTML, CSS. Flask

Application characteristics:

S.No	Characteristics	Description	Technology
1.	Open Source Frameworks	Flask	Micro web framework in python
2.	Security Implementations	Basic HTTP authentication, Session based authentication, User Registration, Login Tracking	Flask Security
3.	Scalable Architecture	It can grow and adapt with ease. It is designed for scalability and flexibility that offers help to farmers.	Python, Flask
4.	Availability	Infrastructure of the system provides recoverability and protection from system failure	Flask
5.	Performance	• Integrated support for unit testing • RESTful request dispatching • Uses Jinja templating • Support for secure cookies	Flask