

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

Date	20 October 2022
Team ID	PNT2022TMID08012
Project Name	Exploratory Analysis of Rainfall Data in India for Agriculture
Maximum Marks	4 Marks

S.No	Component	Description	Technology
1.	User Interface	User interacts with the prediction model through website to predict the rainfall data	HTML, CSS, JavaScript
2.	Cloud Database	The model is provided with data from IBM cloud database	IBM DB2, IBM Cloudant etc.
3.	API	Used to extend the service to other applications	Flask Application
4.	Mobile Notification	The purpose of notification is to inform the weather condition and changes	Notification will be shown in electronic device
5.	Machine Learning Model	This model is developed to predict the rainfall using ML algorithms	Sklearn, Algorithms - DT & MLR
6.	Data processing	Data is pre-processed and then used for prediction.	Pandas, Numpy, Matplotlib

**Table-2: Application Characteristics:**

<b>S.No</b>	<b>Characteristics</b>	<b>Description</b>	<b>Technology</b>
1.	Open-Source Frameworks	Backend Framework, CSS Styling framework, Relational Database	PyJWT, Flask, IBM Cloud DB
2.	Security Implementations	Request authentication using JWT Tokens	HS-256, Encryptions, SSL Certs
3.	Scalable Architecture	Support for Multiple Sample prediction using Excel File	Pandas, Numpy
4.	Availability	Availability is increased by Distributed Servers in Cloud VPS	IBM Cloud Hosting
5.	Performance	The application is expected to handle multiple predictions per second	Load Balancers, Distributed Servers

# TECHNOLOGY ARCHITECTURE

