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

Date	28th November 2023
Team ID	PNT2023TMID-592801
Project Name	Machine Learning Approach towards predicting Rainfall
Maximum Marks	4 Marks

Technical Architecture:

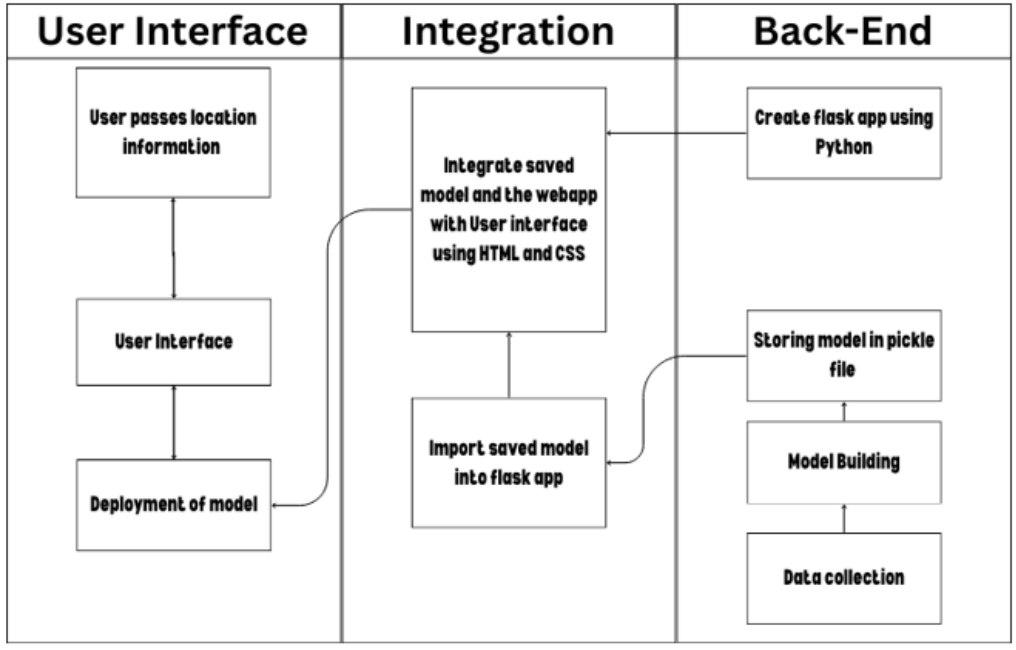

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web Application with prompts to enter necessary details	HTML and CSS
2.	Weather Data Collection	Collecting weather data using for rainfall prediction	API, Online dataset
3.	Data Storage	The weather data from the API and the Dataset is stored as a CSV file	Google Drive
4.	Data visualization and preprocessing	Cleaning the data, feature selection and analyzing the attributes	Python, Pandas, Numpy, Seaborn
5.	Machine Learning Models	Development of multiple models to predict rainfall, using Classification, regression and ANN	Python, Scikit-Learn, Tensorflow
6.	Web Application Framework	Backend Development and integration with FrontEnd	Python Flask
7.	Web Deployment	Deploying model onto the internet by making it an open course code on GitHub	Github Pages

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Python's Flask
2.	Security Implementations	Data encryption included during transit and input validation	HTTPS
3.	Scalable Architecture	Two tier Architecture	
4.	Availability	Does not support constant high volume traffic	Github Pages
5.	Performance	Site gets rebuilt every time a change is made and committed Improved loading time by allowing access to site by closest server	Jekyll CDN (Content delivery Network)