

Project Design Phase-II

Technology Stack (Architecture & Stack)

Date	16 October 2022
Team ID	PNT2022TMID10058
Project Name	Exploratory Analysis of Rainfall Data in India for Agriculture
Maximum Marks	4 Marks

Technical Architecture:

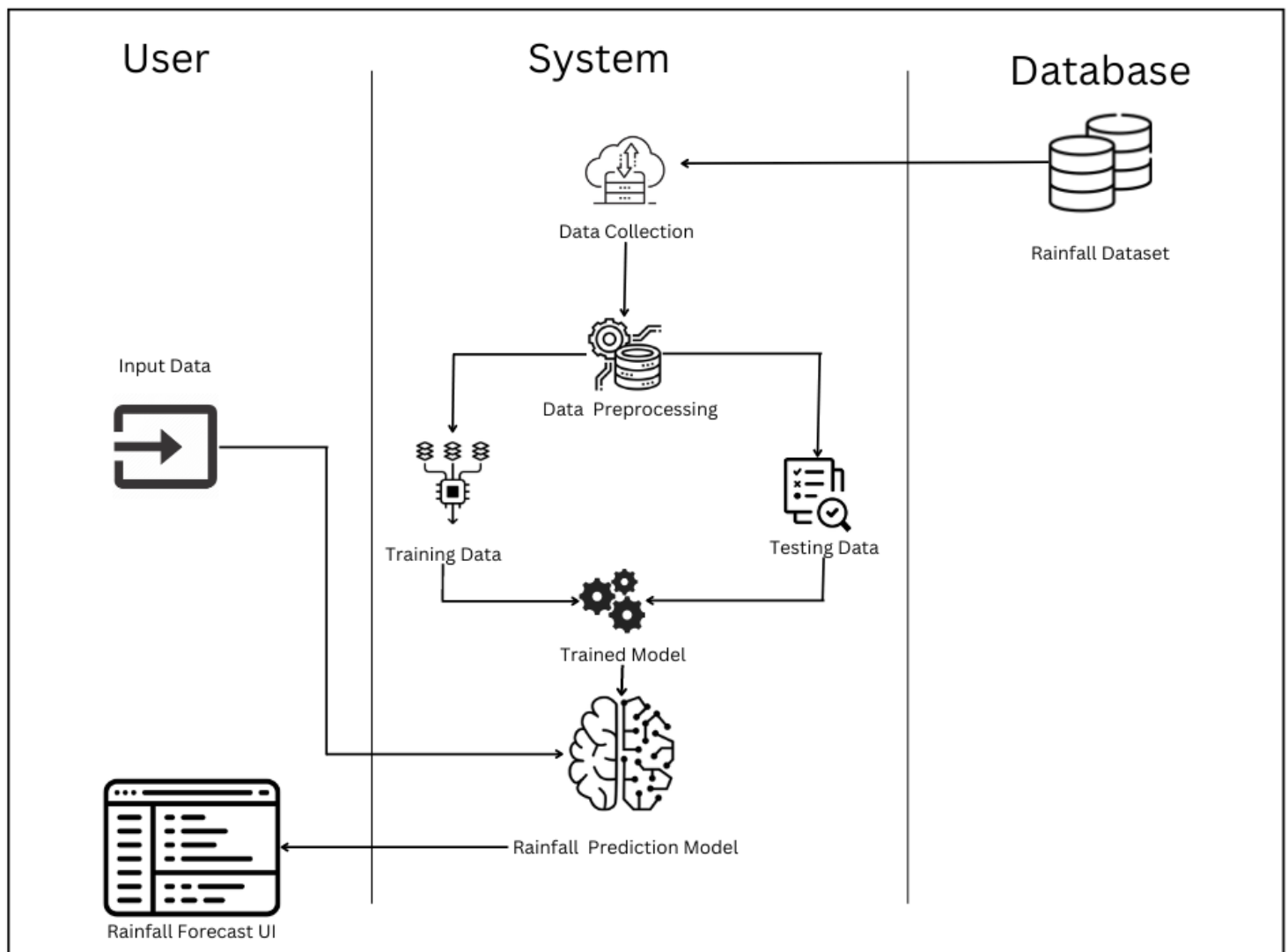


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	User interacts with application by Web UI	HTML, CSS, Bootstrap, JavaScript
2.	Application Logic-1	Integrate website with machine learning	Flask, Python
3.	Application Logic-2	Forecasting rainfall	Machine learning
4.	Application Logic-3	Cloud Application Server	IBM Watson STT service
5.	Database	Data Type, Configurations etc.	MySQL, Pickle, etc
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	External API	Accessing current climate data	IBM Weather API, etc.
8.	Machine Learning Model	Forecasting rainfall and crop recommending	Rainfall Model, Crop Recommending Model.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Open-source frameworks used	Python, Flask, Pickle, Machine learning
2.	Security Implementations	Request authentication using JWT Tokens	HS-256, Encryptions, SSL Certs
3.	Scalable Architecture	Support for Multiple Sample prediction	Pandas, Numpy , Scipy, Scikit-learn
4.	Availability	Availability is increased by Distributed Servers in Cloud VPS	IBM Cloud
5.	Performance	The application is expected to handle multiple predictions per second	Load Balancers, Distributed Server