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

Date	20 October 2022
Team ID	PNT2022TMID26144
Project Name	Predicting The Energy Output Of Wind Turbine Based On Weather Condition
Maximum Marks	4 Marks

Technical Architecture:

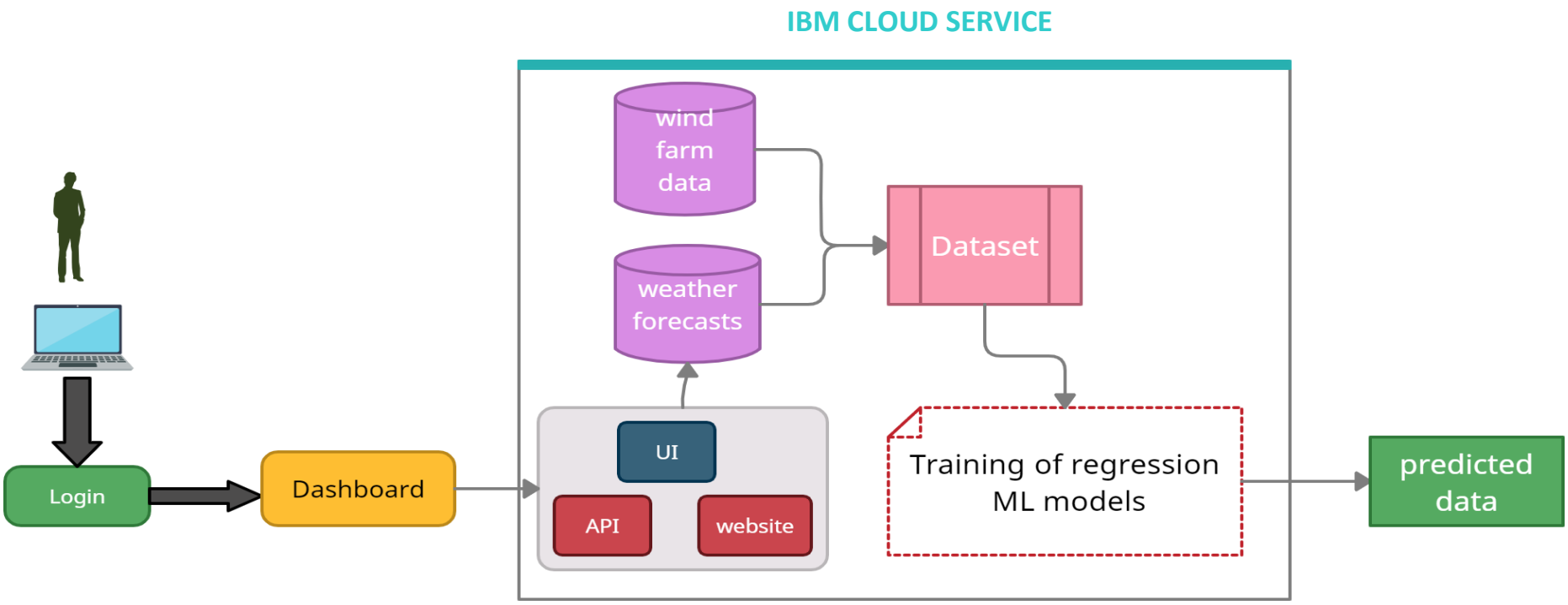

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web UI	HTML, CSS, JavaScript
2.	Application Logic-1	Prediction process	Java / Python
3.	Database	Integer type used to store the collected and examine weather data	MySQL, NoSQL
4.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloud DB
5.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
6.	External API	Used to predict weather	IBM Weather API, etc.
7.	Machine Learning Model	This model is developed to predict the rainfall using ML algorithms	Algorithms like regression, classification, clustering and ML models
8.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: intel i3 with 4GB ram Cloud Server Configuration :IBM cloud service	Local, IBM Cloud Storage Services

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Backend Framework, CSS, Relational Database	PyJWT, Flask, IBM Cloud DB
2.	Security Implementations	Request authentication using JWT Tokens	SHA-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 perform accurate prediction	Auto regressive models