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

Date	19 October 2022
Team ID	PNT2022TMID41492
Project Name	Predicting the energy output of wind farm based on weather conditions.
Maximum Marks	4 Marks

Technical Architecture:

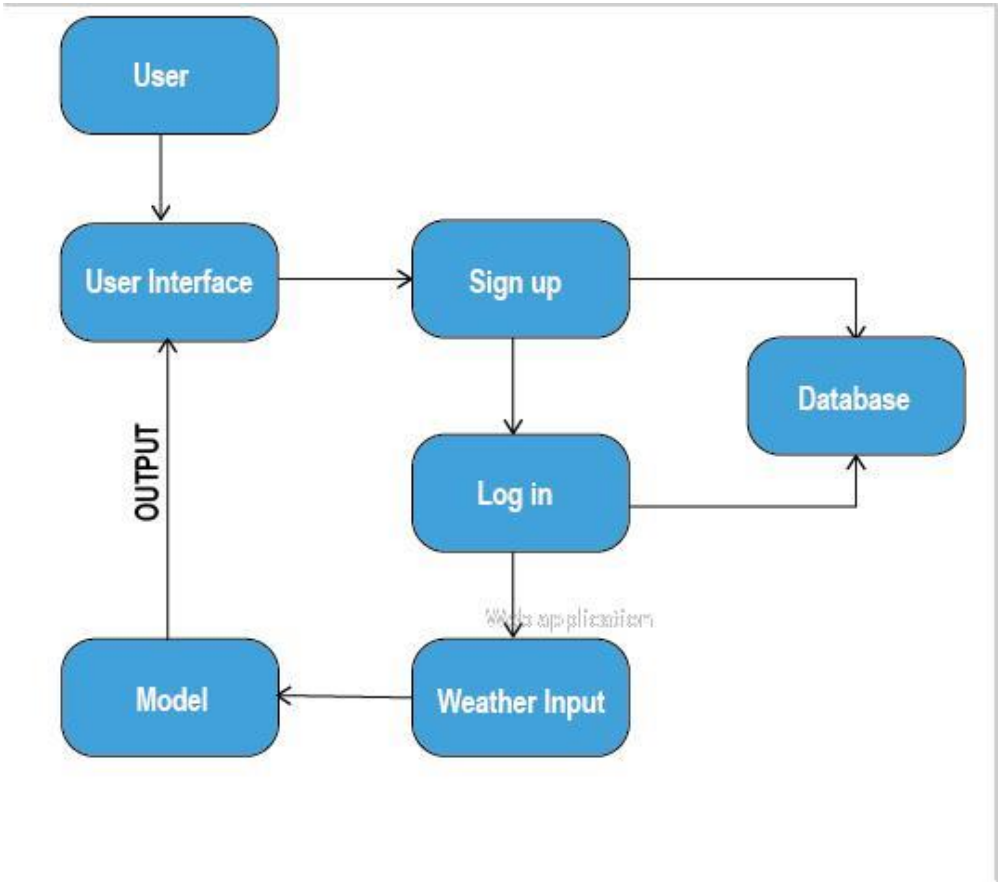

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	User can interact with web application	React JS
2.	Application Logic-1	Using python to create API's	Python
3.	Application Logic-2	Creating a model to Predict the data	IBM Watson STT service
4.	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5.	Database	To store user details and dataset	NoSQL
6.	Cloud Database	Database Service on Cloud	MongoDB atlas
7.	File Storage	-	-
8.	External API-1	Encrypting the user name, password and communication details	NPM package encryption
9.	External API-2	Purpose of External API used in the application	Aadhar API, etc.
10.	Machine Learning Model	Predicting the out of wind turbine using weather data	Regression Model
11.	Infrastructure (Server / Cloud)	-	-

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Using open source for external packages	Technology of Opensource framework
2.	Security Implementations	For securing the details of the users	Encryption algorithms.
3.	Scalable Architecture	The architecture used here is a 3tier architecture where a middleware is present to carry out the communication between client and server.	3tier architecture.
4.	Availability	It's a web application	React JS
5.	Performance	100 request per second for the server. We can also make higher number of requests per seconds by upgrading	Server hosting

4.	Availability	it’s a web application	React js
5.	Performance	100 request per second for the database.	mongoDB atlas

References:

https://c4model.com/

https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/

https://www.ibm.com/cloud/architecture

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https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d