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

Date 03 October 2022
Team ID PNT2022TMID25491
Project Name Predicting the output of a wind turbine 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 StorageTable -	-
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 Open Source framework
2.	Security Implementations For securing the details of the users	Encryption algorithms.
3.	Scalable Architecture The architecture used here is a 3 tier architecture where a middleware is present to carry out the communication between client and server.	3 tier architecture.
4.	Availability It's a web application	React JS

5. Performance 100 requests per second for the server. per seconds by upgrading
We can also make higher number of requests Server hosting

4.	Availability it's a web application	React js
5.	Performance 100 requests 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

https://aws.amazon.com/architecture

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