**Project Design Phase-II**

**Solution Requirements (Functional & Non-functional)**

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| Date | 21 October 2022 |
| Team ID | PNT2022TMID38491 |
| Project Name | Predicting the energy output of wind turbine based  on weather condition |
| Maximum Marks | 4 Marks |

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

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| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| FR-1 | User Registration | Registration through Gmail |
| FR-2 | User Confirmation | Confirmation via Email |
| FR-3 | User login into website | Login using credentials |
| FR-4 | Home page of the website | Description of the Predictor app |
| FR-5 | Redirection to prediction page | Clicking on a button from home page takes user to next page |
| FR-6 | Enter required parameters | Inputs like city name, area and more |
| FR-7 | Validating all required fields | System checks whether all the required fields are filled and the linked API has the weather condition of the city mentioned |
| FR-8 | Displays weather conditions of  of the entered city | Climatic conditions of the entered city will be displayed  to the user from the API on the webpage |
| FR-9 | Displays prediction results | Users can view the energy output of the entered weather conditions |
| FR-10 | Download prediction results | Download as jpg/png, download as pdf |
| FR-11 | Logout from the site | User can log out from the site |

**Non-functional Requirements:**

Following are the non-functional requirements of the proposed solution.

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| **FR No.** | **Non-Functional Requirement** | **Description** |
| NFR-1 | **Usability** | The system satisfies the user goals and the application is easy to use |
| NFR-2 | **Security** | Login credentials will be protected from attacks and of single use only. If it doesn’t match the existing  one, it shows an error message. Number of attempts to login to the site is limited |

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| NFR-3 | **Reliability** | The system will provide consistency in output without producing an error. Prediction Model is well trained |
| NFR-4 | **Performance** | Prediction Model will be well trained and accurate  with a accuracy above 70 percent to predict correct results |
| NFR-5 | **Availability** | Users can access the site from anywhere, anytime.  The resources to the website like the API to get weather conditions will be available at all time |