

## Project Design Phase-II

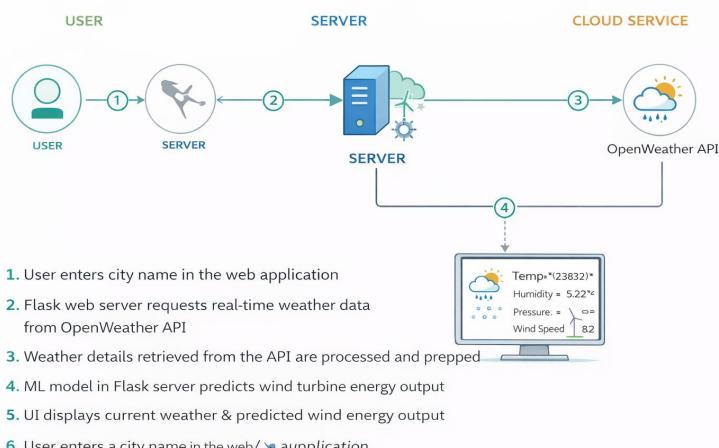
### Data Flow Diagram & User Stories

Date	15 February 2026
Team ID	LTVIP2026TMIDS80318
Project Name	Weather-Based Prediction of Wind Turbine Energy Output: A Next-Generation Approach to Renewable Energy Management
Maximum Marks	4 Marks

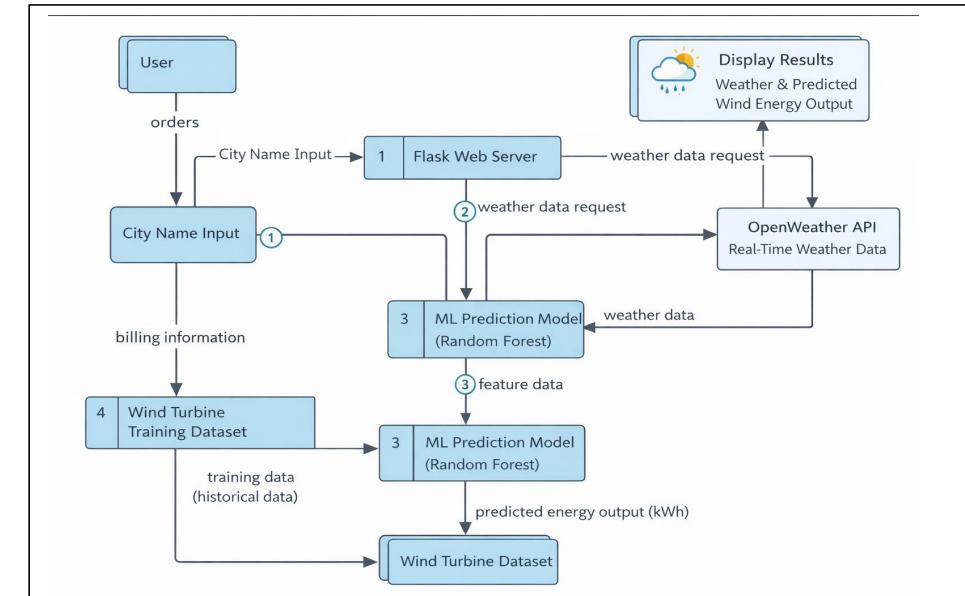
#### Data Flow Diagrams:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

#### Example: (Simplified)



Example: DFD Level 0 (Industry Standard)



## User Stories

Use the below template to list all the user stories for the product.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Web user)	Weather Information	USN-1	As a user, I can enter a city name to fetch real-time weather data	Weather details (temperature, humidity, pressure, wind speed) are displayed correctly	High	Sprint-1
		USN-2	As a user, I can select a city from dropdown list	Selected city remains displayed after submission	Medium	Sprint-1
		USN-3	As a user, I can view predicted wind turbine energy output based on weather data	Predicted energy value is displayed successfully	High	Sprint-2
		USN-4	As a user, I can input theoretical power and wind speed manually	System calculates and displays prediction result	Medium	Sprint-2
Customer (Mobile/Web user)	Real-Time API Integration	USN-5	As a user, I can get live weather data using OpenWeather API	API fetches correct real-time weather data	High	Sprint-1
Developer	Model Development	USN-6	As a developer, I can train a machine learning model for energy prediction	Model is trained and saved successfully (.pkl file)	High	Sprint-2
Developer	Deployment	USN-7	As a developer, I can deploy the application on cloud	Application runs successfully on Render cloud URL	High	Sprint-3
Administrator	System Monitoring	USN-8	As an admin, I can monitor application functionality and API response	System runs without errors and handles invalid city inputs	Medium	Sprint-3