**2.1 Technology Used**

**1. Frontend**

* **React.js** for building the UI.
* **Redux Toolkit** for state management.
* **Tailwind CSS** for styling.
* **Axios** for API calls.

**2. Backend**

* **Flask** framework for handling API requests.
* **MongoDB** as the primary database (if needed for storing user interactions).
* **Pl@ntNet API** for plant identification (directly uploading images and retrieving responses).

**3. AIML Integration**

* **YOLO** for image segmentation and recognition
* **LangChain** (if a custom chatbot needs to be trained).
* **GPT API** for chatbot processing and plant-related queries.

**4. Authentication**

* **JWT (JSON Web Tokens)** for secure authentication.
* **Bcrypt** for password hashing.

**2.2 Dataset And Input Format**

**Dataset**

* **Plant Identification (via API):** Image uploaded → Returns species name, scientific name, and confidence score.
* **Alternative Dataset (Oxford102):** Can be used but may require high processing power.
* **Chatbot Responses:** Query ID, User ID, Question, AI Response.

**Input Format**

* **User Registration:** { "email": "user@example.com", "password": "hashed" }
* **Plant Image Identification:** { "user\_id": "UUID", "image": "base64\_encoded\_string" }
* **Chatbot Query:** { "user\_id": "UUID", "query": "text" }