

Objective:

Develop a responsive and user-friendly web application named "**Energy Literacy App**" that helps consumers understand their energy bills and provides personalized energy-saving recommendations. The app should rely on the **OpenAI API** to analyze the bills and generate recommendations based on persona type and bill characteristics.

Key Features to Implement:

1. Persona Selection:

- Create a landing page with a selection of predefined energy consumer personas.
- Each persona should be represented with an image and a brief description.
- Implement clickable persona cards that allow users to select and proceed.

2. Bill Upload Functionality:

- Develop a secure file upload system that accepts PDFs and image files (JPEG, PNG).
- Include drag-and-drop functionality and a traditional file selection dialog.
- Validate the uploaded files for format and size, providing user feedback.
- Ensure the upload process is user-friendly with progress indicators.

3. Bill Analysis and Detailed Explanation:

- Implement OCR processing to extract text from the uploaded bills.
- Integrate the **OpenAI API** to analyze the extracted text and identify key billing information.
- Display the extracted data in an organized and readable format.
- Use the OpenAI API to generate interactive explanations for each part of the bill.
- Include charts and graphs to visualize energy consumption patterns.

4. Personalized Energy-Saving Recommendations:

- Use the OpenAI API to generate customized recommendations based on the user's bill data and selected persona.

- Calculate and display estimated cost and energy savings for each recommendation.
- Provide actionable steps and resources for users to implement the suggestions.
- Allow users to filter or prioritize recommendations based on their preferences.

5. AI Chatbot Assistant (Optional but Recommended):

- Integrate an AI-powered chatbot using the OpenAI API to assist users.
- The chatbot should be able to answer questions about the bill, energy-saving tips, and app features.

Technical Requirements:

- Use React for building the user interface.
- Ensure the application is fully responsive and works across various devices and screen sizes.
- Implement intuitive navigation and interactive elements.

Design Guidelines:

- Adopt a clean, minimalistic and modern design aesthetic with an eco-friendly color palette.
- Use intuitive navigation and clear calls-to-action to guide users through the app.
- Incorporate accessibility best practices to make the app usable for all users.