Frontend Development Assessment Task

Project: Dynamic Product Filtering Component

Time Limit: 2 hours

Goal:

Create a reusable JavaScript component that allows users to filter a list of products based on various criteria (e.g., category, price range, brand). The component should dynamically update the displayed products based on the selected filters.

Assets:

- **Product Data:** You will need to upload a JSON file containing an array of product objects with the following properties (Sample data is attached):
  - `id`
  - `name`
  - `category`
  - `price`
  - `brand`
- **Basic HTML Structure:** A simple HTML template will be provided with containers for the filter options and the filtered product list.

Requirements:

1. **Data Fetching:**
   - Use JavaScript's `fetch` API (or a similar method) to retrieve the product data from the uploaded JSON file.
2. **Filter Options:**
   - Implement filter options for at least two of the following criteria:
     - Category (e.g., dropdown or checkbox list)
     - Price Range (e.g., slider or input fields)
     - Brand (e.g., dropdown or checkbox list)
   - Filter options should be clearly labeled and easy to use.

3. **Product Display:**
    - Display the filtered products in a visually appealing way (e.g., grid or list layout).
    - Each product item should show at least the name and price.
    - Optionally, display the product image and other relevant details.
4. **Dynamic Filtering:**
    - As the user selects or changes filters, the product list should update in real-time to show only the matching products.
    - If no products match the selected filters, display a "No results found" message.
5. **Code Quality:**
    - Write clean, well-organized JavaScript code.
    - Use comments where necessary to explain your logic.

Bonus (Optional):

- Implement a "Clear Filters" button to reset the filters and show all products.
- Add sorting options to the product list (e.g., by price, alphabetically).
- Enhance the visual presentation of the component.

Submission:

- Host the completed component on a platform like CodePen, JSFiddle, or similar, including the uploaded JSON data file.
- Submit a link to your hosted project along with a brief explanation of your process.

Evaluation Criteria:

We will evaluate your submission based on:

- Correctness and efficiency of the filtering logic.
- Usability and clarity of the filter options.
- Visual appeal and responsiveness of the product display.
- Code quality, readability, and maintainability.

Let us know if you have any questions. Good luck!