### **Class Component Questions**

1. **Product Search (Dynamic Search):**
   * **Problem**: Create a class component that displays a list of products and allows the user to search for products by name.
   * **Real-Life Example**: You’re building a small product listing page where users can search for items like "Shirt" or "Pants" from a predefined list.
2. **Simple Login Form (Form Validation):**
   * **Problem**: Create a login form with email and password fields, and validate the email format before allowing submission.
   * **Real-Life Example**: You’re making a login page where users must enter a valid email address and password to log in.
   * **Solution**: On form submission, validate that the email has an "@" symbol and the password is at least 6 characters long. Show an error message if the validation fails.
3. **Todo List (Add/Remove Items):**
   * **Problem**: Create a todo list where the user can add and remove tasks.
   * **Real-Life Example**: A simple task manager where users can add tasks like "Buy groceries" and remove them once completed.
4. **Counter (Increment/Decrement):**
   * **Problem**: Create a simple counter that allows the user to increase or decrease a value.
   * **Real-Life Example**: A simple counter to track the number of items in a cart, allowing users to increase or decrease the count.
   * **Solution**: The component will have buttons for incrementing and decrementing the counter, and will store the current value.
5. **Toggle Light/Dark Mode:**
   * **Problem**: Create a component that toggles between light and dark modes when a button is clicked.
   * **Real-Life Example**: A webpage that changes from light to dark mode when a user clicks a button, similar to a dark mode feature on most websites.

### **Function Component Questions**

1. **Search Bar (Real-Time Filtering):**
   * **Problem**: Create a search bar component that filters a list of names as the user types.
   * **Real-Life Example**: A search bar on a contact list that filters and shows matching names as the user types (e.g., "John", "Jane").
2. **Simple Toggle (Button State):**
   * **Problem**: Create a button that toggles its text between "ON" and "OFF" when clicked.
   * **Real-Life Example**: A button that changes its label between "Start" and "Stop" depending on the state.
3. **Input Form (Track Input Changes):**
   * **Problem**: Create a form with a single input field where the value is displayed below the input as the user types.
   * **Real-Life Example**: A live preview feature where the text typed into an input field is displayed below the field.
4. **Counter with Reset (Increment and Reset):**
   * **Problem**: Create a simple counter with buttons to increment the value and reset it to zero.
   * **Real-Life Example**: A counter in an app that allows users to increase the count and reset it when needed.
5. **Change Text Color (Button Click Event):**
   * **Problem**: Create a button that changes the text color of a paragraph when clicked.
   * **Real-Life Example**: A simple app where a button click changes the color of a text from black to red, blue, or green.