

# Frontend Developer Assignment

## Project Overview

This prototype transforms a form-based website builder into an interactive **drag-and-drop interface**, empowering users to design websites visually while retaining form-based property editing.

## Architecture

### 1. Component-Based Structure (React)

- **Canvas:** Main area where users can drag-and-drop elements.
- **Sidebar (Element Library):** Contains draggable UI components (Text, Image, Button, etc.).
- **Property Panel (Form):** Dynamic form interface that appears when an element is selected for editing properties like text content, image URLs, colors, etc.

### 2. State Management

- **React Context API** for global state management to track:
  - Elements added to the canvas
  - Active (selected) element
  - Element positions and styles

### 3. Drag-and-Drop Handling

- **Library:** react-dnd (or @dnd-kit/core) for:
  - Drag source and drop target handling
  - Layered dragging experience
  - Snap-to-grid support (optional for alignment)

### 4. Responsive Design

- **Tailwind CSS** for fast, mobile-friendly styling.
- Elements adapt to screen size using utility classes (w-full, sm:w-1/2, flex-wrap, etc.).

## Tools and Libraries Used

Tool / Library	Purpose
React	Frontend framework
react-dnd / dnd-kit	Drag-and-drop functionality
Tailwind CSS	Rapid styling and responsiveness

Tool / Library	Purpose
Zustand / Context	Global state management
Formik + Yup	Form handling and validation
Vite / CRA	Project setup

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## 🌟 Key Features

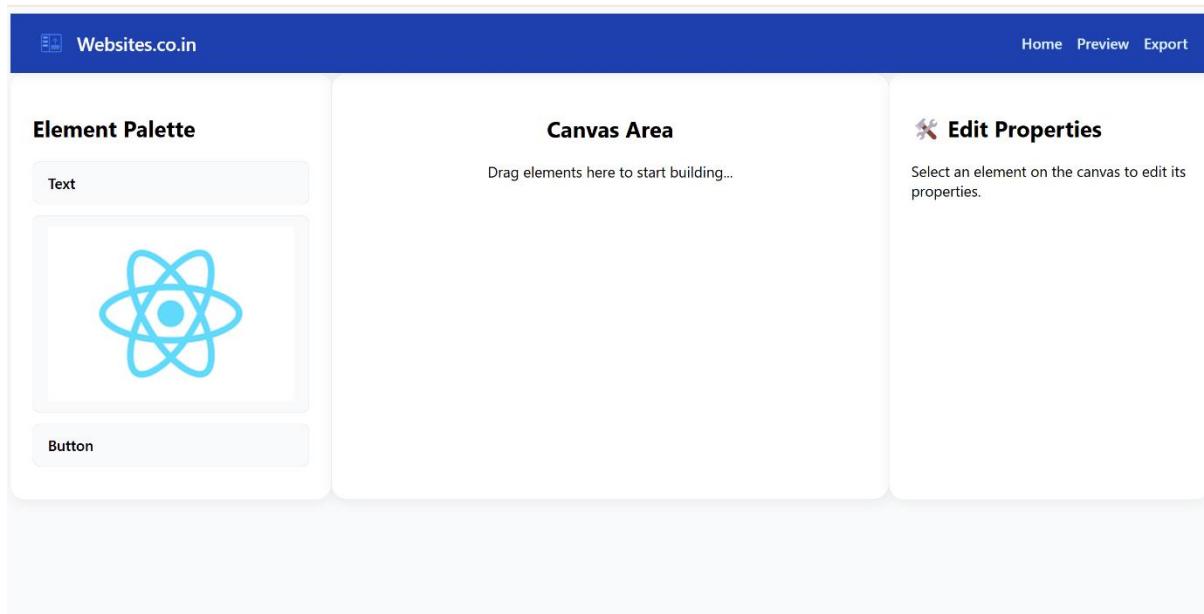
- 1. Drag-and-Drop Canvas:**
    - Users drag elements from sidebar to the canvas.
    - Each element is uniquely identifiable and editable.
  - 2. Dynamic Property Forms:**
    - Click on any canvas element to reveal form controls (text, style, alignment).
    - Data binding ensures real-time updates.
  - 3. Responsive Layouts:**
    - Canvas auto-adjusts for desktop and mobile previews.
  - 4. Scalable Codebase:**
    - Easily extendable to add new component types (e.g., video, forms, maps).
    - Modular structure supports theme/template integration.
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## 🧠 Rationale Behind Decisions

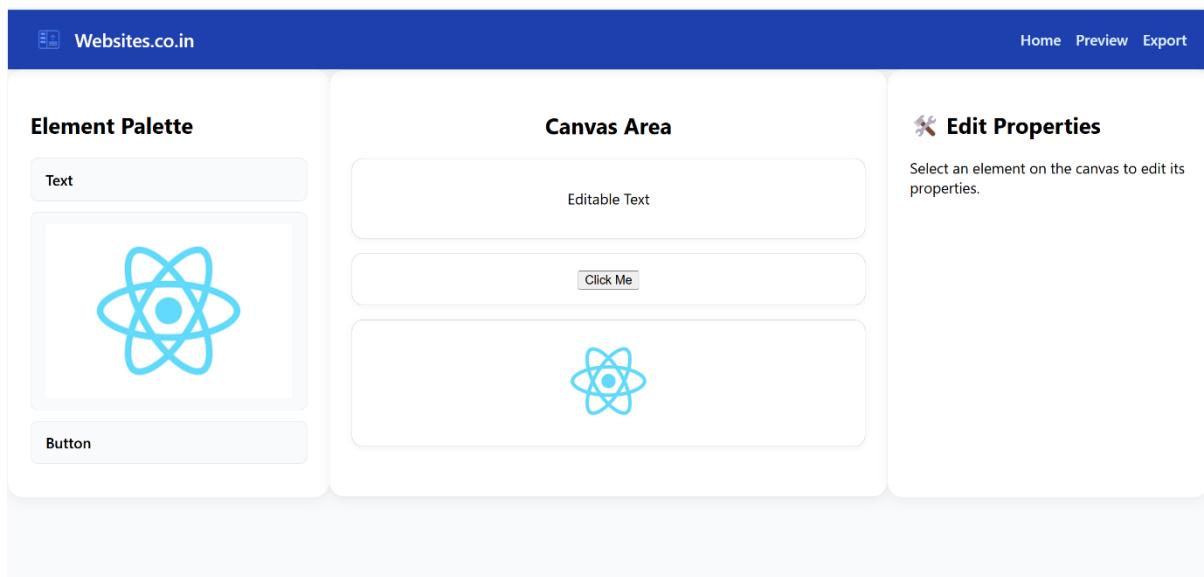
- **React:** Ideal for dynamic UI updates and reusable components.
  - **Drag-and-drop:** Using react-dnd ensures accessible and customizable interactions.
  - **Forms:** Maintaining the form-based editing ensures continuity from your existing platform, easing the learning curve.
  - **Tailwind CSS:** Provides a scalable, responsive design system without writing custom CSS.
  - **State Management:** Minimalist (Zustand or Context) avoids overkill for prototype while remaining robust.
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### Prototype Preview:

**1. This screen is a prototype of a drag-and-drop website builder featuring three main sections: an Element Palette to choose elements, a Canvas Area to build the layout, and an Edit Properties panel to configure selected elements. It allows users to visually design their website with interactive and customizable components.**



**2. This updated screen shows a working drag-and-drop builder where text, button, and image elements have been added to the Canvas Area. Users can still select any element to customize its properties through the Edit Properties panel on the right**



**3.**

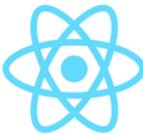
**This screen demonstrates the editing capability of the builder where a text element on the Canvas Area is selected. The Edit Properties panel allows users to modify its content dynamically through a form input.**

Websites.co.in

Home Preview Export

**Element Palette**

Text



Button

**Canvas Area**

Editing Text



Click Me

**Edit Properties**

Element Type  
Text

Text Content



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