



**COLLEGE CODE: 9504**

**COLLEGE NAME: DR.G.U.POPE COLLEGE OF ENGINEERING**

**DEPARTMENT: COMPUTER SCIENCE AND ENGINEERING**

**STUDENT NM ID: 17EB415F3BD034A830348260A3C0FB92**

**ROLL NO: 950423104033**

**DATE: 15-09-2025**

**Completed the project SINGLE PAGE APPLICATION Phase-01**

**TECHNOLOGY PROJECT NAME: IBM-FE- SINGLE PAGE APPLICATION**

**SUBMITTED BY,**

**NAME : RENISTON R**

**MOBILE: 8883793681**

## Problem Statement:

Modern users demand fast, intuitive, and responsive web applications. Traditional multi-page applications (MPAs) often reload the entire page during interactions, leading to delays, inconsistent experiences, and increased server load. These inefficiencies are unacceptable in today's competitive digital landscape.

A Single Page Application (SPA) solves these problems by dynamically loading content without full-page reloads. This approach enhances user experience, improves performance, and reduces server interactions. The aim of this project is to build a SPA tailored to a practical use case (e.g. task manager, booking system, inventory management) using modern web technologies like React, Vue, or Angular.

## Users & Stakeholders:

**General Users:** Regular users accessing the application to perform tasks like creating, viewing, or updating data.

**Admin Users:** Users with elevated privileges to manage the system, such as user roles, data control, and settings.

**Stakeholders:** Client/Product Owner: Provides the project vision and core requirements.

**Developers:** Implement the SPA features and integrations.

**UI/UX Designers:** Ensure the application is intuitive, attractive, and responsive.

**Project Manager:** Ensures deliverables meet deadlines and quality standards.

## User Stories:

- As a user, I want to register and log in so I can access my personal dashboard.
- As a user, I want to create and manage items (e.g., tasks/bookings) efficiently without page reloads.
- As an admin, I want to manage users and data securely from an admin dashboard.
- As a user, I want the application to be responsive so I can use it on my mobile device.
- As a user, I want to receive real-time feedback (success/failure messages) on my actions.

### MVP Features:

- User authentication (Sign Up / Login / Logout)
- Responsive user interface
- Dashboard with dynamic content rendering
- CRUD operations (Create, Read, Update, Delete)
- API integration for data exchange
- Admin panel (basic role-based access control)
- Real-time feedback and error handling

### Wireframes / API Endpoint List

#### Wireframes (To be attached separately):

- ❖ Login / Signup Page
- ❖ Dashboard / Item List Page
- ❖ Item Detail / Edit Page
- ❖ Admin Panel (optional)

## API Endpoint List:

Endpoint	Method	Description
<b>/api/signup</b>	POST	Register a new user
<b>/api/login</b>	POST	Authenticate and log in user
<b>/api/logout</b>	POST	Log out current user
<b>/api/items</b>	GET	Retrieve all items
<b>/api/items/:id</b>	GET	Retrieve a specific item
<b>/api/items</b>	POST	Create a new item
<b>/api/items/:id</b>	PUT	Update an existing item
<b>/api/items/:id</b>	DELETE	Delete an item
<b>/api/users/:id</b>	PATCH	Update user role (admin only)

## Acceptance Criteria:

Users can register, log in, and log out securely.

Application must load dynamically without full-page refresh.

Users can perform CRUD operations on items.

Role-based access: Admins can manage users; regular users cannot.

API endpoints return expected responses (status codes & messages).

Application works on all device sizes (responsive design).

Proper error messages and success confirmations are displayed.