Project Overview:

This web application is a modern **event and expo management platform** that allows users to interact with the **event venue floor plan** in both **2D and 3D**. The platform also offers a powerful **Admin Panel** to manage stall creation, assignments, and live updates.

Target Users:

- **Event Attendees**: Can explore the venue in 2D/3D, search stalls, and get company details.

- **Event Organizers/Admins**: Can log in, design the floor plan layout, assign stalls, and manage vendor info.

Key Features:

Public Users

- View the **interactive 2D floor plan**

- Explore a fully rendered **3D version** of the layout

- Search for stalls by name or category

- Click on booths to get vendor details

- View **venue location** on Google Maps

Admin Panel

- **Secure login** for admin

- Create/Edit floor layout using **drag-and-drop 2D editor**

- Assign metadata (company name, logo, type, etc.)

- Save layout and preview public view

- Export layout data (for backup or other use)

Technologies & Why We're Using Them

Technology	Purpose	Why It's Chosen
React.js	Frontend framework	Fast, scalable, component-based UI
React Router	Routing	For SPA page transitions (login, dashboard, viewer)
Tailwind CSS / Bootstrap	Styling	Responsive, modern UI design
React-Konva / Fabric.js	2D Editor	Enables drag-and-drop canvas-based layout editor
React-Three-Fiber	3D Viewer	Brings Three.js into React; enables real-time 3D rendering
Firebase Auth or Node.js + JWT	Admin Authentication	Easy-to-use, secure login system
Firebase Firestore / MongoDB	Database	Stores layout, stall data, and user info
Google Maps / Mapbox API	Venue Location	Allows users to view the event location and get directions
Vite / Create React App	Build tool	Fast dev server, modern build process
Netlify / Vercel / Firebase Hosting	Deployment	Scalable, free hosting options with CI/CD support

Project Phases

Phase	Description
Phase 1	Setup & Authentication
Phase 2	Admin 2D Editor
Phase 3	Public 2D Viewer
Phase 4	3D Floor Plan Viewer
Phase 5	Google Maps & Search
Phase 6	Testing & Deployment

Benefits to Client

- Easy event management from one place
- Real-time floor planning without third-party tools
- Attractive 3D visualization to impress visitors
- Efficient stall assignments and search
- Scalable and mobile-ready design

Optional Add-ons (Future Enhancements)

- **Real-time updates** using WebSocket's
- **QR Code booth navigation** for mobile
- **Booking system** for vendors
- **Multi-admin support**
- **Analytics Dashboard** (stall views, clicks, etc.)