

EventX Studio – Event Management System

1. Introduction

Event management is always a challenging task, especially for small and medium organizations that cannot afford expensive or overly complex solutions. Organizers usually struggle with creating events, managing tickets, tracking attendees, and analyzing engagement. This project, EventX Studio, was developed to provide a simple and affordable solution with two main roles: Admin (event organizers) and User (attendees). The system is built using modern technologies and a clean UI to make the process smooth for both sides.

2. Problem Statement

Existing event management tools are either too costly or too complicated. Small event organizers need something lightweight but still powerful enough to cover basic needs such as event creation, ticket booking, and attendee insights. Without such a tool, organizers face difficulties in keeping track of sales, engagement, and managing their audience effectively.

3. Objectives

- Build a complete full-stack web system using React, Node.js, and MongoDB.
- Provide authentication with role-based access (Admin/User).
- Allow Admins to create, update, delete, and manage events.
- Enable Users to browse events, book tickets, and get QR codes for check-in.
- Offer an Analytics Dashboard for Admins (Sales, Revenue, Attendee Demographics).
- Deploy the project online for a live demo.

4. Features

Admin Side

- Login & Register
- Dashboard (Total Events, Tickets Sold, Revenue, Attendees)
- Event CRUD (Add, Edit, Delete)
- Ticket Management (seat allocation + QR code generation)
- Analytics Reports (Age, Gender, Interests, Locations)

User Side

- Login & Register - Browse Events (Upcoming, Active, Closed) - Event Details Page (date, price, seats, description) - Book Tickets (seat selection + dummy payment) - My Tickets Page (shows QR codes for entry) - Notifications for upcoming events

5. Technology Stack

- Frontend: React (Vite) + TailwindCSS - Backend: Node.js + Express.js - Database: MongoDB (local or Atlas) - Other Tools: JWT (authentication), QR Code Generator, Recharts (analytics), Figma UI

6. Implementation Phases (Modules)

- Module 1: Authentication & Setup (React + Node + MongoDB + JWT) - Module 2: Event Management (Admin CRUD + Seat Allocation + QR Codes) - Module 3: User Booking System (Browse, Details, Booking, My Tickets) - Module 4: Analytics & Reports (Dashboard charts + Insights) - Module 5: Deployment (Frontend → Vercel, Backend → Render, DB → MongoDB Atlas)

7. Deployment

- Frontend (React): hosted on Vercel/Netlify - Backend (Node.js): hosted on Render/Heroku - Database: MongoDB Atlas - Environment variables were set for security (MONGO_URI, JWT_SECRET, CORS_ORIGIN).

8. Results

The final system successfully provides a complete event management workflow: - Admins can create and manage events, track tickets, and view analytics. - Users can explore events, book tickets, and receive QR codes. - The system demonstrates end-to-end web development with proper integration between frontend, backend, and database.

9. Future Enhancements

- Adding a real payment gateway (e.g., Stripe). - Exporting analytics as CSV/Excel. - Adding a QR scanner for on-site check-in. - Improved notification system (email/SMS).

10. Conclusion

This project shows how modern web technologies can solve real-world problems in a simple and affordable way. EventX Studio achieves its goal of providing an easy-to-use, full-stack event management platform tailored for smaller organizations, with the potential to scale and add more features in the future.