System Design Document - Event Manager Dashboard

1. Overview

The Event Manager Dashboard is a full-stack web application that allows users to create, update, delete, and view events. It is designed to be fast, responsive, and user-friendly with real-time update capabilities.

2. Technologies Used

- Frontend: Next.js (App Router) with TypeScript and Tailwind CSS

- Backend: Node.js with Express.js

- Database: PostgreSQL (raw SQL queries)

- API Testing: Postman

- Deployment: AWS EC2 with Nginx

3. Architecture

The system follows a client-server architecture:

Client (Next.js) -> Express.js Server (API Layer) -> PostgreSQL (Data Layer)

All interactions happen via RESTful API endpoints hosted on the Express backend.

4. Features

- Create, Read, Update, Delete (CRUD) operations for events

- Real-time update of event list on creation

- Responsive design with scrollable event cards

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- Custom date-time input with form validation

- Confirmation modals and toast notifications for actions

5. Deployment

The application is deployed on an AWS EC2 instance. The backend runs on a Node.js server, and the frontend is served using Nginx. Nginx also acts as a reverse proxy for API requests to the backend.

6. Database Schema

Table: events

Columns:

- id (serial primary key)

- title (text)

- description (text)

- datetime (timestamp)

- location (text)