Project Proposal

On

AI Powered Event Organiser Web Application

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AI Powered Event Organiser Web Application

2. Introduction

Event management is a complex and time-consuming activity that involves venue booking, guest management, vendor allocation, theme selection, budgeting and timeline planning. Most people struggle because they do not have expertise, enough time or proper support to plan an event in an organized way.

To overcome this challenge, the proposed project introduces an **AI-powered automated event planning platform** that helps users create complete event plans within minutes. By entering details like event type, date, number of guests and budget, the system uses **Artificial Intelligence to generate event proposals, vendor suggestions, venue ideas, estimated costs and schedules**.

This web-based system reduces manual effort, improves planning efficiency and provides a smarter digital event management experience.

3. Objectives

Primary Objectives

- To automate event planning with the help of Artificial Intelligence.
- To generate event proposals, schedules and cost estimates instantly based on user inputs.
- To reduce manual effort, time and complexity involved in event management.

Secondary Objectives

- To provide smart venue, vendor and theme suggestions through AI recommendation engine.
- To offer a user-friendly dashboard for tracking event progress and task timelines.
- To securely store and manage event-related data using a cloud-based database.

Technical Objectives

- To build a full-stack web application that supports multi-user access.
- To integrate AI (Gemini API) with Next.js and Convex backend for intelligent planning.
- To implement secure authentication and role-based access using Clerk.
- To ensure cross-platform accessibility through a browser-based interface.

Long-Term / Business Objectives

- To scale the platform into a SaaS-based service suitable for individual users, event planners and companies.
- To support subscription-based and vendor booking-based revenue model.
- To allow future integration of online payment, chat and mobile app support.

4. Project Category

Full Stack Web Application — AI Integrated Event Management System

This project belongs to the category of **SaaS (Software as a Service)** based **Full Stack Web Application**.

Users can access the system directly through a web browser without installing any software. All features such as event planning, AI proposal generation, vendor selection and budget estimation are offered as **online services**, making it a **cloud-based event management platform**.

Why this project is SaaS:

- The platform works entirely online (website based)
- Users can register and access services based on their requirements
- All data is stored securely in the cloud and processed by the backend server
- The system provides services on demand to multiple users simultaneously
- AI-powered features add automation and personalization to the service

Thus, it is not just a simple website — it is a **subscription-ready cloud solution** that can be used by:

- Individuals planning personal events
- Professional event organizers
- Corporate teams arranging conferences/meetings
- Vendors offering event services

Key characteristics of this SaaS-based system:

Feature	Type
Deployment	Cloud / Web
Access	Browser-based (no installation)
Scalability	Multi-user & multi-event support
Business Model (future)	Subscription / Pay-per-service
Automation	AI-generated planning & scheduling

5. Analysis

5.1 Modules & Description

The system is divided into multiple interconnected modules to ensure scalability, maintainability and modular development.

Module Name	Description
User Module	Enables user registration, login, profile management and event creation workflow.
AI Planning Module	Takes event details as input and generates budget estimation, theme suggestions and complete schedule using AI.
Venue & Vendor Module	Provides smart recommendations of vendors/venues based on event type, budget and location. Also supports booking & availability tracking.
Dashboard Module	Displays event progress, tasks, timeline, vendor bookings and overall status in real time.
Admin Module	Manages users, events, vendor information and has full control over platform data and analytics.
Authentication Module	Ensures secure login and role-based access management using Clerk authentication services.

5.2 Database Design

The database design follows a **normalized and scalable structure** to support multi-user and multi-event operations.
It is optimized for:

- Fast read/write operations
- Real-time event updates
- Secure authorization and access control

Major database entities include:

- Users
- Events
- Vendors
- Schedules

- Bookings
- Payment (future extension)

Each entity contains unique identifiers and is relationally linked to ensure data integrity, avoiding duplication and redundancy.

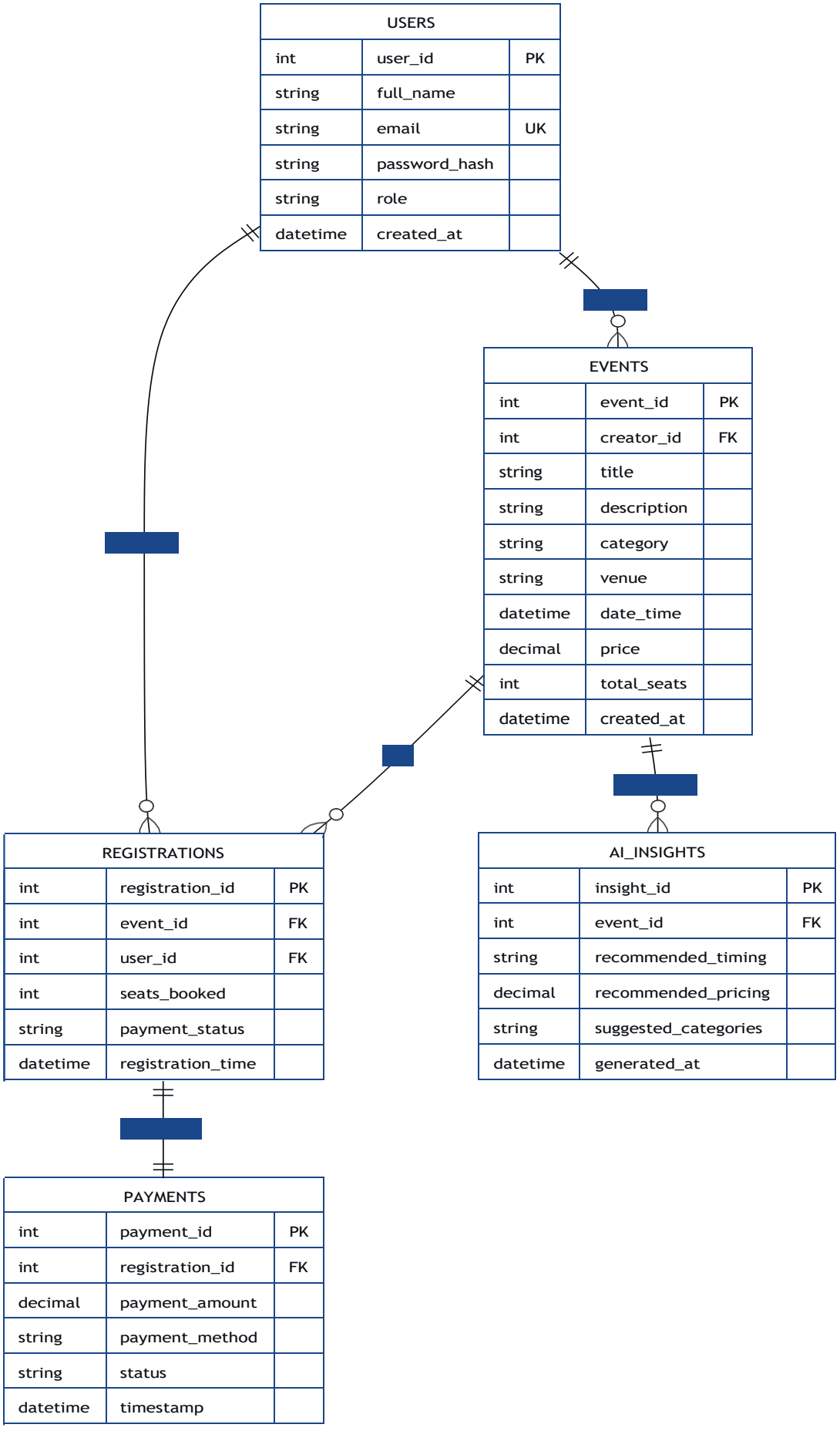
5.3 ER Diagram (Entity Relationship Model)

The conceptual ER model visualizes the relationship between actors and database entities.

Explanation of relationships:

- A **User** can create multiple **Events**
- Every **Event** can generate multiple **Schedules**
- Each **Event** may include multiple **Vendor Bookings**
- Each booking links to a specific **Vendor**

This design ensures that data retrieval for event planning and tracking remains fast and organized.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datetime created_at
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datetime created_at
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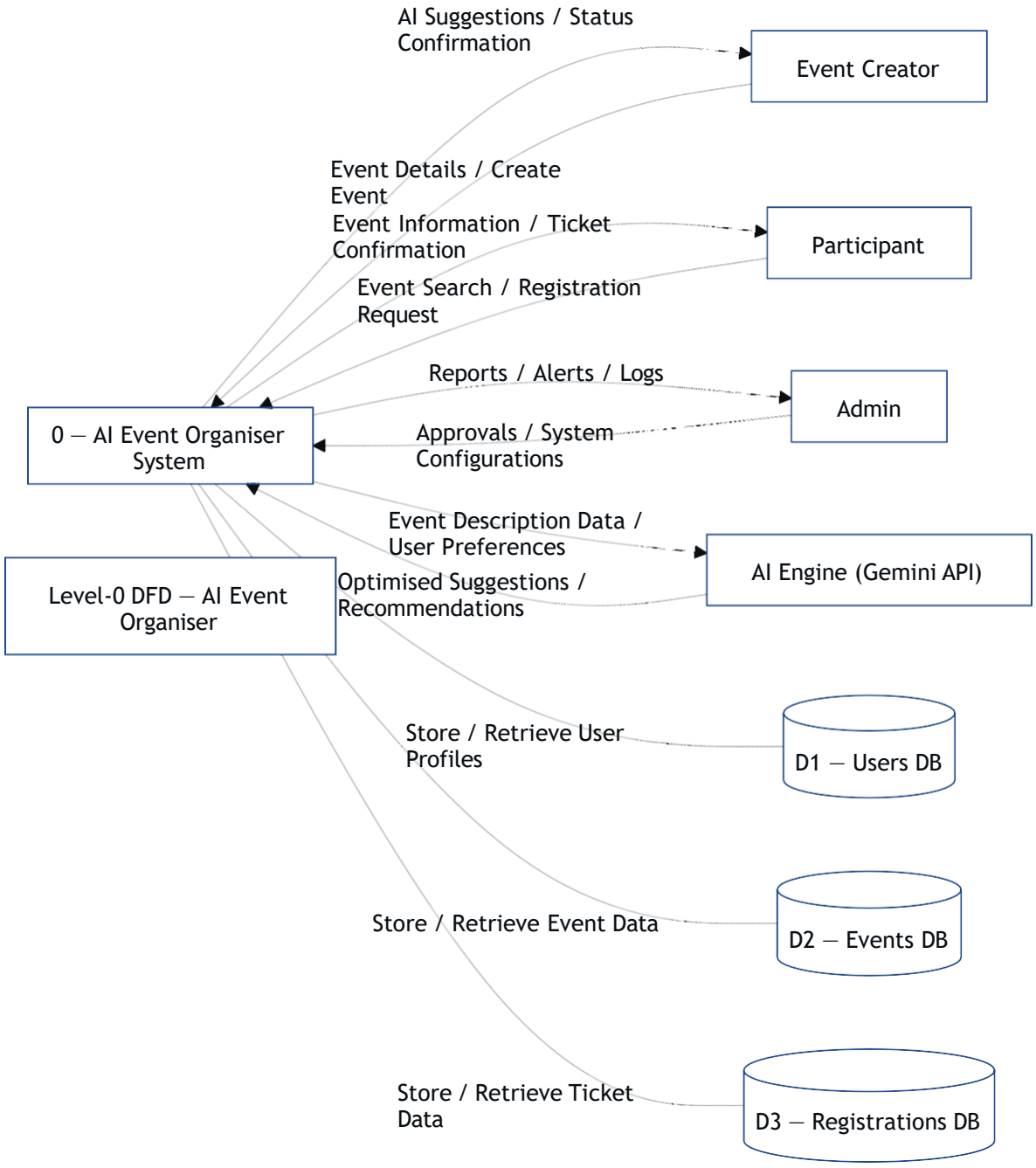
5.4 Data Flow Diagram (DFD)

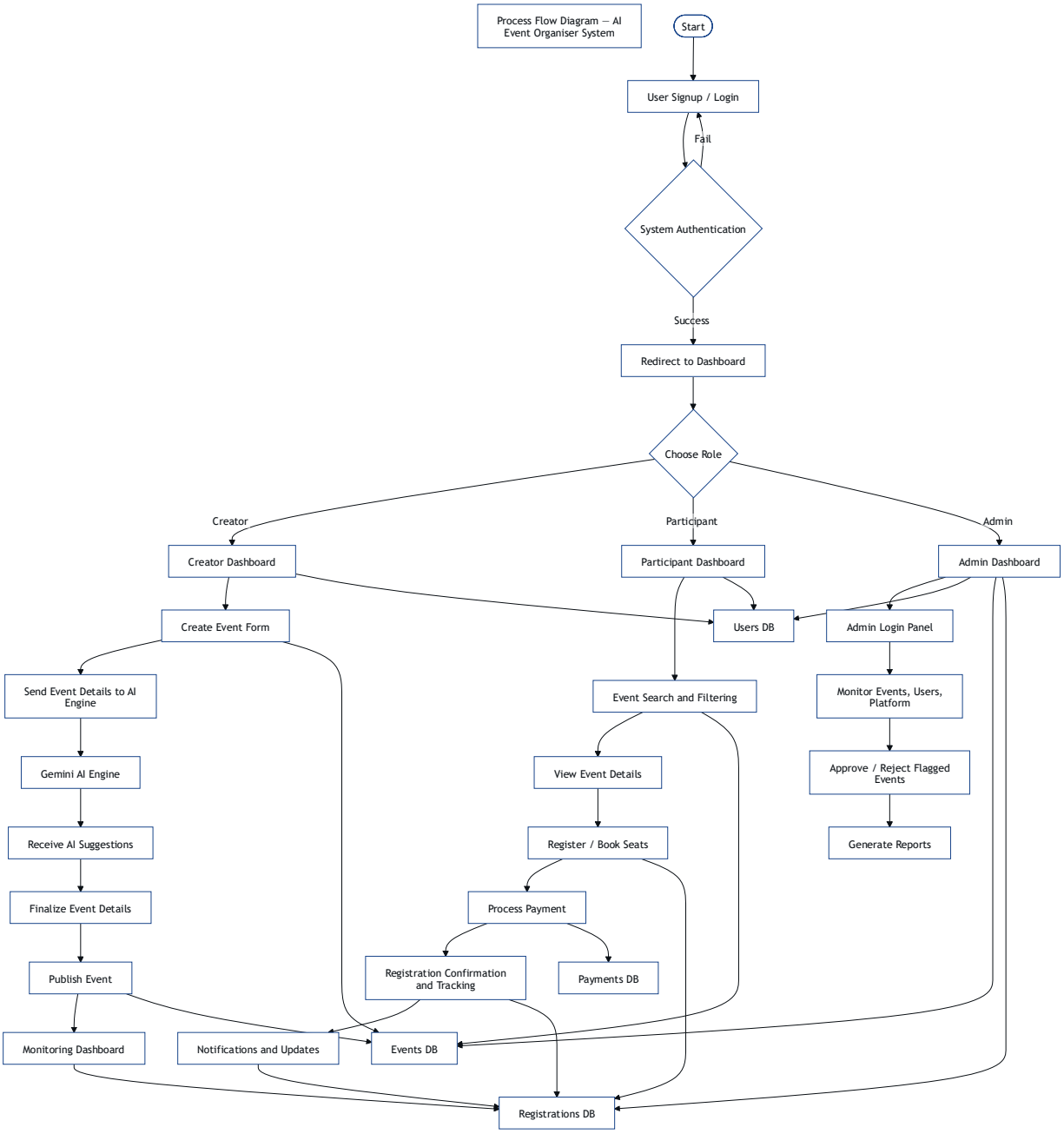
The Data Flow Diagram represents how data moves through the system from input to output.

DFD – Level 0 (Context Diagram)



6. Complete Structure

Process Logical Diagram (Workflow)



System automatically performs:

- Budget estimation
- Timeline sequencing
- Activity allocation
- Notifications and reminders

7. Platform Used

Hardware Requirement

Component	Minimum
Processor	Intel Core i3
RAM	4 GB
Storage	2 GB
Operating System	Windows / Mac / Linux

Software Requirement

Component	Technology
Frontend	Next.js, React, Tailwind CSS
Backend	Node.js + Convex
Database	Convex Database
Authentication	Clerk
AI	Google Gemini API
IDE	Visual Studio Code
Version Control	Git & GitHub

8. Future Scope

The platform has significant potential for enhancement and scalability. Possible future developments include:

- **Integration of Online Payment Gateway:** Enable seamless and secure financial transactions between vendors and the platform.
- **QR-Based Event Entry:** Implement QR code tickets for smooth and contactless guest entry management.
- **Real-Time Communication:** Facilitate instant messaging between guests and organizers for improved coordination.
- **Mobile Application Development:** Launch dedicated Android and iOS apps for enhanced accessibility and user experience.
- **IoT-Based Event Tracking:** Introduce live tracking of event activities and resources, particularly for high-budget or large-scale events.
- **Business Analytics Dashboard:** Provide detailed insights into vendor performance, event metrics, and operational efficiency to support data-driven decisions.

These enhancements aim to make the platform more interactive, efficient, and data-driven, catering to evolving user needs and industry trends.

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