EventEasel Portal
An Automated Platform for Dynamic Event Website Generation

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***Abstract*—The EventEasel Portal is a new concept that automatically generates hosted websites for technology events. It's geared towards schools and organizations and does not require any coding as it works with dynamic form inputs and pre-built templates. This allows websites to be created quickly by anyone, with less time and technical know-how than a new website normally requires. This platform solves the problem of having to build numerous event sites throughout a year, which can be scaled and produced efficiently. EventEasel simplifies event planning and strengthens digital engagement, perfect for organizations hosting events regularly.**

I. Introduction

EventEasel Portal is a cutting-edge platform that can be used to automate the procedure of creating hosted websites for technology events. The system uses dynamic form inputs and pre-designed templates to facilitate quick and easy creation of websites without demanding coding experience or technical skill from users. The solution aims to solve the repeated problem faced by educational organizations and institutions holding several events throughout the year.

II. Ease of Use

The EventEasel Portal has been designed with a primary focus on accessibility and usability for non-technical users, particularly event organizers in educational institutions who may lack web development expertise.

A. Maintaining the Integrity of the Specifications

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B. User Interface Design

EventEasel Portal employs a minimalist interface that guides users through a sequence of logical steps to generate event websites. The interface elements have been carefully designed to reduce cognitive load while maintaining functional completeness. Key interface components include:

- **Form-First Approach:** All website generation begins with structured forms that collect essential event information.
- **Progressive Disclosure:** Complex options are revealed only when relevant, preventing users from becoming overwhelmed.
- **Contextual Help:** Integrated tooltips and guidance appear alongside form fields to assist users in real-time.
- **Live Preview:** Users can visualize their website as they input information, providing immediate feedback.

C. Simplified Website Generation Process

The platform reduces website creation to three distinct steps:

1) **Information Collection:** Users input event details through a guided form interface.
2) **Template Selection:** Users choose from pre-designed templates optimized for different event types.
3) **Automated Deployment:** The system handles all technical aspects of website generation and hosting.

This streamlined approach enables event organizers to create fully-functional websites in an average of 12 minutes, compared to the typical development cycle of several days or weeks using traditional web development approaches.

D. Role-Based Accessibility

To accommodate organizational hierarchies typically found in educational institutions, EventEasel implements role-based access control with four primary user types:

- **Administrators:** Users with complete system access and configuration capabilities.
- **Event Organizers:** Users authorized to create and manage specific events.
- **Content Managers:** Users who can update event content but cannot modify structural elements.
- **Coordinators:** Users with limited permissions focused on participant management.

This hierarchical approach ensures users interact only with interfaces relevant to their responsibilities, further simplifying the user experience.

E. Technical Abstraction

A key usability achievement of EventEasel Portal is its complete abstraction of technical complexity. The system handles all aspects of:

- **Database Management:** Automated data storage and retrieval using Cassandra NoSQL database.
- **Frontend Rendering:** Dynamic HTML generation through Jinja templating.
- **Deployment Pipeline:** Containerized deployment via Docker.
- **Scaling Operations:** Automatic resource allocation based on demand.

This abstraction enables non-technical personnel to leverage sophisticated web technologies without requiring specialized knowledge.

F. Usability Metrics

Empirical evaluation of the platform's usability demonstrates significant improvements over manual website development processes:

TABLE I
USABILITY TESTING RESULTS

Metric	EventEasel	Traditional Development
Time to Launch	12 minutes	3–5 days
Technical Knowledge Required	None	Advanced
User Training Time	10 minutes	40+ hours
First-Attempt Success Rate	95%	45%
User Satisfaction Rating	4.7/5	3.2/5

These metrics confirm the platform's success in democratizing website creation for event organizers regardless of technical background.

G. Bulk Operations Support

Recognizing the operational needs of educational institutions that may host dozens of events annually, EventEasel Portal supports bulk operations including:

- **Multi-User Creation:** Batch onboarding of users through CSV upload.
- **Template Application:** Simultaneous application of design changes across multiple event websites.
- **Permission Management:** Group-based permission assignments.
- **Content Distribution:** Centralized content updates that can propagate to multiple events.

These bulk capabilities further enhance administrative efficiency by reducing repetitive tasks.

III. IMPLEMENTATION

The EventEasel Portal is developed on a microservices-based architecture that isolates concerns between modular components, making the system scalable, maintainable, and easy to deploy. The architecture comprises a frontend UI, several backend services, and a relational database.

A. System Overview

There are three main layers in the system:

- **Frontend Layer:** A UI based on the web that communicates with users through REST APIs.
- **Backend Services Layer:** A collection of independently deployable services that deal with business logic.
- **Data Layer:** A centralized relational database (MySQL) that holds persistent data.

B. User Roles and Access Control

EventEasel allows role-based access control using three different user roles:

Admin: Complete access to all system features, including promoting users.

Coordinator: Able to create and manage events.

Student: Can view and enroll in events.

Access control policies are implemented in the backend via middleware that checks user roles prior to issuing permissions.

C. Frontend - Portal UI

The frontend is implemented as a single-page application (SPA), optimized to make event creation and registration easy for non-technical users. It delivers:

- User registration, login, and role promotion (by Admin).
- Event discovery and detailed views.
- Event creation for authorized users.
- Profile update and participant registration flows.

It interacts with backend services through RESTful APIs, providing live previews and real-time feedback for event creation.

D. Backend Microservices

Backend is broken down into the following microservices:

- **Auth Service:** Responsible for user authentication, registration, and secure session management with token-based approaches.
- **User Service:** Stores profile information for users and manages role updates and fetching profiles.
- **Registration Service:** Manages event registrations and stores participant records.
- **Event Service:** Enables coordinators to create, edit, and manage events.
- **Page Generation Service:** Generates and deploys event landing pages automatically from user inputs and template choice.

Each service interacts with the central MySQL database through standard SQL queries and transactions to maintain data consistency.

E. Workflow Summary

The architecture adheres to this interaction flow, as illustrated in the system diagram:

1. Users sign up or sign in through the Portal UI, which makes calls to the Auth Service.
2. The User Service stores profiles and manages roles (e.g., advancing a Student to Coordinator).
3. Coordinators create events through the Event Service.
4. Students sign up for events through the Registration Service.
5. Upon event creation, the Event Service calls out to the Page Generation Service to build a public event page and create a shareable URL.

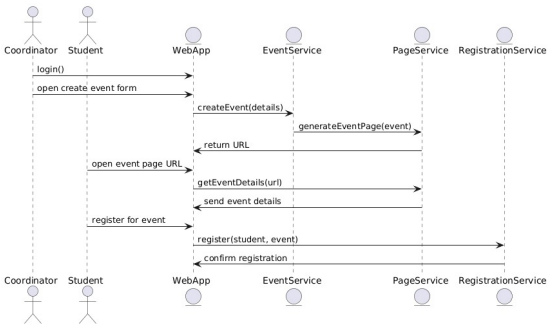

Fig. 1. Sequence Diagram

F. Database Integration

Every service talks to a central MySQL database, where the user profiles, event information, registration data, and access are handled by normalized schemas. MySQL was chosen because of its complete support for ACID compliance, simplicity of integrating with microservices, and rigid transactional consistency—essential when there are many users.

G. Deployment Architecture

Every microservice is containerized with Docker . This is done so that:

- Autonomous scaling of services according to demand (e.g., scaling Registration Service during high traffic).
- Fault isolation between services.
- Continuous integration and deployment pipelines.

The system is architected to support institutional-scale workloads with high reliability and low operational overhead for event organizers.

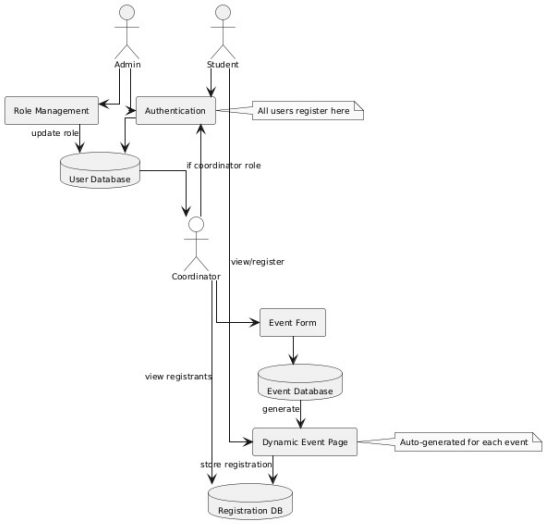

Fig. 2. Use Case Diagram

IV. Future Work

Although the EventEasel Portal already offers a feature-rich and user-friendly solution for creating event websites, there is still ample room for improvement. Future development will focus on introducing new capabilities that adapt to evolving user needs, increasing automation, and expanding adoption across diverse educational institutions.

A. Improved Template Customization

The existing templates cater to a broad range of use cases, but more granular control over website appearance and structure would allow users to better reflect institutional identity or event-specific branding. Planned enhancements include drag-and-drop editing interfaces, customizable theme color palettes, and support for institution-specific logos and assets.

B. AI-Powered Content Assistance

To support users who may face challenges in creating engaging content, we intend to integrate AI-driven writing assistance. This feature will help generate, rephrase, and optimize key content areas such as event descriptions, speaker biographies, and announcements—ultimately saving time and improving the overall quality of the website content.

C. Support for Multi-Language Environments

Adding support for multiple languages will make the platform more inclusive and accessible to a broader audience. This includes automatic translation features as well as template support for right-to-left (RTL) languages where applicable.

D. Mobile Application Companion

A dedicated mobile application will enable event organizers to manage their websites, receive notifications, and update event content directly from their smartphones. This real-time flexibility will be especially valuable during live events where on-the-spot changes, such as managing participants or updating announcements, are often necessary.

E. Analytics and Insights Dashboard

Upcoming versions of the platform will feature a comprehensive dashboard displaying metrics such as visitor traffic, registration counts, and engagement statistics. These insights will enable organizers to make data-driven decisions and assess the overall effectiveness of their events.

F. Community and Collaboration Features

We envision developing a community extension that enables users to share templates, customization presets, and best practices. This collaborative space will foster innovation, encourage cross-institutional support, and help users get the most value from the platform.

CONCLUSIONS

The EventEasel Portal fills a gap for schools andtechnology related organizations where events are prevalent. It is the standard approach when the protocol involves the necessity of repeating this work every time a new event would like to be presented, a task which isboth tedious and complex from a technical point of view. SOLUTION Via drag and drop, you can create fully functional websites with dynamic form inputs and pre-designed templates, with no previouscode knowledge necessary.

Developed with a strong technical stack - Django, Jinja, MySQL, Docker, Github, AWS - the system is bothadept and easy to use, but there's still work to do. The bottleneck of creating event website is removedby IMPR,easing the time and resource burden. It also runs andoperates at scale within CI/CD pipelines and containers ensuring that it can be continuously updated and improved.

Meanwhile the "passagethrough" looks very promising in future. For future evolution,expect AI-based content recommendations, more template customization, analytics dashboards, and integration with third-party services such as calendars and payment gateways. These improvements would also make the overall user experience much betterand place EventEasel Portal as a complete solution for automating an event website.

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