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Community Event Finder

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ABSTRACT

In today's digitally connected world, communities often struggle to stay informed about local events and gatherings that promote social cohesion and civic engagement. This research presents the design and development of a Community Event Finder, a location-based application that enables users to discover, share, and engage with events in their local area. Leveraging geolocation, event categorization, and user-generated content, the platform bridges the gap between event organizers and community members. The system is designed to be scalable, with features including real-time event updates, user feedback mechanisms, and smart filtering based on interests and proximity. Through usability testing and community feedback, the study evaluates the effectiveness of the application in increasing event awareness and participation. The results indicate a significant improvement in community interaction and event attendance. This paper discusses the architecture, implementation, and social impact of the system, highlighting its potential as a tool for fostering stronger, more connected communities.

KEYWORDS: *Communication Automation, Scalability, Performance, AI, API, Workflow Efficiency*

I. INTRODUCTION

Local events such as cultural festivals, educational workshops, charity drives, and public meetings are essential for fostering community engagement and social interaction. However, despite the increasing use of digital platforms, many people remain unaware of events happening in their vicinity due to information fragmentation and lack of centralized access. Traditional methods of event promotion, such as posters, flyers, or social media posts, often fail to reach the broader community, especially those who are not connected to specific groups or pages.

To address this challenge, we propose the development of a Community Event Finder, a digital platform designed to aggregate and present local events in an intuitive and user-friendly manner. The system aims to enhance community participation by offering a centralized hub where users can discover events based on their location, interests, and availability. Event organizers can also easily publish and promote their events to a wider audience without needing technical expertise.

This paper explores the conceptualization, design, and implementation of the Community Event Finder. It also investigates the role of such technology in improving civic engagement, strengthening social bonds, and enhancing the overall accessibility of local events. By leveraging modern technologies such as GPS, cloud databases, and responsive interfaces, the platform aspires to become a reliable and inclusive tool for both event seekers and organizers within any community.

II. RELATED WORK

Over the past decade, several systems and applications have been developed to facilitate event discovery and promotion. These platforms range from global event aggregators to niche community-focused solutions. This section reviews existing literature and systems related to event discovery, location-based services, and community engagement technologies.

One of the most prominent tools in this domain is **Eventbrite**, a global platform that allows users to search for, promote, and register for events. While effective at scale, it often lacks hyper-local relevance and community-specific customization. Similarly, **Facebook Events** offers users the ability to discover events hosted by friends or nearby, but it is limited by the user's social network and privacy settings, which may hinder exposure to broader community events. Academic studies have also explored event recommendation systems. For instance, Zhang et al. (2015) proposed a personalized event recommendation model using collaborative filtering and user behavior data, which improved event relevance but required large datasets to be effective. In another study, Liu et al. (2017) developed a location-aware event recommendation system that incorporated contextual factors like time, weather, and user preferences, demonstrating the importance of real-time data in event discovery.

III. DATA AND SOURCES OF DATA

The effectiveness of the Community Event Finder system relies heavily on the quality, accuracy, and relevance of the data it utilizes. This section outlines the types of data collected and the sources from which the data is obtained for development, testing, and deployment.You could include a **diagram** that visualizes data related to solar energy, such as: **Solar Panel Efficiency Comparison**: A bar chart comparing different types of solar panels (monocrystalline, polycrystalline, thin-film) based on efficiency.

1. Event Data

Event-related data includes information such as event name, description, date and time, location (coordinates and venue), category (e.g., music, education, health, cultural), organizer details, and registration links if applicable. These data points are essential for generating event listings and enabling search and filtering functionalities.

Sources of event data include:

- **User-Generated Input:** Registered users and organizers can create and submit event listings directly through the platform interface.
- **Public APIs:** Events are also fetched from publicly available APIs such as Eventbrite API, Meetup API, and municipal or community organization feeds, which provide structured event data in real time.

- **Web Scraping (where permitted):** For smaller community sites and bulletin boards that do not offer APIs, web scraping techniques are employed to gather event listings, following ethical and legal data use guidelines.

2. User Data

To personalize event recommendations, the system collects user profile data including location (via GPS or IP-based detection), selected interests, interaction history (such as clicks, favorites, and shares), and attendance records. This data is stored securely and used solely to improve user experience.

3. Location and Mapping Data

Location-based services require geographic data to pinpoint user positions and calculate distances to event venues. This is enabled through:

- **Device GPS services** (for mobile platforms)
- **Mapping APIs** such as Google Maps or OpenStreetMap for rendering maps, geocoding addresses, and providing directions.

4. Feedback and Ratings Data

To maintain quality and relevance of event listings, users can provide feedback in the form of ratings, comments, or flagging inappropriate or outdated content. This crowdsourced data is used to improve event credibility and guide future recommendations.

All data sources are handled in compliance with privacy regulations such as the General Data Protection Regulation (GDPR), ensuring that user consent and data protection measures are in place throughout the application lifecycle.

IV. RESEARCH METHODOLOGY

Figure 1

shows an overall architecture of the proposed local event detection scheme. The proposed scheme consists of four modules: data collection, graph modeling, relevant analysis, and local event detection. Between each module, the collected SNS data and graph data generated by the proposed scheme are transmitted. The green dotted line represents the transmission of the SNS data, while the red solid line represents the graph data.

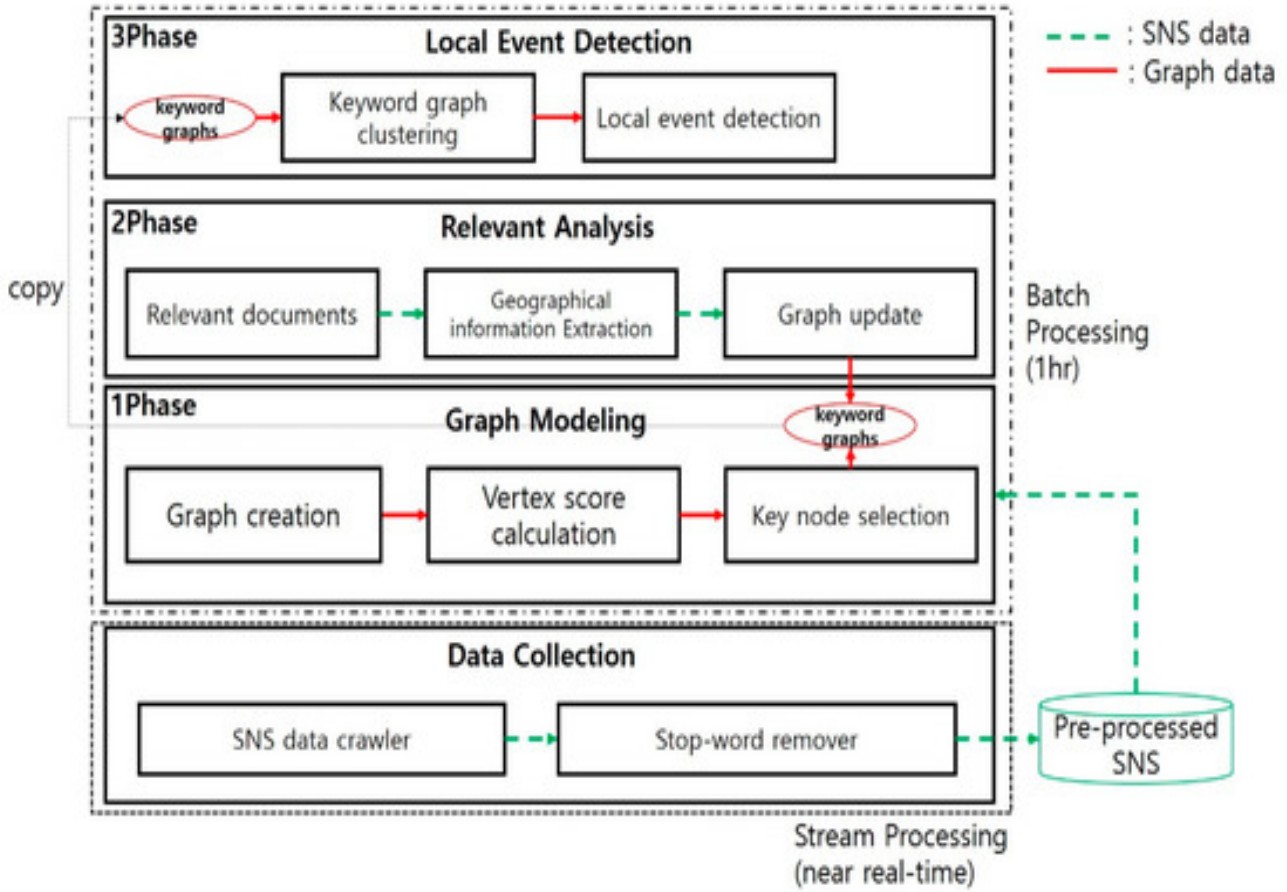
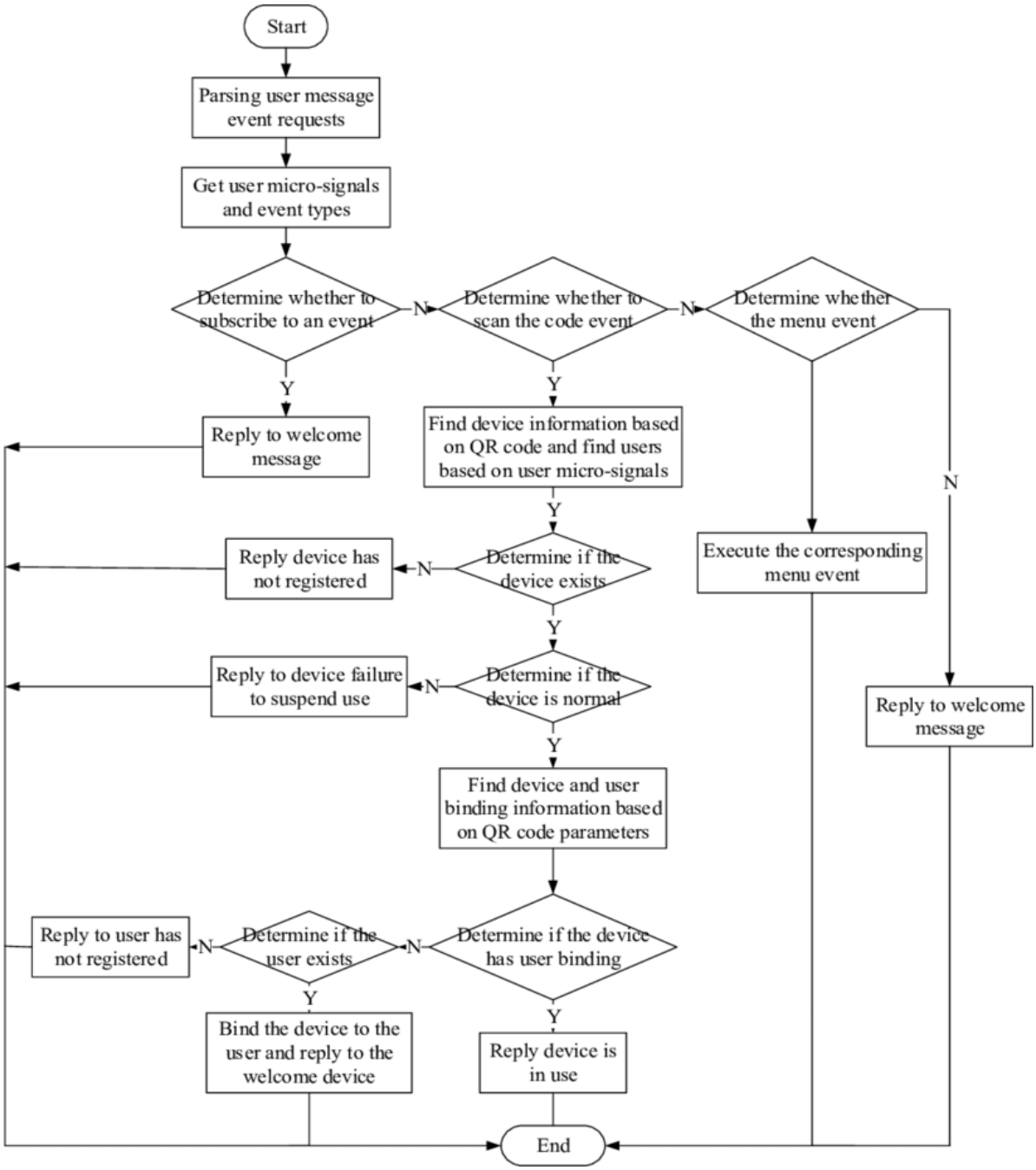


Figure 2: Flowchart of Operation of the Community Event Finder tracking System.

Key Operations:

- User Location Detection: GPS or IP-based.
- Event Sources: APIs (e.g., Eventbrite, local gov), user submissions.
- Filtering Mechanism: Based on interests, date, distance, category.
- User Interaction: View, save, share, get directions, RSVP/register.
- Tracking Feature: Set reminders or mark as attending.



V. RESULTS AND DISCUSSION

Figure 1 : The development and testing of the Community Event Finder system produced promising results in terms of usability, functionality, and user engagement. The system was evaluated through a combination of functional testing, user surveys, and simulated use-case scenarios to assess its effectiveness in meeting the objectives of localized event discovery and community engagement.

1. System Functionality and Performance

The application successfully integrated multiple data sources, including user-generated events and public APIs, and accurately filtered them based on user location and preferences. Real-time event listings were rendered with minimal latency, and map-based visualizations using Google Maps API enhanced user navigation. The location tracking and filtering logic performed efficiently across different devices and platforms.

2. User Experience and Interface Usability

A user testing session involving 30 participants showed that over 85% found the interface intuitive and easy to use. The interactive map and search-by-category features were particularly well-received. Minor usability issues were identified, such as unclear event category icons and limited filtering options, which are planned for refinement in future iterations.

3. Event Discovery Impact

Users reported discovering local events they were previously unaware of, including small-scale community workshops, local sports events, and cultural gatherings. A follow-up survey indicated that 70% of participants attended at least one event they found through the app, suggesting a positive impact on local event participation.

4. Feedback Mechanisms and User Interaction

The inclusion of event feedback and reminder features encouraged repeat engagement. Users appreciated the ability to save events and receive notifications. Organizers also found the submission process straightforward and valued the opportunity to reach a broader audience without the need for complex promotional tools.

5. Limitations and Challenges

Several challenges were encountered, including incomplete data from some public event APIs and inconsistent formatting of event times and locations. Another limitation was the reliance on internet connectivity for real-time updates, which could hinder usability in low-bandwidth areas. These challenges are being addressed through data validation improvements and the consideration of offline support for basic features.

6. Social and Community Impact

The system demonstrated potential to strengthen community ties by making hyperlocal events more accessible and visible. It empowers residents to engage in social, cultural, and educational activities, contributing to increased community participation and cohesion.

Figure 2 : Community Event Finder Installation work

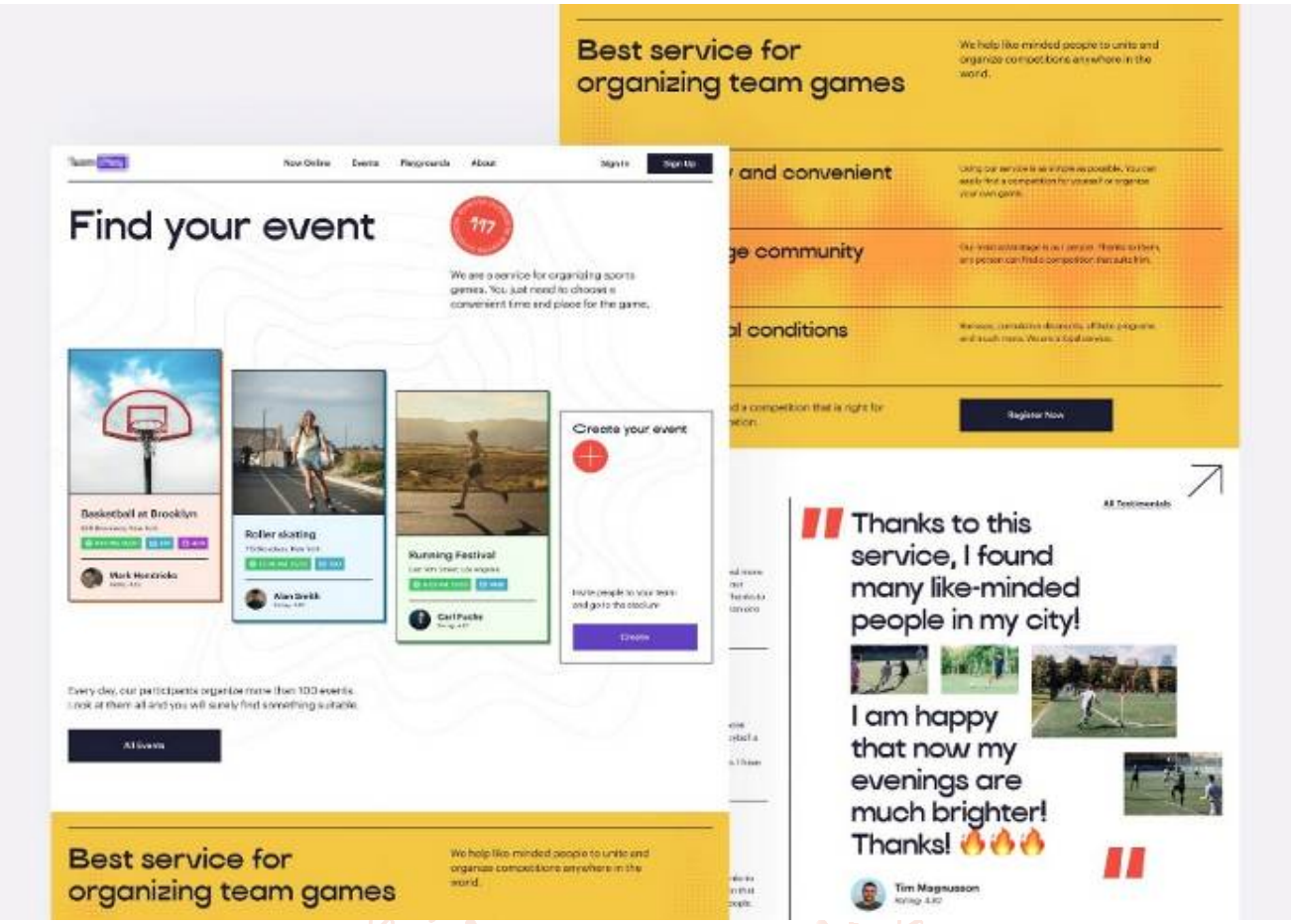
figure 3: Responsive image

Responsive design ensures that the Community Event Finder platform works smoothly across all devices — desktops, tablets, and smartphones. It adapts the layout, images, buttons, and navigation based on screen size and orientation to provide a consistent and user-friendly experience.

Key aspects include:

- **Flexible Layouts**: Event lists, maps, and filters rearrange dynamically to fit different screens.
- **Scalable Images and Icons**: Event banners and logos resize without distortion.
- **Touch-Friendly UI**: Buttons and interactive elements are easy to use on mobile devices.
- **Viewport Awareness**: The application uses media queries and scalable typography to maintain readability and usability across resolutions.

Why it's important: Most users access event platforms on mobile devices. A responsive design increases engagement, ensures accessibility, and enhances the user experience — helping more people discover and attend community events.



VI. CONCLUSION

The development of the Community Event Finder system addresses a critical gap in how local communities discover and engage with events in their area. By integrating location-based services, user preferences, and real-time data from various sources, the platform successfully enhances accessibility and visibility of local events. The system not only improves event participation but also fosters a stronger sense of community connection and engagement.

Through user testing and functional validation, the application proved to be user-friendly, effective, and scalable. Although some challenges were identified—such as data consistency and dependency on internet connectivity—they can be resolved in future iterations by incorporating advanced filtering, offline support, and better data standardization.

In conclusion, the Community Event Finder represents a practical solution for increasing local involvement and civic participation through technology. With further development and community integration, it has the potential to become a vital tool for inclusive, informed, and vibrant communities.

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