

## Development of website-based sports event information system

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### Abstract

In the field of sports, information technology can be applied to provide actual information to the public regarding the latest things happening in the world of sports. In addition, through technological advances in the form of the internet, it has opened up opportunities to manage websites and provide statistical data from match results and a sports team. Creating a website is one way to use the internet. Information can be obtained and disseminated quickly and easily through the internet, one of the largest marketing media in the world. Based on the results of field observations and information related to sports events, there is no website that displays complete information about the schedule, regulations, number of participants and results. So far, competition events in each sport have only been promoted through several social media that have not been maximized. Given the increasingly advanced development of technology, researchers feel the need for innovation related to the promotion of sports events. This development uses the waterfall method with the Unified Modeling Language (UML) model using usecase diagrams, data flow diagrams (DFD), and Entity Relationship Diagrams (ERD). This waterfall method is only suitable for software development with specifications that do not change. The waterfall method has several stages, namely Requirements analysis and definition, System and software design, Implementation and unit testing, Integration and system testing, Operation and maintenance. The development results show that the website related to the sports system information system is able to input related to the event agenda in the field of sports. In addition, the developed website is able to contain information related to the name of the event, schedule of implementation, registration link, contact person and regulations for the event. Based on the findings of the website development, it is recommended for future development, namely the implementation of the use of information systems for sports events on an ongoing basis and socialization related to the sports event website in the study program, faculty, university, user, sponsorship and partner environment.

**Keywords:** Information Systems; Promotion of Sports Events; Social Media; Sports Event; Website

### 1. Introduction

Currently, sports events are not merely a form of entertainment but have evolved into a spectacle, a source of income, and a significant industry involving various stakeholders such as organizers, referees, participants, and others. The success of a sports event is influenced by several factors, including marketing and promotion (Hidayah & Rumini, 2023). In the field of sports, information technology plays a crucial role in providing the public with up-to-date information on the latest developments in the sports world (Hidayat & Setiawan, 2017).

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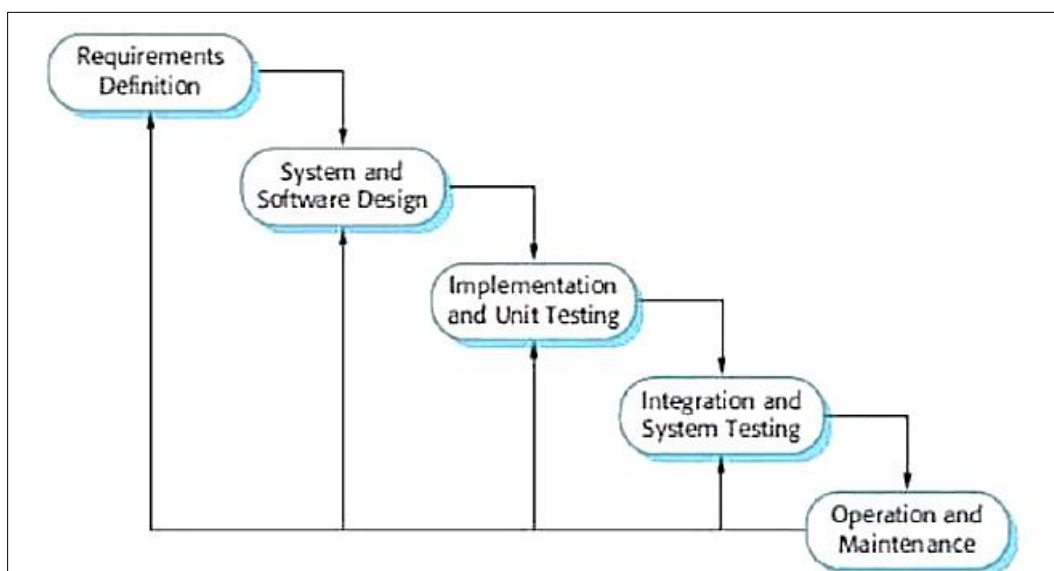
Organizing a sports event can be costly and requires added value to attract public interest. Beyond serving the needs of sports practitioners, sports events also have a significant economic impact, particularly for host communities (Laurence, 2017). Additionally, advancements in internet technology have created opportunities to manage websites and provide statistical data on match results and team performance (Robert & David, 2024).

The rapid development of digital media and the increasing accessibility of the internet worldwide have transformed how information is disseminated (Yu, 2022). Technology facilitates various activities through applications and systems (Abdulrahman et al., 2020). One effective way to leverage the internet is by developing a website, which enables the fast and efficient sharing of information. The internet has become one of the most powerful marketing tools globally (Mutamimah & Wibowo, 2022). The increasing complexity of modern life demands processes that are fast, accurate, precise, effective, and efficient. One of the ways to utilize information and communication technology is through website development (Waluyo & Fatich, 2017). If utilized effectively, event organization can serve as a powerful promotional tool. Various promotional activities conducted through events can help introduce products or initiatives that are not yet widely recognized by the public (Permatasari, 2022).

Based on field observations and existing information on sports events, there is currently no comprehensive website that provides details such as schedules, regulations, participant numbers, and results. Sports competitions across different disciplines are typically promoted through social media, which has yet to be fully optimized. Given the rapid advancement of technology, researchers recognize the need for innovation in promoting sports events.

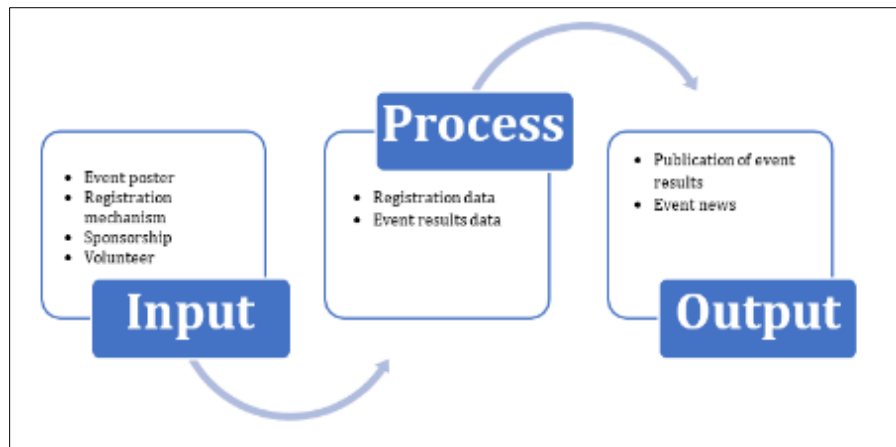
## 2. Material and methods

his study employs the waterfall methodology combined with the Unified Modeling Language (UML), incorporating use case diagrams, data flow diagrams (DFD), and entity-relationship diagrams (ERD). The waterfall model is best suited for software development projects with stable and well-defined specifications. It consists of several sequential stages, including requirements analysis and definition, system and software design, implementation and unit testing, integration and system testing, and operation and maintenance. A detailed illustration of the waterfall model can be seen in Figure 1.



**Figure 1** Waterfall Model

The standard operating procedure (SOP) for utilizing the sports event information system website is structured as follows:



**Figure 2** SOP for Sports Event Information System Website

### 3. Results and Discussion

The outcome of this system development is a web-based sports event information system, which has been completed and is accessible via the following link: <https://sportsevents.unesa.ac.id/#gsc.tab=0>. This website is designed to facilitate the management and dissemination of sports event information in a more structured, real-time, and easily accessible manner for various stakeholders, including organizers, participants, and the general public. By utilizing this system, event-related information can be published more effectively compared to conventional methods that rely solely on social media.

This website incorporates several key features aimed at enhancing the efficiency of sports event management. The homepage includes a navigation menu with sections such as Home, About, Workshop, Regulations, Partners, and Contact Us, along with a Live Chat feature that enables users to communicate directly with administrators for further inquiries. Additionally, an Admin Login Page serves as a gateway for administrators to manage the system. To access the main dashboard, administrators must enter valid username and password credentials, allowing them to manage news updates, event agendas, and promotional sliders. As shown in Figure 3, the website's homepage is designed with a user-friendly interface, facilitating easy navigation for visitors.



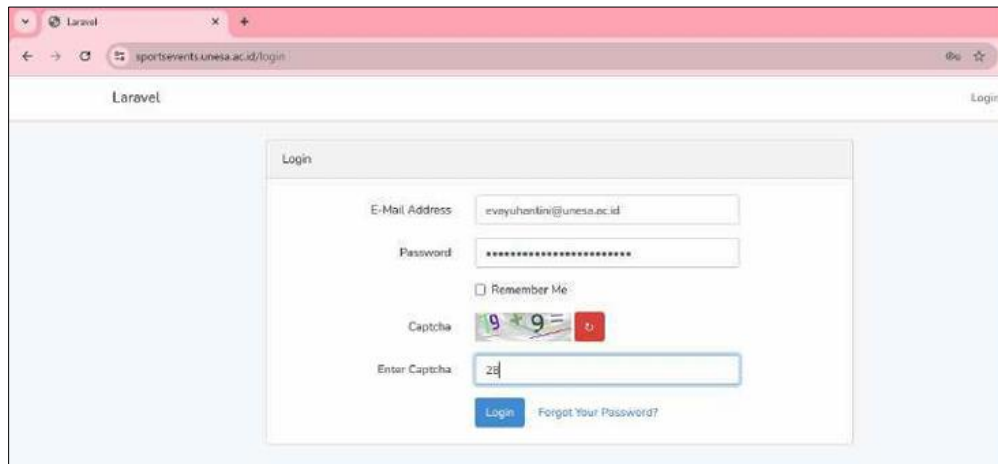
**Figure 3** The Website's Homepage

Figure 3. This is the main page display for the sports event information system which contains the home menu, about, workshop, regulations, partners, contact us and there is a feature for live chat that will connect with the admin regarding questions about the website/event that will be held.

In the Event Management section, the admin can add various sports events by filling in information such as event name, schedule, location, registration link, contact person, and applicable regulations. After the event data has been successfully entered, the information will be immediately available and can be accessed by users through the main page of the website. As seen in Figure 4, the admin login page functions as an entry point for event managers to perform

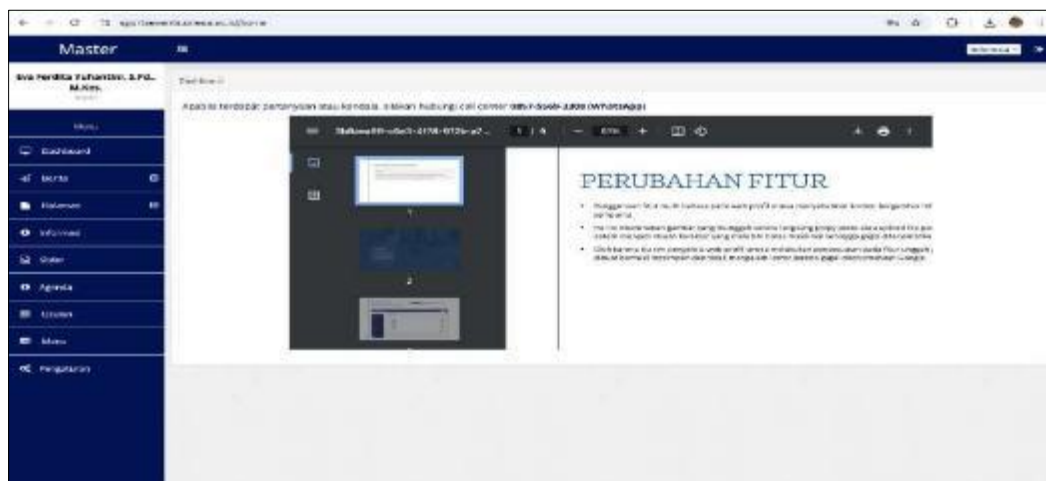
system management. After successfully logging in, the admin will be directed to the main dashboard, as shown in Figure 5, which provides various features to facilitate event agenda management.

The login page is the home page of the website information system, the stages that must be done if you want to log in as an Admin. On this Login page, the admin must fill in the username and password to enter the application. The appearance of the home page is shown in Figure 4 as follows.



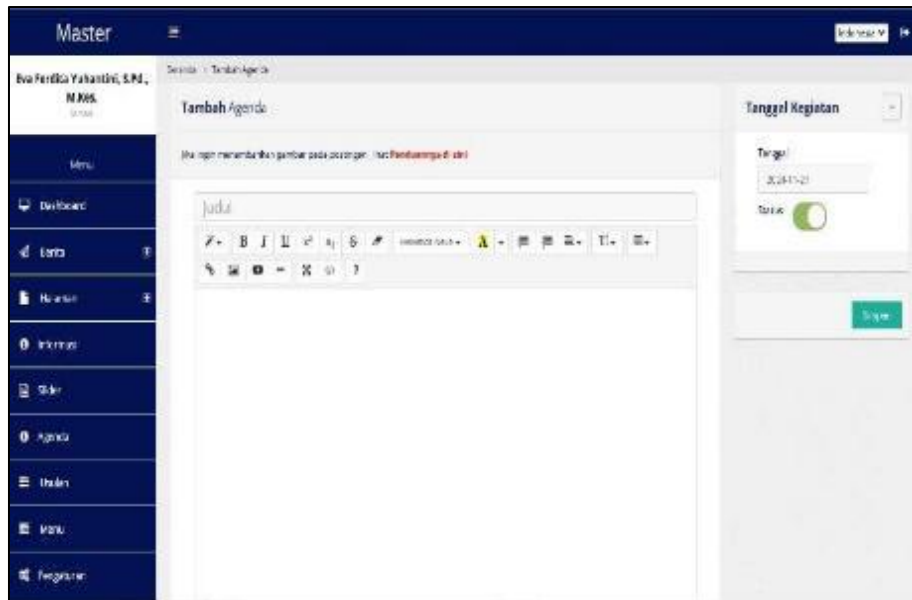
**Figure 4** Admin Home Page

The main page will appear after the admin successfully accesses the Web System. The features on the admin's main page consist of news, information, agendas, and sliders to display the latest events or the latest information. The main page display can be seen in Figure 5.



**Figure 5** Information system website admin

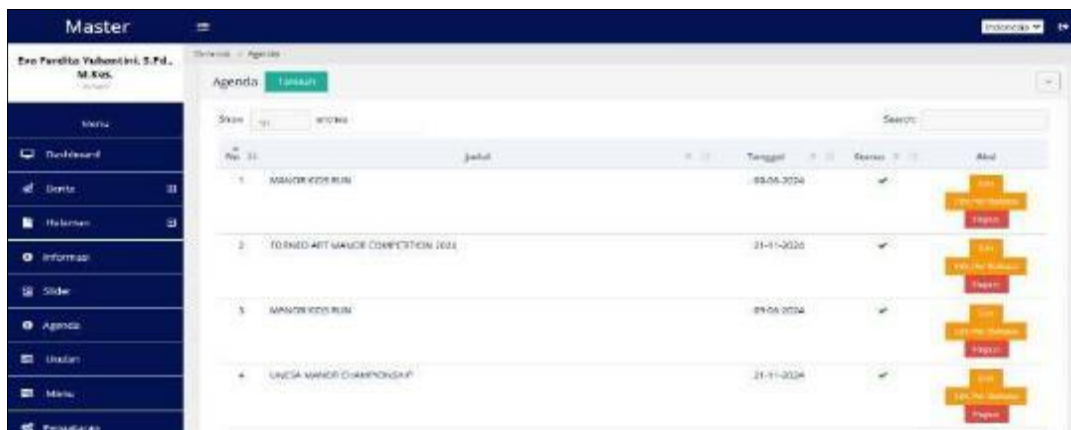
In system testing, various aspects are tested to ensure the functionality and reliability of the website. Login testing shows that the system can handle authentication properly, ensuring that only users with valid credentials can access the admin dashboard. Testing of the add agenda function has also been carried out, where every event data entered is successfully saved and displayed on the main page of the website. As shown in Figure 6, the admin can add sports events through the available input form, while the results of the events that have been successfully entered can be seen on the website page display as in Figure 7.



**Figure 6** Event Addition Menu

Through the Agenda menu, administrators can add sports event titles to be held or activities related to sports events managed by the Undergraduate Sports Management Program or in collaboration with the Faculty, University, and its partners.

As shown in Figure 7, the trial for adding an event agenda was successfully conducted for a sports event organized by the Undergraduate Sports Management Program, as illustrated below:



**Figure 7** Sports Event Agenda Menu

Once the event has been successfully inputted by the administrator, users can view the list of available events on the website's main page, as shown in Figure 8. This feature allows participants to easily find information about ongoing events, including details such as schedule, location, and registration link. With more transparent and structured information, prospective participants can make quicker and more informed decisions when selecting events to join.

Additionally, this system enables event organizers to document all past events, serving as a digital archive for future reference or evaluation.

The next step after entering the sports event agenda is to review how the information appears on the website's public interface, which can be accessed by visitors. The successfully added agenda is displayed on the website, as illustrated in Figure 8 below.



**Figure 8** Sports Event Display on the Website

Furthermore, the development of this sports event information system is rooted in various concepts of web-based information system management. One of the primary principles implemented is event data centralization, which allows all relevant information about sports events to be collected into a single, easily accessible digital platform for the general public. This approach aligns with the study by Mutamimah & Wibowo (2022), which emphasizes that the utilization of information and communication technology (ICT) can enhance the efficiency of event information dissemination through web-based platforms. By implementing structured data management, this system not only simplifies event information retrieval for participants but also provides event organizers with a more systematic approach to managing and publishing events effectively (Xie et al., 2024).

Compared to existing sports event information systems, the developed website offers several key advantages, particularly in terms of accessibility, interactivity, and event management efficiency. This system goes beyond simply providing basic event details—it also facilitates online registration, which is significantly faster and more practical than traditional methods that rely on emails or social media. The Live Chat feature embedded in this system serves as an additional advantage, as it allows participants and organizers to communicate directly without the need to manually search for the organizer's contact details. Another crucial advantage is the intuitive admin dashboard, which enables event organizers to manage events efficiently without requiring advanced technical expertise. This finding aligns with the study by Abdulrahman et al. (2020), which highlights that web-based systems with user-friendly interfaces can enhance operational efficiency and improve the overall user experience.

Although this system has various advantages, there are still some limitations that need to be considered for further development. One aspect that has not been done in this study is comprehensive system testing, both in terms of usability testing and technical performance evaluation using standard metrics, such as Google PageSpeed Insights or GTmetrix (Puspito, 2024). Further testing is needed to measure access speed, data processing efficiency, and user satisfaction levels, to ensure that the system can function optimally. In addition, although this system has been developed and can be used, the level of adoption by event organizers still needs to be reviewed further, considering that wider socialization is needed so that this system can be implemented optimally by various interested parties. Therefore, future research can focus on several aspects that can increase the effectiveness of this system. One step that can be taken is usability testing using standard methods, such as the System Usability Scale (SUS) or User Experience Questionnaire (UEQ), to evaluate the user experience in using this system. In addition, the development of online payment features can be an innovation that makes it easier for participants to register for paid events. Furthermore, future research can also explore the use of artificial intelligence (AI) to provide event recommendations based on user preferences and integrate this system with social media, so that event information can be published automatically to various digital platforms. With these improvements and innovations, the website-based sports event information system is expected to be more optimal in supporting event implementation and providing a better experience for users.

Overall, the results of this development show that the website-based sports event information system has been successfully implemented with various main features that can increase the effectiveness of event management. This website not only acts as a means of promotion, but also as a more systematic and professional information platform, compared to conventional information dissemination methods. Although there are still several challenges in its development, this system has great potential to continue to be developed to support the growing sports event industry.



With various innovations and additional features that can be implemented in the future, this system is expected to be a comprehensive solution for organizers and participants of sports events, as well as encourage digitalization in the sports sector more broadly.

#### 4. Conclusion

The development results indicate that the sports event information system website can manage and input sports event agendas. Additionally, the developed website can store and display essential event details, including event name, schedule, registration link, contact person, and applicable regulations. Based on the findings from this development, future improvements are recommended, particularly in the sustainable implementation of the system for sports event management. Furthermore, extensive promotion and socialization efforts should be conducted within the academic environment, including study programs, faculties, and universities, as well as among users, sponsors, and partners, to maximize the adoption and utilization of this system.

#### Compliance with ethical standards

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##### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

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