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Web-Based Conference Management pada The International Conference on Computer Science and Technology (WeBEST)

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Abstract. The International Conference on Computer Science and Technology (ICCSET) is an annual routine agenda by the Faculty of Engineering, Universitas Muria Kudus. The usefulness of this agenda adds to the publications of UMK Engineering faculty lecturers in particular and other universities in general. The consistency of the Faculty of Engineering in holding ICCSET attracts researchers from outside UMK. The obstacle that arises during ICCSET is the ICCSET data management system. The system uses Google Forms, where Google Forms have not been integrated between forms. This makes the ICCSET data processing system difficult due to incomplete data. This research resulted in a web-based management system for ICCSET at the Faculty of Engineering, Universitas Muria Kudus, which was named WeBEST - Web-Based Conference Management at The International Conference on Computer Science and Technology (ICCSET)

Keywords: Payment Gateway, Web-Based, Webest, Website

1 Introduction

The International Conference on Computer Science and Technology (ICCSET) is an annual international seminar organized by the Faculty of Engineering at Universitas Muria Kudus. ICCSET activities have been carried out four times: 2018, 2019, 2022, and 2023. The implementation of ICCSET 2023 will involve Technical Reviews from abroad, which are devoted to evaluating journals with international reputations.

The flow of ICCSET activities includes abstract registration, abstract evaluation, receipt of full papers, and payment. The validation and review process is also carried out to maintain the quality of publications. This year, the reviewers involved came from various foreign institutions. So far, ICCSET has provided a choice of Publishers, both in the form of journal proceedings and journals with a reputation for SINTA and/or SCOPUS.

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ICCSET activities do not yet have a systematic and integrated system. So far, the entire system has been run semi-manually. Starting from the registration flow, abstract collection, review process, sending feedback to participants, collecting full papers, and confirming payment is done using Google Forms. This is ineffective, error-prone, and difficult to validate data. The ICCSET website only functions as a broadcast media for activities but does not include a comprehensive system management. The semi-manual system using Google Forms has a high level of error because the system cannot automatically monitor participants' progress. Reviewing journals with participant feedback and revision experienced major obstacles because it involved three parties (participants, reviewers, and committees), which were not integrated. Another risky condition is the payment process and confirmation, only done through Google Forms. A systematic and integrated management system has not supported ICCSET's activities, so various obstacles have not been resolved. Of course, a web-based conference management system is needed where the entire flow and management of conferences comprehensively, systematically, and integrated is arranged in one unit.

The software development life cycle model (SDLC) stage can be used to create a web-based conference management system. The SDLC stages include requirement, design, execution, testing, and release [1]. To overcome the weaknesses in the ICCSET activity system, a website platform is needed that manages the entire conference flow, from registration and review to payment.

Full lifecycle support for the conference management system can be implemented. The first phase consists of applying the paper process, reviewing it, and interacting with the committee and participants. The second phase is the management of publication outputs [2]. Then, payment activities that initially use the transfer method and manual checking at IB/M-Banking still create a gap in human error. Therefore, a third party is needed, such as the midtrans/ QRIS payment gateway or other third-party platforms [3]–[5].

2 Research Method

The research methods were carried out using the SDLC (Software Development Life Cycle) method [6], including the following:

Fig 1. SDLC Method

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2.1 Planning

The planning stage includes all project and product management aspects, such as resource allocation, capacity planning, project scheduling, cost estimation, and inventory. It involves several steps: observation by the Faculty of Engineering and the relevant ICCSET committee. Next, collect the data needed for research, such as data on speakers, participants, articles, reviewers, and so on.

2.2 Analysis

The data analysis that has been collected becomes a system concept that will be developed. Analyze what needs are needed and analyze system design and financing needs in research.

2.3 Design

The design or design stage is the stage where the developer changes the specifications of the software into a design plan or the Design Specification Document (DDS). In this case, this design is carried out using a flowchart and use case.

2.4 Implementation

This SLDC stage is the actual stage where software development begins. It's important to gather all developer buy-ins on the existing blueprint. If, in the previous stage, the design was worked on in detailed detail, this stage of development could be difficult. The implementation in this study uses PHP programming language and MySQL database [7]–[11].

2.5 Testing & Integration

This stage is quite important, where the WeBEST that has been developed is evaluated by the testing team to determine whether the system is eligible to be implemented in ICCSET or not based on what is specified in the planning stage. These tests include black box and white box testing to test the success and suitability of the application according to the test script that has been designed [12].

2.6 Maintenance

At this stage, various elements of the software are monitored. Such as covering overall system performance, user experience, new security vulnerabilities, and analysis of bugs or errors in the system.

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3 Results

The website was created for the International Conference on Computer Science and Technology (ICCSET) Faculty of Engineering, Universitas Muria Kudus, and produced a Web-Based Conference Management (WeBEST) system. Activities at WeBEST include registration processes, abstract submissions, abstract reviews, full paper submissions, and full paper reviews, as well as business processes from ICCSET. The stages of this system development include planning, analysis, design, implementation, testing and integration, and maintenance.

3.1 Planning

This design is outlined in the flowchart system flowchart. The initial flowchart created is the registration flowchart, starting from the landing page (the main page of the registration). The user registers as an author and participant. The author is a user who registers as a speaker, so it continues to the abstract and entire paper submission process. The participant is registered as a participant who comes to the conference only. The registration flowchart can be seen in Figure 2.

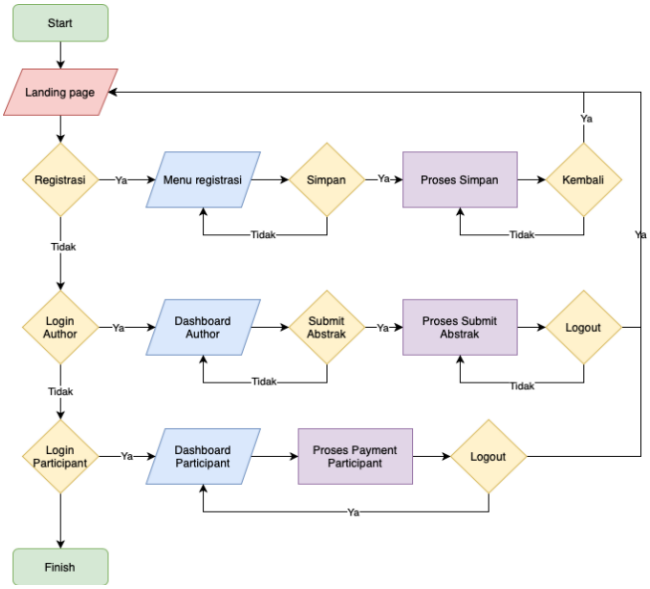

Fig 2. Registration Flowchart

After registering as an author, submitting abstracts, full papers, and payments are made. On this flowchart, the author logs in and will find the author dashboard. Next, the author can submit and review the abstract; if accepted, it will be followed by the abstract payment. The next step is for the author to submit a full paper, followed by a review and payment process if the status is accepted. This flowchart can be seen in Figure 3.

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The third flowchart is the payment flow from the author if the abstract and full paper status are accepted. On the payment flowchart, there are 2 (two) options, namely abstract payment and full paper payment verified by the admin. After verification, the author will get an online receipt on the abstract and/or full paper payment. This payment flowchart can be seen in Figure 4.

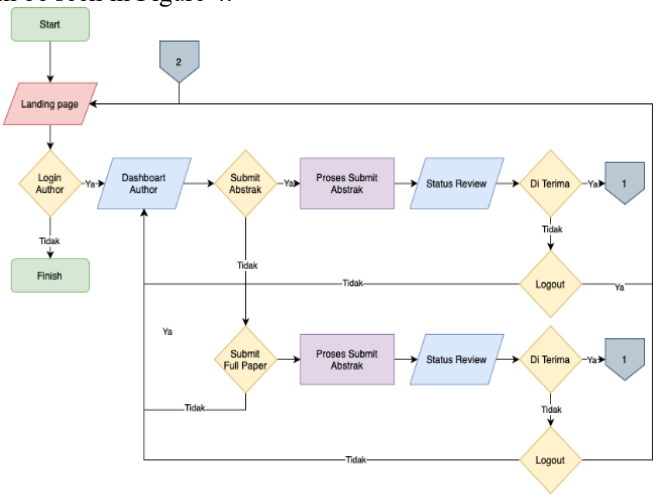

Fig 3. Submit Abstract and Full Paper Flowchart

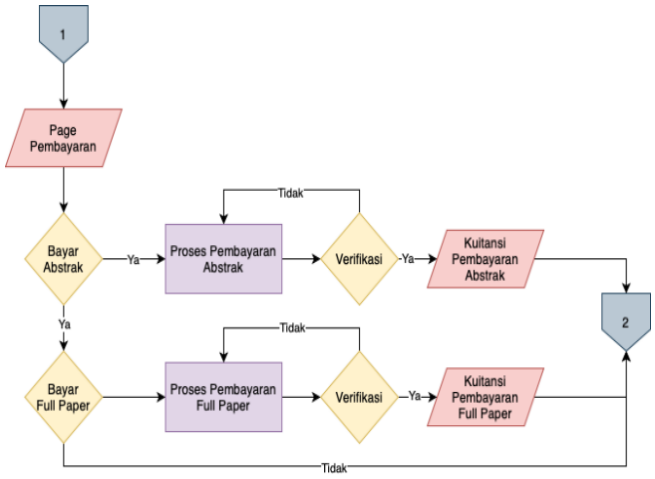

Fig 4. Payment Flowchart

3.2 Implementation

(WeBEST)—Web-Based Conference Management at The International Conference on Computer Science and Technology (ICCSET) Faculty of Engineering, Universitas Muria Kudus was built using the PHP programming language and MySQL database. During the development of this system, several obstacles occurred, including the Laravel framework, where some functions could not be executed. Other functions were then

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experimented with. The following are the results of the construction of the ICCSET conference system. The WeBEST system has several menus that users (authors) and admins can access.

1. Registration Process

The registration process is the initial menu for users/ authors to register to participate in ICCSET activities.

a. Step 1. Open the https://iccset.umk.ac.id/portals/ page and select "sign up for an account," as shown in Figure 5.

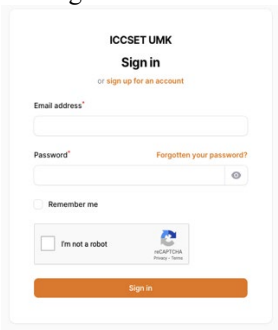

Fig 5. Login/ Sign Up Page

b. Step 2. The user is asked to fill in the correct data on the sign-up page. The data consists of first name, last name, email, password & confirm country, affiliation, faculty, and phone number. After being input correctly, then click the Sign-up button seen in Figure 6.

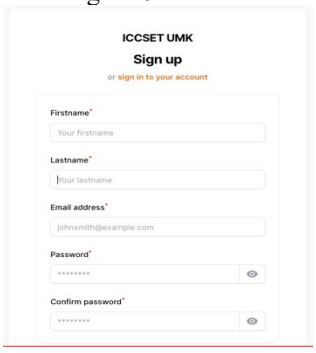

Fig 6. Sign up Page

c. Step 3. Verify the email that has been entered, make sure the email entered is correct and active. Check the inbox/spam and click verify Email Address as shown in Figure 7.

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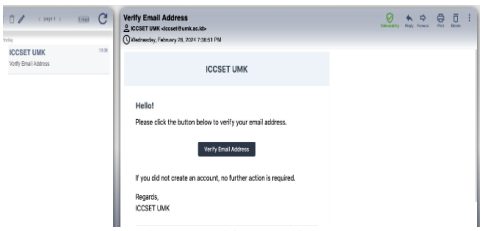

Fig 7. Verify Email Page

2. Dashboard Admin

The admin dashboard is an admin page on which you can manage all menus on the system. The Steps and menus on the admin dashboard are as follows.

a. Step 1. Open the https://iccset.umk.ac.id/portals/ page and enter the admin email address, password, and captcha verification, as shown in Figure 8.

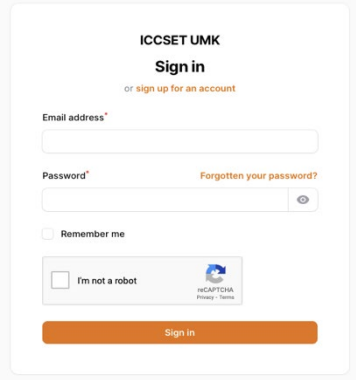

Fig 8. Login admin page

b. Step 2. If the username (email) and password are correct, it will enter the admin dashboard page. On the admin dashboard, you can see several menus that can be accessed, including dashboard pages, conference models, ICCSET event models, user management (user list and roles), main menu (ICCSET event and finance), editorial menu (abstract and papers), and pages. The menu on the admin dashboard is seen in Figure 9.

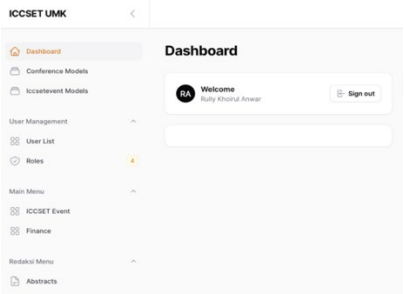

Fig 9. Dashboard admin Page

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c. Step 3. On the conference model's menu, admins can add conference models to be held. In addition, admins can also edit conference models that have been inputted.
d. Step 4. The next menu is ICCSET event models. On this menu, the admin can add ICCSET events to be carried out. This is seen in Figure 10.
e. Step 5. The user's menu is a page where admins can see all users registered on the system. Here, the admin can also add a New User, as shown in Figure 11.

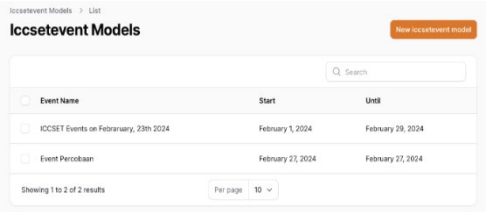

Fig 10. ICCSET Event Models Page

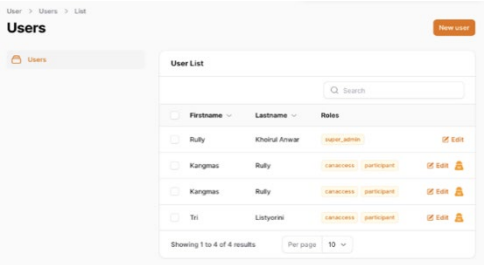

Fig 11. Users Page

f. Step 6. Roles menu, on this page, admins can view and add roles. Roles are rules that admins can set where users have and do not have the right to access menus in the system. This roles menu can be seen in Figure 12.

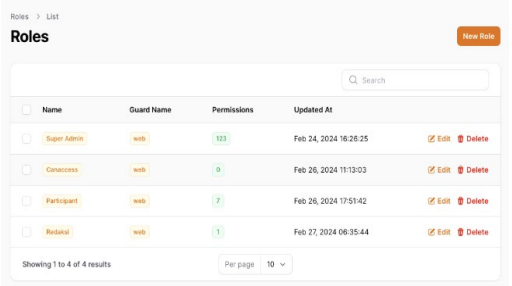

Fig 12. Roles Menu

g. Step 7. The ICCSET Events menu has several sub-menus: ICCSET Event, conferences, publishers and category list. Admins can add ICCSET events and other sub-menus. This menu page can be seen in Figure 13.

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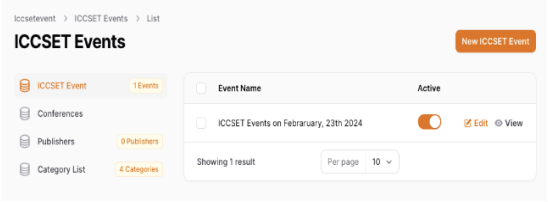

Fig 13. ICCSET Event

h. Step 8. The Payment Models menu contains the payment model that will later be the user/ author's payment destination. This page can be seen in Figure 14.

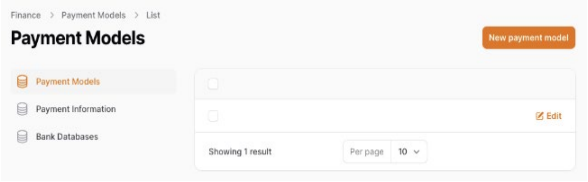

Fig 14. Halaman Payment Models

3. Dashboard User/ Author/ Participant

The user/author/participant dashboard is the main page for registering for ICCSET events. It also allows users to follow and update information related to events, payments, abstract status, and full papers. The menus on this dashboard are as follows.

a. Step 1. Open the https://iccset.umk.ac.id/portals/ page, enter your email address (after verifying), password, and captcha, and click Sign in. This user sign-in page can be seen in Figure 15.

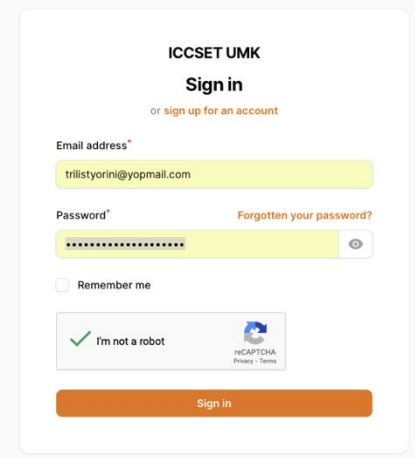

Fig 15. Sign in Page

b. Step 2. The user/ author Dashboard page contains a welcome to this ICCSET system. This user menu has several menus: overviews, ICCSET event list, my

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journal, abstract list, paper list, payment, and user profile. This dashboard page can be seen in Figure 16.

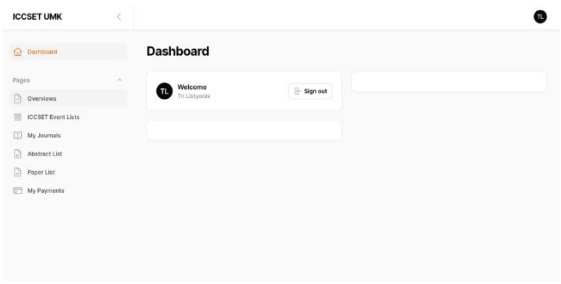

Fig 16. Dashboard User Page

c. Step 3. The overview page will later contain announcements and information from ICCSET activities.
d. Step 4. The ICCSET Event lists page contains ICCSET events that users will choose to participate in. Users can choose which event to participate in and click Join Now. This page can be seen in Figure 17. If we click Join Now, we can choose whether we will join as a presenter or a visitor. We select one and then click Submit. This page is seen in Figure 18.

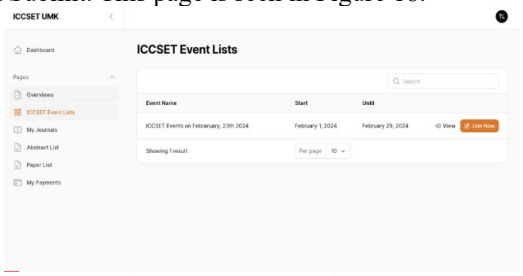

Fig 17. ICCSET Event Lists Page

Fig 18. Join Now Options

e. Step 5. The My Abstract list page will look like the abstract the user submitted.
f. Step 6. The My Payments page lets users view the payment history of the events they have participated in.

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g. Step 7. The Profile page contains personal data from the user. On this page, the user can update the data and change the login password. The profile page can be seen in Figure 19.

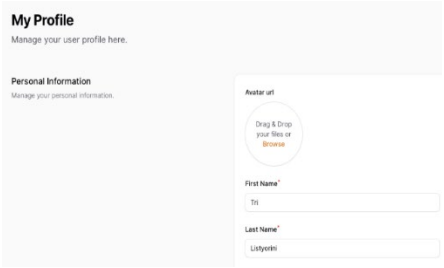

Fig 19. Profile Page

4 Discussion And Conclusion

Since the outbreak of COVID-19, all aspects have changed, including holding conferences, especially at the international level. This aligns with Etzion, Gehman, and Davis [13] regarding implementing a hybrid conference model starting at ICCSET 2022. A web-based conference management system has been created by Santiputri [14] for general conference use by designing a Class Diagram and ER diagram. This study created a web-based conference management system with the SDLC method. At the same time, Kusaini [15], [16] developed a web-based seminar management information system based on the R&D method and conducted usability testing. Usability testing can also be carried out on WeBEST to measure the efficiency of the ICCSET seminar management website for improvement in the next period.

The administration and monitoring system for ICCSET activities of the Faculty of Engineering, Universitas Muria Kudus, was created with a web-based concept called (WeBEST) - Web-Based Conference Management. So that data collection and searching for documentation of ICCSET activities is more accessible. WeBEST can also help with accreditation, especially publications, because data can be easily obtained from total author submissions, funding, and activities from year to year.

5 Acknowledgment

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