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Development of Chair Module In Web-Based Conference Management System

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ABSTRACT

Conferences are an important platform for academics, researchers, and practitioners to share knowledge and the latest research results. Efficient conference management is crucial in ensuring the success of such events. In this context, a Conference Management System (CMS) has emerged as a solution that facilitates various aspects of conference management. This research discusses the development of a Chair module in a web-based Conference Management System. The purpose of this research is to improve the efficiency and functionality of the Chair module so that it can better manage various aspects of the conference. Because in the existing application there are shortcomings in digital integration between organizers and information management that has not been centralized in one conference. The results showed that the development of the Chair module has worked as expected in the planning stage. The interaction between the Chair and conference participants, reviewers, and paper authors became more coordinated and integrated. The responsiveness of the web-based interface provides better accessibility, allowing the Chair to access information and make decisions in real-time.

1. INTRODUCTION

In this modern era, scientific conferences have become an important means of exchanging knowledge[1], research results, and ideas among academics, researchers, and professionals from various disciplines[2][3]. Universities and educational institutions have a role in organizing conferences as part of their mission to advance science and technology. However, conference management often has some challenges[4][5][6]. Manual paper-based processes and conventional communication can slow down and complicate various aspects of conferences. Some of the problems that are often faced are: participant registration, paper management, schedule management, accommodation, and logistics. In this research, there are several problems faced by the chair such as, coordination and communication with related parties such as authors and speakers, difficulties in reviewer assignment management, monitoring conference performance[7][8][9]. To overcome these challenges, the development of a web-based conference management system is a very relevant solution[10][11]. This system will provide a solution that allows conference organizers and participants to interact online. The system will automate various processes so as to facilitate accessibility, increase efficiency and success of the conference, and improve participant experience[12][13].

Conference management refers to the overall organized activities that consist of the process of planning, organizing, and executing a conference or meeting[14][15]. This involves various stages, from initial planning to implementation and evaluation after the conference is finished. In its development, conference management is often combined with a website-based system which aims to ensure that management data can be arranged in an orderly and integrated manner[16][17]. The system can also help in better organizing the event schedule and provide automatic notifications to avoid schedule clashes. Logistics and accommodation arrangements can also be managed in this platform so that participants can easily get complete information about the facilities provided[18][19]. Thus, the development of a web-based conference management system called EzDesk will provide many benefits for universities, including improving efficiency, increasing the number of participants, reducing operational costs, and improving the institution's image as a professional scientific conference organizer.

2. LITERATURE REVIEW

A. Conference Management System
Conference Management is a concept of planning and managing a conference activity from before the conference starts (pre-conference) to after the conference starts (post conference). These management processes and activities include four basic needs, namely, collecting papers, reviewing papers, assigning papers and proceeding/camera-ready paper collection[20].

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B. Waterfall Method

The waterfall method or often called the waterfall method is often called the classic life cycle, the name of this model is actually the "Linear Sequential Model" where it describes a systematic and sequential approach to software development, starting with the specification of user requirements and then continuing through the stages of planning, modeling, construction, and delivery of the system to users (deployment), ending with support for the complete software produced[21].

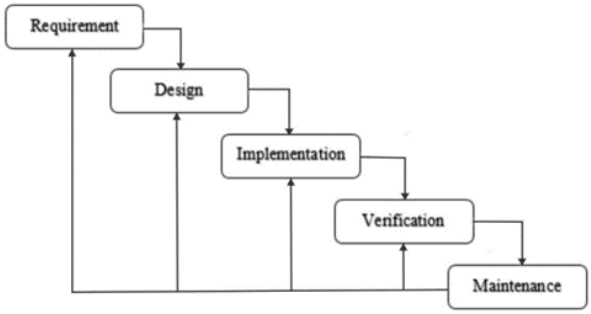

Figure 1. Waterfall Method

C. Typescript

TypeScript is an opensource programming language developed by Microsoft. TypeScript is a superset of JavaScript, meaning that TypeScript has all the features that exist in JavaScript with the addition of several features[22][23].

D. Next.JS

Next.JS is a React framework that is used to develop a full-stack website. Next.JS was developed by a private company called Vercel.

E. MySQL

MySQL is a DBMS web application programming that has been very widely used for a database that has one or more tables. The table consists of some rows and each row has one or more tables consisting of some rows and each row contains one or more tables.

F. Tailwind CSS

Tailwind CSS is a CSS framework library used by web developers to quickly create website layouts, easily edit class styles, and easily create responsive website screens.

G. PACT Analysis

Analysis based on People, Activities, Context and Technology, popularly known by the acronym PACT is a common framework used to analyse situations in interactive system design. PACT analysis follows the principle that "People use Technology to perform Activities in Context" and covers the scope of Human Computer Interaction (HCI) [24][25].

Certainly, the development of web-based applications will be influenced by market sentiment, often driven by the constraints and limitations faced by users in their daily lives [26]. In this context, social media plays a pivotal role with a highly significant impact on the sustainability of usage [27]. Even at a more detailed level, a website's capabilities in terms of readability, completeness, and the provision of features for enhanced accessibility are crucial for the sustained utilization of the application [28]. Defining clear objectives implies that key business processes have financial benefits and limitations, and some stakeholders concur on how to address issues that arise in the implementation of web-based applications [29].

3. RESEARCH METHODS

A. Conceptual Model

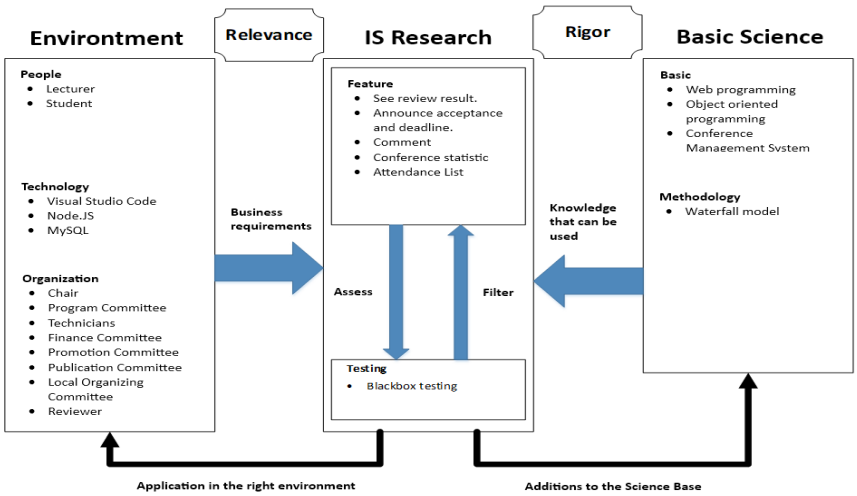

Figure 2. Conceptual Model

The conceptual model or conceptual framework of a study is a conceptual model that shows the logical relationship between factors/variables that have been identified as important for analyzing research problems. The conceptual framework is built based on existing theories and previous research documents so that it is integrated as a unit. The conceptual model used in this study is illustrated in Figure 2.

B. Research Method

The systematic research conducted will pass through four stages, namely Requirement, Design, Implementation, and Verification. Figure 3 illustrates the systematic research that will be carried out during the research.

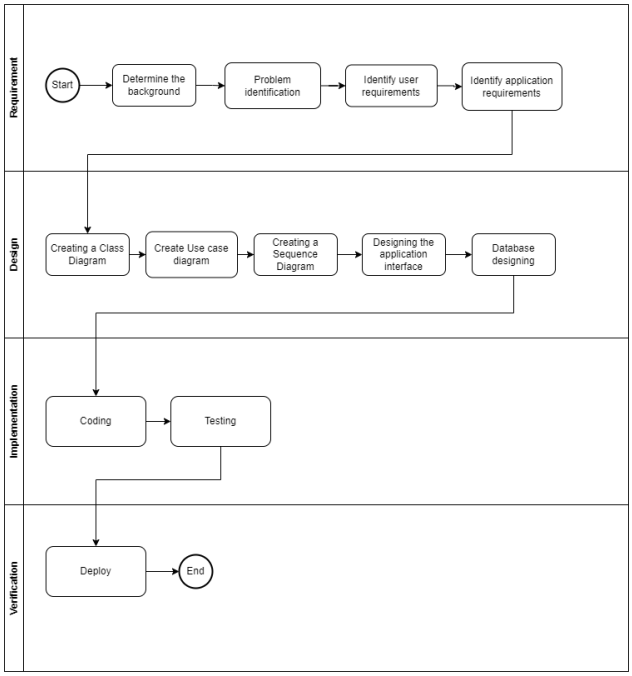

Figure 3. Research Method

4. RESULTS AND DISCUSSIONS

A. PACT Analysis

Details of PACT Analysis:

a) People

Here are some types of users of EzDesk:

1. Author is the person who submits the journal to the conference.
2. The chair is the person who organizes the conference. Starting from determining who becomes a reviewer, the schedule of each stage in the conference, as well as viewing statistics from the ongoing conference.
3. A reviewer is the person responsible for reviewing each journal that has been uploaded by the Author.
4. Admin, is a party from EzDesk who oversees maintaining the operation of the website, starting from accepting the creation of a conference, verifying the conference, and seeing how many conferences are currently running on the site.

b) Activities

Here are the details of the activity process that occurs on the EzDesk website:

Table 1. Activity Analysis

Actor	Activity	Description
Author	Uploading the journal	*Author uploads the journal on the EzDesk website.*
	Got the review result	*Author gets journal results that have been reviewed by reviewers.*
Chair	Monitoring the conference	*Chair monitored the ongoing conference.*
	Determining the Reviewer	*The Chair determines who will be the Reviewers at the conference.*

Actor	Activity	Description
	Assign a Reviewer	*The Chair assigns the Reviewer to review the journal that has been uploaded by the Author.*
Reviewer	View the list of review tasks	*Reviewers can view the list of journals to review.*
	Review journal	*Reviewers review the journal that has been uploaded by the Author.*
Admin	Conference verification	*Admin checks the completeness of the conference file uploaded by the Chair.*
	Monitoring the site	*Admin can find out the number of conferences and users registered on the EzDesk site.*
	Conduct conference management	*Admin can add or delete conferences on EzDesk site.*

c) Context

The activities performed cover the scope of using applications such as :

1. Physical Context
   All users can interact with the app in both indoor and outdoor situations as long as they are connected to the internet and have a registered account.
2. Social Context
   The Chair can view journals that have been uploaded by the Author, which will then be assigned to a Reviewer to review the journal.

d) Technology

Analysis of the technological aspects:

1. Conference Management System (CMS): The main platform that has various functions related to conference management.
2. Site interface: The application is accessed through a responsive web interface, allowing users to access and take actions from a variety of devices.

B. Implementation

System implementation refers to a series of steps required to introduce or integrate a new system. This includes planning, design, testing, execution, and evaluation of a new system or software. The following are the results of the system implementation.

1. Register Page

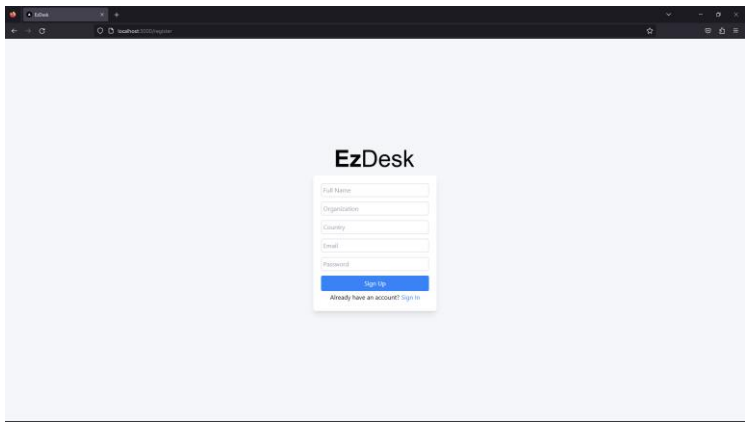

Figure 4. Register Page

This page is used when the user does not have an account and wants to access the EzDesk application. The user fills in the data according to the form provided, after which the user presses the "Sign Up" button. After the "Sign Up" button is pressed, the user will be directed to the login page for the next login process. But if the user already has an account, the user can press the "Sign In" text located under the "Sign Up" button.

2. Login Page

This page is used when the user already has an account and wants to access the EzDesk application. Users fill in the data according to the form provided, namely, email and password. After the user fills in the form, the user must press the "Sign In" button. After the "Sign In" button is pressed, the user will be directed to the home page. But if it turns out that the user does not have an account to access the EzDesk application, then the user can press the "Sign Up" text located under the "Sign In" button.

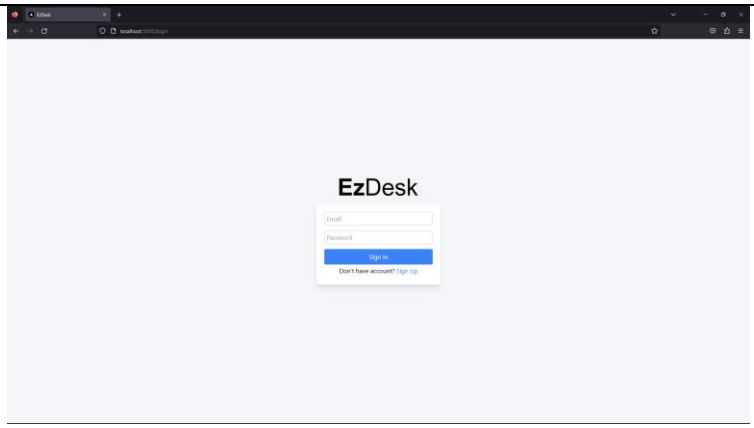

Figure 5. Login Page

3. Dashboard Page

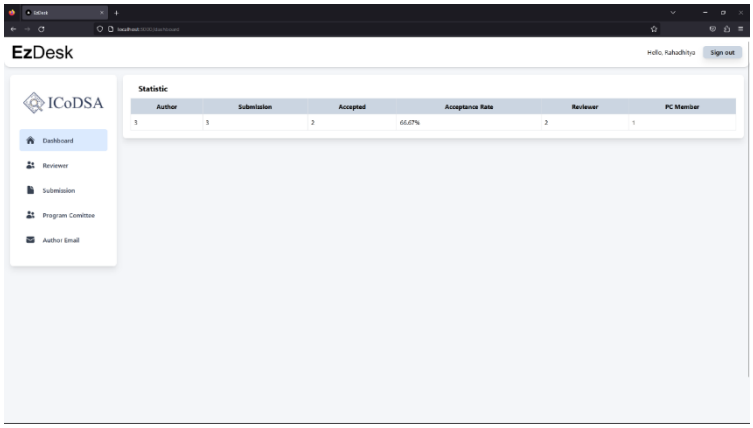

Figure 6. Dashboard Page

This page is used when the chair wants to see statistics on the current conference. This page displays acceptance rate statistics on papers in the current conference.

4. Submission List Page

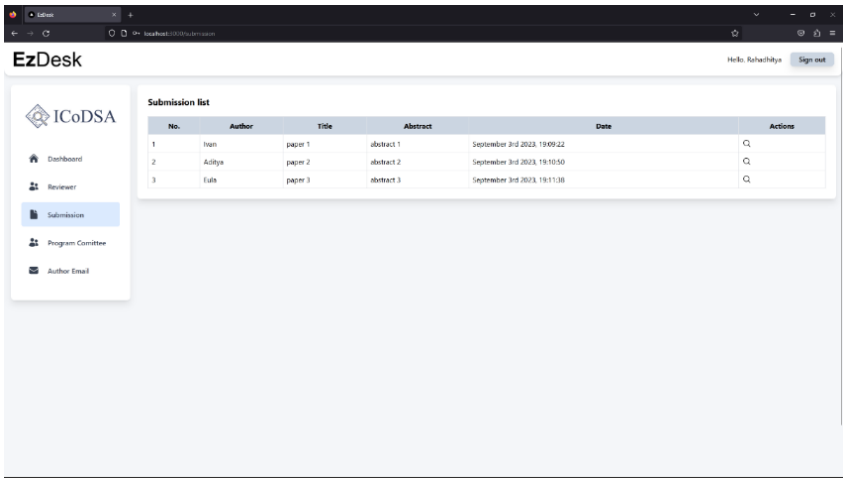

Figure 7. Submission List Page

This page is used when the chair wants to see statistics on the current conference. This page displays acceptance rate statistics on papers in the current conference.

5. Reviewer List Page

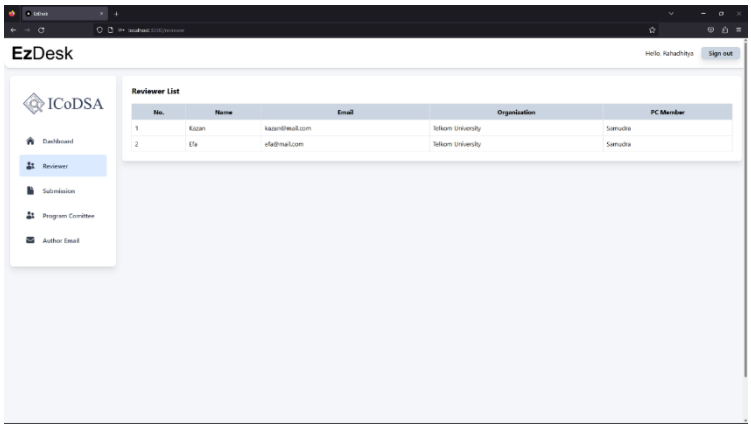

Figure 8 Reviewer List Page

This page displays a table containing a list of reviewers that have been added by the Chair. The table contains the name, email, organisation of the reviewer, and the person in charge of the reviewer.

6. Program Committee List Page

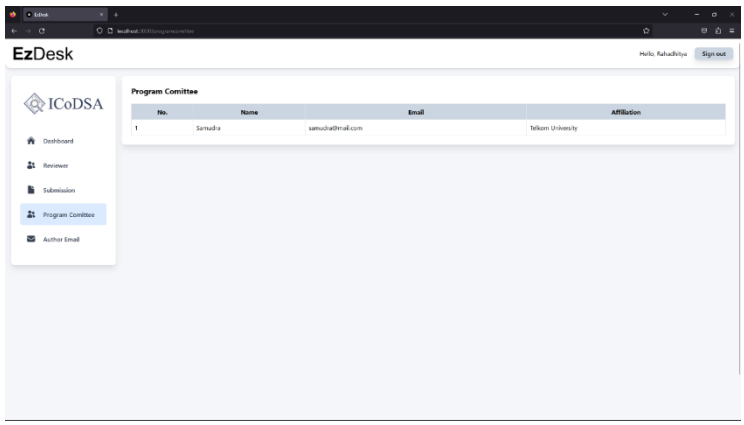

Figure 9. Program Committee List Page

This page displays a table that lists the programme committees that have been added by the Chair. The table contains the name, email, and organisation of the programme committee.

7. Author List Page

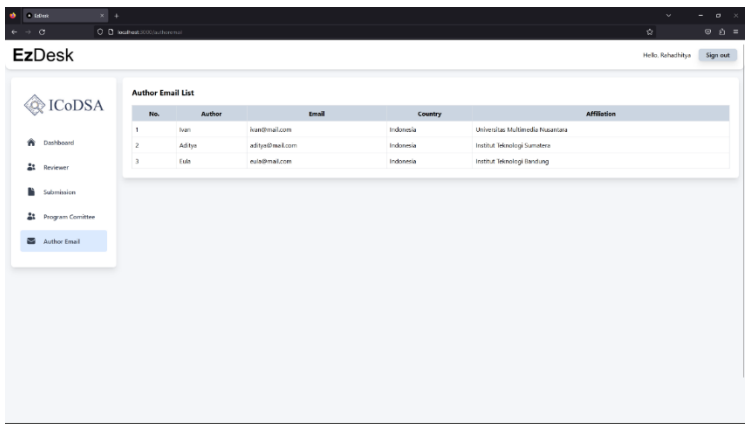

Figure 10. Author List Page

This page displays a table containing a list of authors who have uploaded papers to the conference. The table contains the author's name, email, and home organisation.

8. Detail Paper Page

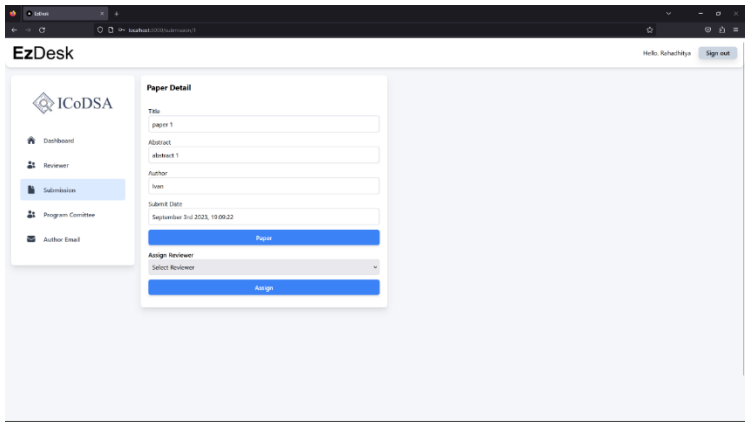

Figure 11. Detail Paper Page

This page displays details of the paper that has been uploaded by the author. Details displayed are title, abstract, author name, paper file, and paper upload date and on this page the chair can make assignments to available reviewers.

9. Review Result Page

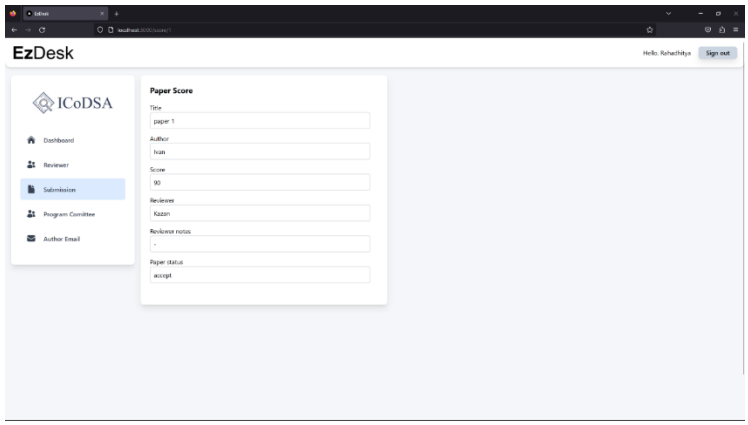

Figure 12. Review Result Page

This page displays details of the review results of papers that have been reviewed by the Reviewer. Details displayed are the title, author name, paper score, reviewer name, notes from the reviewer, and paper status whether accepted or rejected.

5. CONCLUSSION

EzDesk application consists of 4 modules, namely, Author, Reviewer, Chair, and Administrator. But this journal focuses on the Chair module. Chair is responsible for monitoring the ongoing conference, assigning Reviewers, and approving papers that have been uploaded by Author. And based on the test results using scenario testing. The functions contained in the EzDesk application have run as expected.

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