p–ISSN: 2723 - 6609 e-ISSN : 2745-5254
Vol. 6, No. 12 Desember 2025
http://jist.publikasiindonesia.id/

Implementation of a Web-Based Theater Show Inventory Borrowing System

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Keywords:
inventory, theater, performance, borrowing, web-based

Info Article
Accepted: 2025-10-25
Revised: 2025-11-26
Approved: 2025-12-27

ABSTRACT

Inventory management is a crucial aspect of theatrical performance execution, especially among theater organizations across campuses in Zone 3 Cirebon. This study aims to develop a web-based inventory borrowing system to facilitate collaboration and equipment sharing among theater groups from selected campuses: Universitas Muhammadiyah Cirebon (Roempoet Theater Club), Swadaya Gunungjati University (USB & Blue Chain Theater), UNTAG 17 August (Department of Arts and Culture), and IAIN Syekh Nurjati (Teater Awal). The system was developed using the Laravel 8 framework with the PHP programming language, supported by hardware such as an HP AMD Ryzen 5 laptop and software including Visual Studio Code and XAMPP. The resulting system provides functionalities for managing inventory data, users, inventory categories, administrators, and loan records, thereby streamlining the borrowing and return processes. This research demonstrates that a centralized digital platform can enhance operational efficiency, foster inter-campus collaboration, and support the sustainability of theatrical activities within Cirebon's academic community

INTRODUCTION

In performance activities, it is often necessary to have special inventory or equipment that is not owned by every organization or individual (Suwono & Prasetyo, 2025). Therefore, to facilitate the process of borrowing inventory between organizations or individuals within campus theater communities throughout Cirebon City, a system is needed that can provide information about available inventory and simplify the borrowing process to prevent difficulties or delays in staging performances (Agusvianto, 2017; Wibowo et al., 2021).

In today's digital era, technology continues to develop and is increasingly used to simplify various activities. One activity that can benefit from technological assistance is the borrowing of inventory or special equipment for performance activities within campus theater circles across Cirebon City (Salvato, Reuer, & Battigalli, 2017). By leveraging technology, a web-based information system can be created to provide information about available inventory and facilitate the borrowing process between organizations or individuals (Desmayani et al., 2022). With such a system, it is expected that difficulties or delays in preparing performances can be minimized. In addition, the use of technology also supports more efficient and accurate inventory management (Syani & Werstantia, 2018).

The number of theater performances in Region 3 Cirebon has experienced significant growth in recent years, following the end of the pandemic period in 2023. However, the main obstacle that often arises is the lack of equipment required by the

various organizations or theater groups involved. For this reason, it is necessary to develop an information system capable of supporting information needs, borrowing processes, and inventory management in the context of performance implementation (Mufida et al., 2019; Pramitasari & Nurgiyatna, 2019). The continuity of the performances presented by the various organizations depends heavily on cooperation in lending performance equipment, making the concept of mutual support essential. In this system, registered users will be able to view lists of available equipment and performance resources from other users (Hermes & Hudon, 2019). Each user will provide information regarding their organization and the details of the inventory that can be accessed and loaned, according to the permissions granted. Additionally, users can submit borrowing requests by attaching an official letter to the system to borrow equipment from other registered users.

This inventory and borrowing application, or system, aims to provide convenience to theater organizations or groups in Region 3 Cirebon located within the campus environment so that they can hold performances without being constrained by limited equipment and resources. The purpose of this research, as outlined in the background and problem formulation, is to produce Implementation of a Web-Based Theater Performance Inventory Borrowing System (Case Study: Campus Theater in Region 3, Cirebon) so that users can better manage and borrow inventory. The benefits of this research are threefold. For theater organizations, the system offers a centralized platform to share equipment, reducing costs and logistical barriers. For campus management, it promotes inter-institutional collaboration and optimizes resource utilization (Oktaviani et al., 2019). For the broader performing arts community in Cirebon, this system supports cultural sustainability by enabling more frequent and higher-quality theatrical productions despite limited resources. Thus, the implementation of this web-based system is expected not only to solve immediate operational challenges but also to foster a more collaborative, efficient, and innovative ecosystem for campus-based theater activities in Cirebon.

METHOD

In this study, the author applies the descriptive analysis method, an approach used to describe the situation or problem that is happening based on the facts and data collected during the research. In the preparation of this report, the author uses the descriptive analysis research method because the author collects data by conducting direct observations of conditions in the field. This is so that the data can be considered in the decision-making process.

Research Techniques

The research techniques used by the author in collecting data by paying attention to the research methods, namely:

Observations

Conducting direct observations to the research site being researched. In this observation, the author conducts observations, recording and data collection at Roempoet Theater (University of Muhammadiyah Cirebon), Awal Theater (IAIN Syekh Nurjati), Blue Chain & USB Theater (Swadaya Gunungjati University), and UNTAG 45 Arts and Culture.

Interview

Conducting data collection through a question and answer process carried out by the author to the manager of the Secretariat at the Roempoet Theater (University of

Muhammadiyah Cirebon), Teater Awal (IAIN Syekh Nurjati), Blue Chain & USB Theater (Gunungjati Swadaya University), and UNTAG 45 Arts and Culture and Public Relations of the Cirebon Theater Forum.

Studi Literature

Literature study techniques involve the review and analysis of pre-existing literature related to the research topic. Literature studies assist researchers in understanding current developments, theories, and research findings related to the phenomenon being studied.

System Development Methods

In developing this system, the System Development Life Cycle (SDLC) method is used, also known as the Waterfall method. SDLC is a process of creating and modifying systems that involves models and methodologies in software engineering (Nugraha Wahyu et al., 2018; Ridwan & Fitri, 2021).

Some of the stages of the *Waterfall method* are shown in the following figure:

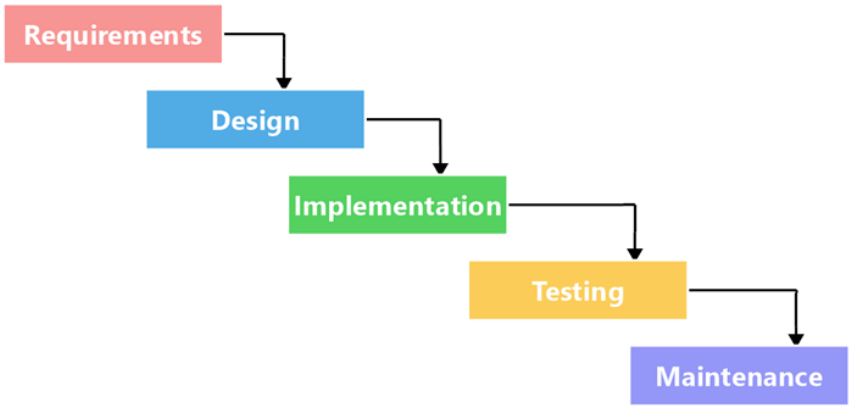

Figure. 1 Waterfall Model
(https://blog.mindmanager.com/waterfall-methodology/, 2023)

RESULTS AND DISCUSSION

System Usage Overview

The system produced from this research is a website-based Correspondence Service Information System at the Faculty of Engineering, University of Muhammadiyah Cirebon (Putra, 2020). This system is used to facilitate the process of submitting and making letters made by students, and to find out the number of students. This system is made using a *local server*, so before using this system on a laptop or computer, you must *have an XAMPP web server installed*. Then *import the MySQL database* and activate *the web server*.

System Display

The system view is an interface that interacts with the user (Hidayatullah & Kawistara, 2017).

Login Page

The Login page is the main entry point for users who already have an account in the system. This page allows users to authenticate themselves using the correct username/email and password combination. Directed at Figure 2

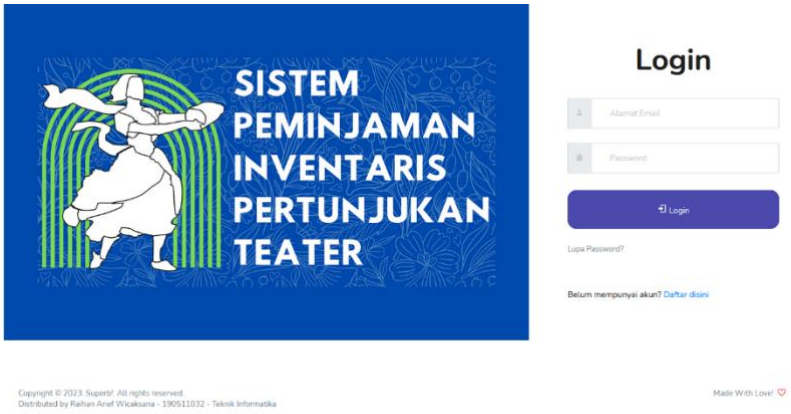

Figure 2 Login Page
Source: Screenshots of the system developed by the researcher (2024)

Registration Page

The user registration page is a key component that allows *users* to register and create an account in the **system**. This page is the first gateway that opens user access to various services and features of the system for inventory data management as well as borrowing, shown in Figure 2

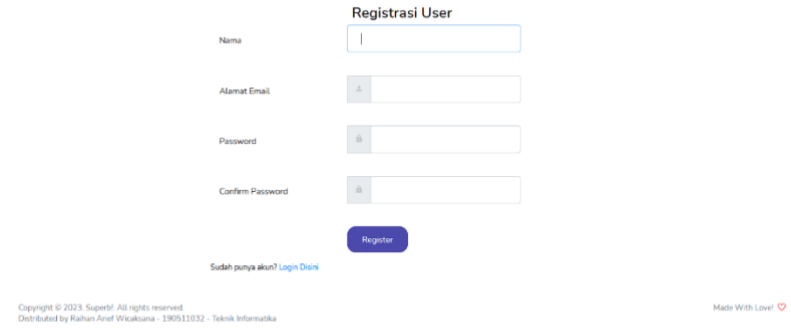

Figure 3 Registration Page
Source: Screenshots of the system developed by the researcher (2024)

Forgot *Password Page*

The Forgot User Password page is an important feature in the system allowing users who have forgotten their passwords to reset their passwords and regain access to the system. Aimed at Figure 4

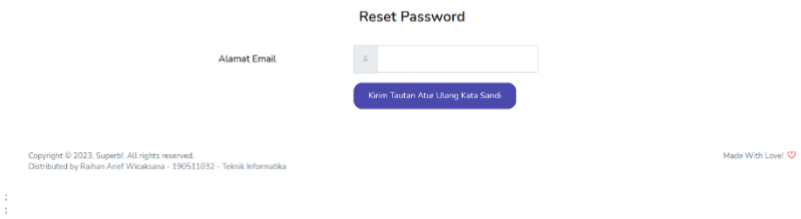

Figure 4 Login Page
Source: Screenshots of the system developed by the researcher (2024)

Admin Dashboard *Page*

The Admin Dashboard page is the main control center for admins with special access rights within the system, where admins can view important information, manage content, monitor activity, and take the necessary actions to maintain system functionality and performance (Rahman et al., 2019).

Figure 5 Admin Dashboard Page
Source: Screenshots of the system developed by the researcher (2024)

User Management CRUD Page

The User Data Management page is an interface that allows admins with special access rights to manage user information within the syste (Kusuma et al., 2020; Novitasari, 2018; Sholikhah et al., 2017). This page facilitates the management and maintenance of user data, such as adding data, changing user data, deleting accounts, and the main page of user data management shown in Figure 6

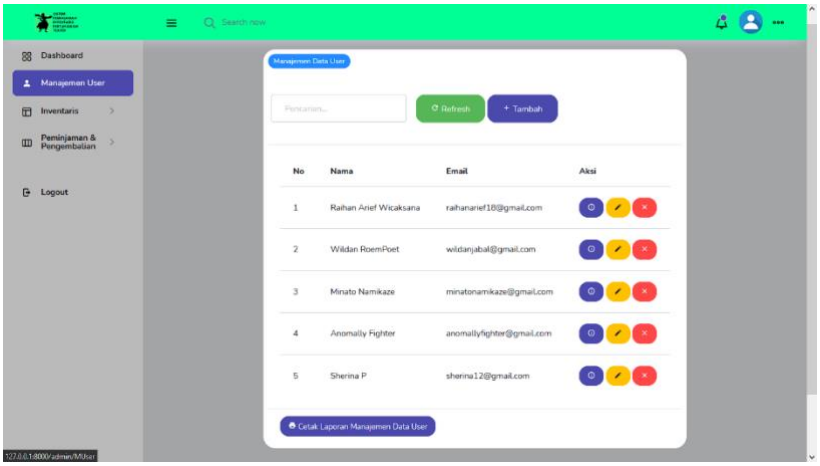

Figure 6 User Management Page
Source: Screenshots of the system developed by the researcher (2024)

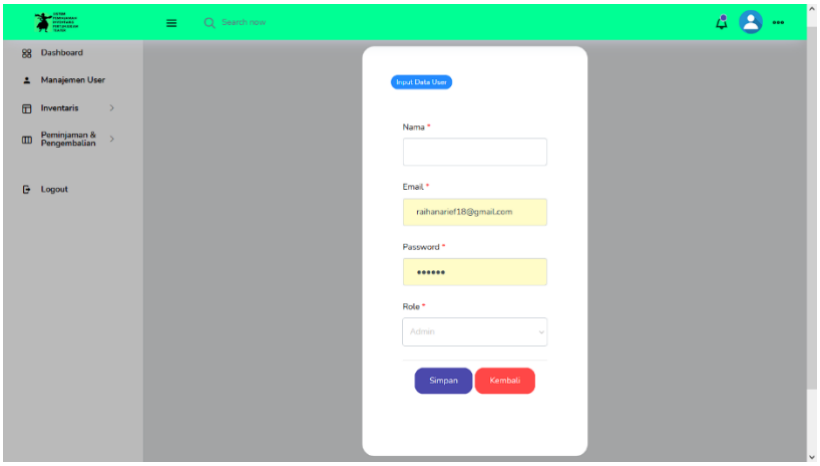

Figure 7 User Management Create Page
Source: Screenshots of the system developed by the researcher (2024

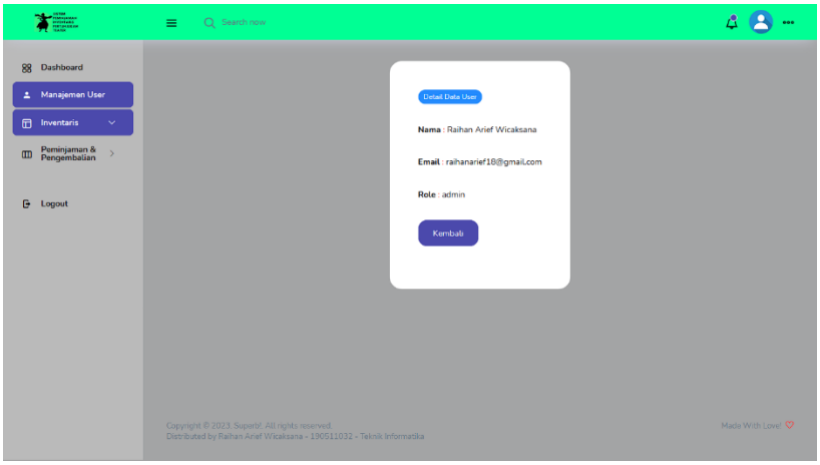

Figure 8 User Management Detail Page
Source: Screenshots of the system developed by the researcher (2024)

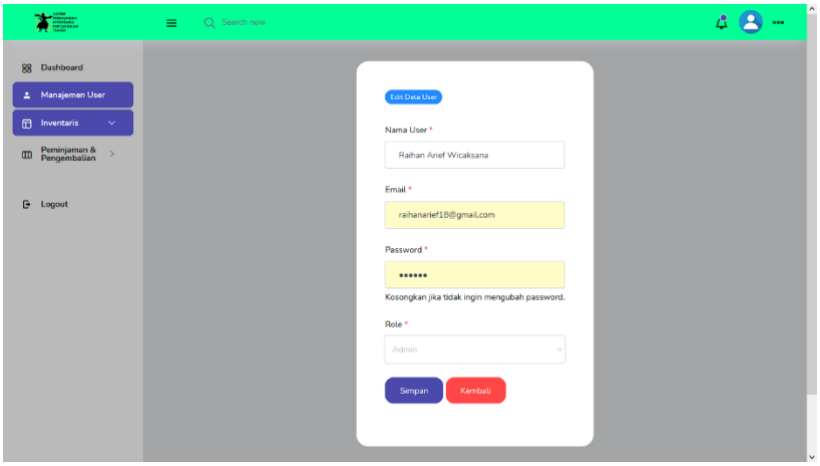

Figure 9 User Management Edit Page
Source: Screenshots of the system developed by the researcher (2024)

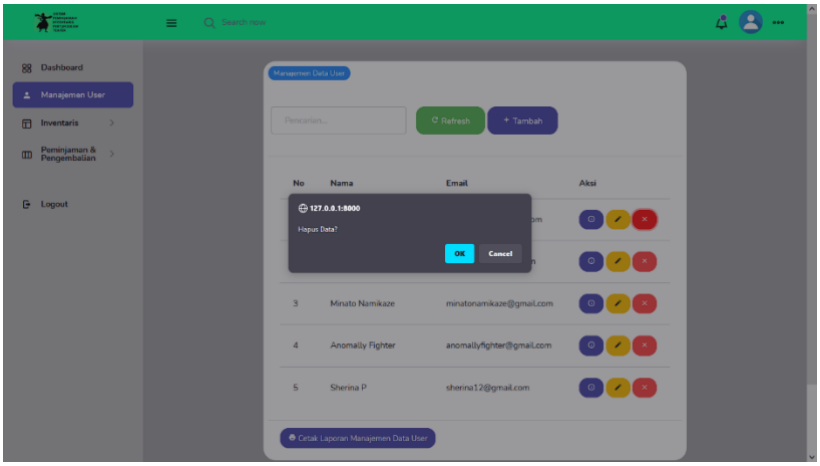

Figure 10 User Management Delete Page
Source: Screenshots of the system developed by the researcher (2024)

Inventory Category Management CRUD Page

The User Data Management page is an interface that allows admins with special access rights to manage user information within the system. This page facilitates the management and maintenance of user data, such as adding data, changing user data, deleting accounts, and the main page of user data management is shown in Figure 11.

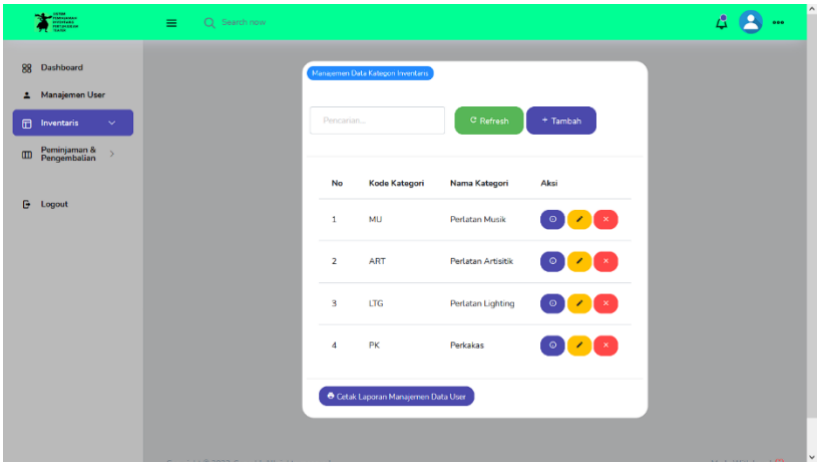

Figure 11 Inventory Category Management CRUD Page
Source: Screenshots of the system developed by the researcher (2024)

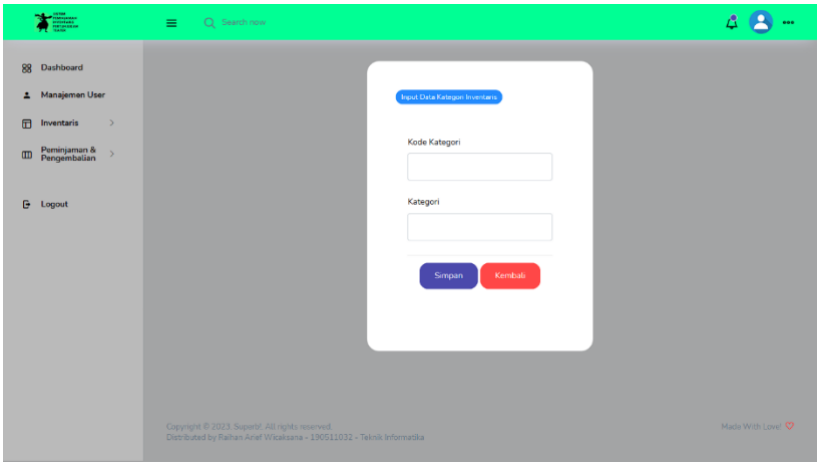

Figure 12 Inventory Category Management Create CRUD Page
Source: Screenshots of the system developed by the researcher (2024)

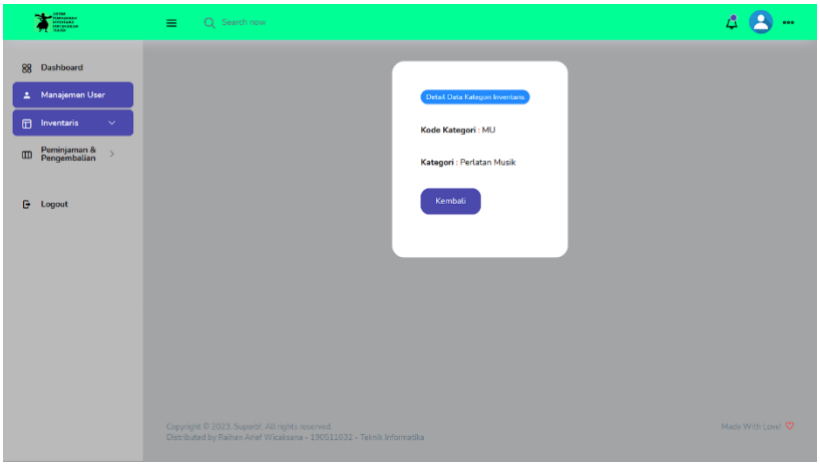

Figure 13 Inventory Category Management CRUD Detail Pages
Source: Screenshots of the system developed by the researcher (2024)

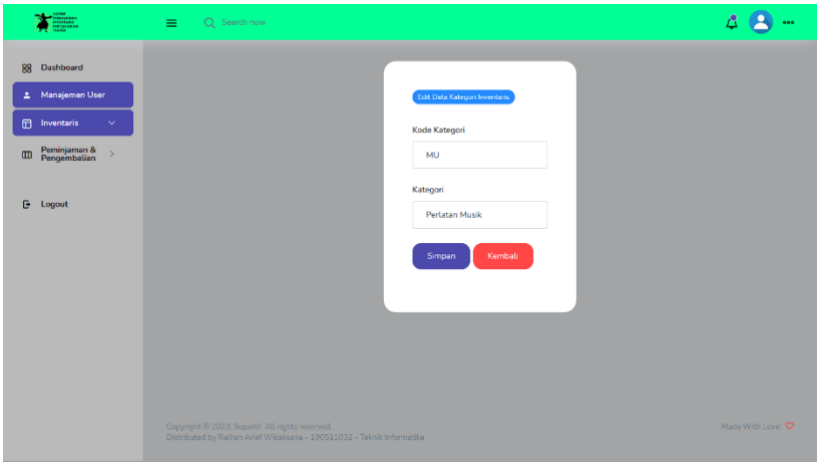

Figure 14 Edit Page CRUD Inventory Category Management
Source: Screenshots of the system developed by the researcher (2024)

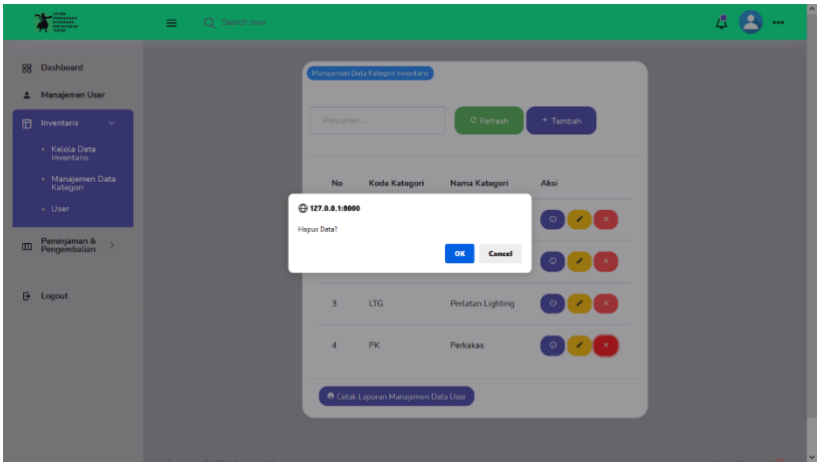

Figure 14 Pages Delete CRUD Inventory Category Management
Source: Screenshots of the system developed by the researcher (2024)

Forgot Password *Page*

To access the system, the first thing to do is to turn on the *web server* on *Apache MySQL*, then open *a web browser* and type "localhost/student" then press enter and you will enter the login *page.* Next, enter your *username* and *password* to enter the *dashboard page*.

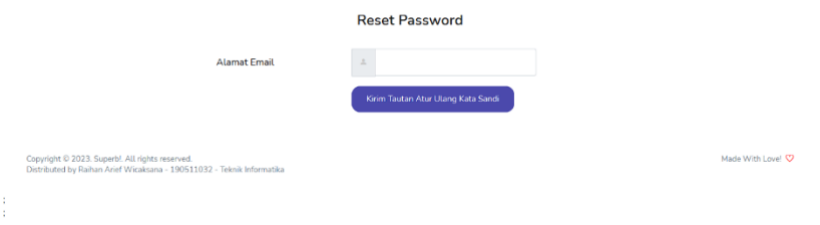

Figure 15 Login Page
Source: Screenshots of the system developed by the researcher (2024)

System Testing

Software testing is necessary because it can determine if the software is error-free and suitable for use. This test was carried out using the black box method.

Test Plan

Table *1.* Test Plan

Test Class	Test Item Code	Test Items	Level
Login	01	*Log* in with *the correct* username *and* password	Adminnistrator
	02	*Log* in with *the wrong* username *and* password	Administrator
	03	*Log* in with *a blank* username *and* password	Administrator
Managing Study Program Data	04	Fill in all data *input formscorrectly*	Administrator
	05	Fill out *the data* input data *form* by blanking one of the *forms*	Administrator
	06	Changing data with the correct data	Administrator
	07	Delete study program data	Administrator
Managing Dean's Data	08	Fill out all input *data* forms *correctly*	Administrator
	09	Fill out *the data* input data *form* by blanking one of the *forms*	Administrator
	10	Changing data with the correct data	Administrator
	11	Delete dean's data	Administrator
Managing Study Program Head Data	12	Fill out all input *data* forms *correctly*	Administrator
	13	Fill out *the data* input data *form* by blanking one of the *forms*	Administrator
	14	Changing data with the correct data	Administrator
	15	Deleting the data of the head of the study program	Administrator
Managing Student Data	16	Fill out all input *data* forms *correctly*	Administrator
	17	Fill out *the data* input data *form* by blanking one of the *forms*	Administrator
	18	Changing data with the correct data	Administrator

	19	Delete student data	Administrator
Managing Data User	20	Fill out all input *data* forms *correctly*	Administrator
	21	Fill out *the data* input data *form* by blanking one of the *forms*	Administrator
	22	Changing data with the correct data	Administrator
	23	Delete *user data*	Administrator
Managing SKL	24	Fill out all input *data* forms *correctly*	Administrator
	25	Fill out *the data* input data *form* by blanking one of the *forms*	Administrator
	26	Changing data with the correct data	Administrator
	27	Delete SKL data	Administrator
Managing SPS	28	Fill out all input *data* forms *correctly*	Administrator
	29	Fill out *the data* input data *form* by blanking one of the *forms*	Administrator
	30	Changing data with the correct data	Administrator
	31	Delete tuition data	Administrator
Managing SOKP	32	Fill out all input *data* forms *correctly*	Administrator
	33	Fill out *the data* input data *form* by blanking one of the *forms*	Administrator
	34	Changing data with the correct data	Administrator
	35	Delete SOKP data	Administrator
Managing CASE	36	Fill out all input *data* forms *correctly*	Administrator
	37	Fill out *the data* input data *form* by blanking one of the *forms*	Administrator
	38	Changing data with the correct data	Administrator
	39	Delete SAK data	Administrator
Managing SPKL	40	Fill out all input *data* forms *correctly*	Administrator
	41	Fill out *the data* input data *form* by blanking one of the *forms*	Administrator
	42	Changing data with the correct data	Administrator
	43	Delete SPKL data	Administrator
	44	Fill out all input *data* forms *correctly*	Administrator

Managing SC	45	Fill out *the data* input data *form* by blanking one of the *forms*	Administrator
	46	Changing data with the correct data	Administrator
	47	Delete SC data	Administrator
Managing SPK	48	Fill out all input *data* forms *correctly*	Administrator
	49	Fill out *the data* input data *form* by blanking one of the *forms*	Administrator
	50	Changing data with the correct data	Administrator
	51	Delete SPK data	Administrator
Managing SPP	52	Fill out all *input* data *forms* correctly	Administrator
	53	Fill out *the data* input data *form* by blanking one of the *forms*	Administrator
	54	Changing data with the correct data	Administrator
	55	Delete tuition data	Administrator
Login	56	*Log* in with *the correct* username *and* password	Dean
	57	*Log* in with *the wrong* username *and* password	Dean
	58	*Log* in with *a blank* username *and* password	Dean
Login	59	*Log* in with *the correct* username *and* password	Head of Study Program
	60	*Log* in with *the wrong* username *and* password	Head of Study Program
	61	*Log* in with *a blank* username *and* password	Head of Study Program
Login	62	*Log* in with *the correct* username *and* password	Students
	63	*Log* in with *the wrong* username *and* password	Students
	64	*Log* in with *a blank* username *and* password	Students
	65	Fill out all input *data* forms *correctly*	Students

SKL Submission	66	Fill out *the data* input data *form* by blanking one of the *forms*	Students
	67	Changing data with the correct data	Students
	68	Delete SKL data	Students
SPS Submission	69	Fill out all input *data* forms *correctly*	Students
	70	Fill out *the data* input data *form* by blanking one of the *forms*	Students
	71	Changing data with the correct data	Students
	72	Delete tuition data	Students
SOKP Submission	73	Fill out all input *data* forms *correctly*	Students
	74	Fill out *the data* input data *form* by blanking one of the *forms*	Students
	75	Changing data with the correct data	Students
	76	Delete SOKP data	Students
SAK Submission	77	Fill out all input *data* forms *correctly*	Students
	78	Fill out *the data* input data *form* by blanking one of the *forms*	Students
	79	Changing data with the correct data	Students
	80	Delete SAK data	Students
SPKL Submission	81	Fill out all input *data* forms *correctly*	Students
	82	Fill out *the data* input data *form* by blanking one of the *forms*	Students
	83	Changing data with the correct data	Students
	84	Delete SPKL data	Students
Pegajuan SC	85	Fill out all input *data* forms *correctly*	Students
	86	Fill out *the data* input data *form* by blanking one of the *forms*	Students
	87	Changing data with the correct data	Students
	88	Delete SC data	Students
SPK Submission	89	Fill out all input *data* forms *correctly*	Students
	90	Fill out *the data* input data *form* by blanking one of the *forms*	Students

	91	Changing data with the correct data	Students
	92	Delete SPK data	Students
SPP Application (PHP Official, 2019).	93	Fill out all input *data* forms *correctly*	Students
	94	Fill out *the data* input data *form* by blanking one of the *forms*	Students
	95	Changing data with the correct data	Students
	96	Delete tuition data	Students

Source: Compiled by the author based on Black Box testing scenarios (2024)

Test Results

The test results are made to prove that the information system is on purpose and able to meet the needs of users. Testing based on the test plan results in the following test results:

Table *2.* Test Item Code Results 01

Test Item Code	01		
Test Item Name	*Log* in with *the correct* username *and* password		
Classes	*Login*		
Purpose	Check the *username* and *password data* of the administrator *account* contained in the *database*		
Initial Conditions	*Admin* is not yet in the system		
Scenario			
1. Opening the system 2. Fill out *the administrator login form* 3. Click on the 'Login' button			
Results			
Data provided	What to expect	Observations	Conclusion
Fill *out the administrator login form* with *the correct* username *and* password	Successfully *log in* and log in to the *administrator dashboard*	Successfully logged in to the administrator dashboard (Appendix Figure L.1)	*Pass*

Source: Data from functional system testing using the Black Box method (2024)

In the test item code 01, the *administrator login test* was carried out by filling *in the correct* username *and* password form, then the *login* results were successful as expected.

Summary of Test Results

Tests carried out on the Student Correspondence Service Information System at the Faculty of Engineering, University of Muhammadiyah Cirebon resulted in the conclusion that all systems run with the expected results, including:

1) The system can identify the user's level and redirect to the page according to his level.

2) Adding data can be done successfully.
3) Changing data can be done successfully.
4) Delete data can be done successfully.
5) The system can display data.
6) The system can display the body of the letter.
7) The system can print the submitted letter.
8) Functionally the system can produce the expected output

CONCLUSION

Based on the description in the previous chapters, this research has produced an application of student correspondence service as a medium for submitting letters for students of the Faculty of Engineering, University of Muhammadiyah Cirebon. The system that has been created can help the Faculty to make a letter submitted by students and can print the letter. The system that has been created can help the Faculty in managing the data of students, deans and heads of study programs, so the conclusions that the author can draw, namely: The system can identify the user's level and redirect to the page according to his level; Adding data can be done successfully; Changing data can be done successfully; Delete data can be done successfully; The system can display data; The system can display the body of the letter; The system can print the submitted letter; Functionally the system can produce the expected output.

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