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Black Box Testing of Futsal Field Rental Information Systems Using Automated Testing Method

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Abstract

A pivotal aspect of software development is testing, which serves as the final phase preceding the release of a software or information system. The realm of software testing encompasses a diverse array of methods, and within the scope of this investigation, the focus is on black box testing. In pursuit of this objective, the study leverages the capabilities of the Katalon Studio for Automated Testing. Its application is directed towards evaluating the functionality of an information system dedicated to the rental of futsal fields in the city of Singkawang. The essence of this examination lies in affirming the integrity of each feature and menu that constitutes the futsal field rental information system. This validation process is integral to ensuring that the system aligns seamlessly with the requisites of its users. The culmination of these testing endeavors culminates in the confirmation that the information system harmoniously resonates with user expectations. Consequently, it stands primed for implementation and subsequent release, signifying the attainment of a pivotal milestone in its development journey.

Keywords: Black Box, Testing, Futsal Field, Information System, Katalon Studio

1. INTRODUCTION

At its core, an information system is a meticulously crafted convergence of technology, sociocultural dynamics, and organizational structures, strategically designed to capture, process, retain, and disseminate information [1]–[3]. This information, in essence, constitutes a web of interconnected data points whose value and utility come to the fore when the relationships between these data points are deciphered [4], [5]. The acquisition of substantial and pertinent information has the potential to bestow individuals with knowledge, thus enabling their empowerment. The focal point of this study revolves around the progressive development of an information system tailored specifically for managing the rental operations of a futsal field located in Singkawang City. The architectural blueprint of this information system has been meticulously delineated.

The developmental approach embraced in creating this system adheres to the principles of the System Development Life Cycle (SDLC), also known as the system development lifecycle. SDLC serves as a comprehensive framework encompassing methodologies, models, and processes that underlie the creation,

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enhancement, and maintenance of various systems [6], [7]. Within the SDLC framework, several models have gained prominence, including the well-known waterfall model, rapid analysis development, and prototyping, among others [8], [9]. A cornerstone of each SDLC model is the scrupulous consideration given to the testing phase—a pivotal juncture within the broader system development lifecycle. This phase is critical in ensuring the reliability and robustness of applications or information systems before they are introduced into real-world contexts [10], [11].

However, this inquiry is marked by a predicament: despite the completion of the information system, its deployment has yet to take place. As a result, the potential merits, limitations, and benefits for end-users remain uncharted. In response, a rigorous assessment of the system's functionality becomes paramount. Consequently, prior to the official launch of the futsal field leasing information system in Singkawang City, a meticulous examination of the system's features becomes an imperative endeavor. This evaluation seeks to validate the seamless execution of each programmed feature and menu as envisioned during the system's design phase.

To undertake this evaluation, the methodology of choice is the black box approach, which meticulously focuses on the functional dimensions of the information system. The assessment is facilitated by leveraging the capabilities of the Katalon Studio software, chosen for its ability to reveal the alignment of designed features with user expectations. Unlike previous research that relied solely on the equivalence partition technique, this approach broadens the evaluation by integrating Katalon Studio software. Black box testing, as a means of evaluating software, zeroes in on the software's functional prerequisites. It provides software developers with a systematic mechanism to formulate input conditions that thoroughly exercise all functional facets of the program [12]–[14]. Through this methodical examination of input conditions, black box testing ensures the comprehensive validation of the program's functional specifications.

Black box testing is a method employed to detect errors across a diverse array of categories [15], [16]. These encompass, firstly, improper or missing functionalities, where the system fails to execute expected functions. Secondly, interface errors are identified, highlighting discrepancies in the interactions between different components. Thirdly, errors related to data structures or external database interactions are brought to light, encompassing problems with data organization and retrieval. Furthermore, the testing methodology identifies errors in terms of performance or behavioral anomalies, indicating deviations from expected system responses. Lastly, the testing process scrutinizes initialization and termination phases for potential faults, ensuring that these critical procedures function as intended. This approach to testing uncovers these categories of errors, making visible instances such as missing or inaccurately executed functions, interface

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inconsistencies, issues with data manipulation and external data access, performance deviations, and anomalies during system startup and shutdown.

2. METHODS

Black Box testing employs a range of techniques, including Equivalence Partitions, Boundary Value Analysis, Comparison Testing, Sample Testing, Robustness Testing, Behavioral Testing, Performance Testing, Requirement Testing, Endurance Testing, and Cause-Effect Relationship Testing [17]. In the context of this study, the Equivalence Partitions technique has been applied. This technique revolves around validating the functions performed or inputs provided within the application, followed by an observation of the corresponding outputs or responses to ensure their alignment with the anticipated outcomes. The flow of this research is depicted in Figure 1.

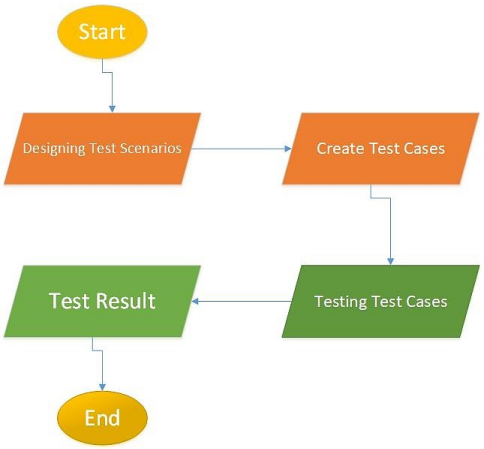

Figure 1. Research Procedure

The schematic in Figure 1 outlines the sequential progression of this research across four distinct stages. The initial phase involves the formulation of a comprehensive test scenario, which sets the foundation for the subsequent steps. Following the scenario design, the creation of meticulous test cases ensues, ensuring a systematic and comprehensive coverage of various aspects. With the test cases established, the subsequent stage pertains to their actual execution and rigorous examination, gauging the behavior and performance of the system. The conclusive phase encapsulates the culmination of these stages, presenting a comprehensive and insightful summary of the garnered test results.

3. RESULTS AND DISCUSSION

Derived from the comprehensive results and subsequent discussion, the study advances through a sequence of four distinct processes. It commences with the

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meticulous design of test scenarios, undertaken with the specific goal of judiciously evaluating the system's validity through the functional examination of targeted features. Subsequently, a diligent creation of test cases unfolds, serving as a meticulous record of the various menus designated for examination. These test cases then undergo rigorous examination employing Katalon Studio, a step undertaken to verify the precise alignment of the testing sequence with the intricately designed scenarios. Ultimately, this progression culminates in the generation of comprehensive test results, thereby affirming the validation of each scenario design or flagging any potential errors that have emerged.

3.1 Designing Test Scenarios

Within this study, a multitude of meticulously crafted test scenarios form an integral component. These scenarios span across diverse dimensions, commencing with the scrutiny of user login functionality and extending to encompass venue data management, manager booking data validation, funds withdrawal assessment, futsal field information verification, field booking process analysis, master data examination, service fee appraisal, payment confirmation assessment, comprehensive funds transfer evaluation, and a meticulous review of generated reports. The ensuing Table 1 serves as a structured analytical platform, delineating and categorizing the outlined test plan through the lens of the black box method facilitated by Katalon Studio.

1) User login page

Illustrating the testing scope, we consider the user login page as an exemplar. The interface for this page, depicted in Figure 2, exemplifies the login interface shared across user categories, although their access privileges may vary. Specifically, the Admin login page features a form intended for users with administrative credentials before they gain entry to the primary interface. Within this form, the user is prompted to input their username or email alongside the corresponding password as part of the authentication process.

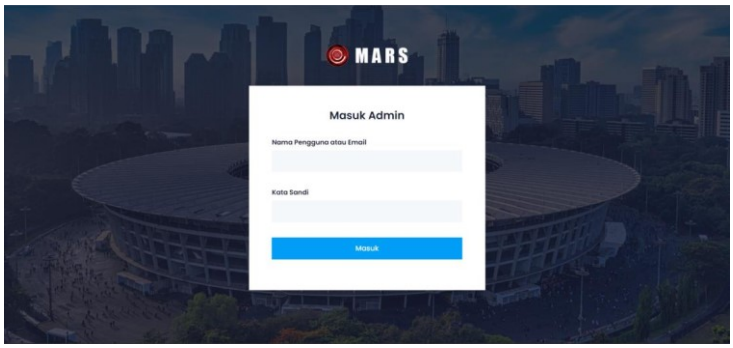

Figure 2. Admin Login Page

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2) Venue data management

Offering a concrete illustration of the testing spectrum, we turn our attention to the venue data manager page, notably exemplified by the Venue Detail Page Interface depicted in Figure 3. Within this context, the admin is afforded the opportunity to access and review an array of venue-specific details. These encompass essential information such as operational hours, a descriptive overview, address specifics, available facilities, geographical coordinates retrieved from Google Maps integration, and an aggregation of user reviews.

Figure 3. Venue Detail Page Interface

3) Manager booking data testing

Illustrating the testing focus further, we delve into the manager booking data page, with a prime example being the Manager Booking Detail Page Interface. Within this interface, the administrative user can seamlessly access and scrutinize a wealth of booking-related information. Notably, the Field Booking Data page facilitates the overview of booked futsal fields, revealing pivotal details such as the booking code, date of booking, status indicators, and the capacity to modify status. A salient feature of the field booking data page is the provision of a data search functionality, showcased prominently in Figure 4.

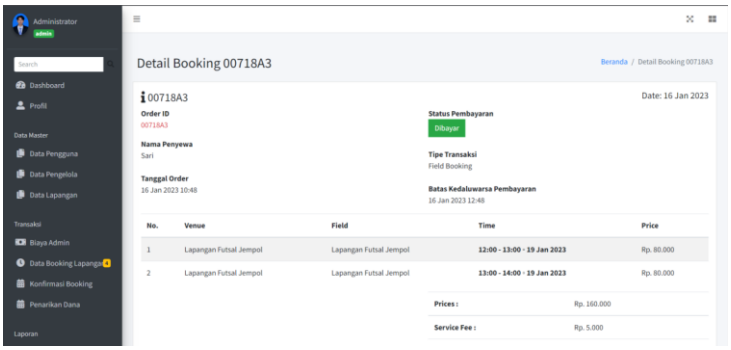

Figure 4. Field Booking Detail Page Interface

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4) Funds withdrawal testing

Providing a tangible demonstration of the testing scope, we spotlight the funds withdrawal page, exemplified by the Funds Withdrawal Detail Page Interface depicted in Figure 5. Within this context, the administrator can effectively access and evaluate a trove of information related to fund withdrawals. Specifically, the Manager's Fund Withdrawal Data page facilitates a comprehensive overview of the withdrawn funds attributed to managers. This encompassing view encompasses pivotal details such as the withdrawal date, manager's identity, the withdrawal amount, associated account number, and the status of the payment. The visual depiction of the Manager Fund Withdrawal Data page interface can be observed in Figure 5.

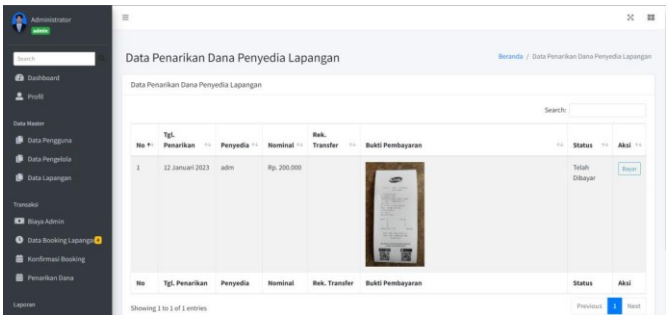

Figure 5. Fund Withdrawal Data Page Interface

5) Futsal field information testing

Illustrating the breadth of the testing endeavor, we focus our attention on the futsal field information page, aptly represented by the Futsal Field Information. Within this context, the manager is empowered to delve into a comprehensive array of futsal field details. This includes essential insights like the available time slots within the field, along with the concurrent booking statuses during those periods. The visual depiction of the Field Detail Page is succinctly captured in Figure 6. This aspect of the testing effort is integral to the comprehensive field booking process assessment.

Figure 6. Field Details Page interface

6) Field booking process testing

Offering a tangible example of the testing endeavor, our focus shifts to the field booking process testing page, which notably encompasses the field booking process itself. Within the framework of payment confirmation, the tenant is presented with a comprehensive interface. Here, the tenant is prompted to input detailed particulars, encompassing their name, email address, booking title, and any relevant notes. Furthermore, the interface furnishes the tenant with a snapshot of payment specifics, including the payment type and the comprehensive rental details, spanning the field's name, the chosen rental duration, and the resulting total payment amount. Subsequently, if deemed appropriate, the tenant has the option to initiate the payment confirmation by clicking the designated button. A visual representation of this pivotal payment confirmation interface is succinctly captured in Figure 7.

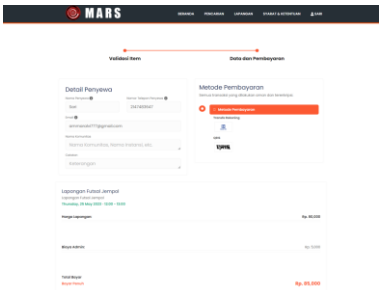

Figure 7. Payment Confirmation Process Interface

7) Testing sending funds, testing reports

Providing a concrete illustration within the testing context, our attention turns to the sending funds testing page, which pertains to the funds transmission process. Following the assessment of payment confirmation outcomes, the administrative user undertakes a crucial step. Based on the accuracy of the provided transfer evidence, the admin proceeds to modify the rental status. If the transfer proof is validated, the rental status is promptly updated to "Paid." Conversely, if the provided transfer proof is deemed incorrect, the admin adjusts the rental status to "Cancel." This pivotal process within the realm of field rental payment confirmation is exemplified in Figure 8, encapsulating the interface that facilitates these essential steps.

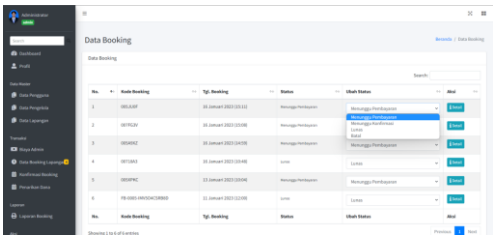

Figure 8. Field Lease Payment Confirmation Interface

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8) Testing reports

Illustrating the comprehensive testing landscape, we turn our attention to the reports testing page, which serves as a crucial component. Specifically, we delve into the Booking Report Detail Page, which allows the administrative user to access and scrutinize vital booking-related information. This encompassing view encompasses pivotal details including the booking code, the designated field, the play date, the allocated playtime, and the associated transfer amount. A visual representation of this Booking Report Detail Page interface, which serves as a fundamental element in this testing process, is encapsulated within Figure 9.

Figure 9. Booking Report Detail Page Interface

3.2 Create Test Cases, Testing Test Cases and Result

Aligning seamlessly with the outlined test scenario design discussed earlier, the ensuing phase entails the meticulous creation of corresponding test cases as delineated below.

Tabel 1. Site Access Test case results

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_01	Test is this application can Accessed on browsers with use a network Internet	Open the browser application then enter the following address http://localhost/futsal al-amar/	Domain	The browser can display the initial view of the Futsal Field Rental Information System in Singkawang City	Accepted

Table 1 above is a test for accessing information systems Rent Futsal Field in Singkawang City with an accepted conclusion. Evidence of testing on a katalon studio can be seen in Figure 10.

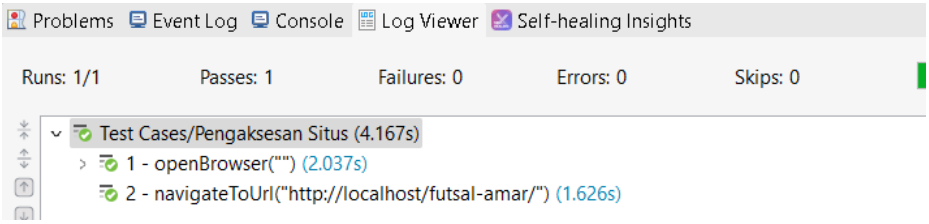

Figure 10. Site access test case results

Figure 10, from the test results using the Katalon Studio, accessing the system site gets status passes, which means it is acceptable and as expected. Then do the test in table 2 below.

Tabel 2. Admin login testing

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_02	Testing whether on app admin login can filter users who has access rights as admin	Open the browser application then enter the following address http://localhost/futsalal-amar/dashboard/login-admin	Username and Password	The application can be accessed after a user with admin privileges. Enter the correct username and password	Accepted

Table 2 above shows the admin login page, the function tested is the admin login process, namely from a user who has access rights as admin. The results can be seen in table 2. Evidence of testing on the catalon workshop can be seen in Figure 11.

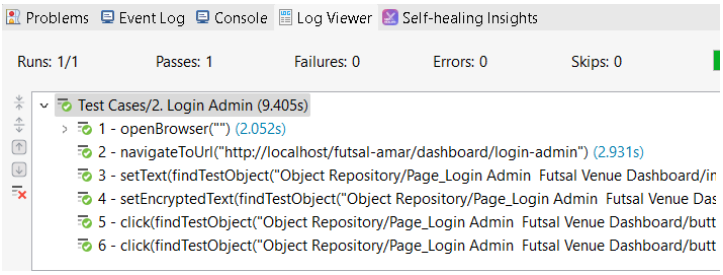

Figure 11. Admin login page test case results

Figure11, from the test results using Katalon Studio, the admin login page gets a pass status which means it is acceptable and as expected. Then do the test in table 3 below.

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Tabel 3. Manager login testing

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_03	Testing whether on app manager login can filter users who has access rights as manager	Open the browser application then enter the following address http://localhost/futsalal-amar/dashboard/loginadmin	Username and Password	The application can be accessed after a user with manager privileges. Enter the correct username and password	Accepted

On Table 3, the function tested is the manager login process, namely from a user who has access rights as manager. The results can be seen in table 3. Evidence of testing on a katalon studio can be seen in Figure 12.

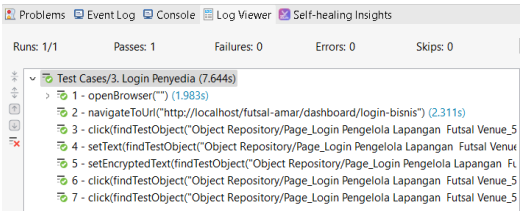

Figure 12. Manager login page test case results

Figure 12, from the test results using Katalon Studio, the manager login page gets a pass status which means it is acceptable and as expected. Then do the test in table 4 below.

Tabel 4. Tenant login testing

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_04	Testing whether on app tenant login can filter users who has access rights as tenant	Open the browser application then enter the following address http://localhost/futsalal-amar/dashboard/loginuser	Username and Password	The application can be accessed after a user with tenant privileges. Enter the correct username and password	Accepted

On Table 4, the function tested is the tenant login process, namely from a user who has access rights as tenant. The results can be seen in table 4. Evidence of testing on a katalon studio can be seen in Figure 13.

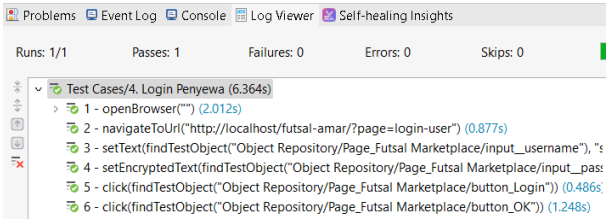

Figure 13. Tenant login page test case results

Figure 13, from the test results using Katalon Studio, the tenant login page gets a pass status which means it is acceptable and as expected. Then do the test in table 5 below.

Tabel 5. Venue Addition Testing

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_05	Testing whether the app can add venues	On the manager page, select the add venue data menu. On the add venue data page, fill in the venue data	Venue details	The added venue appears on the venue list and there is a notification that the venue has been successfully added	Accepted

Table 5 above the application can add venues. evidenced in the katalon studio in Figure 14.

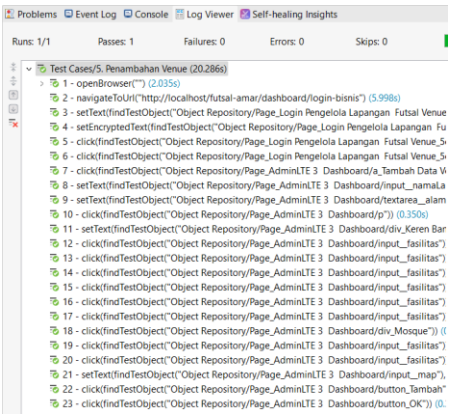

Figure 14. Venue Addition page test case results

Figure 14, from the test results using Katalon Studio, the page for adding venues for managers gets a pass status, which means that it is acceptable and as expected. Then do the test in Table 6.

Tabel 6. Testing changes to venue data

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_06	Tests whether the application can change the venue data	On the manager page, select the venue data menu. On the data page venue select the edit venue data feature, then edit the venue data	Venue data that you want to change	The replaced data appears on the venue detail page and there is a notification that the venue data has been successfully edited	Accepted

Table 6 above the application can change venues. evidenced in the katalon studio in Figure 15.

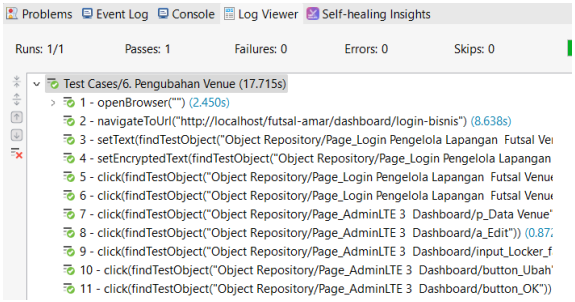

Figure 15. Venue change test case results

Figure 15, from the test results using Katalon Studio, the venue change page for the manager gets a pass status, which means that it is acceptable and as expected. Then do the test in Table 7.

Tabel 7. Venue Data Wipe Test

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_07	Tests whether the app can be uninstalled	On the manager page, select the venue data menu. On the data page venue select the delete venue feature, then delete one of the venues	Delete venues	The selected venue is deleted from the list and displays a notification that the venue was successfully deleted	Accepted

On Table 7 the application can remove the place. evidenced in the studio catalon in Figure 16.

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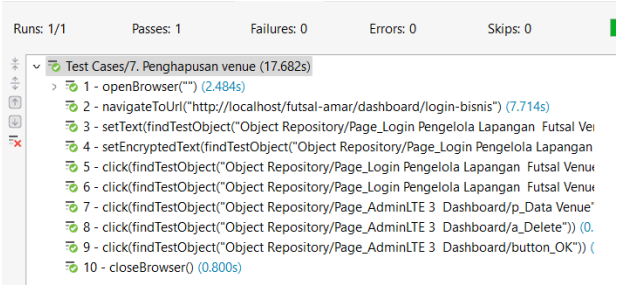

Figure 16. Venue data wipe test case results

Figure 16, from the test results using Katalon Studio, the venue manager's deletion page received a pass status, which means it was acceptable and as expected. Then do the test in Table 8.

Tabel 8. Testing the Addition of Operational hours

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_08	Test whether the application can add operational hours	On the manager page, select the venue data menu. On the data page venue select the edit feature, on the edit page select the operational hours feature, then fill in the form	Operational hours	The added operational hours appear in the futsal field details and there is a notification that the operational hours were successful added	Accepted

Table 8 above the application can add operational hours. evidenced in the katalon studio in Figure 17.

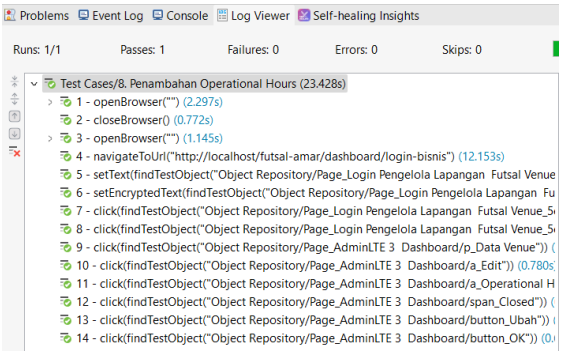

Figure 17. The result of the addition of operational hours

Figure 17, from the test results using Katalon Studio, the page for adding operational hours gets a pass status, which means it is acceptable and as expected. Then do the test in Table 9.

Tabel 9. Field Addition Test

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_09	Tests whether the application can add fields	On the manager page, select the venue data menu. On the data page venue select the edit feature, on the edit page select the field feature, on the field page select the add field feature, then fill out the form	Data field	The added field appears in the Field list and there is a notification that the field was successfully added	Accepted

Table 9 the application can add fields proven in the katalon studio in Figure 18.

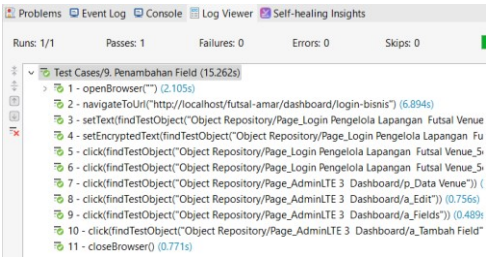

Figure 18. Field Addition Test case results

Figure 18, from the test results using Katalon Studio, the field addition page gets a pass status which means it is acceptable and as expected. Then do the test in Table 10.

Tabel 10. Testing Field Data Changes

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_10	Test whether the application can change data fields	On the management page, select the Data Venue menu. On the Venue Data page select the Edit feature, on the edit page select the field	Field data that you want to replace	The data replaced appeared on the field page and there was a notification that the field data was successfully edited	Accepted

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Id	Description	Testing Procedure	Input	Result	Conclusion
		feature, on the field page select the data edit feature, then edit the data field			

On Table 10 the application can change the fields as evidenced in the katalon studio in Figure 19.

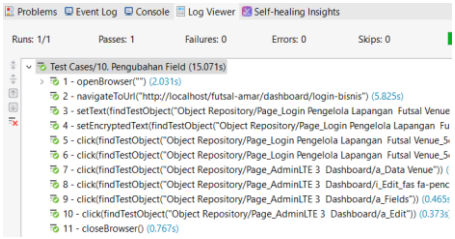

Figure 19. Test Case Results Changing Field Data

Figure 19, from the test results using Katalon Studio, the page can change the field to get a pass status which means it is acceptable and as expected. Then do the test in Table 11.

Tabel 11. Field abolition testing

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_11	Test whether the application can delete field	On the management page, select the Data Venue menu. On the Venue Data page select the Edit feature, on the edit page select the field feature, on the field page select the delete field feature, then delete one of the fields	Delete field	The selected field was deleted from the Field List and displayed the Field notification successfully deleted	Accepted

On Table 11 the application can delete the field as evidenced in the katalon studio in Figure 20.

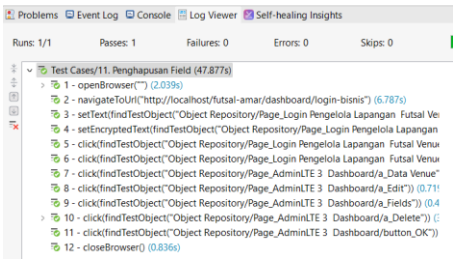

Figure 20. Test Case Results Deleteion Field

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Figure 20, from the test results using Katalon Studio, the page can delete fields and get a pass status which means it is acceptable and as expected. Then do the test in Table 12.

Tabel 12. Testing the addition of rental prices

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_12	Test whether the application can add rental prices.	On the management page, select the Data Venue menu. On the data page Venue select the edit feature, on the edit page select the field feature, on the page Field selects the edit feature, on the edit page select the rental price feature, then fill in the form	Rental price data	The rental price added appears in field details and there is a notification that the rental price was successfully added	Accepted

On Table 12 the application can add rental prices as evidenced in the katalon studio in Figure 21.

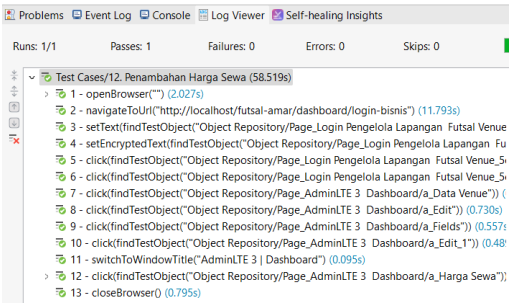

Figure 21. Test results for adding rental prices

On Figure 21, from the test results using Katalon Studio, the page can add rental prices to get a pass status which means it is acceptable and as expected. Then do the test in Table 13.

Tabel 13. Testing Displays Field Booking Data

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_13	Test whether the application can display field data booking	On the management page, select the Field Booking Data menu, select the Fix Booking or Waiting List feature menu	Select Fix Booking or Waiting List	Managers can see field booking data that has been paid or not	Accepted

On Table 13 above the application can display field booking data as evidenced in the katalon studio in Figure 22.

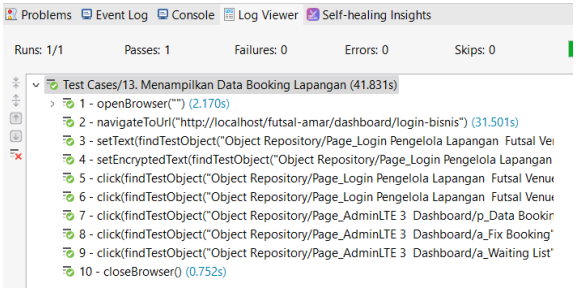

Figure 22. Test case Display Field Booking Data

On Figure 22, From the test results using Katalon Studio, the page can display Field Booking Data to get a pass status which means it is acceptable and as expected. Then do the test in Table 14.

Tabel 14. Testing Data Data Booking Field

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_14	Test whether the application can display data booking details field	On the processing page, select the field data booking menu, select the details feature	Select Detail Booking Field	Managers can see field booking details	Accepted

On Table 14 above the application can display detailed field booking data as evidenced in the studio catalog in Figure 23.

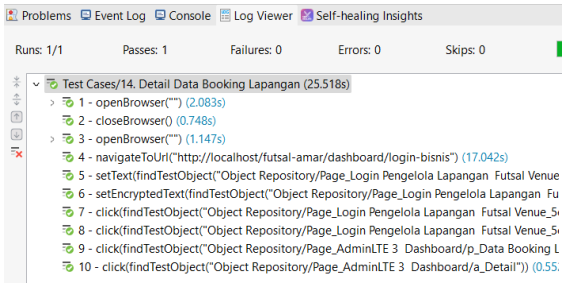

Figure 23. Test case Display Field Booking Data

On Figure 23, From the test results using Katalon Studio, the page can display detailed field booking data to get a pass status which means acceptable and as expected. Then do the test in Table 15.

Tabel 15. Testing displays field booking schedules

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_15	Test whether the application can display a field booking schedule	On the management page, select the field booking schedule menu, select the view feature	Select the date	Managers can see field booking schedules Futsal	Accepted

On Table 15 the application can display the field booking schedule as evidenced in the katalon studio in Figure 24.

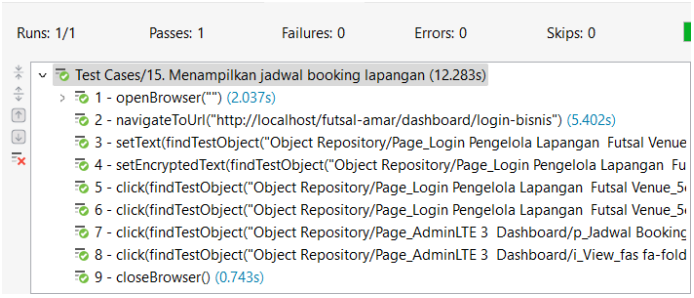

Figure 24. Test case results display field booking schedules

Figure 24, From the test results using Katalon Studio, the page can display the field booking schedule to get a pass status which means it is acceptable and as expected. Then do the test in Table 16.

Tabel 16. Fund withdrawal testing

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_16	Test whether the application can withdraw funds	On the management page, select the field data booking menu, on Field Booking Data Pages Select the balance of the balance feature, then select the balance.	Choose a balance	Funds that have been withdrawn appear on the list of withdrawal of admin funds and there is a notification that the withdrawal of funds is successful	Accepted

On Table 16 above the application can withdraw funds as evidenced in the katalon studio in Figure 25.

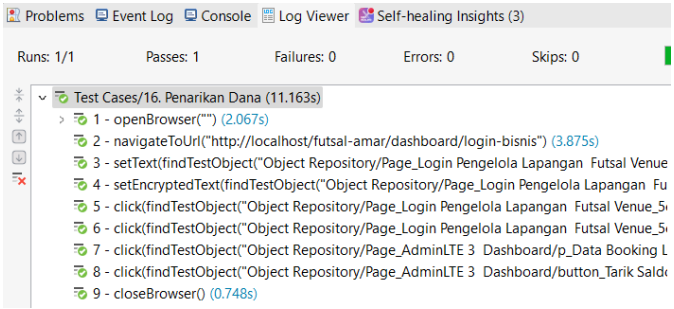

Figure 25. The results of the fund withdrawal testing

On Figure 25, From the test results using Katalon Studio, the page can withdraw funds and get a pass status which means it is acceptable and as expected. Then do the test in Table 17.

Tabel 17. Testing displays a history of withdrawing funds

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_17	Test whether the application can display a history of withdrawing funds	On the management page, select the Histori Menu withdrawing Funds	Select a history of withdrawing funds	Managers can see a history of withdrawing funds	Accepted

On Table 17 the application can display the withdrawal of funds as evidenced in the katalon studio in Figure 26.

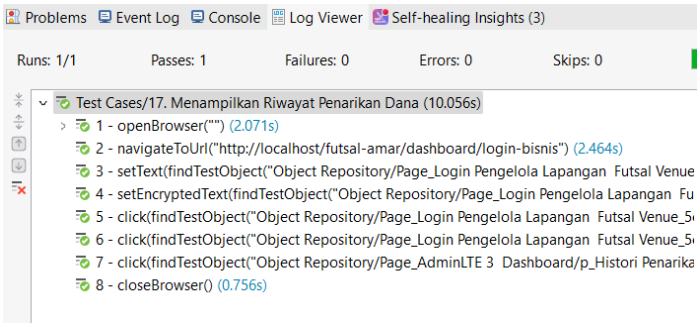

Figure 26. The test case results display a history of withdrawing funds

On Figure 26, From the test results using Katalon Studio, the page can display a withdrawal of funds getting a pass status which means it is acceptable and as expected. Then do the test in Table 18.

Tabel 18. Futsal field search test

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_18	Test whether the application can display Futsal Field Search Results	On the tenant page, select the search menu, on the page Search select search features by date	Select the date	Tenants can see the search results for futsal fields	Accepted

On Table 18 above the application can search for futsal fields as evidenced in the katalon studio in Figure 27.

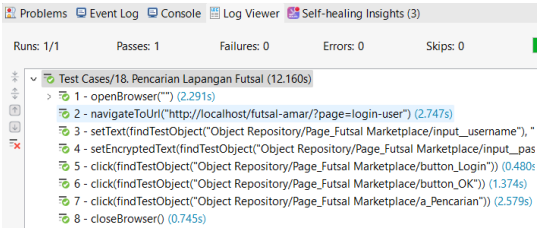

Figure 27. Futsal field search test case results

Figure 27, From the test results using Katalon Studio, the page can search for futsal fields to get a pass status which means it is acceptable and as expected. Then do the test in Table 19.

Tabel 19. Futsal field search test

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_19	Test whether the application can display detailed futsal field data	On the tenant page, select the field menu, on the field page select the view detailed feature	Choose a futsal field	Tenants can see the details of the futsal field	Accepted

On Table 19 the application can see the details of the futsal field as evidenced in the studio catalog in Figure 28.

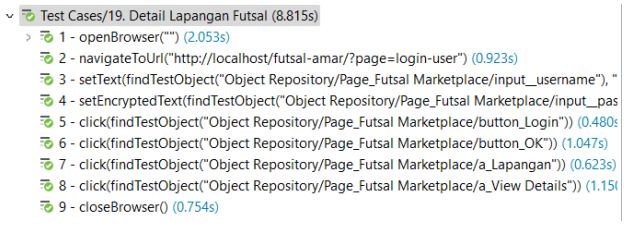

Figure 28. Futsal Field Detail Test Case Results

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Figure 28, From the test results using Katalon Studio, the page can display details of the futsal field getting a pass status which means it is acceptable and as expected. Then do the test in Table 20.

Tabel 20. Test see the schedule and price of the futsal field

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_20	Test whether the application can display the schedule and price of the futsal field	On the tenant page, select the field menu, on the field page select the view detailed feature, on the Pilih feature view detailed page See schedule	Choose a futsal field	Tenants can see field schedules and prices Futsal	Accepted

On Table 20 above the application can see the schedule and detailed prices for the futsal field as evidenced in the katalon studio in Figure 29.

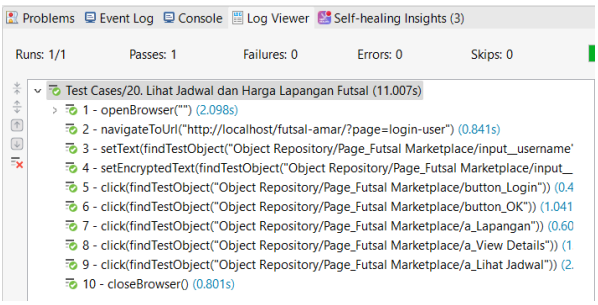

Figure 29. Futsal Field Detail Test Case Results

Figure 29, From the test results using Katalon Studio, the page can display detailed schedules and prices for the futsal field to get a pass status which means it is acceptable and as expected. Then do the test in Table 21.

Tabel 21. Testing data filling for futsal field bookings

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_21	Test whether the application can fill in data for the booking process Futsal field	On the checkout page fill in the data for the futsal field booking process	Complete data booking	Futsal field booking is successful and directed to the payment page	Accepted

On Table 21, the application can fill in the futsal field booking data as evidenced in the katalon studio in Figure 30.

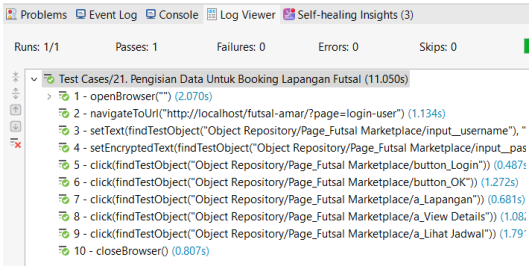

Figure 30. Test case results fill in order data

Figure 30, From the test results using Katalon Studio, the page can fill in data for orders to get a pass status which means acceptable and as expected. Then do the test in Table 22.

Tabel 22. Testing proof of payment

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_22	Test whether the application can send Booking Payment Data	On the transaction page select the pay feature, then fill in the proof of payment data	Proof of payment data	Proof of payment that has been sent appears on the admin payment confirmation list	Accepted

On Table 22 the application can fill in the futsal proof of payment data which is proven in the katalon studio in Figure 31.

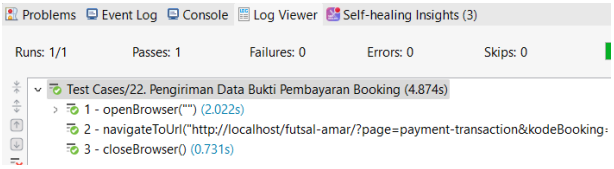

Figure 31. Proof of payment test results

Figure 31, From the results of testing using Katalon Studio, the page can fill in proof of payment data to get a pass status which means it is acceptable and as expected. Then do the test in Table 23.

Tabel 23. Test See Successful Booking Detail Data

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_23	Test whether the application can see successful booking detailed data	On the transaction page select the detailed feature, then display the details of the order success	Select detail booking	Displays Successful Booking Detail Data	Accepted

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On Table 23 the application can display booking details as evidenced in the katalon studio in Figure 32.

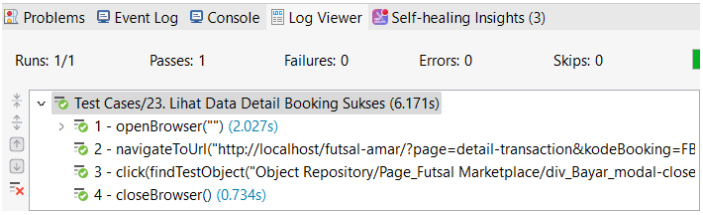

Figure 32. Successful detailed booking test results

Figure 32, From the test results using Katalon Studio, the page can display booking details to get a pass status which means it is acceptable and as expected. Then do the test in Table 24.

Tabel 24. Ticket print test

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_24	Test whether the application can print tickets	On the ticket page, select the download feature, then the ticket will be downloaded	Select the ticket	Booking tickets will be downloaded	Accepted

On Table 24 the application can download the ticket which is proven in the studio catalog in Figure 33.

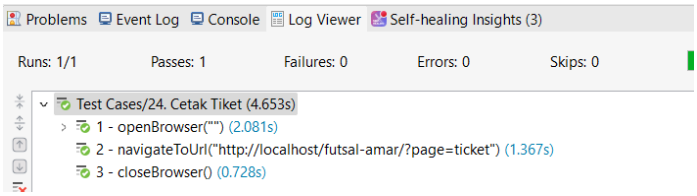

Figure 33. Test results download ticket

Figure 33, From the test results using Katalon Studio, the page can download tickets to get a pass status which means it is acceptable and as expected. Then do the test in Table 25.

Tabel 25. Test Displays User and Manager Data

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_25	Test whether the application can display data users and administrators	On the admin page select the user and manager data menu then it will display a list of user and manager data	Select the user and manager data menu	Data user and manager	Accepted

On Table 25 above the application can see user and manager data as evidenced in the studio catalog in Figure 34.

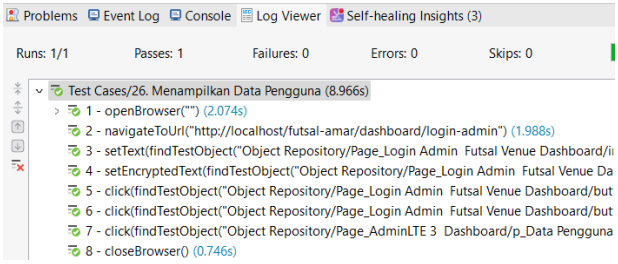

Figure 34. User and manager data test results

Figure 34, from the results of testing using Katalon Studio, the page can see user and manager data get a pass status which means it is acceptable and as expected. Then do the test in Table 26.

Tabel 26. Testing the addition, modification, and deletion of service fees

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_26	Test whether the application can add, change and delete service fees	On the admin page select the service fee menu, select the add data feature, change data, delete data then input data, edit and delete service fees	Service fee data	Service fees that have been added and changed appear on the payment confirmation page and those that have been deleted are lost	Accepted

On Table 26 the application can add, change, and delete service fees as evidenced in the katalon studio in Figure 35.

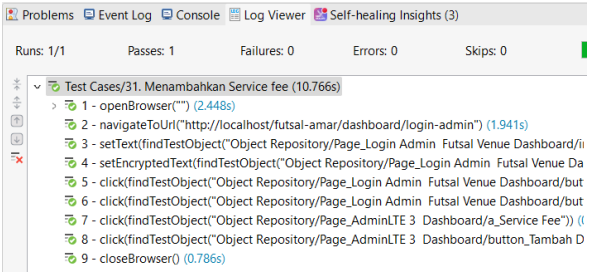

Figure 35. User and manager data test results

Figure 34, From the test results using Katalon Studio, the page can add, change, delete service fees and get a pass status which means acceptable and as expected. Then do the test in Table 28.

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Tabel 27. Admin field booking management testing

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_27	Test whether the application can display booking details from tenants, change booking status, confirm payments, send funds	On the admin page, select the booking details menu from the tenant, change the booking status, confirm payment, send funds	Select field booking management	Admin manages to view booking details, confirm payment, change booking status and send funds	Accepted

On Table 27 above the application can view booking details, change booking status, confirm payment and send funds as evidenced in the katalon studio in Figure 36.

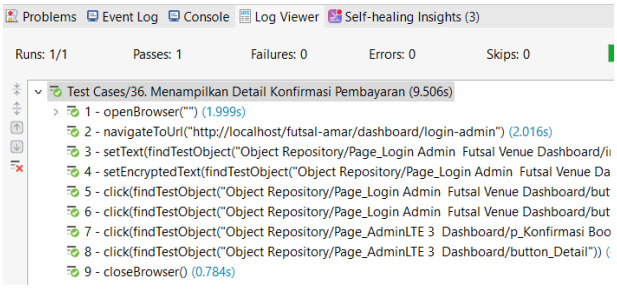

Figure 36. Testing Displays Booking Details

Figure 36, From the test results using Katalon Studio, the page displays details of the booking getting a pass status which means it is acceptable and as expected. Then do the test in Table 29.

Tabel 28. Test Print Manager and Admin Reports

Id	Description	Testing Procedure	Input	Result	Conclusion
Pa_28	Tests whether the app can print manager and admin reports	On the manager and admin page select the booking report menu, on the booking report page select print all or print by date	Select print all or by date	Report will be downloaded	Accepted

On Table 28, the application can print reports as evidenced in the studio catalog in Figure 37.

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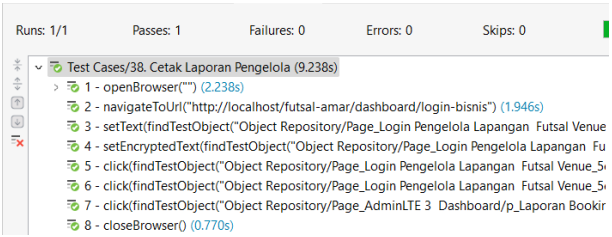

Figure 37. Print test results report

Figure 37, From the results of testing using Katalon Studio, the page can print reports to get a pass status which means it is acceptable and as expected. and testing is complete.

4. CONCLUSION

The evaluation of the application's functionality through the rigorous application of the black box testing methodology, utilizing the advanced automated testing tool, Katalon Studio, has yielded highly commendable results. The systematic process of system testing within Katalon Studio, involving the meticulous recording and comprehensive analysis of each response in unit tests, has transpired seamlessly. The successful outcomes achieved across all test cases, encompassing critical functionalities such as the login process, data storage, modification, and deletion, unequivocally demonstrate the readiness of the information system for practical implementation. The culmination of this thorough evaluation instills a profound sense of confidence in the application's performance and assures its reliability in real-world scenarios. These findings serve as a testament to the effectiveness of employing robust testing methodologies in ensuring the robustness and functionality of software systems.

REFERENCES

[1] I. R. I. A. Slamet Riyadi, "Rancang Bangun Buku Tamu Berbasis Web Studi Kasus Dinas Pendidikan Kabupaten Gresik," *JOINCS (Journal Informatics, Network, Comput. Sci.*, vol. 4, no. 2, pp. 35–38, 2022.

[2] A. Christian, S. Hesinto, and Agustina, "Rancang Bangun Website Sekolah Dengan Menggunakan Framework Bootstrap," *J. Sisfokom (Sistem Inf. dan Komputer)*, vol. 7, no. 1, pp. 22–27, 2018.

[3] R. A. Y. Manurung and A. D. Manuputty, "Perancangan Sistem Informasi Lembaga Kemahasiswaan Universitas Kristen Satya Wacana Salatiga," *J. SITECH Sist. Inf. dan Teknol.*, vol. 3, no. 1, pp. 9–20, 2020, doi: 10.24176/sitech.v3i1.4703.

[4] R. Sanjaya and S. Hesinto, "Rancang Bangun Website Profil Hotel Agung Prabumulih Menggunakan Framework Bootstrap," *J. Teknol. dan Inf.*, vol. 7,

no. 2, pp. 57–64, 2018, doi: 10.34010/jati.v7i2.758.

[5] F. Asrin, S. Saide, and S. Ratna, "Data to knowledge-based transformation: The association rules with rapid miner approach and predictive analysis in evergreen IT-business routines of PT chevron pacific Indonesia," *Int. J. Sociotechnology Knowl. Dev.*, vol. 13, no. 4, pp. 141–152, 2021, doi: 10.4018/IJSKD.2021100109.

[6] H. Mukhtar, "Aplikasi Penjadwalan Otomatis Ujian Proposal Dan Sidang Skripsi Pada Fakultas Ilmu Komputer Universitas Muhammadiyah Riau," *J. Fasilkom*, vol. 8, no. 1, pp. 315–333, 2019, doi: 10.37859/jf.v8i1.1196.

[7] N. Cholisoh, J. Junaidi, and I. S. Sari, "Rancangan Sistem Penginputan Judul Online KKP, TA/SKRIPSI Berbasis Laravel Pada Universitas Raharja," *Technomedia J.*, vol. 5, no. 2, pp. 248–258, 2021, doi: 10.33050/tmj.v5i2.1430.

[8] K. Kirman and E. E. Saputra, "Metode SDLC Waterfall Pada Rancang Bangun Sistem Informasi Sekolah SMP Negeri 10 Kaur," *JUSIBI (Jurnal Sist. Inf. dan E-Bisnis)*, vol. 4, no. 2, pp. 112–118, 2022, doi: 10.54650/jusibi.v4i2.453.

[9] M. R. D. Wiradiputra, I. M. Candiasa, and D. G. H. Divayana, "Pengembangan dan PengujianSistem Informasi Manajemen Jalan Untuk Pemeliharaan Jalan DiKabupaten Buleleng Menggunakan Standar Iso 9126," *J. Ilmu Komput. Indones.*, vol. 6, no. 1, pp. 17–26, 2021.

[10] Uminingsih, M. Nur Ichsanudin, M. Yusuf, and S. Suraya, "Pengujian Fungsional Perangkat Lunak Sistem Informasi Perpustakaan Dengan Metode Black Box Testing Bagi Pemula," *STORAGE J. Ilm. Tek. dan Ilmu Komput.*, vol. 1, no. 2, pp. 1–8, 2022, doi: 10.55123/storage.v1i2.270.

[11] M. F. Yordani and A. Sudaryanto, "Pengujian Sistem Monitoring Listrik Berbasis NodeMCU Menggunakan Blackbox Testing," *Informatics, Electr. Electron. Eng.*, vol. 1, no. 2, p. 50, 2021, doi: 10.33474/infotron.v1i2.11331.

[12] Y. Dwi Wijaya and M. Wardah Astuti, "Pengujian Blackbox Sistem Informasi Penilaian Kinerja Karyawan Pt Inka (Persero) Berbasis Equivalence Partitions Blackbox Testing of Pt Inka (Persero) Employee Performance Assessment Information System Based on Equivalence Partitions," *J. Digit. Teknol. Inf.*, vol. 4, no. 1, pp. 23–26, 2021.

[13] F. Ardi and H. Prihantoro Putro, "Pengujian Black Box Aplikasi Mobile Menggunakan Katalon Studio," 2020.

[14] A. Aulia, Nur Rizky; Indrayanti, "Pengujian Aplikasi Mahasiswa Stmik Jakarta Sti & K," vol. 5, 2021.

[15] P. Saman and C. Indah Ratnasari, "Pengujian Black Box Pada Aplikasi Pembelajaran Bahasa Mandarin Berbasis Android Black Box Testing on an Android-Based Mandarin Learning Application," *J. Ilm. Intech Inf. Technol. J. UMUS*, vol. 4, no. 1, pp. 10–22, 2022.

[16] A. T. Wahyuji, "Pengembangan dan Pengujian Aplikasi Website Career Center ITERA," *J. Tekno Kompak*, vol. 15, no. 1, p. 67, 2021, doi: 10.33365/jtk.v15i1.921.

p-ISSN: **2656-5935** http://journal-isi.org/index.php/isi e-ISSN: **2656-4882**

[17] P. A. Desi, A. Santi, R. Afwani, and M. A. Albar, "Pengujian Black Box Dengan Metode Equivalence Partitioning Dan Boundary Value Analysis (Studi Kasus: Sistem Informasi Akademik Universitas Mataram)," *Universitas Mataran*, pp. 207–219, 2022, doi: 10.2991/978-94-6463-084-8_19.