TEPIAN Vol. 6 No. 1 (March 2025) 13-30 p-ISSN 2721-5350 e-ISSN 2721-5369
https://doi.org/10.51967/tepian.v6i1.3242 © 2025 Tepian Politeknik Pertanian Negeri Samarinda

Design and Development of the "Seruni Sehat" Application: A Health Functional Competency Test Registration System for the West Kalimantan Provincial Health Service

Suharsono *
Information Technology, State Polytechnic of Pontianak, Pontianak, 78124, Indonesia
suharsono@polnep.ac.id
**Corresponding author*

Agung Sutiyo Sudrajat
Informatics Engineering, State Polytechnic of Pontianak, Pontianak, 78124, Indonesia
agungsutiyosudrajad@gmail.com

Muhammad Hasbi
Informatics Engineering, State Polytechnic of Pontianak, Pontianak, 78124, Indonesia
muhammad.hasbi@gmail.com

Tri Bowo Atmojo
Informatics Engineering,
State Polytechnic of Pontianak, Pontianak, 78124, Indonesia
tribowo17@gmail.com

Submitted: 2025-02-21; Accepted: 2025-03-06; Published: 2025-03-15

***Abstract*—** The West Kalimantan Province Health Service has a competency test registration service for promotions to functional positions for health workers via Google Form, however, the use of Google Form does not support registration, so it has difficulty verifying the Competency Test registration files. So it takes a long time to check each registrant one by one manually. For this reason, the West Kalimantan Health Functional Competency Test Registration System Application was created which is expected to make it easier for registrants and admins in the Health Human Resources, Data, and Health Information Technology fields to verify participant files. The development method used in making this application is the Waterfall method. The waterfall method is a systematic development method that goes from one stage to another. The essence of the waterfall method is that work on a system is carried out sequentially or linearly. Meanwhile, the software that will be used to build this application is Laravel, Bootstrap, and PHP. This research produced the Application which can provide registration services, upload files for competency tests, view data that has been registered, correct data if it needs to be corrected, and also print competency test participant cards. Based on the results of application testing which has been carried out by testing directly with the Admin of the West Kalimantan Provincial Health Service, it is running as it should.

***Keywords*—** Application, Public Health, Competency Test, information Systems, Waterfall

I. INTRODUCTION

Every year, healthcare professionals in West Kalimantan have the opportunity to advance their careers through the competency test organized by the West Kalimantan Provincial Health Office. Held annually in May, this test serves as a crucial gateway for those seeking career progression, job transitions, or new opportunities within the healthcare sector. Participants can choose from four test categories: Promotion, Transfer, Job Transfer, and Promotion.

With 22 functional positions available out of a total of 30, a wide range of healthcare professionals—including doctors, nurses, pharmacists, midwives, radiographers, and clinical psychologists—can take part in this important evaluation. This initiative not only ensures the continued professional development of healthcare workers but also strengthens the overall quality of healthcare services in the region.

The Health Functional Position Competency Test is a process to measure the knowledge, skills, and work attitudes of Health Functional Officials carried out by the examination team. An examiner must have a position or qualification, namely a functional person of the same rank, have a high level and have been trained and certified. In 2023 there were 77 examiners from all functional positions with a total of 800 registered participants. The need for a Functional Position competency test is based on the fact that the scope of work of the Functional Position has a fairly broad scope, requires mastery of theoretical standard knowledge in its field, and requires substantial special mastery according to the level of expertise in a particular field. Guided by "Regulation of the Minister of Health Number 18 of 2017 concerning Health Worker Competency Testing" (BPOM, 2024). At the West Kalimantan Provincial Health Office, competency tests are carried out by dividing the test fields based on the functional positions, totaling 22 functional positions.

The competency test registration process that has been carried out so far uses Google Forms to fill in participant data and collect files. Thus, a permanent admin at the West Kalimantan Provincial Health Office in the Health Resources, Data and Health Information Technology sector located at Street Daeng Abdul Hadi Number 7, had difficulty verifying the competency test participant files on Google Form. In addition, when participants made an error in collecting files on Google Forms, participants had to refill the Google Form.

Based on the registration process and collection of competency test files that have been explained previously, there were several problems, namely the admin had difficulty in verifying the participant's competency test files which took a long time with the assumption that it would take approximately one hour for one person with a different number of files according to the level to be occupied. This is one of the factors that makes it difficult for the admin to find complete and unverified participant data. In addition, participants who have registered and collected competency test files on Google Forms (Sudrajat & Suharsono, 2024), when the exam day comes, the participants must wait their turn to take the exam call number card.

After conducting research through interviews and observations, the author proposed to Mrs. Hidayati as an employee in the Health Human Resources, Health Data and Information Technology field an application that can be used in the registration process for competency test participants and can print exam cards. To solve the problem, the author looks for several relevant references related to the problems to be solved in this study to build a West Kalimantan Health Functional Competency Test Registration System Application at the West Kalimantan Provincial Office which can facilitate the verification of participant files and printing of exam cards.

Based on the background that has been described and discussed previously, the author formulates the problem, namely, how to design and build the West Kalimantan Health Functional Competency Test Registration System Application at the West Kalimantan Provincial Health Office.

The limitations of the problem in designing and building this application are as follows: the application is built on the web and only manages the registration process and printing of exam cards. The software used is Laragon PHP, MySQL, and Visual Studio Code. The framework used in this application is Laravel 10, Bootstrap. The research location was at the West Kalimantan Provincial Health Office in the Health Resources, Data, and Health Information Technology field.

This research aims to produce a West Kalimantan Province Health Functional Competency Examination Registration System Application which previously used Google Forms. This application helps simplify the registration and verification process for competency exam participant files, features printing exam cards and digital registration archives.

The benefits obtained by application users are: Facilitate data and health information technology admins in verifying competency test files. Facilitate registrants in collecting files online so that they can be done anywhere and anytime, and as a place for digital file archiving, namely the recapitulation of registration registrant data.

There are five references for the author in this study. The first one was written by Dicky Eka Putra in 2020 with the research title "Design and Construction of Nurse Competency Test Application at Husada Utama Hospital, Surabaya". In the journal, the design of the application that was built has several features, namely: competency test registration, assessment results, appeals, and competency reports (Fadillah & Warta, 2023).

The second reference was carried out by Nurseto Adhi, Yanuar Mahfudz Safarudin, Sugiarti, and Edi Wijayanto in 2022 with the research title "Design and Construction of a Web-Based Online Competency Test Registration System at LSP Polines", the journal designed an application that has features such as website homepage, selection of competency test locations, selection of schemes and registration via Google form (Adhi et al., 2022).

The third reference was conducted by Melda Dahoklory, Thenny Daus Salamoni, Berthy Pelicula, Ludwina Pormes, and Marchia Molle in 2023 with the research title "Web-Based Competency Test Registration Application at the P1 Ambon State Polytechnic Professional Certification Institute", The journal designed an application with features such as features to be able to view information related to the P1 Ambon State Polytechnic LSP, namely LSP Profile, Scheme, Assessor, Competency Test Location, Information and Contact. Students can register as assessors by registering which will be confirmed by the administrator (Dahoklory et al., 2024).

The fourth reference was conducted by Wahyuni Eka Sari, Raudah Ahmad, and Faisyal in 2023 with the research title "Application for Management of Competency Certification Test Registration at a Web-Based Professional Certification Institution", the results of the study contain an application design with features such as: an online platform for registration, users can submit supporting documents and track certification status in real-time (Sari et al., 2023).

The fifth reference was conducted by Abdul Hamid, Ali Martondi, Syamsul Bahri, Lukman Hakim, Nurman Musyaffa, and Ricki Sastra in 2020 with the research title "Competency Test Registration Information System at the Jakarta Organic Farming Professional Certification Institute", the journal discusses the design of the information system which has several features, namely: features for verifying prospective participant data, confirming the registration, managing participant data, managing exam schedules, managing exam venues, Research on the registration information system has also been conducted by Reni Aryani, Dewi Lestasi, Yolla Noverina, and Edi Saputra with the title Prototype of the Online Registration Information System for the Public Health Center (SIROP): Aurduri Public Health Center, Jambi City in 2023. This system was built using a web-based prototype methodology that can optimize the registration process and get queue numbers online without

Suharsono, Sudrajat, A. S., Hasbi, M., & Atmojo, T. B. (2025). Design and Development of the "Seruni Sehat" Application: A Health Functional Competency Test Registration System for the West Kalimantan Provincial Health Service. TEPIAN, 6(1).13-30. https://doi.org/10.51967/tepian.v6i1.3242

going to the Public Health Center physically. The goal is efficiency optimizing the patient registration process and increasing access to health services for the community. The focus of this system is general patient registration, schedule management, and automatic queue number assignment (Aryani, 2023).

Based on several studies that have been conducted, there are several differences in the title, the methods used, namely the waterfall method and the prototype method, the tools used, and the features created from the research. Still, they also have similarities related to the competency test topic. In this research, the competency test registration application was built using the waterfall model with a MySQL database and Laravel Framework, while the text editor used was Visual Studio Code.

The theoretical basis that is explained briefly and is used to support this research, namely: Competency Test, Website, HTML, Laragon, PHP, JavaScript, Cascading Style Sheet (CSS), Bootstrap, Laravel, Balsamiq Wireframes and My Structured Query Language (MySQL).

II. LITERATURE REVIEW

In this study, various relevant theories will be discussed to provide a strong conceptual foundation. These theories will help in understanding and analyzing the issues addressed in this research. By referring to existing theoretical studies, this research is expected to gain deeper insights and contribute to the development of knowledge in the related field,

A. Competence Test

The Health Functional Position competency test is a process to measure the knowledge, skills, and work attitudes of Health Functional Officials carried out by the Testing Team to meet the requirements for promotion to a higher position level (BPOM, 2024). The levels that will be occupied by health workers are Advanced/Advanced Implementer, Supervisor, First Expert, Junior Expert, and Middle Expert (Sudrajat & Suharsono, 2024).

B. Website

World Wide Web (WWW), better known as the Web is one of the services obtained by computer users connected to the Internet (Arthalita & Prasetyo, 2020). The web was originally an information room on the internet using hypertext technology, users are guided to find information by following the links provided in web documents displayed with a web browser. The web is identical to the internet because of its current popularity, the web has become an application interface for conducting transactions and presenting complete information from all over the world.

C. HTML

HTML (Hypertext Markup Language) is a markup language or text-based marker also called formatting language. HTML is a markup language used by browsers to interpret and write text, images, and other materials into web pages visually and sound (Abdulloh, 2023). HTML plays an important role in several aspects, namely: determining page structure, displaying content, increasing user interaction, and integration with Laravel.

D. Laragon

Laragon is a portable, isolated, fast, and powerful universal development environment for PHP, Node.js, Python, Java, Go, and Ruby. It is fast, lightweight, and easy to use. It is also great for building and managing modern web applications. It is also focused on performance that has been designed with stability, simplicity, flexibility, and freedom in mind (Baraka, 2023).

E. PHP

PHP Hypertext Preprocessor is a web programming language that can be inserted into HTML scripts and works on the server side. PHP helps web development to create dynamic webs (Abdulloh, 2023).

F. Java Script

JavaScript is a web programming language that is processed on the client side. JavaScript can only be run using a web browser. JavaScript is usually run when a certain event occurs on a web page (Abdulloh, 2023). Java Script improves form validation, enriches user experience, increases security, and enables integration with APIs.

G. CSS

Cascading Style Sheet (CSS) is a web document that functions to organize HTML elements with various available properties so that they can appear with various desired styles. How CSS works in modifying HTML by selecting the HTML elements to be arranged and then providing properties that match the desired appearance (Abdulloh, 2023). CSS helps differentiate the content from the visual appearance of a website (Robyyanto, 2024).

H. Bootstrap

Bootstrap is one of the most popular CSS frameworks out of the many CSS frameworks that exist. Bootstrap allows a website to be responsive so that it can be displayed well on various devices (Abdulloh, 2023) such as mobile phones, tablets, laptops, and computers. Bootstrap has a powerful grid system, fast web creation process, compatibility with all the latest browser versions, easy to customize (Robyyanto, 2024).

I. Laravel

Laravel Framework is an open-source programming framework used by many developers from all over the world. Laravel follows the Model-View-Controller (MVC) architectural pattern. MVC functions to separate applications based on application components, such as data manipulation, controllers, and user interfaces (Yuniarti et al., 2022) (Tahir et al., 2019).

J. Balsamiq Wireframes

Balsamiq Wireframes is a software that functions as a design maker. Software that can make it easier to draw a

Suharsono, Sudrajat, A. S., Hasbi, M., & Atmojo, T. B. (2025). Design and Development of the "Seruni Sehat" Application: A Health Functional Competency Test Registration System for the West Kalimantan Provincial Health Service. TEPIAN, 6(1).13-30. https://doi.org/10.51967/tepian.v6i1.3242

User Interface display (Oktora, 2023). Wireframes are rough schematics created in the early stages of digital product design to help visualize and communicate the structure of the product or website. This application is quite easy to use for beginners because it has features that are easy to operate without requiring complicated codes. In addition, the design process becomes faster and easier (Sitompul et al., 2024).

K. MySQL

MySQL is a database developed from SQL (Structured Query Language). SQL is a structured language used for interaction between program scripts and database servers in terms of data processing (Suharto et al., 2024). SQL is a standard database language for rational type databases (Marsa et al., 2023). With SQL, you can create tables that will be filled with data, manipulate data such as adding, deleting and changing data, and perform calculations based on the data found. SQL is not only used to obtain a static database display, but SQL3 has also been developed which plans to make SQL a language close to a Turing machine, for example queries that can be calculated or queries that are recursive (Firmansyah, 2024).

III. METHODOLOGY

The research methods used are observation methods, interviews, and literature study. Observation method is carried out by observing directly at the West Kalimantan Provincial Office, specifically in the Health Resources, Data and Health Information Technology field to obtain the information needed to find out the current process flow and the information needed to build the application.

Interview method is carried out by collecting the data needed through direct interviews with staff at the West Kalimantan Provincial Health Office, specifically in the Health Resources field as the author's research location according to the case study chosen by the author. Through the interview process, the author will explore information about what needs to be built in the system. The questions during the interview are as follows.

a. How many actors are needed to create this application?
b. For participant actors, is account creation created by the admin or must they register themselves?
c. When logging in, what do participants need to fill in the form?
d. When registering, what do participants need to fill in the form?
e. What menus are needed in this application?
f. On the competency test participant data filling page, what do participants need to fill in the form?
g. How many types of Functional Positions are there in this Competency Test?
h. On the document upload page, what do participants need to upload?
i. What features does the admin need in this application?

Literature study is an activity to collect library data and process various previous research sources that are relevant to the research to be carried out. In this study, the author refers to several references in the form of books and journals to support the development and design theories that will be created.

System development methods used in this web-based application is the waterfall method. This method consists of five stages, namely: Needs Analysis, System Design, Program Code Creation, Testing, Implementation, and maintenance (Sommerville, 2011). The stages of the waterfall method are presented in Figure 1.

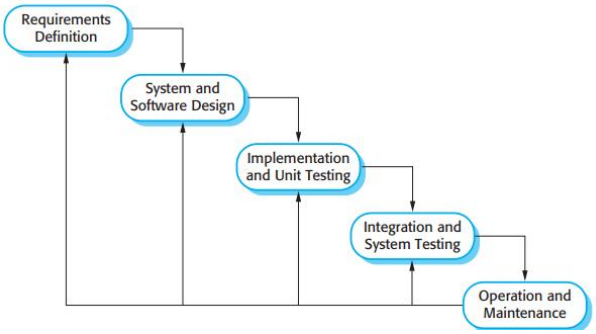

Figure 1. Waterfall Method

The waterfall method is a classic approach in software development that describes a linear and sequential method. (Hasanah, 2020) (Saad, 2024). Where this stage has a tiered pattern that requires the stages to be carried out in order. A clear flow makes the stages more detailed and detailed regarding the tasks to be carried out, thereby minimizing the potential for errors (Firmansyah, 2024). However, if the stages that have been passed can return to the previous stage. If the first step has not been done, then the second step cannot be done. If the second step has not been done, then the third step cannot be done, and so on. Automatically the third step can be taken if the first and second steps have been taken. The reason the author uses the waterfall method is because this method has stages and sequences that are carried out sequentially and continuously and all needs are well understood at the beginning of development.

The five stages in the waterfall method in this research are as follows.

1) Needs Analysis
   At the needs analysis stage based on the results of interviews and observations conducted with employees of the West Kalimantan Provincial Health Office in the Health Human Resources, Health Data and Information Technology field, the author obtained information that it is expected that the application will have a home menu, exam scheduling, Competency Test participant data, upload documents, view data, edit participant data, edit documents, print exam cards, can verify participant files and can send exam notifications via e-mail.
2) System Design
   The stage where thoughts are poured out and system design is carried out for solutions to existing problems using system modeling tools such as creating Use Case Diagrams using Star UML from predetermined users and creating application mockups using

Suharsono, Sudrajat, A. S., Hasbi, M., & Atmojo, T. B. (2025). Design and Development of the "Seruni Sehat" Application: A Health Functional Competency Test Registration System for the West Kalimantan Provincial Health Service. TEPIAN, 6(1).13-30. https://doi.org/10.51967/tepian.v6i1.3242

Balsamiq Wireframes. This stage aims to provide an overview of what should be done and how the application looks according to the design.

3) Writing Program Code
Writing program code or coding is the translation of the design into a language that can be recognized by the computer. Carried out by the author who will translate the transactions requested by the user. This stage is the real stage in working on a system. In the sense that computer usage will be maximized in this stage by using the programming language PHP and the framework Laravel while creating the database using MySQL.

4) Program Testing
Before this system is used by the user, testing is needed to determine whether the program created is appropriate or not. The testing method used is the Usability system testing which will be carried out directly at the West Kalimantan Provincial Health Office which will be run by the admin and request an assessment from the head of the Health Human Resources, Data and Health Information Technology division of this application system.

5) Program Implementation and Maintenance
Operating the program in its environment and carrying out maintenance. At this stage, system maintenance is not used because it only reaches the program testing stage.

IV. RESULTS AND DISCUSSION

A. *Needs Analysis Stage*

This stage is carried out to find out the process currently carried out by the committee and participants of the competency test at the West Kalimantan Provincial Health Office, the obstacles encountered when using the system currently used. The results of the identification are known to have several problems in the competency test registration process, including:

a. The registration process for prospective competency test participants registers using Google Form.
b. The verification process is carried out manually by bringing original documents at the time of registration.
c. When an error occurs in uploading documents, participants must refill from the beginning of the registration process by correcting the incorrect documents.
d. There is no estimated time from registration to the implementation of the competency test that will be received by the participants.

The results of the identification of problems that have been carried out include several functional and non-functional needs of the competency test system as follows.

a. Functional requirements
1. Users
1) The system allows users to register online.
2) The system allows users to upload registration files.
3) The system allows users to view user data that has been uploaded.
4) The system allows users to view verification results and print competency test cards.
5) The system allows users to receive notifications via email regarding the registration process.
2. Admin
1) The system built allows the admin to view, change, and delete participant data that has been registered as a competency test participant.
2) The system built allows the admin to verify documents of prospective competency test participants.
3) The system built allows the admin to send verification result notifications to participants.
4) The system built allows the admin to determine the registration period, open and close registration sessions, create sessions, schedules, examiners, rooms, print participant lists and competency test schedules,
5) The system built allows the admin to manage registration archives.
3. Examiner
1) The system built allows the examiner to view the list of participants to be tested, the test room, and the competency test schedule.
2) The system built allows the examiner to provide competency test result scores.

b. Non-functional requirements
1) a. The system can be accessed using browsers such as Google Chrome, Mozilla Firefox.
2) b. The system user interface is designed using the Laravel framework.
3) The system is built using MySQL database.

B. *System Design Stage*

Based on the functional requirements analysis of the competency test system, a use case diagram is drawn. Use Case Diagram is a description of the function of a system from a user perspective. Use Case Diagram describes the typical interaction between a user of a system and its system through a story of how a system is used. The steps that explain the relationship between the user and the system are called scenarios (Robyyanto, 2024). The Use Case Diagram in the application that the author designed can be seen in Figure 2.

Suharsono, Sudrajat, A. S., Hasbi, M., & Atmojo, T. B. (2025). Design and Development of the "Seruni Sehat" Application: A Health Functional Competency Test Registration System for the West Kalimantan Provincial Health Service. TEPIAN, 6(1).13-30. https://doi.org/10.51967/tepian.v6i1.3242

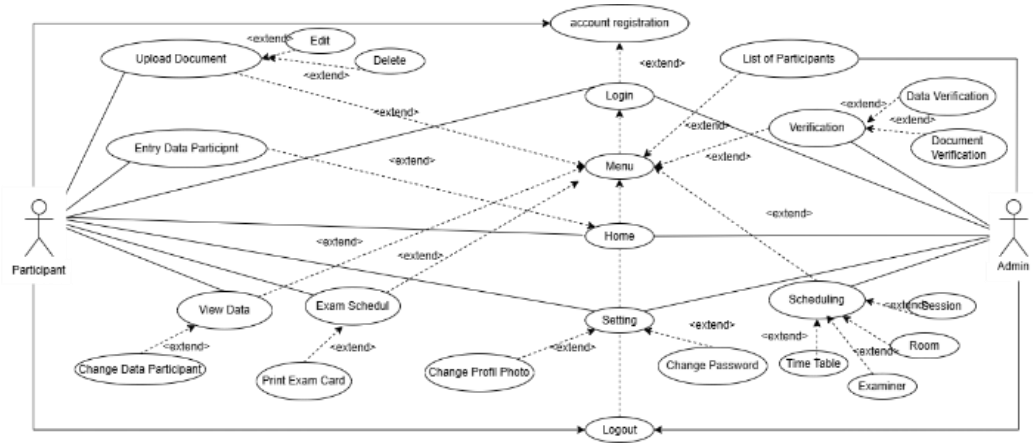

Figure 2. Application Use Case Diagram

The application database is used to store interrelated data and has various types and formats, aimed at meeting user needs. The database design for the West Kalimantan Health Functional Competency Test Registration System Application at the West Kalimantan Provincial Health Office is as follows.

Relation Table The relational table consists of the user's table, participant data table, document table, exam schedule table, examiner table, room table, and exam session table. The relational table can be seen in Figure 3.

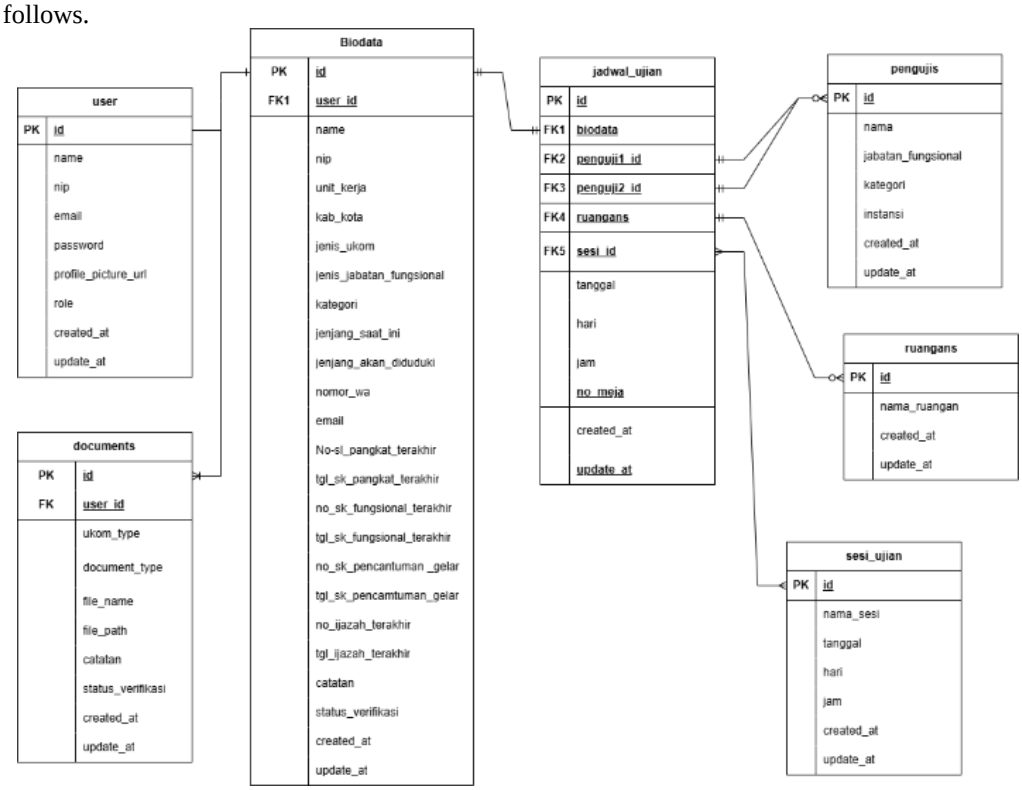

Figure 3. Relation Table

C. Writing Program Code

This stage produces a competency test registration system that is developed. The implementation of the participant interface is the implementation of the West Kalimantan Health Functional Competency Test Registration System Application which contains information related to the Competency Test registration carried out at the West Kalimantan Provincial Health Office. The login page is an initial stage page before accessing the next page can be seen in Figure 4.

Suharsono, Sudrajat, A. S., Hasbi, M., & Atmojo, T. B. (2025). Design and Development of the "Seruni Sehat" Application: A Health Functional Competency Test Registration System for the West Kalimantan Provincial Health Service. TEPIAN, 6(1).13-30. https://doi.org/10.51967/tepian.v6i1.3242

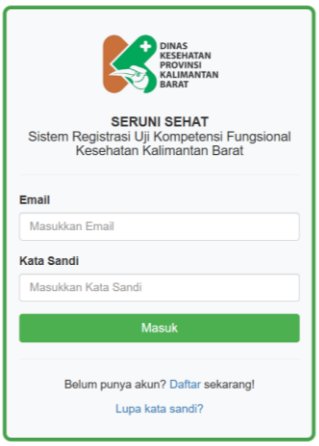

Figure 4. Login Page

Figure 4 shows participants must fill in the Email and Password correctly and then can enter the next page. Users are required to fill in their username and password will appear as in Figure 5.

Figure 5. Message Blank Login Form

Figure 5 shows that when one of the forms has not been filled in, the message "Please fill in first" will appear. There is a notification when participants enter the wrong email or password as in Figure 6.

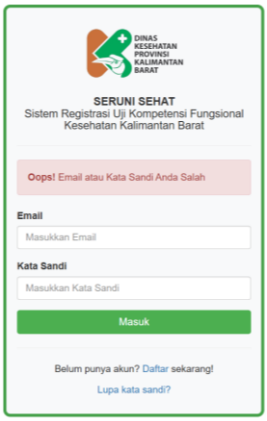

Figure 6. Incorrect Email or Password Message

Figure 6 shows that when an email or password is entered incorrectly when pressing the login button, a message will appear. "Oops! Your Email or Password is Incorrect."

Registration Page This registration page is the participant registration page to create an account. There is an Employee Identification Number, Full Name, Email Address, Enter Password, Confirm Password and there is a Register button as in Figure 7.

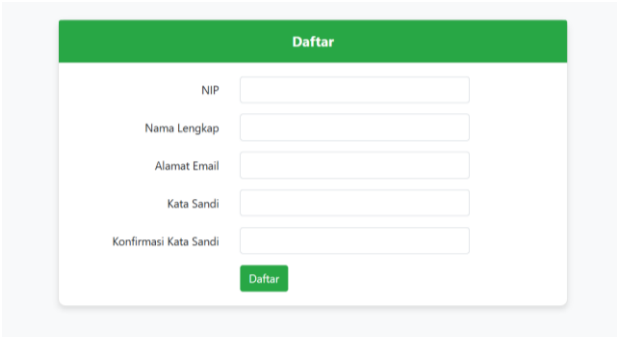

Figure 7. Register Page

Forgot password page is a forgot password page. There is an email input and send password reset link button as in Figure 8.

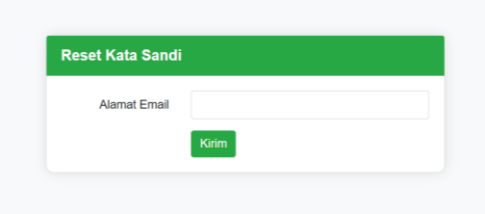

Figure 8. Forgot Password Page

The homepage is the first page that participants will access when logging in. This page provides information for participants who register for the competency test registration application as in Figure 9.

Figure 9. Home Page

Participants can press the upload photo button, then participants will be directed to the profile settings page. Where participants can upload, update, and change new passwords. The display can be seen in Figure 10.

Suharsono, Sudrajat, A. S., Hasbi, M., & Atmojo, T. B. (2025). Design and Development of the "Seruni Sehat" Application: A Health Functional Competency Test Registration System for the West Kalimantan Provincial Health Service. TEPIAN, 6(1).13-30. https://doi.org/10.51967/tepian.v6i1.3242

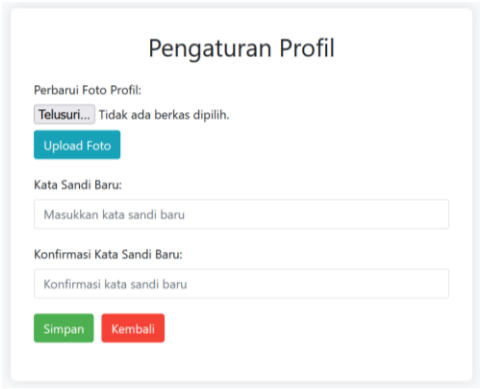

Figure 10. Profile Settings

The competency test participant data page contains the personal data of participants who registered for the competency test. On this page, there are required identities such as full name, employee ID number, enter work unit, Regency, type of room, type of position, category, current level, level to be occupied, WhatsApp number, email, last rank certificate number, date of last rank certificate, last functional certificate number, date of last functional certificate, last diploma number, date of last diploma, title certificate number, title certificate date and there is a send button. The display can be seen in Figure 11.

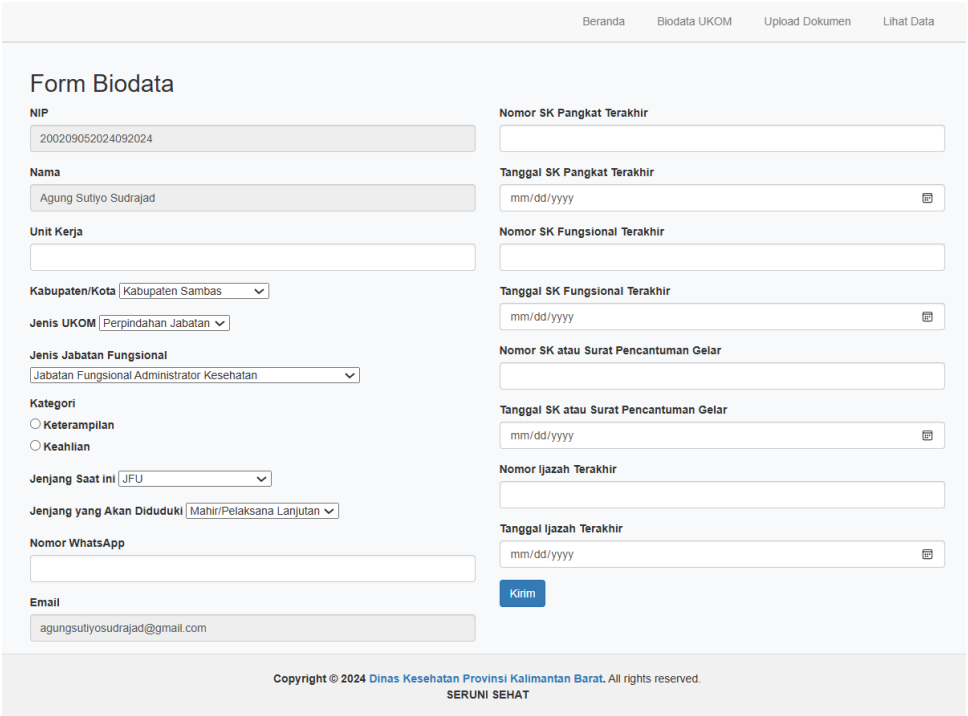

Figure 11. Participant data Page

If one of the forms is empty, the message "Please fill out this field" will appear. The display can be seen in Figure 12.

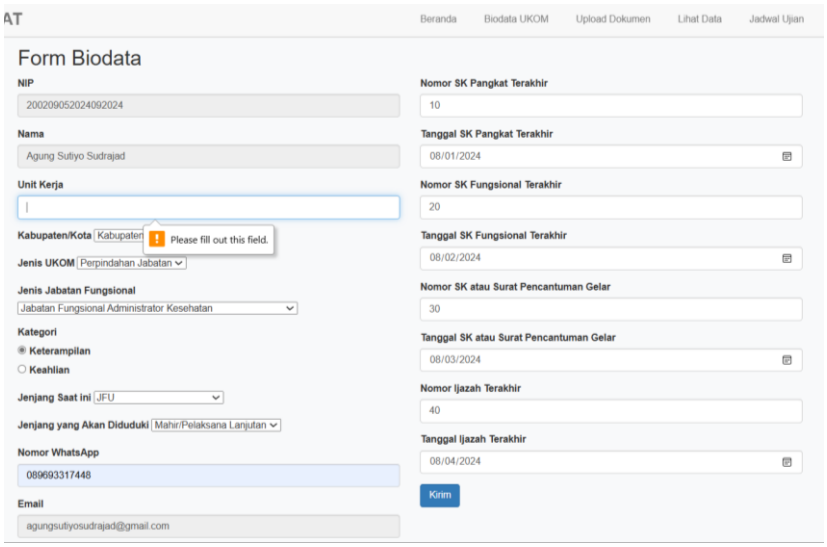

Figure 12. Blank Participant data Form Message

Suharsono, Sudrajat, A. S., Hasbi, M., & Atmojo, T. B. (2025). Design and Development of the "Seruni Sehat" Application: A Health Functional Competency Test Registration System for the West Kalimantan Provincial Health Service. TEPIAN, 6(1).13-30. https://doi.org/10.51967/tepian.v6i1.3242

Figure 12 shows the form that the participant has filled out and then presses the send button, a message will appear. "Are you sure? You will send this personal data." as in Figure 13.

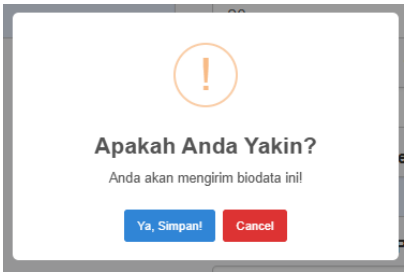

Figure 13. Display of Send Participant data Message

The document upload menu is used to upload participant documents when registering for the competency test as in Figure 14.

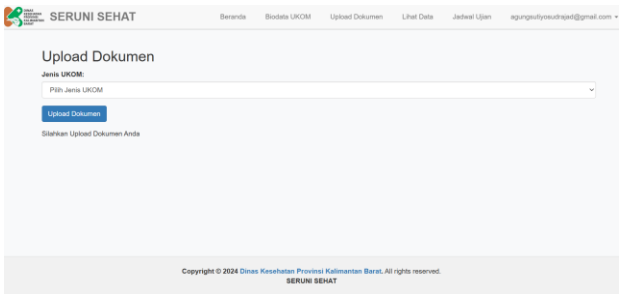

Figure 14. Upload Document Page

Figure 14 shows the upload menu for uploading competency test participant registration files. Next, participants are asked to choose the type of competency test they will take as in Figure 15.

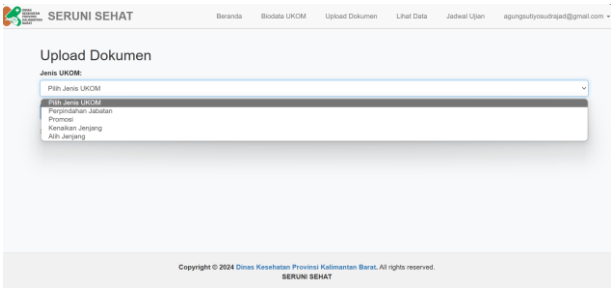

Figure 15 Select Competency Test Type

Figure 15 shows the types of competency tests that participants can choose, namely transfer of position, promotion, and change of level.

After the participant chooses the type of competency test, the participant can upload documents according to the type of competency test they choose as shown in Figure 16.

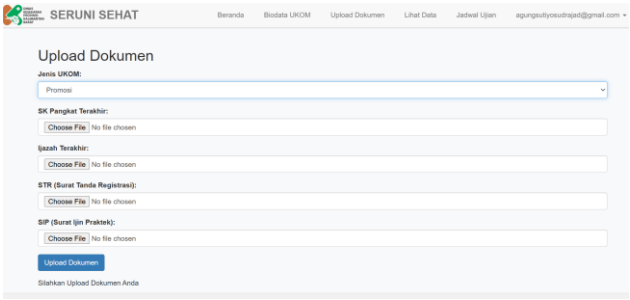

Figure 16. Document Types

Figure 16 shows the document upload form which consists of competency test types, final ranking decision letter, final diploma, registration certificate and practice permit. After the participant uploads the document, the message "Document uploaded successfully" will appear with the status "Not Verified" as in Figure 17.

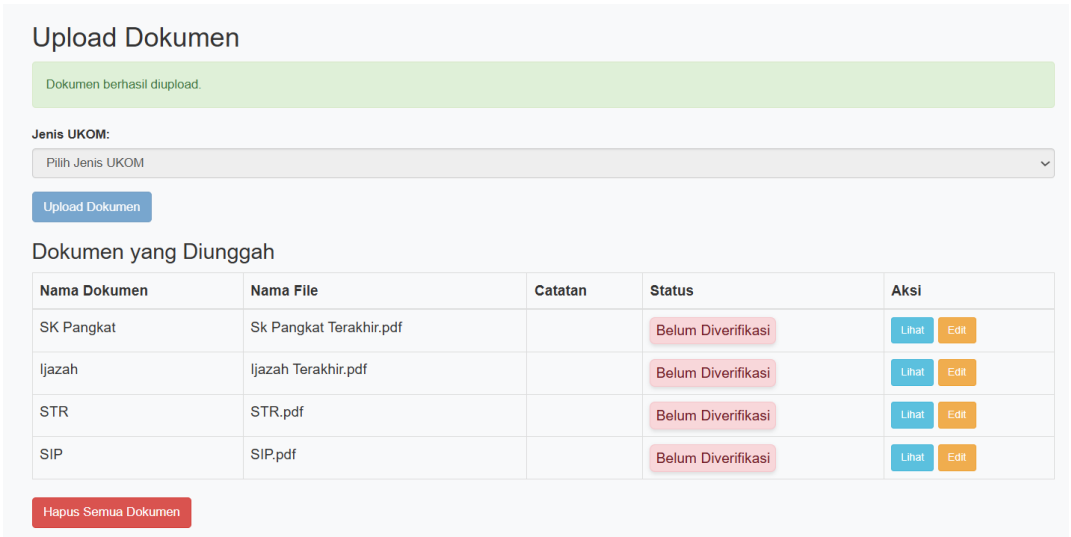

Figure 17. Document Upload Results

Suharsono, Sudrajat, A. S., Hasbi, M., & Atmojo, T. B. (2025). Design and Development of the "Seruni Sehat" Application: A Health Functional Competency Test Registration System for the West Kalimantan Provincial Health Service. TEPIAN, 6(1).13-30. https://doi.org/10.51967/tepian.v6i1.3242

Edit document is a participant's uploaded file that has been sent, and participants can change the file and re-send it if there is an error in sending the file as in Figure 18.

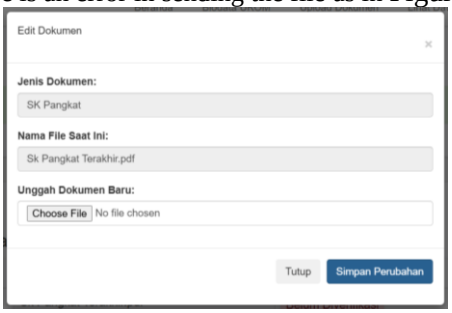

Figure 18. Edit Document

Figure 18 shows the edit document view for uploading a new, corrected document. The data display page is a page that contains data that participants have filled in on the previous competency test participant data page as in Figure 19.

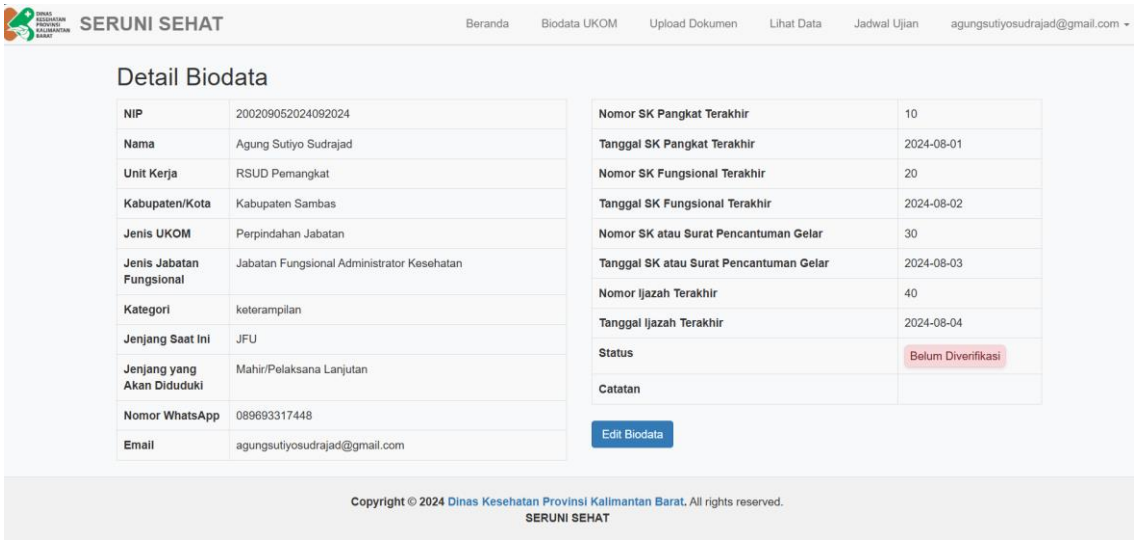

Figure 19. View Data Page

Figure 19 shows this display, there is an edit participant data button to correct the data if there are errors. The participant data edit page displays participant data registered in the previous period's competency test as in Figure 20.

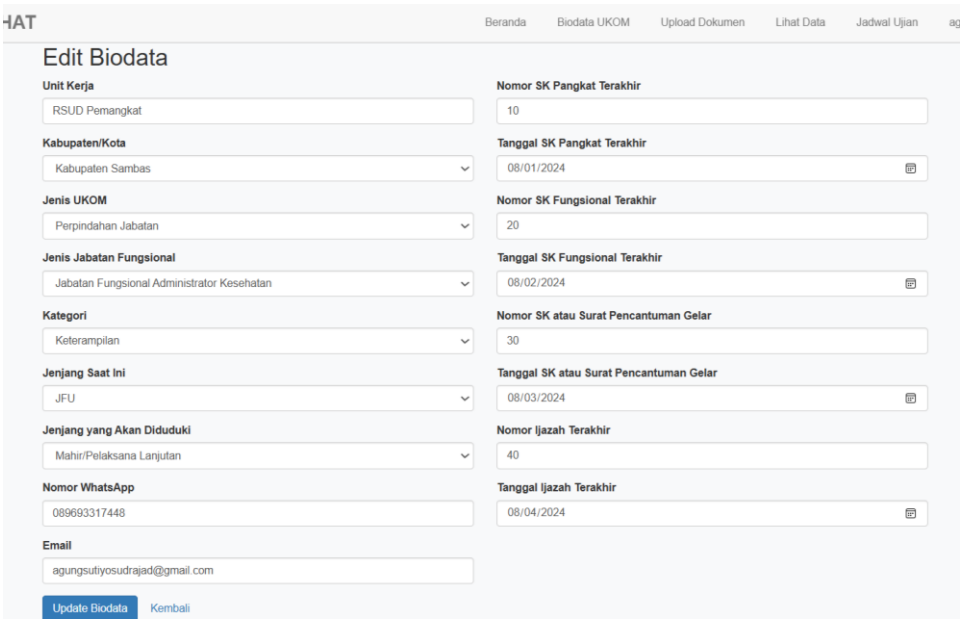

Figure 20. Edit Participant data Page

Suharsono, Sudrajat, A. S., Hasbi, M., & Atmojo, T. B. (2025). Design and Development of the "Seruni Sehat" Application: A Health Functional Competency Test Registration System for the West Kalimantan Provincial Health Service. TEPIAN, 6(1).13-30. https://doi.org/10.51967/tepian.v6i1.3242

Figure 20 shows the form data for updating competency test participant data. After completing data corrections and pressing the edit data button, a notification will appear as in Figure 21.

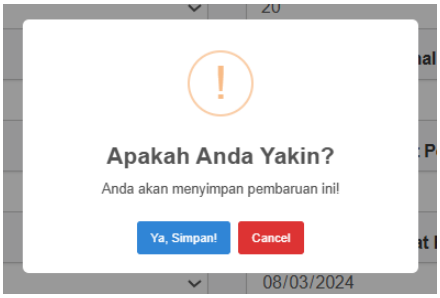

Figure 21. Participant data Update Message Display

Figure 21 shows the participant's notification after completing updating the data. A message appears. "Are you sure? You will save this update." Click the "Yes Save" button to save changes or "Cancel" if you cancel making changes. Next there is an exam schedule menu as in Figure 22.

Figure 22. Exam Schedule Page

Figure 22 shows the exam schedule page containing the competency exam schedule that has been created by the admin. If the schedule has not been created by the admin, the statement "Exam Schedule Not Available" will appear. The exam schedule is available, it will appear as in Figure 23.

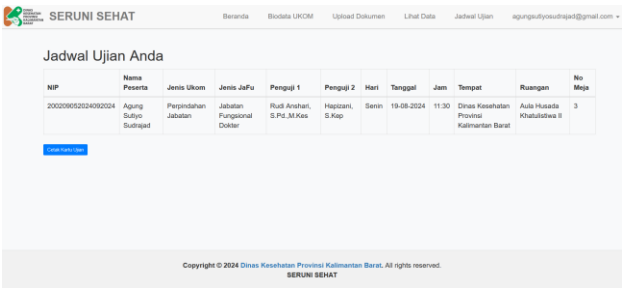

Figure 23. Schedule Page Available

Figure 23 shows the exam schedule which consists of columns Employee ID Number, Participant Name, Competency Test Type, Functional Position Type, Examiner 1, Examiner 2, Day, Date, Time, Place, Room and Table Number. Participants can also print the test card in PDF file format. The appearance of the participant's test card is as in Figure 24.

Figure 24. Exam Card View

Figure 24 shows the appearance of the exam card, which contains the Competency Test Period, passport photo and participant data, competency test schedule and examiners as well as the type of competency test and the participant's functional position. Participants will receive notification via email if the exam schedule has been sent by the admin as in Figure 25.

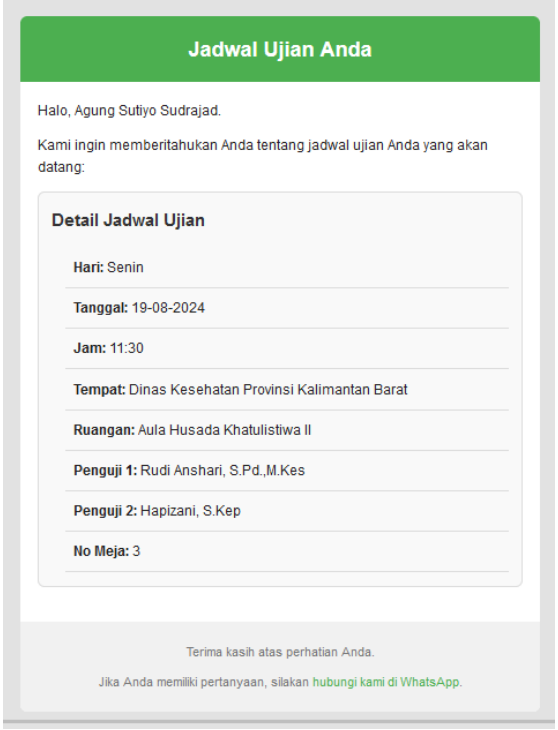

Figure 25. Participant Notification

Suharsono, Sudrajat, A. S., Hasbi, M., & Atmojo, T. B. (2025). Design and Development of the "Seruni Sehat" Application: A Health Functional Competency Test Registration System for the West Kalimantan Provincial Health Service. TEPIAN, 6(1).13-30. https://doi.org/10.51967/tepian.v6i1.3242

Figure 25 shows the notification sent to the participant's email address as well as the admin's WhatsApp contact number who can be contacted if they have questions.

The West Kalimantan Health Functional Competency Test Registration System application also provides an admin feature that provides information on Competency Test registration carried out at the West Kalimantan Provincial Health Service. The admin home page is as shown in Figure 26.

Figure 26. Admin Home Page

Figure 26 shows the admin home page which contains the home menu, list of participants, verification, scheduling, admin email address, welcome and login as admin, and admin photo. Admin can see the list of participants who have registered as competency test participants as in Figure 27.

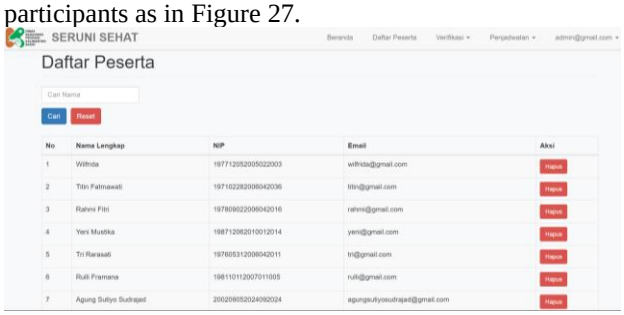

Figure 27. Participant List Page

Figure 27 displays a list of participants who have registered an account on the Application. Admin can search participant data through the participant search column and delete participant data. When the admin deletes participant data, a notification will appear as in Figure 28.

Figure 28. Delete Participant Message Display

Figure 28 shows a notification when the admin is about to delete a participant's account and the message "Are you sure? This participant will be permanently deleted." Please press the "Yes Delete" button to delete the data and "Cancel" if the participant data is not deleted. In the verification menu, the admin can verify participant data as in Figure 29.

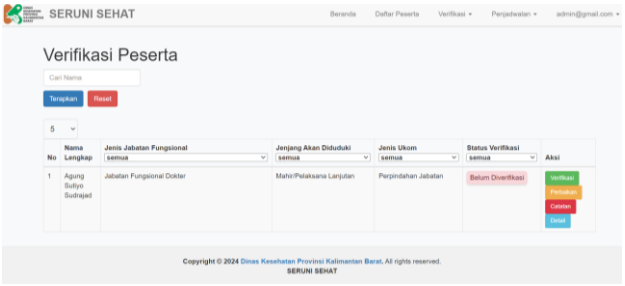

Figure 29. Participant data Verification Page

Figure 29 shows the participant data that has been sent to the admin after completing the registration. Admin can provide verified status if the file is declared complete and corrected if there is data or documents that need to be corrected. After completing the verification, the admin can send the verification or repair status as well as notes to the participants. The details button will display participant details to view overall participant data as in Figure 30.

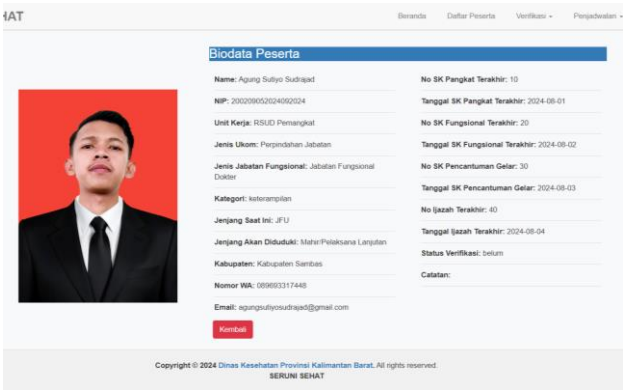

Figure 30. Participant Details Page

Figure 30 displays detailed competency test participant data consisting of photos and data on competency test participants. Admin can verify participant data as in Figure 31.

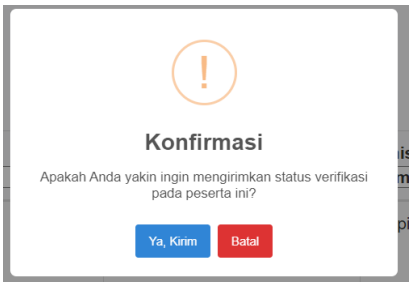

Figure 31. Verification Status Message Display

Figure 31 shows the verification status for participants, the message "Confirm Do you want to send verification status to this participant?" appears. "Yes Send" button to send verification status or "Cancel" to return to participant verification menu. The verification status of

Suharsono, Sudrajat, A. S., Hasbi, M., & Atmojo, T. B. (2025). Design and Development of the "Seruni Sehat" Application: A Health Functional Competency Test Registration System for the West Kalimantan Provincial Health Service. TEPIAN, 6(1).13-30. https://doi.org/10.51967/tepian.v6i1.3242

participants who have been successfully verified will appear as in Figure 32.

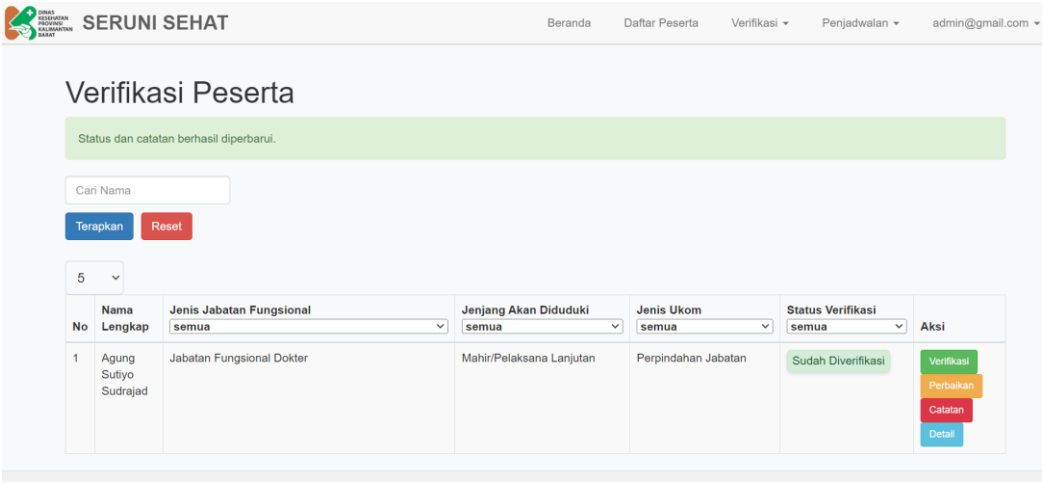

Figure 32. Participant Verification

Figure 32 shows that the participant verification status has changed to Verified. The document verification menu displays a list of names of participants who have sent registration documents, then these documents will be verified by the admin as in Figure 33.

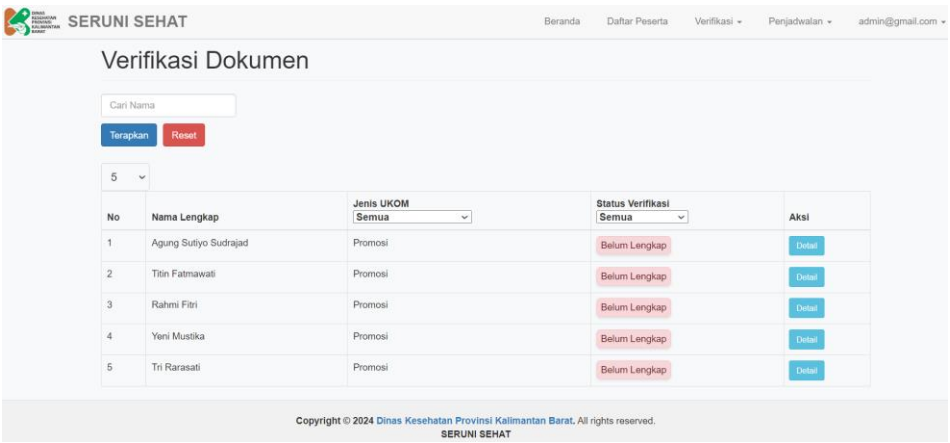

Figure 33. Document Verification Page

Figure 33 displays a list of participant names that need to be verified by the admin. In the document verification process, admins can view documents in detail, participant data and documents that have been uploaded. Detailed participant data will appear as in Figure 34.

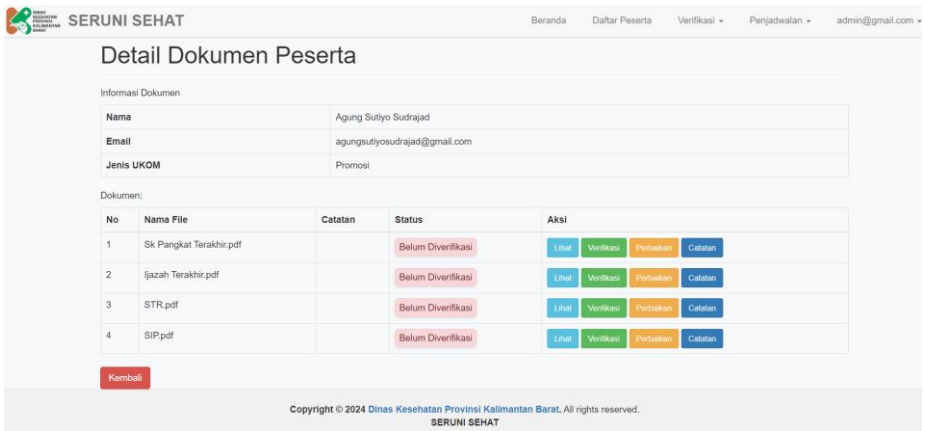

Figure 34. Participant Document Details

Suharsono, Sudrajat, A. S., Hasbi, M., & Atmojo, T. B. (2025). Design and Development of the "Seruni Sehat" Application: A Health Functional Competency Test Registration System for the West Kalimantan Provincial Health Service. TEPIAN, 6(1).13-30. https://doi.org/10.51967/tepian.v6i1.3242

Figure 34 shows the admin menu that wants to verify participant documents. Click the details button to view participant documents that need to be verified. After completing verification of participant data, a notification message will be displayed as in Figure 35.

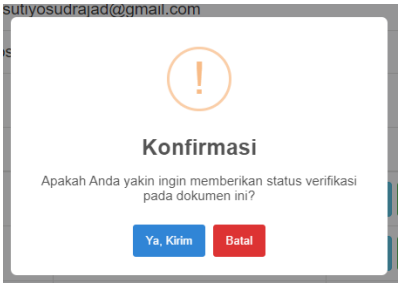

Figure 35. Document Verification Message Display

Figure 35 shows the message "Confirmation. Are you sure you want to provide verification status on this document?". Click "Yes Send" then verification data will be sent to the participant. Click "Cancel" to cancel verification. Next, the file status will change color to Verified, marked in green as in Figure 36.

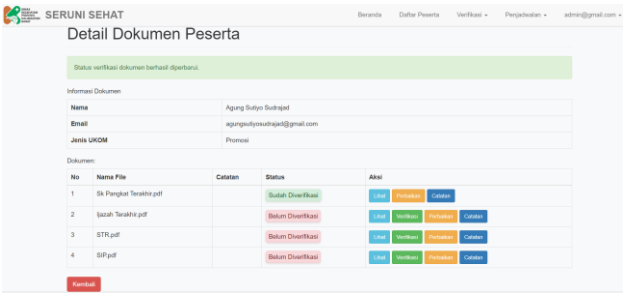

Figure 36. Document Verification Status

Figure 36 shows that if the admin presses the "Yes, Send" button, then the verification status will be sent to the participant's account. The file status will display the message "Document verification status has been successfully updated". on documents that have been verified the Verify button will automatically disappear. The verifier admin can provide notes to participants, if necessary, as in Figure 37.

Figure 37. Sending Notes View

Figure 37 shows a note form for participants to correct documents that have been uploaded. Then click the Send Note button to send correction notes to participants. The repair status sent by the admin will be in the Status section as in Figure 38.

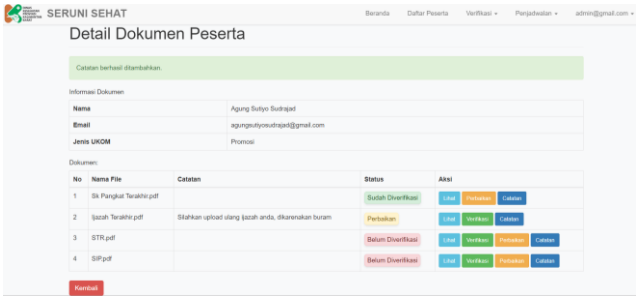

Figure 38. Sent Notes View

Figure 38 shows the admin display for creating a list of exam scheduling sessions by pressing the Create New Session button. Where the sessions that have been added will appear on the exam. Admin can also change and delete registered sessions as in Figure 39.

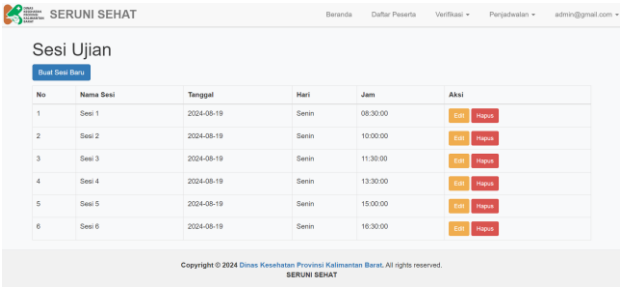

Figure 39. Session Page

Figure 39 shows the test session page for creating new sessions, viewing sessions that have been created, changing sessions and deleting sessions. There are several fields that must be completed to create a new session as in Figure 40.

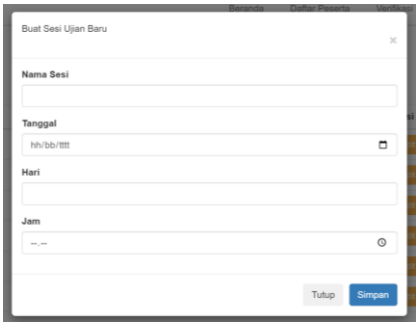

Figure 40. View Creating a New Session

Figure 40 shows the form for creating a new session, which consists of Session Name, Date, Day and Time. Once you have finished filling in the fields, press the Save button. The admin can also change the session that has been created so that the session data correction formula appears as in Figure 41.

Suharsono, Sudrajat, A. S., Hasbi, M., & Atmojo, T. B. (2025). Design and Development of the "Seruni Sehat" Application: A Health Functional Competency Test Registration System for the West Kalimantan Provincial Health Service. TEPIAN, 6(1).13-30. https://doi.org/10.51967/tepian.v6i1.3242

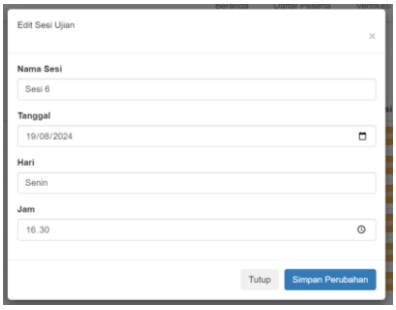

Figure 41. Edit Session View

Figure 41 shows the exam session changes that will be changed, such as Session Name, Session Date, Exam Day, and Exam Time. On the delete button there is a notification when you want to delete the session as in Figure 42.

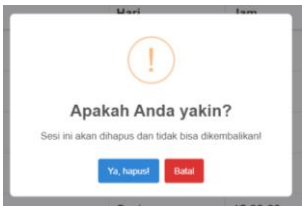

Figure 42. Delete Session View

Figure 42 shows a notification if the admin will delete a session in the exam session list. The notification that appears is "Are you sure? This session will be deleted and cannot be recovered." The "Yes Delete" button to delete the session and the "Cancel" button to cancel deleting the session. After setting up the session, the admin can manage the room via the room management menu as in Figure 43.

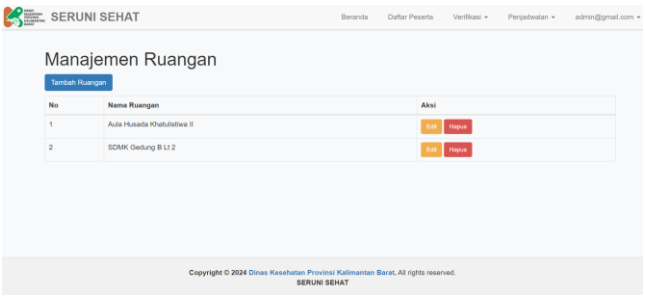

Figure 43. Room Page

Figure 43 shows a list of competency test rooms. Admin can add, edit and delete rooms that have been registered. Admin can add new rooms as in Figure 44.

Figure 44. Add Room View

Figure 44 shows the form for creating a new room as a place for competency testing. Type the room name and click save. Apart from adding a room, the admin can also change the room using the change button as shown in Figure 45.

Figure 45. Edit Room View

Figure 45 shows the process of changing the room name, then click the save button. The admin can then manage the Tester page as in Figure 46.

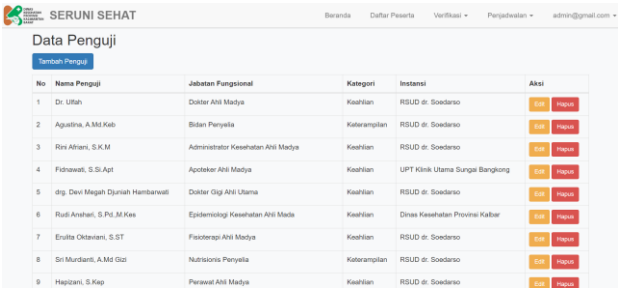

Figure 46. Tester Page

Figure 46 shows the page for the names of testers. Admin can add testers by pressing the "Add Tester" button, a page will appear as in Figure 47.

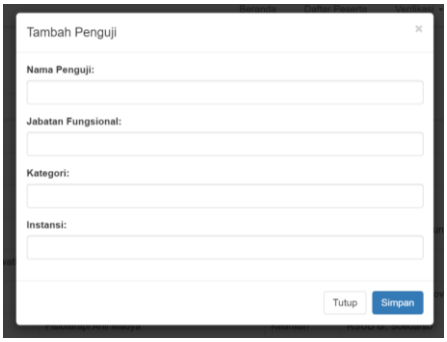

Figure 47. Add Tester View

Figure 47 shows the examiner's name by entering examiner data such as: examiner's name, functional position, category and agency. Then click save to save the new tester. If there are changes to the tester data, the admin can change the tester data as in Figure 48.

Suharsono, Sudrajat, A. S., Hasbi, M., & Atmojo, T. B. (2025). Design and Development of the "Seruni Sehat" Application: A Health Functional Competency Test Registration System for the West Kalimantan Provincial Health Service. TEPIAN, 6(1).13-30. https://doi.org/10.51967/tepian.v6i1.3242

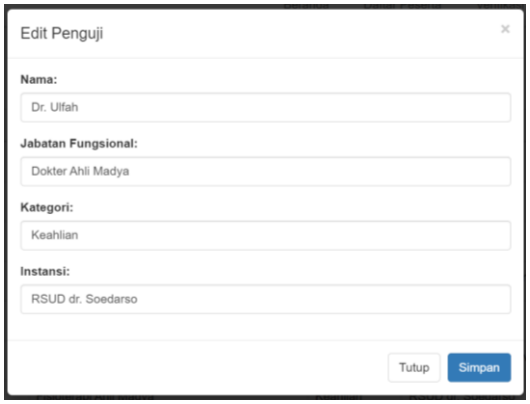

Figure 48. Tester Edit View

Figure 48 shows the form for changing examiner data such as: name, functional position, category and agency then click save. Admin can also delete testers in the list. Before deleting the message "Confirm Delete Are you sure you want to delete this tester?" appears. The "Yes Delete" button is to delete the tester's name from the list while the "Cancel" button is to cancel deleting the tester's name. Next, the admin arranges the exam schedule as in Figure 49.

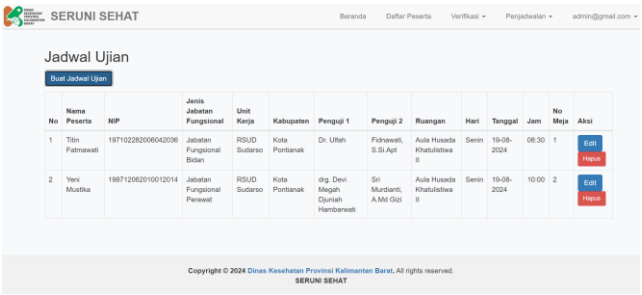

Figure 49. Scheduling Page

Figure 50 shows a list of available exam schedules. The exam schedule displays the participant's name, employee identification number, type of functional position, work unit, participant's district of origin, name of examiner 1, name of examiner 2, room name, exam day, exam date and table number. Admin can add a new schedule for competency test participants as in Figure 51.

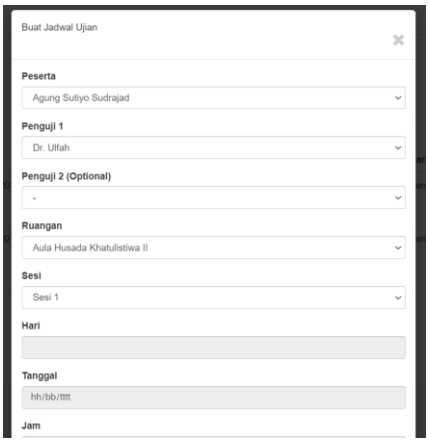

Figure 51. Create Schedule View

Figure 51 shows the contents for adding a new schedule by selecting the participant's name, name of examiner 1 and examiner 2, room name, exam session, exam day, exam date and exam time. Admin can change the exam schedule if there are changes as in Figure 52.

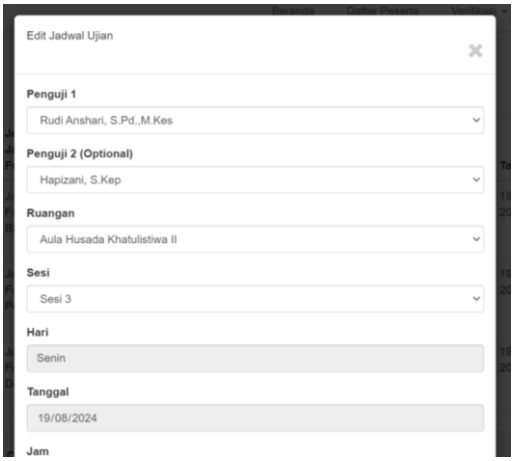

Figure 52. Edit Schedule View

Figure 52 shows the form for changing a previously registered schedule. When you have finished making changes to the data, you can save it again by pressing the save button.

D. Program Testing Stage

Testing on the West Kalimantan Health Functional Competency Test Registration System aims to test whether the system designed and built is what is needed. In testing this system, the author directly involved the admin of the Kalimantan Provincial Health Office, namely Mrs. Hidayati as the Administrator of Health Human Resources, Data, and Health Information Technology. The following are details of the results of the previously completed tests presented in Table 1.

Suharsono, Sudrajat, A. S., Hasbi, M., & Atmojo, T. B. (2025). Design and Development of the "Seruni Sehat" Application: A Health Functional Competency Test Registration System for the West Kalimantan Provincial Health Service. TEPIAN, 6(1).13-30. https://doi.org/10.51967/tepian.v6i1.3242

Table 1. Details of System Test Results

No.	Function	Expected results	Yes
1.	*Register*	Is the Register working properly?	✓
2.	*Login*	Is the Login working properly according to the user?	✓
3.	Forgot Password	Is Forgot Password working fine?	✓
4.	Home page	Is the Home menu working properly?	✓
5.	Competenc y Test Participant data	Does the competency test participant data menu work well and make it easy to fill in participant data?	✓
6.	*Upload Documents*	Is the Upload Document menu working properly?	✓
7.	View Data	Is the View Data menu working properly?	✓
8.	*Edit* Data participant	Is the Edit Participant data menu working properly?	✓
9.	Exam Schedule	Is the Exam Schedule menu working properly?	✓
10.	List of Participants	Is the Participant List menu working properly?	✓
11.	Verify participant data	Does the Participant data Verification menu work well and make it easier to verify Participant data?	✓
12	Document Verification	Does the Document Verification menu work well and make it easy to verify Participant data?	✓
13	Exam Session	Is the Exam Session menu running properly?	✓
14	Exam Room	Is the Exam Room menu working properly?	✓
15.	Tester	Is the Tester menu working properly?	✓
16.	Scheduling	Does the Scheduling menu work well and make it easier to create Participant schedules?	✓
17.	Print Exam Card	Is the Print Exam Card menu working properly?	✓
18.	Email Notification	Is Email Notification working properly?	✓
19.	Change Profile Photo	Is the Change Profile Photo menu working properly?	✓
20.	Change Password	Is the Change Password menu working properly?	✓
21.	Logout	Is the Logout menu working properly?	✓

Based on the testing conducted on 21 features in the registration system, the results of the tests that have been carried out show that the functional features in the application have been successful by 100% and can run well as expected. Functionally, the system can display according to the results expected by the admin of the Kalimantan Provincial Health Office, namely Mrs. Hidayati as the Administrator of Health Resources, Data and Health Information Technology.

E. Programming Implementation and Maintenance Stage

At this stage, the system is tested in the West Kalimantan Provincial Health Office as a system user. The system is run on the admin computer or competency test committee with database access using a local host. However, the maintenance stage cannot be carried out on this system.

V. CONCLUSION

The development of the West Kalimantan Health Functional Competency Test Registration System Application has been completed by the initial design plan, utilizing Laravel, Visual Studio Code, and MySQL. The application has been tested and functions as expected, allowing the Health Office West Kalimantan to manage the competency test registration process efficiently. Key features, such as file verification for participants, individual exam card printing, and notifications about registration status, work as intended, streamlining the overall workflow.

To ensure that the application meets user needs, interviews and observations were conducted with relevant stakeholders, including administrative staff and potential test participants. These methods provided valuable insights into the challenges faced in the previous manual registration process, guiding the selection of essential features. For instance, the need for real-time updates and automated document verification was highlighted through direct discussions with users, justifying their inclusion in the final system.

Future improvements could focus on enhancing functionality by enabling the download of participant lists in Excel format and automating the registration closing time once the registration period ends. Additionally, further user feedback could be gathered to refine the system for an even more seamless and efficient experience.

REFERENCES

Abdulloh, R. (2023). *7 in 1 Pemrograman Web untuk Pemula (Update Version)* (Update Ver). PT Elex Media Komputindo.

Adhi, N., Safarudin, Y. M., Sugiarti, S., & ... (2022). Rancang Bangun Sistem Pendaftaran Uji Kompetensi Online Berbasis Web Pada Lsp Polines. *… Hasil Penelitian Dan …*, 727–734. https://jurnal.polines.ac.id/index.php/Sentrikom/article/view/3397

Arthalita, I., & Prasetyo, R. (2020). Penggunaan Website Sebagai Sarana Evaluasi Kegiatan Akademik Siswa Di Sma Negeri 1 Punggur Lampung Tengah. *JIKI (Jurnal Llmu Komputer & Lnformatika)*, *1*(2), 93–108. https://doi.org/10.24127/jiki.v1i2.678

Aryani, R. (2023). Prototype Sistem Informasi Registrasi Online Puskesmas (SIROP). *Jurnal PROCESSOR*, *18*(2), 159–174. https://doi.org/10.33998/processor.2023.18.2.1399

Baraka. (2023). *Cara Menggunakan Laragon untuk Membuat Website Lokal*. Badan Perencanaan Sumberdaya Manusia Dan Karir. https://baraka.uma.ac.id/cara-menggunakan-laragon-untuk-membuat-website-lokal/#:~:text=Laragon adalah perangkat lunak yang,tanpa perlu menghubungkannya ke internet.

BPOM. (2024). Peraturan Badan Pengawas Obat dan Makanan Nomor 4 Tahun 2024 tentang Pedoman Penerbitan Sertifikat Pemenuhan Komitmen Produksi Pangan Olahan Industri Rumah Tangga. *Peraturan Perundang-Undangan Badan Pengawas Obat Dan Makanan*. https://jdih.pom.go.id/view/slide/508902f63ecd9c999fd9f53f4381ab37/1553/4/2024

Dahoklory, M., Salamoni, T. D., Pelasula, B., Pormes, L., & Molle, M. (2024). Aplikasi Pendaftaran Uji Kompetensi Pada Lembaga Sertifikasi Profesi P1 Politeknik Negeri Ambon Berbasis Web. *Jurnal Simetrik*, *13*(2), 783–790. https://doi.org/10.31959/js.v13i2.1899

Fadillah, I., & Warta, J. (2023). Penerapan Algoritma Sequential Search Pada Sistem Informasi Pendataan Peralatan Outdoor Di UKM Kapal Baja. *Journal of Information and Information Security (JIFORTY)*, *4*(2), 2722–4058. http://ejurnal.ubharajaya.ac.id/index.php/jiforty

Firmansyah, D. (2024). *Perancangan Sistem Informasi Sekolah Menengah Atas Negeri 1 (SMAN 1) Suhaid Berbasis Website Menggunakan Metode Waterfall*. *1*(Sman 1), 39–47.

Hasanah, F. N. (2020). Buku Ajar Rekayasa Perangkat Lunak. In *Buku Ajar Rekayasa Perangkat Lunak*. https://doi.org/10.21070/2020/978-623-6833-89-6

Marsa, A. R., Syelly, R., Amelia, R., Sopandi, A., Suharsono, Rifka, D. A., Irsa, R., Widiyawati, Maulana, N., Irzavika, N., Budiman, A., Niqotaini, Z., & Sayekti, I. H. (2023). *Konsep Sistem Informasi* (D. Prasetyo (ed.)). PT Penerbit Penamuda Media. https://penarepository.com/id/eprint/30/1/EBOOK_removed.pdf

Oktora, T. T. (2023). Penerapan Aplikasi Balsamiq Wireframes pada Rekayasa Perangkat Lunak SMK Negeri 1 Lumajang Jurusan. *Journal of Informatics Education*, *6*(3), 35–42.

Robyyanto, M. D. (2024). *Pengembangan Aplikasi E-Monitoring Berbasis Web Untuk Perencanaan dan Pengelolaan Aset di Perumda Air Minum Tirta Khatulistiwa Pontianak Menggunakan Metode Prototype*. *08*(02), 96–103.

Saad, M. I. (2024). *Implementation of the Flutter Framework for Developing an E-Commerce Application*. *5*(4), 127–135.

Sari, W. E., Ahmad, R., Informasi, J. T., & Samarinda, P. N. (2023). *Aplikasi Manajemen Pendaftaran Uji Sertifikasi Kompetensi Pada Lembaga Sertifikasi Profesi Berbasis Web*. *7*(2), 188–196.

Sitompul, N. S. D., Yugianus, P., & Suharsono, S. (2024). Rancang Bangun Media Pembelajaran Interaktif Tabel Periodik Unsur Kimia di SMAN 1 Sei Bambang Menggunakan Metode ADDIE. *JoMMiT : Jurnal Multi Media Dan IT*, *8*(1), 054–061. https://doi.org/10.46961/jommit.v8i1.1028

Sommerville, I. (2011). *Software Engineering (9th ed.; Boston, Ed.). Massachusetts: Pearson Education.*

Sudrajat, A. S., & Suharsono. (2024). *Rancang aplikasi sistem registrasi uji kompetensi fungsional kesehatan kalimantan barat (seruni sehat) pada dinas kesehatan provinsi kalimantan barat*. *1*(2), 350–360.

Suharto, I., Adam, S., Gautama, B., Laksminini Noor, D., & Negeri Pontianak Jl Ahmad Yani, P. (2024). *ELIT JOURNAL Electrotechnics And Information Technology Rancang Bangun Sistem Informasi Pengukuran Indikator Utama Kegiatan Perguruan Tinggi Politeknik Negeri Pontianak*. *5*(1), 51.

Tahir, T. Bin, Rais, M., & HS, M. A. (2019). Aplikasi Point OF Sales Menggunakan Framework Laravel. *JIKO (Jurnal Informatika Dan Komputer)*, *2*(2), 55–59. https://doi.org/10.33387/jiko.v2i2.1313

Yuniarti, R., Hartami Santi, I., & Dwi Puspitasari, W. (2022). Perancangan Aplikasi Point of Sale Untuk Manajemen Pemesanan Bahan Pangan Berbasis Framework Laravel. *JATI (Jurnal Mahasiswa Teknik Informatika)*, *6*(1), 67–74. https://doi.org/10.36040/jati.v6i1.4283