

DESIGN OF A WEB-BASED DATA MANAGEMENT SYSTEM FOR HEALTH WORKER ACCREDITATION TRAINING PARTICIPANTS

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ABSTRACT	
<i>Data management encompasses all forms of data handling or combinations of various data management techniques to make the data useful and ready for immediate application as desired. This research aims to design a web-based data management application for healthcare accreditation training participants in West Papua Province and to develop the web-based data management application for healthcare accreditation training participants in West Papua Province. The application is tested using the black box method, utilizing PHP and MySQL programming languages. The result of this research is the implementation of an application that provides a solution for managing training participant data related to healthcare accreditation in West Papua Province via a web platform. The application can be applied as it enhances data management efficiency by providing a web platform that can be accessed from anywhere with an internet connection. Additionally, this application facilitates easy access and monitoring of training participant data, making it easier for leadership and administrators to manage data effectively. Based on black box testing, the application functions properly. Therefore, this application has the potential to be widely implemented in the context of health training management in various regions.</i> Keywords: System, Management, Training, Accreditation, Web	Article History Submitted: 18 October 2025 Received: 23 January 2026 Published: 30 April 2026

A. RESEARCH METHODS

Data management encompasses the systematic manipulation and organization of data to convert it into a more functional and beneficial form that can be effectively utilized for various purposes, thereby enhancing its overall utility. Specifically, data management refers to any form of oversight or administration of data, or combinations thereof, aimed at rendering the data useful in alignment with predetermined objectives, which can be readily implemented for immediate use. In broader terms, data processing signifies a comprehensive series of activities or processes that are meticulously executed to alter, transform, or efficiently manage data in a way that enhances its meaning and usefulness. This intricate process inherently involves a series of specific steps that are essential for the effective collection, compilation, analysis, and storage of data, all with the ultimate goal of providing valuable information that is critical for informed decision-making.

Health workers play an undeniably vital role within the framework of the national health system, and as a direct consequence of this importance, there has been a marked emphasis on their professional development

aimed at significantly enhancing the quality of health services available to the public. In this context, a primary focus has emerged on elevating the accreditation of health workers, which is instrumental in ensuring that the human resources operating within the health sector adhere to established standards of practice and professionalism. Nevertheless, the swift increase in the number of individuals undergoing accreditation training has introduced a set of new challenges pertaining to effective data management, challenges that can be adeptly addressed through the strategic implementation of advanced information technology solutions.

The Human Resources Section, which operates under the auspices of the West Papua Provincial Health Office, bears the critical responsibility of overseeing the implementation of accreditation training as well as the ongoing development of health workers within the region. Specifically, the remit of the Human Resources Section encompasses the execution of accreditation training programs and the continuous professional development of health workers. However, this section faces significant challenges in the effective management and monitoring of data pertaining to the participants of health worker accreditation training programs. With a total of 78 health centers located throughout West Papua and an impressive workforce of approximately 3,740 health workers, the burgeoning number of individuals engaging in accreditation training clearly demonstrates a strong commitment to elevating the standards and quality of health services provided in this geographical area. Yet, despite this commitment, the section often encounters various obstacles stemming from the reliance on manual processes, which frequently results in inaccuracies during data processing; such inaccuracies include errors in data entry, instances of duplicate personnel records, prolonged search times for data, and delays in the overall data management process, all of which can significantly hinder the operational efficiency of the health officers involved.

B. RESEARCH METHODS

The methodologies employed in the context of this comprehensive study encompass a diverse array of data collection techniques as well as systematic development methods, wherein the data collection techniques prominently feature observation that is meticulously conducted through the careful observation and systematic recording of the specific symptoms under investigation. In order to ensure that the system being developed possesses a high degree of reliability and credibility, it is imperative to visit the site in person, which, in this case, is the West Papua Provincial Health Office; subsequently, interviews will be conducted with key informants located within the West Papua Provincial Health Office, specifically targeting the Human Resources Section as well as the literature study section to effectively gather pertinent data and insightful information regarding the design and creation of a robust management information system, drawing upon an array of sources such as academic books, references from other researchers, and reputable websites that are relevant to this particular research endeavor. The designated site for this extensive research undertaking will be situated at the West Papua Provincial Health Office,

which is conveniently located at Jl. Brigadier General Marine (Ret.) Abraham O. Atururi, Arfai, Manokwari, serving as the focal point for all investigative activities. Furthermore, it is important to note that the timeframe allocated for this research will span from January to April of the year 2024, providing a structured period during which all necessary data collection and analysis can be diligently carried out. This planned period will allow for a thorough examination and synthesis of the information gathered, ensuring that the final outcomes of the study are both comprehensive and beneficial to the intended stakeholders. Ultimately, the strategic combination of direct observations, interviews, and extensive literature reviews will facilitate the development of an effective management information system tailored to meet the needs of the West Papua Provincial Health Office.

PLANNING

Design is one of the important things in making a program. The purpose of the planning is to give a clear and complete picture to the programmers and technicians involved. The design should be useful and easy to understand so that it is easy to use. Design is the first step in the development phase of product or system engineering, design is the process of applying various techniques and principles that aim to define an equipment, a process or a system in detail that allows physical realization (Sitorus and Sakban 2021).

SYSTEM

A system system is a collection of elements that interact with each other to achieve a specific goal. The system consists of inputs, processes and outputs. Input is an input and output is data produced in the form of information, or a system is "A series consisting of 2 (two) or more components that are related and interact with each other to achieve a goal where the system is usually divided into small sub-sub-systems that support a larger system(Sofyan, Siti Nur Asia 2022).

DATA

Data is a reality that describes an event and is a form that is still raw that cannot tell much so it needs to be further processed through a model to produce information. (Nawassyarif, M. Julkarnain, and Rizki Ananda 2020), or Data is a collection of events that are raised from a reality in the form of numbers, letters, or special symbols or a combination of them that still cannot tell much story, so it needs to be further processed". From some of the definitions above, it can be concluded that data is an event that is raised from a reality (fact) in the form of numbers, letters, certain symbols, or a combination of the three. Data cannot be interpreted yet so it needs to be processed to produce information on making a decision (M.Arfa Andika Candra 2021).

DATA PROCESSING

Data processing is the manipulation of data into a more useful and meaningful form of information using an electronic device, namely a

computer. Data processing is the manipulation of data into a more useful and meaningful form, in the form of information (M.Arfa Andika Candra 2021). Data processing refers to a series of activities or processes carried out to change, transform, or manage data from its original form into a more meaningful or useful form. This process involves specific steps to collect, organize, analyze, and store data so that it can provide useful information or support decision-making.

HTML (Hypertext Markup Language)

HyperText Markup Language (HTML) is a language used to describe the structure of Web pages. HTML can be used such as publishing online documents with titles, text, tables, lists, photos, etc., retrieving information online via hypertext links with the click of a button, designing forms to conduct transactions with remote services, to be used in searching for information, placing orders, purchasing products, etc., including spreadsheets, video clips, sound clips, and other applications directly within the document [7]. HTML to publish documents online. The basic statements of HTML are called tags. A tag is expressed in square brackets (<>). Tags intended for a document or part of a document must be made in pairs. It consists of opening and closing tags. Where the closing tag uses the addition of a slash (/) at the beginning of the tag name (Inyel Suhadertia Boymau1, Sofyan 2023).

PHP Programming Language

PHP or short of *Hypertext Preprocessor* is one of the open source programming languages that is very suitable or specialized for web development and can be embedded in an HTML thesis. The PHP language can be said to describe several programming languages such as C, Java, and Perl and is easy to learn. As the name implies, PHP is used to create personal websites. (Firman, Wowor, and Najoan 2016). Or PHP is a script that is integrated with HTML and resides on a server (server-side HTML embedded scripting). With this PHP you can create a variety of web-based applications, ranging from simple web pages to complex applications that require a connection to a database. PHP is designed to work with database servers and is made to be a sedemic so that the creation of HTML documents that can access the database is so easy. The purpose of this scripting language is to create applications where applications built with PHP will generally produce results in a web browser, but the entire process is run on a server (Sofyan, Siti Nur Asia 2016).

Web

The World Wide Web (commonly abbreviated as WWW) or the web is one of the most popular internet applications. The web is a system where information in the form of text, images, sounds and others is stored on an internet webserver is displayed in HTML (hypertext Markup language). Another definition of web or www is an interconnected document or information that is linked through a hyperlink or URL (Sofyan, Mardewi,

Ronald 2020), or A website is a collection of various types of website pages, which are summarized in a domain or subdomain, which is more in the WWW (World Wide Web) which is of course located on the Internet. Website pages are usually documents written in Hyper Text Markup Language (HTML) format, which can be accessed via HTTP(Yuliton Gobai 2020).

MYSQL (My Structured Query Language)

MYSQL is a basic data relationship system or relational database management system (RDBMS) that is able to work quickly and easily use. MySQL is also a network database access program, so it can be used for multi-user applications. MySQL is distributed for free under the GPL (General Public License). Where every program is free to use MySQL but cannot be used as a derivative product that is closed source or commercial(Sofyan et al. 2021).

Use Case System Diagram

In the design of the use case diagram there are several actors involved in the system, these actors who use or interact with the system which will later play a direct role in the management of Accreditation Training Participant Data can be seen in the figure below.

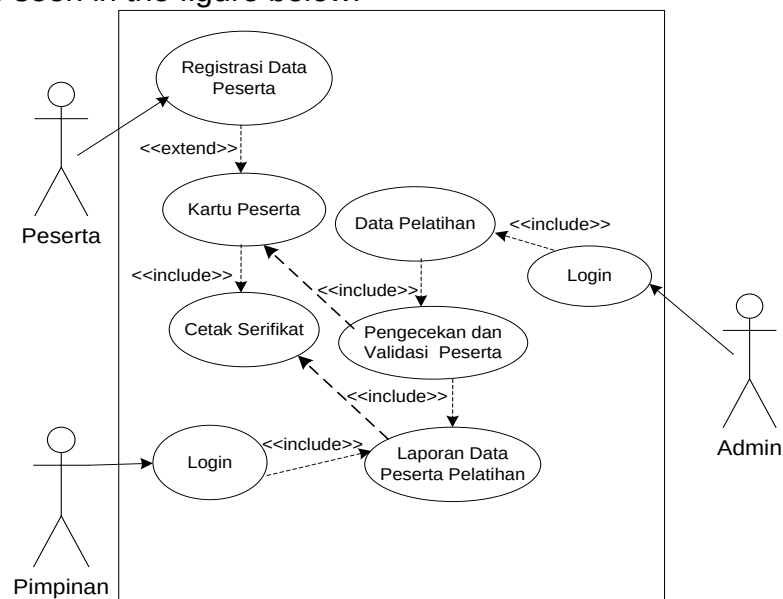


Figure 1 Use Case System Diagram

A use case diagram that describes the system's workflow, involves three main actors: participants, admins, and leaders. The first stage involves registering participants to take part in health worker accreditation training, which then generates downloadable participant cards. When participants are going to take part in the training, the participant's data will be checked by the admin. In addition, the admin is also responsible for managing training

information, including the title of the material and presenters, as well as compiling reports for leaders regarding the data of health worker accreditation training participants.

C. RESULTS AND DISCUSSION

Registration Form

Form is the user's main menu display. When the program or system is first run, a main menu will appear containing the training participant data registration form. In addition, in the main menu, users can see the participant card information and participant certificate. The participant card is obtained after registration and validated by the admin, while the certificate will be obtained after the training activity is completed and issued by the admin.

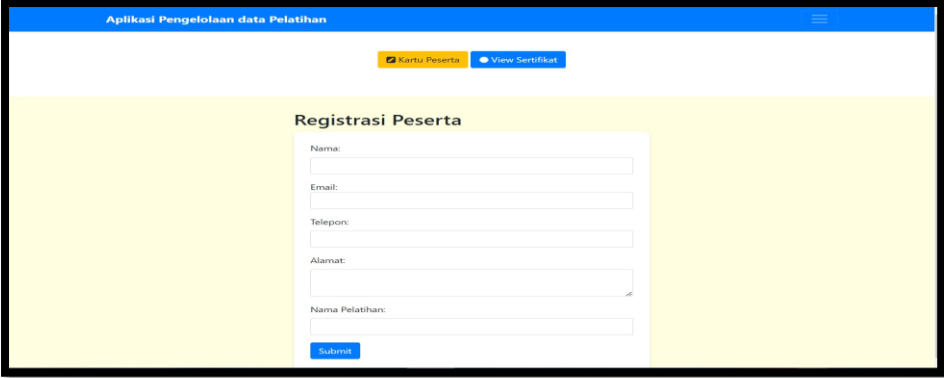
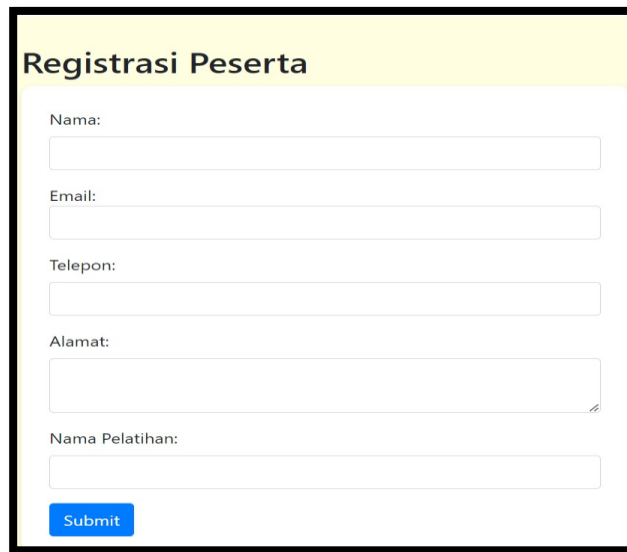
The image shows a web application interface for training management. At the top, there is a blue header bar with the text 'Aplikasi Pengelolaan data Pelatihan'. Below the header, there are two navigation buttons: 'Kartu Peserta' (yellow) and 'View Sertifikat' (blue). The main content area has a light yellow background and is titled 'Registrasi Peserta'. It contains a white registration form with the following fields: 'Nama:' (Name), 'Email:', 'Telepon:' (Phone), 'Alamat:' (Address), and 'Nama Pelatihan:' (Training Name). Each field has a corresponding input box. At the bottom of the form is a blue 'Submit' button.

Figure 2 User Main Menu View

Registration Form

The Registration Form is a registration form display that functions to display the registration form of training participants. In this form view, there are several fields that need to be filled in by participants, namely name, email, phone, address, and training name. The data entered in these fields will be stored in the database. Once the data is saved, the participant's information will be displayed to the admin for validation. This process ensures that all information provided by participants is correct and complete before they can take part in the training



The image shows a registration form titled "Registrasi Peserta" in a yellow header. The form contains several input fields: "Nama:" (Name), "Email:", "Telepon:" (Phone), "Alamat:" (Address), and "Nama Pelatihan:" (Training Name). Each field is represented by a white rectangular box. At the bottom of the form is a blue button labeled "Submit".

Figure 3 Register Form Display

Form Login

Form Login is a login form display that functions to display the login form where in the design there is a username and password and there is a button to login. If you successfully log in, it will display the main menu.



The image shows a login interface on a blue background. At the top, it says "Info Kontak Layanan Kami" (Our Service Contact Information) with a phone icon and number "+62 82197001632" and an email icon and address "Dinkes3@gmail.com". Below this is the heading "Silahkan Login" (Please Login). There are two input fields: one for the username containing the text "admin" and another for the password containing five dots. At the bottom, there is a red button labeled "Login" and a link that says "Belum punya akun? Daftar" (Don't have an account? Register). A hamburger menu icon is visible in the bottom right corner.

Figure 4 Login Form View

Admin Main Menu

It is the main menu display of the admin, namely in this view, there are several main menus designed to make it easier for admins to manage various aspects of the system. The first menu is "Home," which is the main page after the admin logs in. Furthermore, there is the "Training Participant Menu," which has two sub-menus, namely "Training Registration" for validation of new participants and "Training Data" to view and manage the data of registered participants. Then, there is the "Certificate Menu" which consists of the "Add Certificate" sub-menu to add new certificate data and the "Certificate Data List" to view and manage existing certificates. In addition, there is a "User Menu" that is used to store and manage the data of

system users. Finally, there is a "Logout" button that allows admins to log out of the system safely.

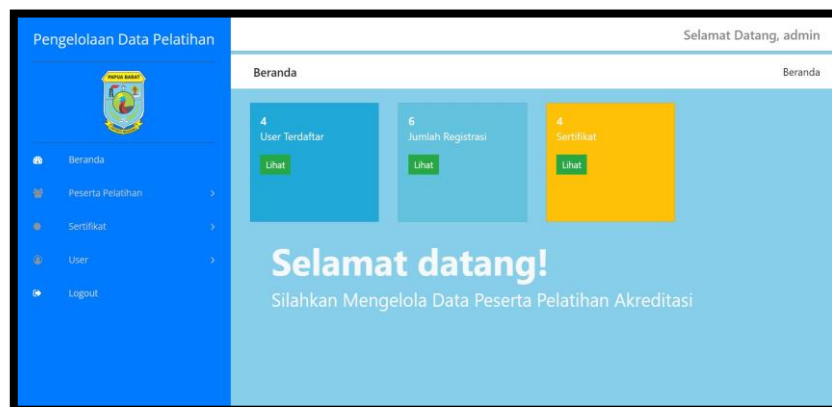


Figure 5 Admin Main Menu View

Participant Card

The participant card is a printed display of the participant card displayed in pdf form that will be owned by the trainee who is asked to pass the qualification stage of registration.



Figure 6 Participant Card Display

Certificate

The participant certificate is a printed display of the certificate that is displayed in pdf form when the trainee is declared to have passed the accreditation training activity.



Figure 7 Certificate Display

D. CONCLUSION

In light of the comprehensive research findings and subsequent discussions, a number of significant conclusions can be drawn with clarity and precision. The system that has been meticulously developed employs a sophisticated web-based programming architecture that has been specifically tailored to effectively streamline and enhance the accreditation training activities conducted at the West Papua Provincial Health Office. This innovative implementation not only successfully eliminates instances of data redundancy but also facilitates the efficient management, organization, and display of essential documents such as participant cards, certificates, and comprehensive records. Moreover, the rigorous functionality validation that was conducted through the methodology of black-box testing has confirmed an impressive success rate of 100% for the system, thereby demonstrating its robustness and reliability for operational use in various contexts. The implications of these findings are substantial, as they not only highlight the efficacy of the system but also underscore its potential to revolutionize the way accreditation training is managed within the health sector. Ultimately, this advancement represents a significant leap forward in improving administrative efficiency and effectiveness, paving the way for future developments in health office operations.

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