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Implementation of the Model View Controller Method in the BKPM Health Services Information System Prabumulih City

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Abstract

The community Lung Health Center is a health service facility than organizes and provides basic medical services at BKPM which are still carried out manually greatly slow down officers in managing data and searching for patient data. This research aims to design and develop a service system. The develipment method used is RAD (Rapid Application Development) which consists of requirements planning, design and implementation processes. The language used is PhpMySql, a base operation that allows selecting data or entering data that can be easily carried out automaticaly.

Keywords: *information system, service website, RAD*

1. Introduction

The development of information technology is widely used for work processing because of its effectiveness and efficiency which has been proven to be able to speed up performance. Technological progress is something that cannot be avoided in this life, because technological progress will run in accordance with scientific progress, every innovation is created to provide positive benefits for human life [1]. For example, the importance of using computers as a human aid tool is very important. in carrying out their work duties at government agencies operating in the health sector. One of them is for health services at the Prabumulih City Community Lung Health Center (BKPM). BKPM is one of the health agencies built by the government located in Patih Galung Subdistrict, West Prabumulih District, Prabumulih City.

BKPM is a health service facility that organizes and provides basic medical services, however in handling this health service it often experiences delays due to lack of scheduling. services so that they cannot be served optimally, apart from that the process of searching for patient data, medical records and the process of processing patient administration data is still done manually where the process of searching for patient data takes a long time and in medical records sometimes files are difficult to find because there is no storage the data is neatly arranged, while the process of processing administrative data and patient registration is still carried out in writing in a book recording, making it possible for officers to have difficulty providing effective and efficient services to patients. Improvements that will be made are replacing the manual recording method with computerized recording. This research explains building a health service information system using the PHP programming language and MySQL database, by applying the Model View Controller (MVC) programming concept. The application of the MVC concept in the development of health service information systems at BKPM aims to provide simplicity and convenience for web programmers in system maintenance, because it separates the data (Model) from its appearance (view) and the way to process it (controller) so that it does not make it difficult when having to repair the system, where according to [2] a website is a medium that has many pages that are connected to each other (hyperlinks), where the website has the function of providing information in the form of text, images, video, sound, and animation or a combination of all of them. Based on the problems above, I as the author will create a web-based information system with the title "Implementation of the ModelView Controller Method in the Prabumulih City BKPM Health Service Information System".

2. Theoritical Basic

2.1. Understanding Implementation

Implementation is an activity or activity that is planned and carried out seriously based on certain norm references to achieve activity goals [3]. Implementation is an action or implementation of a plan that has been prepared carefully and in detail [4]. Based on the definition above, it can be concluded that implementation is an activity or action, a plan that has been prepared to achieve the same goal.

2.2. Understanding Systems

A system is a group of people who work together with systematic and structured rules to form a single unit that carries out a function to achieve a goal [5]. A system is a network of procedures whose results are related, gathered together to carry out an activity or to complete a certain target [6]. Based on the definition above, it can be concluded that information systems are components that are interconnected with each other to support decision making.

2.3. Understanding Information

Information is data that is processed to be useful in making decisions for its users [7]. Based on the definition above, it can be concluded that information is the result of data processing so that it becomes an important form for the recipient and is useful as a basis for decision making for the user.

2.4. Understanding Websites

A website is a collection of pages on a domain on the internet that are created with a specific purpose and are interconnected and can be accessed widely via the front page (home page) using a browser using the website URL [8].

2.5. Understanding Health Services

Health services are a form of public service context and are absolutely implemented well by the government. Health care services are guaranteed to every person in the 1945 Constitution to make efforts to improve the health status of both individuals and groups or communities [9].

2.6. Understanding MVC (Model View Controller)

The MVC concept is a method of programming that separates the main components that build an application, namely data manipulation, user interface and parts that control the application. The three main components of the application are usually called Model, View and Controller which is an abbreviation of MVC [10].

3. Research Metods

Research methods are a series of activities in searching for the truth of a research study, which begins with a thought that forms a problem formulation so as to conclude an initial hypothesis, with the help and perception of previous research, so that the research can be processed and analyzed which ultimately forms a conclusion. In this research the author used descriptive and qualitative methods. The descriptive method is a method for describing research results [11]. The data collection techniques that the author used in preparing this thesis are:

1. Observation
   Observational data collection in the observation research area for writing this thesis was carried out at BKPM Prabumulih City.
2. Interview
   Data collection is done by having a conversation or asking questions directly with the head of the Community Lung Health Center.
3. Documentation
   Data collection originates from written objects, books, newspapers, documents, meeting minutes, diaries and others.

4. System Analysis and Design

This section explains the analysis and design of the system that will be studied.

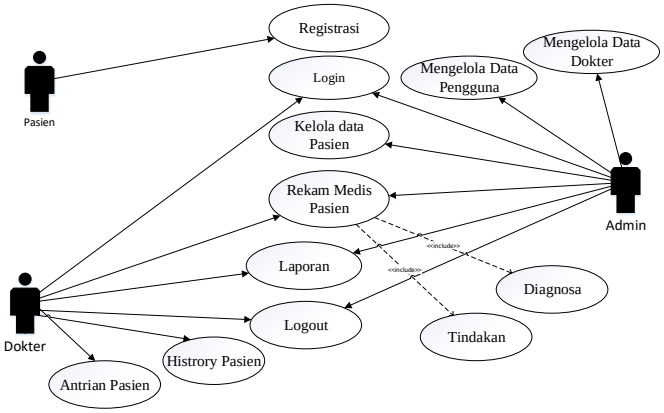

Fig .1: Proposed Use Case

Use case diagrams show interactions between actors and message interactions or actions carried out by the system or between the two. Actors can be people, equipment or a system that is being built. Use cases explain the description of the system or requirements that must be met from the user's perspective. In the health service system at the Prabumulih City Community Lung Health Center, the initial design stage was carried out by first creating a Use Case Diagram which can be seen in Figure 1.

5. System Implementation and Testing

Implementation or testing is the next stage of the third stage in the Rapid Application Development (RAD) Implementation Method, namely coding. The results of the analysis and design that have been made and explained in the previous chapter IV at this stage will be implemented in the form of coding.

5.1. Database Implementation

In designing a web-based health service information system at the Prabumulih City Community Lung Health Center, researchers used the MySQL phpMyAdmin database via a web server, namely the Xampp Control Panel. Here is what the implementation looks like:

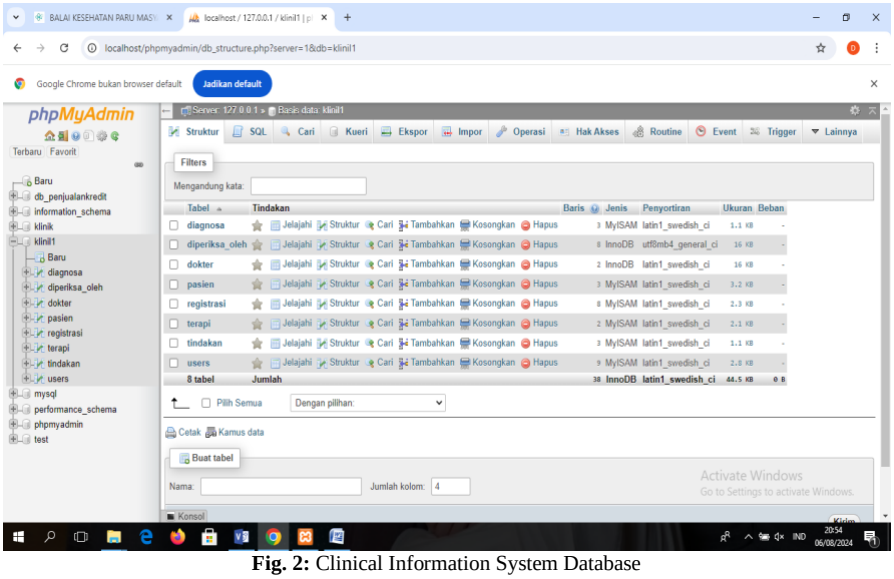

Fig. 2: Clinical Information System Database

Based on the image above, the existing and displayed database consists of tables user, action, therapy, registration, patient, doctor, master_action, manster_diagnosa, checked by, and diagnosis.

5.2. Interface Implementation

In the implementation part of this interface, the researcher creates a website display where each page display is made in the form of a file with a PHP extension, and this is what is accessed as a liaison between the admin and users of this website. The following is the interface implementation of the health service design at the Prabumulih City Community Lung Health Center which is as follows:

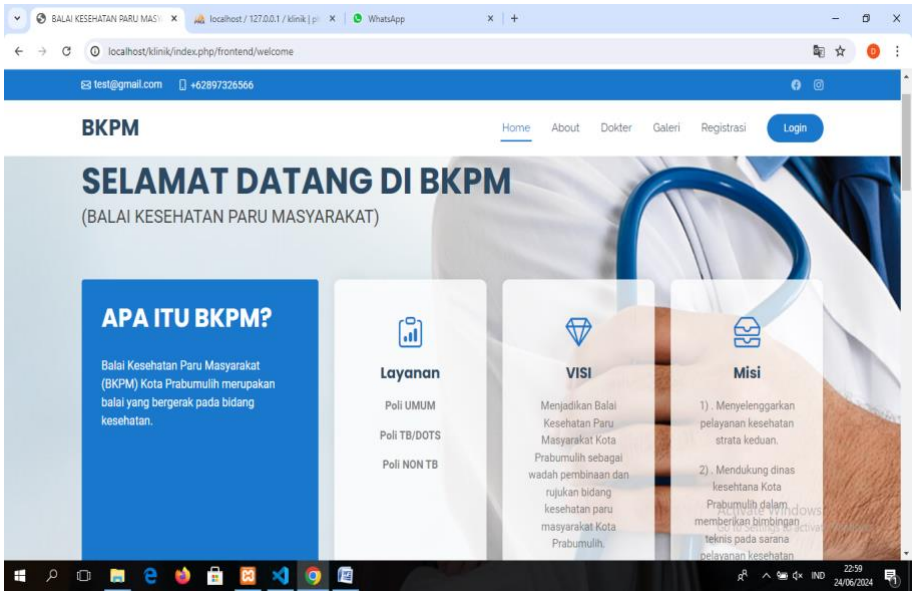

Fig. 3: Front Page View

In figure 3 is the front page that users can use to manage the application and for patients who register online. Users must fill in the password and username first and patients must fill out the registration form when registering online.

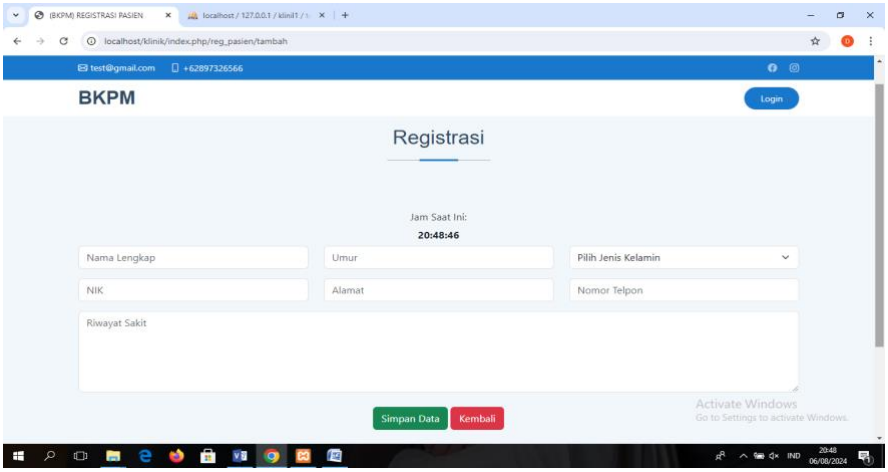

Fig. 4: Display of the Patient Registration Page

Figure 4 shows the patient registration page that patients can use to register online.

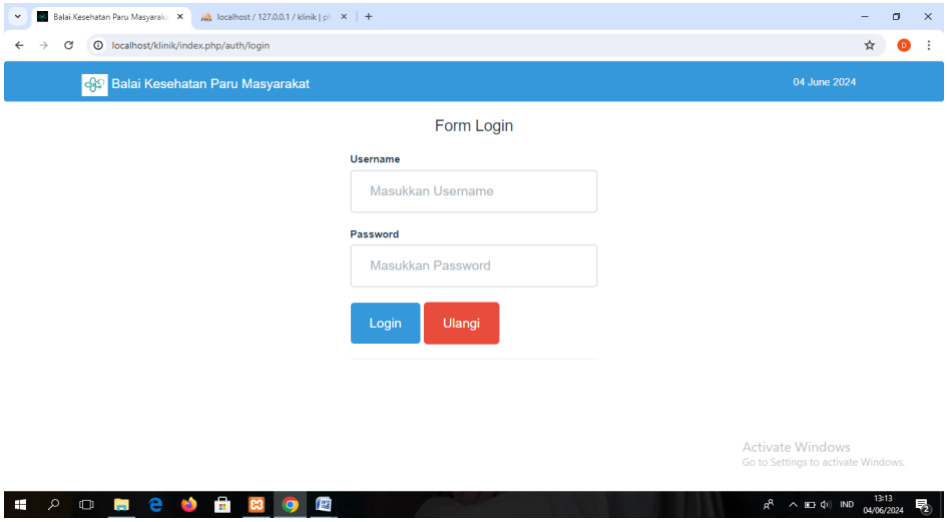

Fig. 5: Login Page Display

In Figure 5, the login page is useful for admins and doctors to enter the health service website.

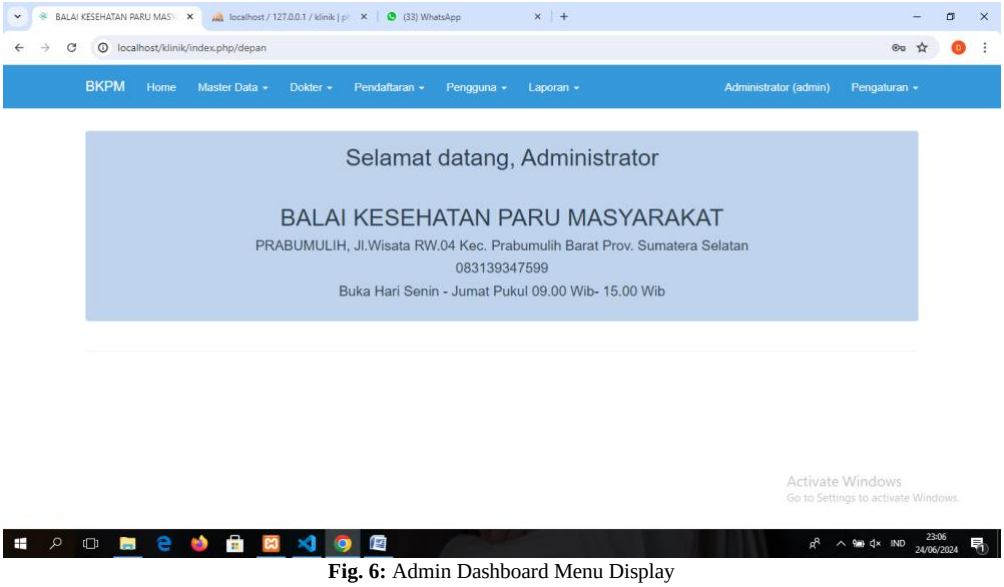

Fig. 6: Admin Dashboard Menu Display

This menu is the page after logging in, the admin dashboard menu contains master data, doctors, registration, users, and reports as seen in Figure 6.

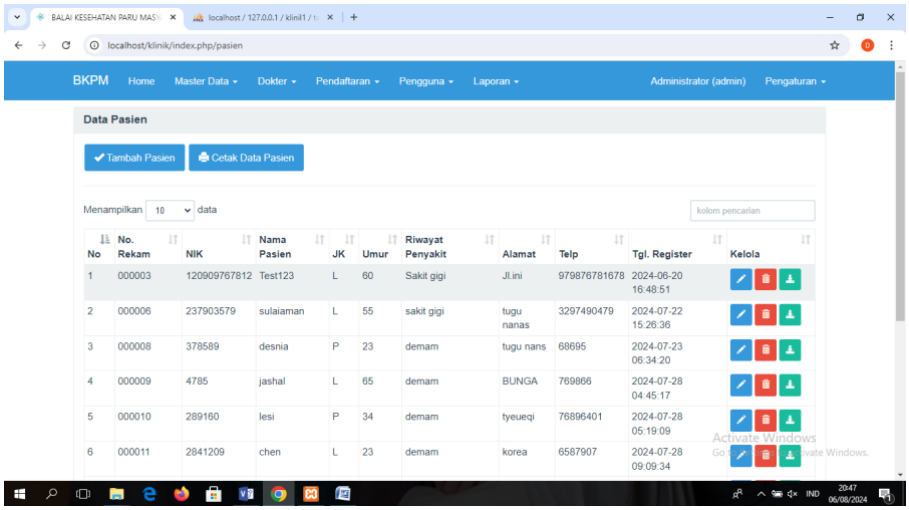

Fig. 7: Patient Data Master Menu Display

Figure 7 shows the menu used to add patient data and print patient data.

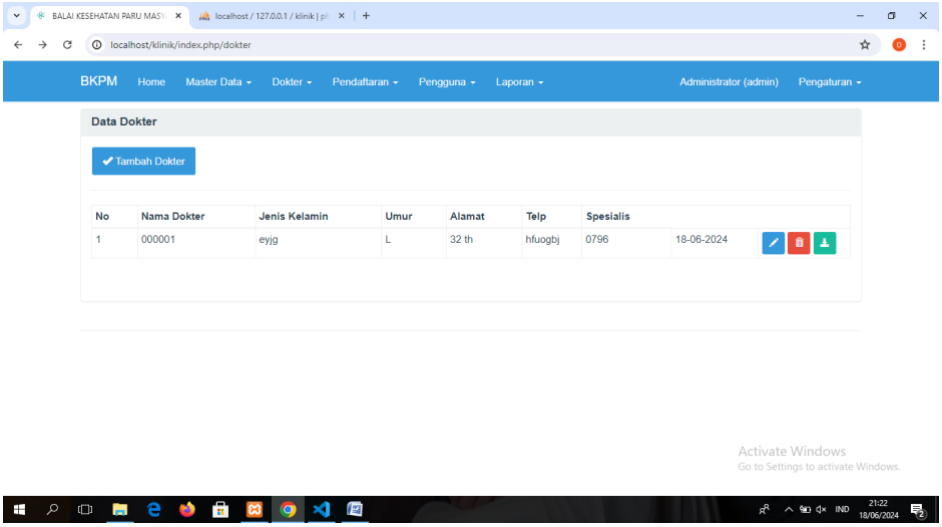

Fig. 8: Doctor Data Master Menu Display

This menu is used to view and add data on doctors who work at BKPM, see Figure 8.

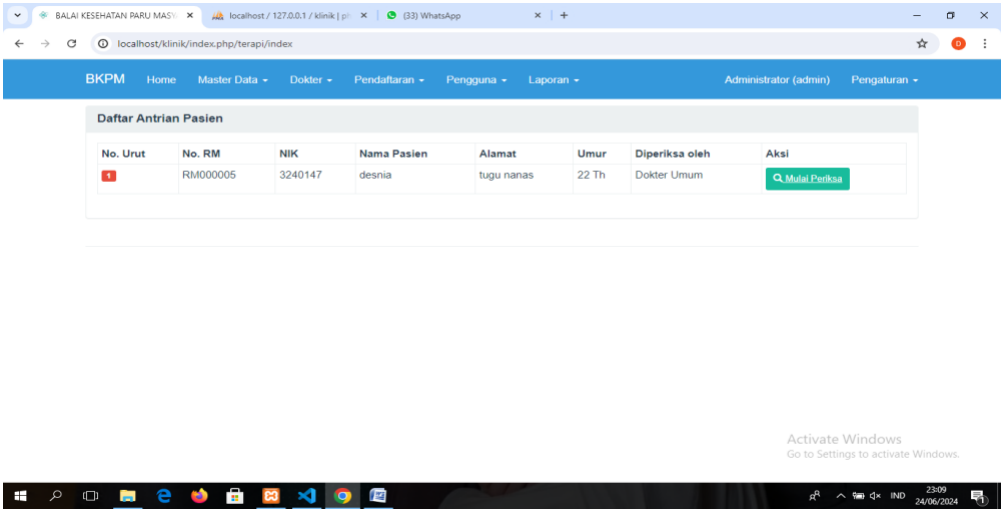

Fig. 9: Patient Queue Menu Display

In figure 9 This menu is used to view and add patient queues.

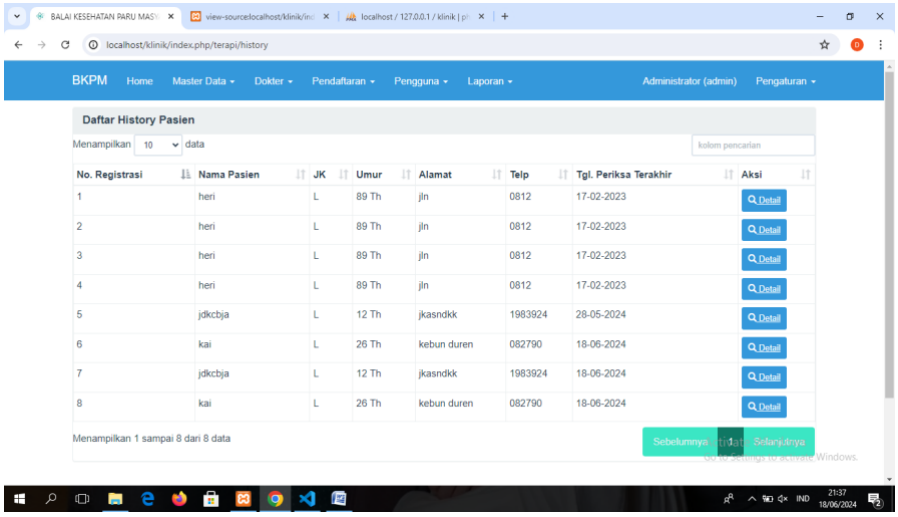

Fig. 10: Patient History Menu Display

In Figure 10, this menu is used to view and print the patient history list.

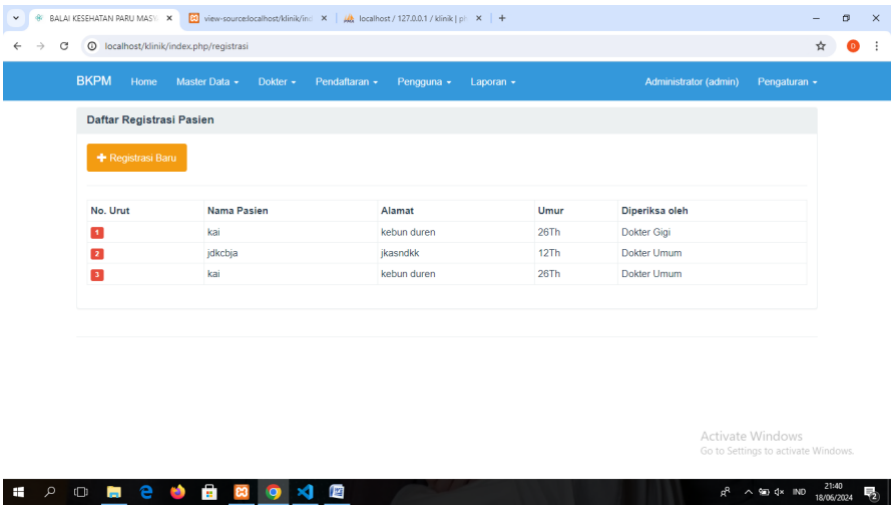

Fig. 11: Queue Registration Menu Display

Figure 11 shows the menu used to register new patients.

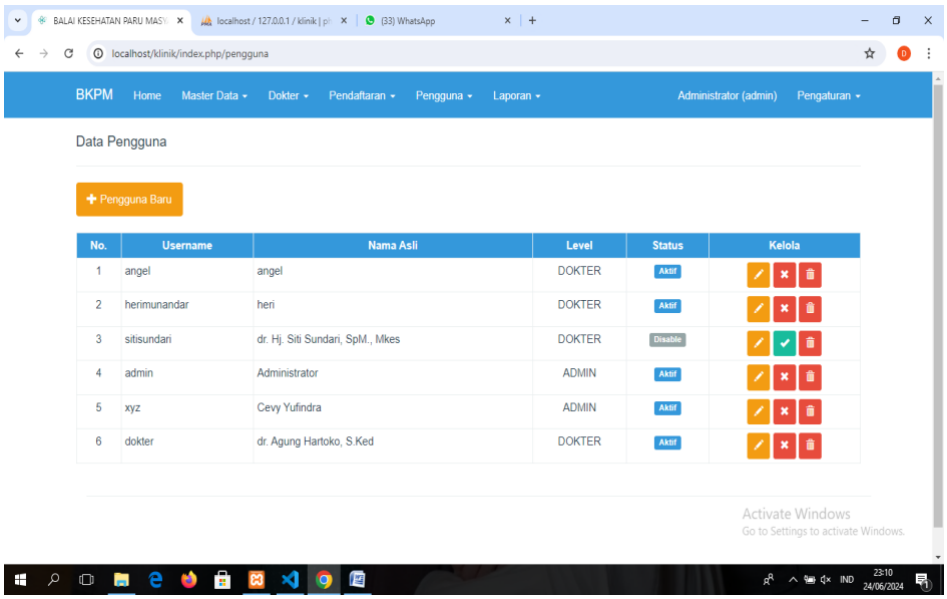

Fig: 12: User Menu Display

Figure 12 shows this menu is used to view and add new user data.

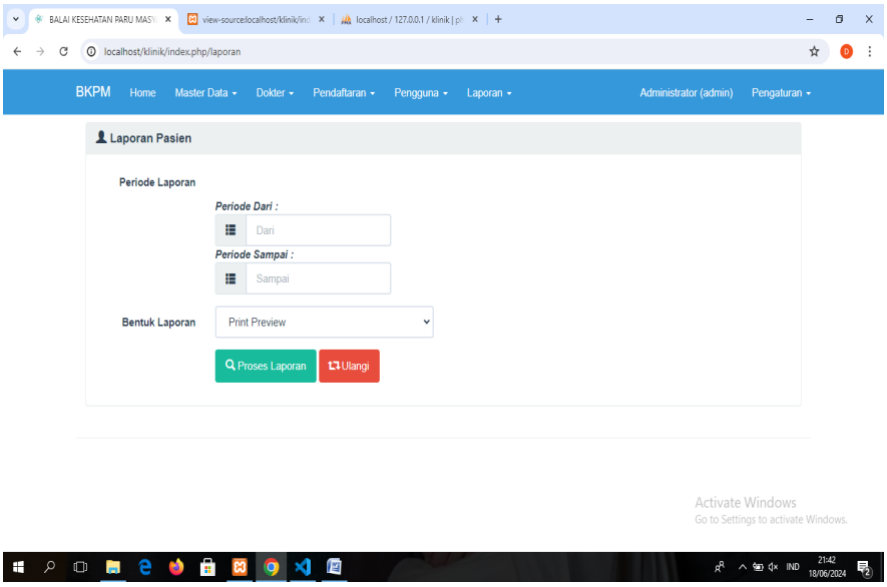

Fig. 13: Menu Display Patient Reports Per Period

This menu is used to view and print patient reports for each period.

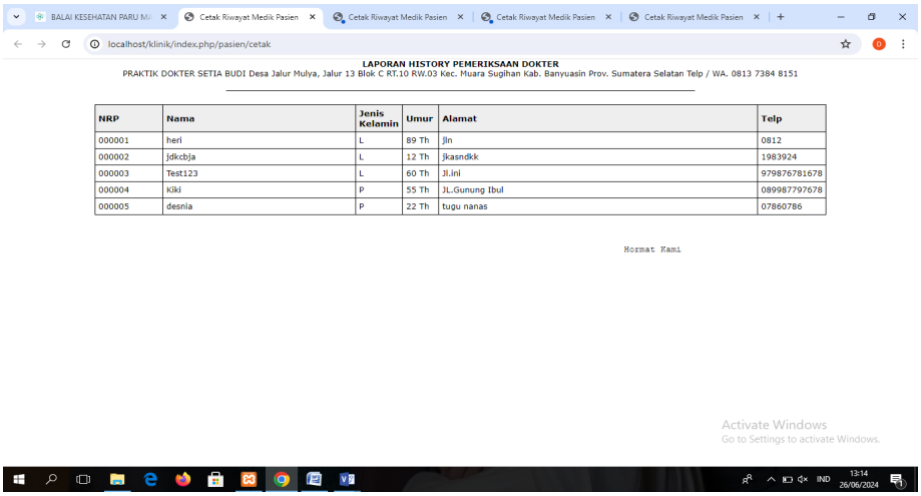

Fig. 14: Overall Patient Report View

This menu is used to display patient report results for each period.

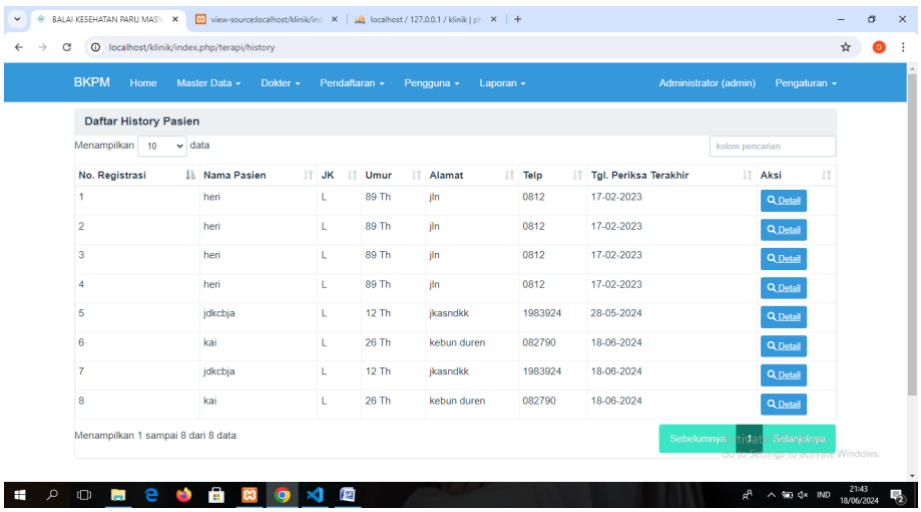

Fig. 15: Menu Display Report List of Patient History

This menu is used to view and print patient history reports as seen in Figure 15.

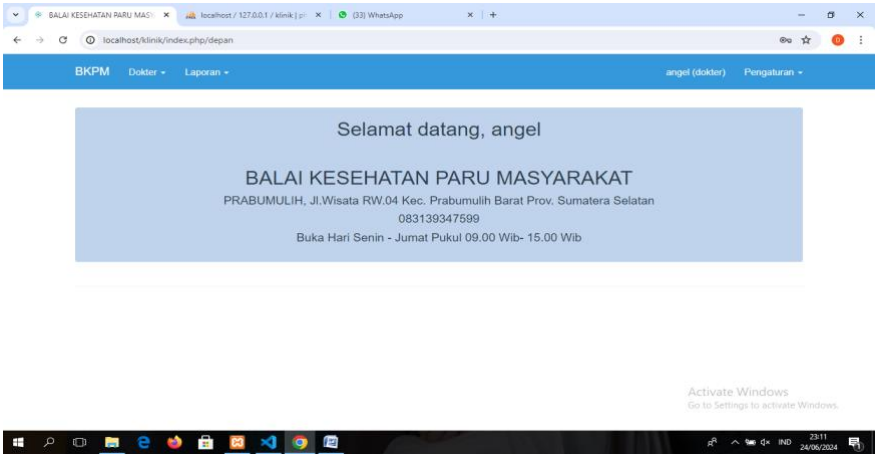

Fig. 16: Doctor Dashboard Menu Display

This menu is used to view patient data, patient queues, patient history, and patient reports as shown in Figure 16.

5.3. Test Result

Based on all the test results that have been carried out by researchers, the researchers can conclude that the Health Service information system at the Prabumulih Community Lung Health Center that has been designed and created can run and function well. This is in line with research conducted by [12] entitled "Designing a Web-Based Health Service Information System at the Pekuncean 2 Community Health Center" which resulted in this being able to help provide information on patient medical records, provide information on patient queues, patient drug prescriptions and patient reports. Furthermore, research conducted by [13] entitled "Website Based Patient Service System at the Gayam Health Center, Sumenep" stated that this system can improve performance and efficiency of time used in providing health services.

6. Conclusion

The results of creating a research system at the Community Lung Health Center using the Rapid Application Development (RAD) method are as follows:

1. Based on the results of research that has been carried out to design and create a health service information system at BKPM, it has been achieved according to the desired needs, because the system created is capable of providing services such as online patient registration, inputting, storing patient data and medical record data patient. As well as assisting officers in making patient data reports and examination data more quickly and effectively.
2. By applying the Rapid Application Development (RAD) method approach, the development of the health service system at BKPM can be carried out well.
3. With this system, users can register online, because previous registration was still done manually.

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