

# Design of Web-Based Patient Registration Information System at Asy-Syifa Medika Clinic

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## ABSTRACT

Medical Record is a file containing records and documents regarding patient identity, examination, treatment, actions and other services to patients at health care facilities. Each officer must work quickly to find out the data that has been inputted, get patient data reports according to their needs, so as to make the results of services and reports at the Medika Saintika Padang of Clinic faster and more accurate, the impact of service information is more quickly known by the patient concerned, but the recording is done still manual so that changes need to be made using a web-based information system. The purpose of the authors conducting this research is to create a medical record information system that was developed for fast, precise/accurate, and relevant data collection at Asy-Syifa Medika Clinic. The method used is Programmable Hypertext Preprocessor (PHP) and Structured Query Language. The results of a computerized patient registration information system produce data that is stored correctly and accurately, so that the patient registration information system developed for data collection of patients stored in the database is expected to complete patient registration to be more efficient.

**Keywords:** Information Systems, Medical Record, Patient Registration

## 1. INTRODUCTION

Information technology and computers in the current era greatly affect in all respects, both in the fields of education, government, offices, the world of work and in the world of health [1]. Of course, the need for accurate and efficient information is needed in the use of computer and information technology. Advances in computer and information technology now provide several alternatives in processing data, one of which is by using computerized technology. So with the system data can be accessed easily and quickly [6].

Information technology and computers that are increasingly developing have entered various sectors including health. Health is the most important thing that must be taken care of by every human being [5]. Maintaining health is one of the efforts that must be considered because it will affect the activities and performance of oneself and others. Nowadays, many people always neglect their own health because of the various activities and activities they do [10]. As a result, currently many clinics, health centers, or any hospital, there are many people who seek treatment there with various complaints and various types of diseases. Everyone should be able to feel how their own health is. If a person is stricken with a disease, he must be able to

feel the state of his body and immediately go to the nearest clinic, health center, or hospital [9].

Information technology has the potential to process data and process it into information. Information technology is able to store data with more capacity. Information technology also allows health data to be sent easily and quickly. The development of information technology is very supportive in the management of medical records more effectively and efficiently [4].

Efforts to improve health services, especially in clinics, are needed, therefore a computerized system is needed to be able to improve services and to support maternity clinic activities such as data processing and patient data reporting [9].

Asyisyifa Medika Clinic is a Primary clinic, located at Jalan Jakarta Blok G2 Siteba Padang. Serves BPJS participants and the general public every day. Always strives to provide optimal, professional and comprehensive health services for both BPJS participants and the general public who seek medical services without any restrictions on age, gender or type of disease. This clinic serves general, dental and

maternity examinations and also has laboratory and pharmacy facilities.

In processing and making patient data reports at the Asy-Syifa Medika Clinic, they still use the manual system. This causes delays in the delivery of daily patient data reporting information. To overcome this problem, it is necessary to develop a system with a faster calculation rate and delivery of data, able to work faster and more accurately. With this system, it can help medical record officers at the Asy-Syifa Medika Clinic in accelerating and simplifying the process of managing patient data and reducing queues for outpatients.

## 2. METHODS

The information system consists of several components, these components are referred to as building groups, namely input groups, model groups, output groups, technology groups, database groups, and control groups. As a system, the six groups of information systems each interact with each other to form a single unit to achieve its goals.

Medical record is a file that contains notes about the patient's identity, as well as a history document of examination, treatment, action, and other services that have been provided to the patient. The documents referred to refer to the records of certain doctors, dentists, and/or health workers, supporting results reports, daily observation and treatment records and all records.

In order to achieve the goal in developing public health service software at the clinic, the software development life cycle method in the form of a linear sequential model is used. This linear sequential model is a software development life cycle method that aims to obtain clear and agreed requirements for prospective users. The stages of the process carried out are as follows:

### 2.1 *Software Requirements Analysis Phase (Analysis)*

Understanding the overall problems that exist in the information system to be developed such as the scope of the software product, and the users who will use it. Defines what the system must do to meet the requirements.

At this stage, an analyst studies the problems that exist in the software being developed, so that they can be determined.

- 1) Who are the users using the software?
- 2) Where the software will be used
- 3) Any work of the user to be assisted by the software.

- 4) what is the scope of the work, and what is the mechanism for its implementation.
- 5) what are the obstacles in terms of the technology used or in terms of law and standards.

### 2.2 *Design Phase (Design)*

Software design is a stage of software development whose results can be used by software developers to create programs. Software design is often also referred to as physical design. If the system analysis stage emphasizes business problems (business rules), on the other hand software design focuses on the technical side and implementation of a software.

### 2.3 *Coding Stage (Coding)*

Coding is one of the actions of programming steps by writing code or scripts in a programming language. So that the script can be understood by the computer, then during the coding process you must follow the applicable syntax rules. The syntax rules really depend on what programming language you use when writing the script.

In other words, coding is an activity where you tell the computer what to do for you. A code that is in a script can be likened to everyday language. Every code you write will help the computer to know and understand what you want to do with the computer. The computer will receive this command and the computer will perform operations based on the command you wrote.

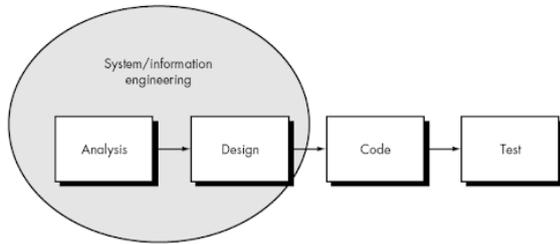
### 2.4 *Testing Phase (Testing)*

Software Testing is the process of running and evaluating a Software manually or automatically to test whether the Software has met the requirements or not or to determine the difference between the expected results and the actual results. The implementation of Software testing is usually adjusted to the Software development methodology used. In general, testing is carried out after the programming stage, however, testing planning is carried out starting from the analysis stage.

Testing Purpose

- 1) Assess whether the software developed has met the needs of users.
- 2) Assess whether the Software development stage is in accordance with the methodology used.
- 3) Create test result documentation that informs the suitability of the Software being tested with the specified specifications.

For more details can be seen in Figure 1 the following linear sequential model:



**Figure 1.** Linear Sequential Model

### 3. RESULTS AND DISCUSSION

#### 3.1. User Level

The design of the proposed procedure is the result of changes and corrections to the current system, where the proposed system is expected to cover the shortcomings of the current system. In the software made there are several entities or information objects that play a role, namely:

- a. Admin
- b. Admissions or medical record employees
- c. Doctor

The explanation of the function of each user at the Asy-Syifa Medika Clinic is as follows:

- a. The admin role is to manage user data, namely the admissions section and doctors
- b. Admission plays a role as part of the registration of patients who will perform health services
- c. Doctors can view their patients' medical records

#### 3.2. Application Usage Procedure

The explanation of the procedure for proposing patient services at the local health center is as follows:

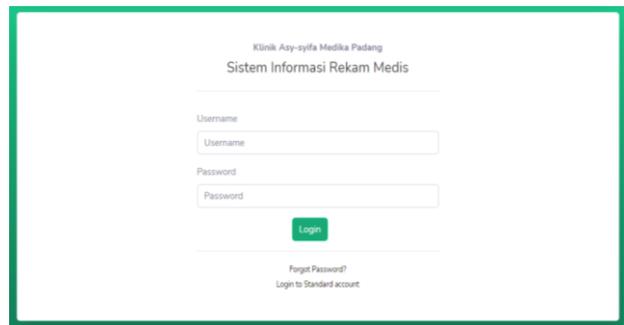
- a. Patient registration procedure
  - 1) The patient submits his identity at the registration section.
  - 2) The registration section inputs patient data in the patient data file.
- b. Patient examination procedures
  - 1) The examination section looks for patient visit data.

- 2) The examination section diagnoses the patient

System implementation is the stage of implementing the system that will be carried out if the system is approved, including programs that have been made at the system design stage so that it is ready to be operated optimally according to needs. The following will explain the implementation of the Asy-Syifa Medika Clinic software system.

#### 3.3. User Interface

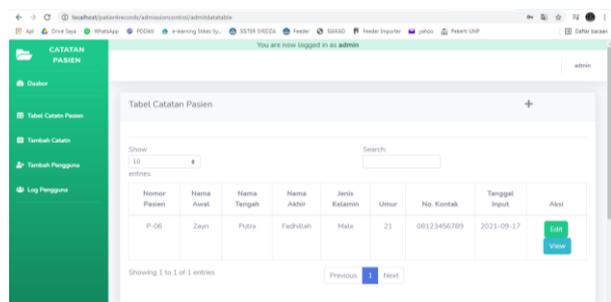
To start using the application, the user must first login by entering the username and password.



**Figure 2.** Login Page

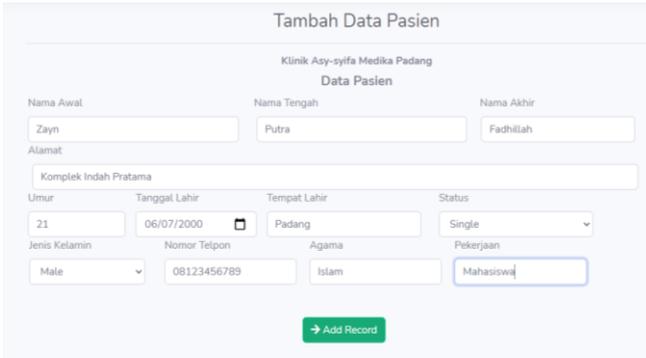
After logging in, the user will enter the dashboard page, on this page the user will see several menus in the application, namely:

- a. Patient Records Collection Table
- b. Add Note (add patient)
- c. Add user
- d. User Log



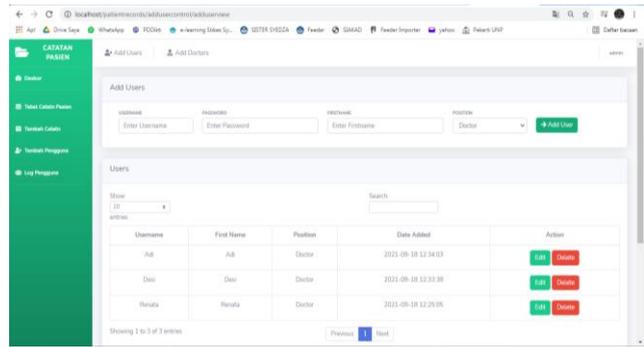
**Figure 3.** Dashboard Page

To start inputting patient data, the user can use the Patient Data Registration Form on the Add Patient Record menu



**Figure 4.** Patient Data Input Page

After inputting patient data, the user can continue by adding physical examination data and patient complaints on the OPD Findings page. On this page, the name of the doctor will also be input according to the patient's diagnosis and examination.

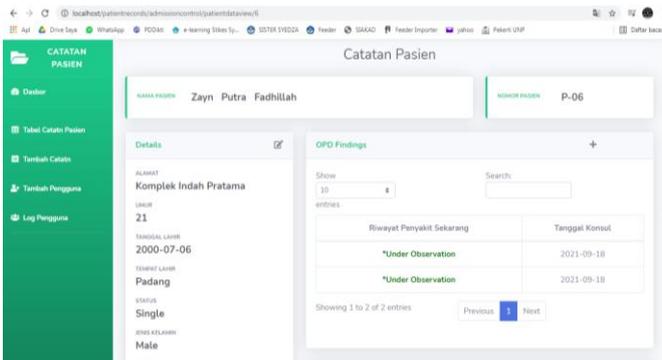


**Figure 7.** Add User (Doctor) page

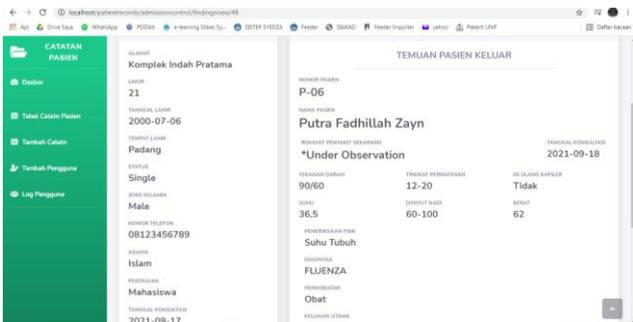
**4. CONCLUSION**

Some conclusions that can be drawn are as follows With the implementation of a web-based patient registration information system, data storage from the registration and examination sections is integrated centrally using a database server so that it will make it easier to find patient data. The use of a web-based patient registration information system can minimize errors and overcome data redundancies that occur.

The suggestions that can be put forward for consideration are as follows It is hoped that all Asy-Syifa Medika clinic officers will be informed how to operate the Information System that has been built so that the information system can function optimally and the new system can run well. We recommend that this information system can be developed by adding SMS gateway technology, so that patients can register via SMS and do not need to queue when going for treatment.



**Figure 5.** Patient Examination History Page



**Figure 6.** Patient's Medical Record Details

After the patient's examination data is inputted, the doctor will also be able to see the patient's medical record data that has been checked in the account of each doctor that has been inputted by the admin.

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