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# Implementation of CRM (Customer Relationship Management) at UPT Public Health Center Perbaungan Web-Based

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ABSTRACT

Public health center is a health service facility that organizes health efforts for the community. Currently, most public health center are still using the old system to record all transaction results, and the data processing is still in manual form so that this method can be time consuming and inefficient. Therefore, the researcher intends to find out and analyze the effect of service quality on patient satisfaction with the customer relationship management method. One of the things that health workers need to know and pay attention to is efforts to improve the quality of services that can have an impact on the good or bad of the patient's assessment of the public health center. The stages of data collection were carried out by conducting interviews, literature studies, and observations. and using the RAD method at the system development stage. The application of the Customer Relationship Management method at the UPT Public health center Perbaungan was built on a web-based basis, with the CRM application it is expected to help attract new patients and also maintain the quality of services provided to patients so that they can continue to assist the marketing process for service satisfaction at the Public health center.



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## 1. INTRODUCTION

Customer Relationship Management (CRM) is a method used to learn about the needs and characteristics of customers in developing closer relationships with customers. CRM can also be interpreted as an integrated function and method of sales, marketing and service that aims to increase revenue and customer satisfaction. In addition, CRM is also related to customers in a company that aims to improve access to a faster, easier and quality business process that involves several fields, namely marketing, ordering, and service[1].

Along with the development of today's technology which results in increasingly rapid competition in the business world, which causes companies to compete to attract customers, the quality of service remains very important. The demands for the need for information and the use of computers are increasingly encouraging the formation of a computer network capable of serving a variety of specific needs. With the existence of a computer network, information management can take place even better. growing technology and the need for information causes an increase in the complexity of the information that must be and which can be processed, so that the need for the use of computer networks is increasingly needed. The use of this network together has grown to form a very large computer network which are scattered in all parts of the earth[2].

With the existence of sophisticated website technology at this time which is useful as a means of information on an institution or organization. The implementation of Customer Relationship Management on a website at the Public Health Center is a new breakthrough to show how to get new customers, improve the quality of information that will be received by patients later, as well as improve relationships with patients and provide good information services for patients who will ultimately struggle in the future. creation of patient loyalty. Based on technological developments and customers' needs for fast and practical service access, there is a web-based CRM concept[3].

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## 2. RESEARCH METHOD

In this study, the discussion uses data analysis with a qualitative approach. The subjects in this study were the results of interviews with the UPT Public Healt Center Perbaungan and discussions in research journals. Data collection methods at this stage can be done in several ways, namely:

a. Literature study
Literature study is the collection of data and information to obtain information from existing sources, used several books such as information systems learning books, HTML and MYSQL programming language books, PHP programming books, scientific papers, and other sources related to information systems and Customer Relationship Management[4].

b. Observation
Observation is the collection of data by observing and recording directly carefully and systematically to obtain an overview of the system that is running. In the data collection stage, direct observations were carried out in the UPT Public Health Center Perbaungan environment to obtain data and information that would be used to build a Customer Relationship Management application at the health center[5].

c. Interview
Interview is a process of communication between two parties, namely the interviewer and the informant verbally with a specific purpose. Like a conversation that aims to obtain information that is at the UPT Public Health Center Perbaungan.

The Customer Relationship Management (CRM) component framework is classified into three namely[6]:

a. CRM Operations
Operational CRM is known as the front office of an organization or company. This CRM component plays a role in interaction with customers. One application of CRM which is included in the operational CRM category is in the form of a web application. Through the web, an institution can provide good service to customers.

b. CRM Analytics
CRM analytics plays a role in carrying out customer and market analysis, such as market trend analysis and analysis of customer needs and behavior.

c. CRM Collaborative
Aims to provide added value and expand customer loyalty to other customers who are still not at the level of customer loyalty and include an understanding or awareness that loyal customers can be a magnet for other customers.

### 2.1 System Development Method

In developing Customer Relationship Management (CRM) applications at UPT Public health center Perbaungan, researchers used the *Rapid Application Development* (RAD) method, this method is a method that uses an object-oriented approach to system development which includes an application development method. The RAD method is said to have high speed in carrying out a component-based construction approach because this method is basically developed from a system development method adapted from the waterfall model. Some of the advantages possessed by the RAD method are suitable for use in this study, because the RAD process makes it possible to save time on all stages of work to be achieved[7].

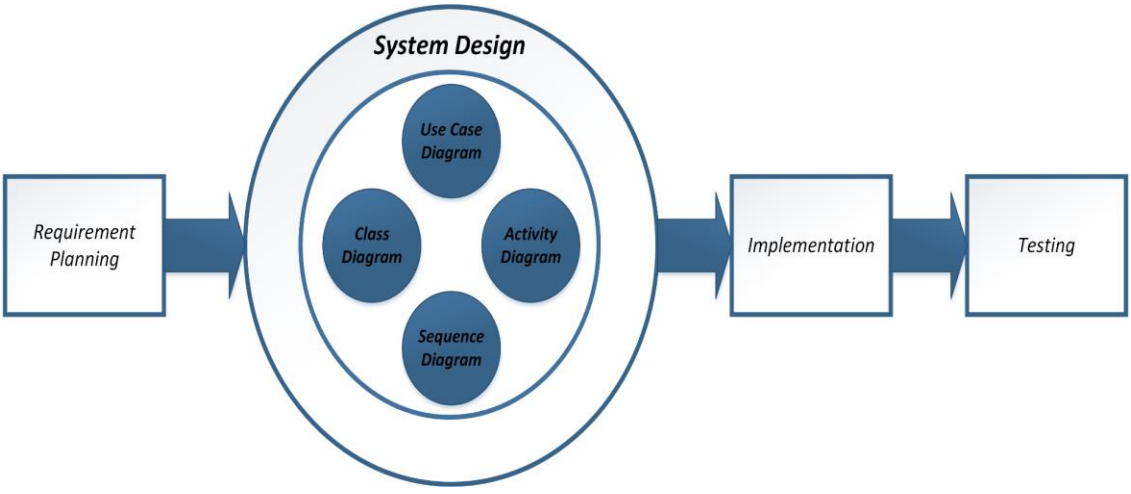


**Figure 1.** *Rapid Application Development* Method

The stages in system development using the *Rapid Application Development* (RAD) method are divided into several stages, namely[8]:

a. Requirement Planning

In this process, the researcher analyzes the data needs by collecting information at the UPT Public health center Perbaungan. The focus in this phase is that the results of the system analysis can solve or help problems in order to achieve good service or quality provided by the health center to patients. The conclusion of the requirements planning stage is to get information about the problems that occur so that a system is needed that can help overcome these problems[9].

b. User Design

User design activity is a process that aims to design the system, design the system to be built. During the design design with Rapid Application Development (RAD), the user performs a prototyping design that will describe how the system processes will run later[10]. At this design design stage, the researcher uses the Unified Modeling Language (UML) notation including the design process design which consists of use case diagrams, activity diagrams, class diagrams that are used as the database design to be created, and the last sequence diagram, and interface design in the form of making system interface prototyping[11].

c. Implementation

At this stage, the system creation process is carried out based on the results that have been carried out from several processes, namely requirements planning, user design. the implementation of the system is carried out using a web programming language, as well as optimization, both in terms of appearance and program coding to ensure the stability of the application and then the testing phase of the system is carried out, to determine whether the system is suitable for commercial use[7].

### 2.1 System Design

The Unified Modeling Language (UML) is a methodology for developing OOP systems and a group of tools used to support system development[12]. UML will provide a standard for writing a system in the form of a blue print, including business process concepts, writing classes in certain programming languages, database schemas, and the elements needed in making software systems[13].

1. Use Case Diagram

Use Case Diagrams describe the interaction between system users and the system itself. In this use case, it involves a user who has a role to provide an assessment of the services provided by the UPT Public health center Perbaungan, and an admin who has the task of managing patient data, doctor data, employee data, along with data on criticism and suggestions that have been inputted by patients. The following is a use case diagram in the Customer Relationship Management application at the UPT Public health center Perbaungan[14].

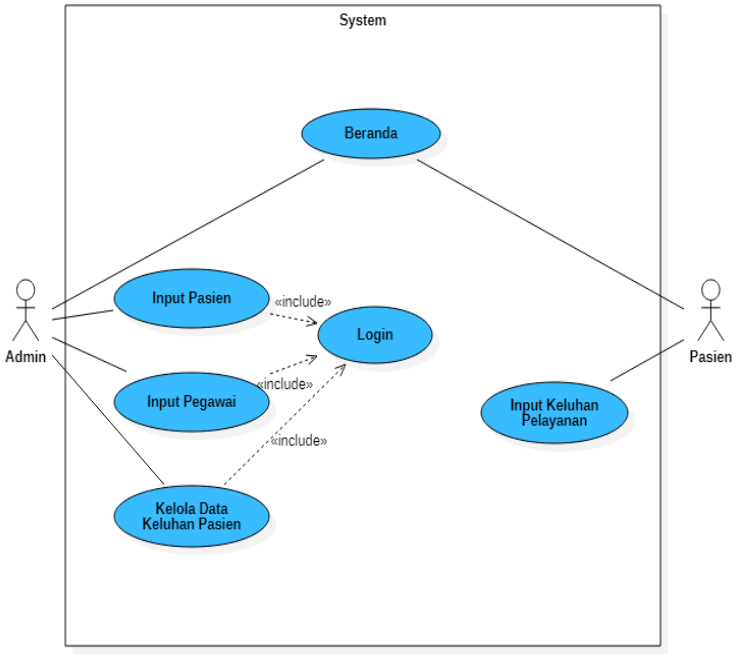


**Figure 2.** *Use Case Diagram*

In the use case diagram above, there are two actors, namely admin and user. The admin has the task of performing CRUD on public health center employee data, managing patient data, and managing patient complaint data, while patients or users only input service complaints, whether in the form of criticism, suggestions, or service complaints at the public health center.

2. Sequence Diagram

Sequence diagram is a diagram that describes the dynamic combination between several objects in a system. The interactions between these objects include users, views, and others described in the form of messages. Sequence diagrams are used to describe a scenario or picture of the steps taken in response to an event to produce a certain output[15]. the following is a sequence diagram for the customer relationship management application at the UPT Public Health Center Perbaungan

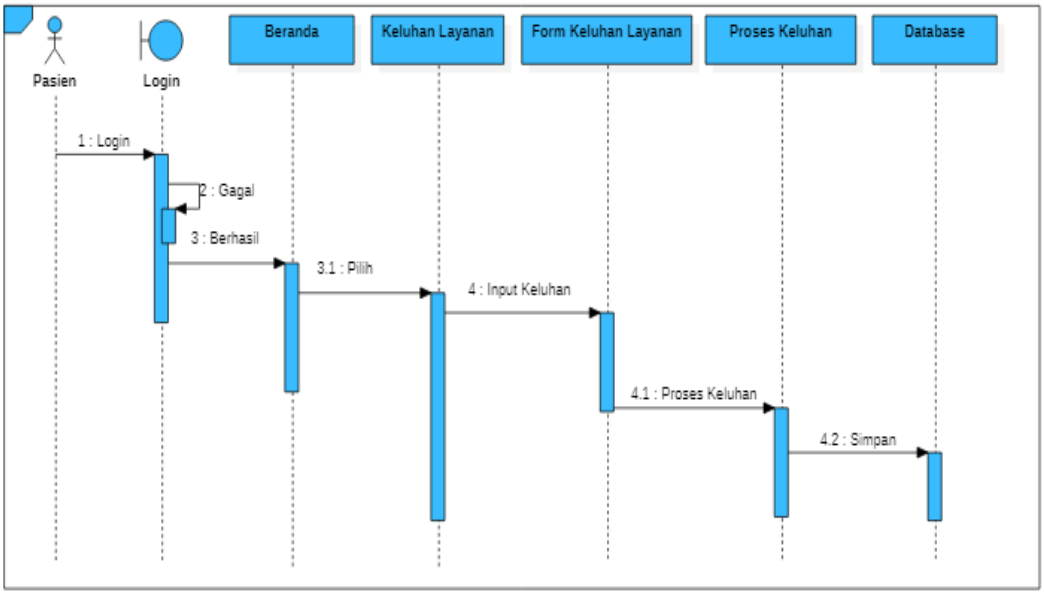


**Figure 3.** *Sequence Diagram* Input Patient Service Complaint

## 3. RESULTS AND DISCUSSION

After carrying out the stages of data analysis and design, this study aims to provide a website platform that is useful for patients to convey deficiencies or complaints in terms of services provided by the UPT Public health center Perbaungan, as well as assist the UPT Public health center Perbaungan in an effort to continuously provide services that are good. best for the patient. This system is designed to digitize where the previous patient complaint process was still done manually.

### 3.1. Login Page

This page is addressed to the admin who has the responsibility to manage the CRM application to view the critical data that has been sent by the patient or user, so that it can be processed directly to every element of the public health center that is reported, in order to improve its services while serving patients.


**Figure 4.** Login Page Display

### 3.2. Home Page

On the start page of this system or dashboard display, there are several menus that can be accessed by the user, some of which are: home menu, Health Articles, Health Tips, Help and About Us. And in the upper corner we also include a login menu for admins who want to see the results of critical data from patients who visit the public health center.

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**Figure 5.** Home Page Display

### 3.3. Complaint Page

On the start page of this system or dashboard display, there are several menus that can be accessed by the user, some of which are: home menu, Health Articles, Health Tips, Help and About Us. And in the upper corner we also include a login menu for admins who want to see the results of critical data from patients who visit the public health center.

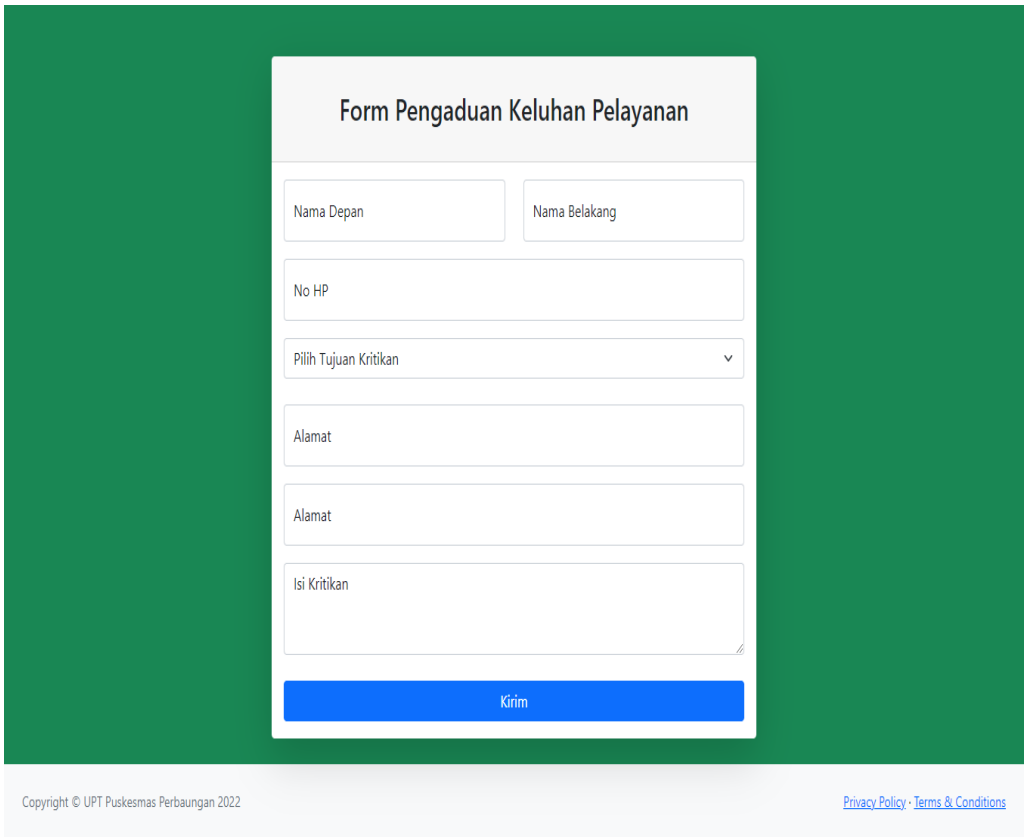


**Figure 6.** Complaint Page Display

### 3.4. Critical Data Page

On this page contains all the complaint data that has been inputted by the patient regarding the quality of service obtained from the UPT Pusblic health center Perbaungan.


**Figure 7.** Critical Data Page Display

## 4. CONCLUSION

From the results of the research described in the previous section, it can be concluded that, with this CRM system, it can facilitate and assist the process of conveying the aspirations of the community or patients at the UPT Public health center Perbaungan in the form of criticism and suggestions to build health services that can provide comfort to the community during treatment at Public health center. With this system, both doctors and employees can receive detailed information about things that must be improved, both in terms of systems and attitudes and services as well as further improving work discipline and professionalism of employees in providing health services to sick people. The community can easily channel their aspirations to improve the quality of service at the UPT Public health center Perbaungan so that it will be even better in the future. The public can also provide a review of the services provided by doctors and employees at the health center.

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