Website-Based Clinic Queue Information System

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Abstract

One of the computer-based information systems is a website. Along with the development of technology, the website has become a fast way for people to get information and is also easily accessible. Dissemination or delivery of information carried out on online information systems can be accessed by anyone and anywhere with the condition that they are connected to the internet network. The purpose of this research is that people no longer need to go back and forth just to take the clinic queue number. The development methodology used is the SDLC (System Develop Life Cycle) method with the waterfall process model until the testing stage. The programming language used is PHP and the database uses MySQL. The expected result is to make the registration process easier, from initially having to queue first to register, then now being able to register through the website without having to go back and forth to the clinic just to queue to register.

Keywords: System, Information, Clinic

Introduction

A queuing process is a process related to the arrival of a customer at a service facility, then waiting in a line (queue) if all the workers are busy, and finally leaving the facility. A queuing system is a set of customers, servers and a rule that governs customer arrivals and problem processing. A common thing that happens when we enter a queuing system is that we have to wait to get a service. This is one of the factors for evaluating a queue. A good queuing system will have a short queue waiting time so that it will reduce the possibility of large or long queues. Queuing theory is a theory that concerns the mathematical study of queues. This theory was discovered and developed by A.K Erlang, an engineer from Denmark, he conducted experiments on fluctuations in demand for telephone facilities in Copenhagen in 1910 (Indiana, 2018). This queuing activity makes people spend their time waiting. They can't wait while doing outside activities even for a while, because the scope of queuing information is only inside the clinic, so it will have an impact on losing the queue. Services in the health sector are one of the most needed forms of service by the community. One of the health service facilities that have an important role in providing health services to the community is a clinic. the number of outpatients who come to get health services every day is not always the same. At the clinic, the queuing process that is currently running is still using a manual queue, that is, every patient who comes to the clinic will take a queue number. In such a situation, there will be an accumulation of patients which will lead to an increase in queues to be served. Especially during the current Covid-19 pandemic, which requires us to always comply with health protocols. One of them is that it requires us to keep our distance, which makes waiting places at the Clinic less and less. In an effort to improve the quality of better patient care, a good concept or queue system and queue registration system is needed, so that later quality, effective and efficient health services can be realized and can improve the performance of the clinic. Based on the description that has been described above, the authors make a thesis proposal report entitled "website-based clinical queuing information system"

Methodology

The Waterfall method is one of the methods in the SDLC (System Development Life Cycle) which has the characteristic of working, that is, each phase in the waterfall must be completed before moving on to the next

phase. This means that the focus on each phase can be maximized because there are rarely parallel works, although there can be pararealism in the waterfall.
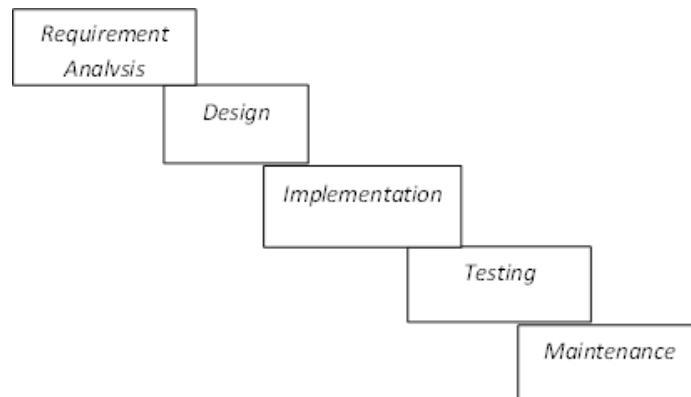

Image 1 : SDLC

The stages in the waterfall method: (1) Requirements analysis The data search process is intensified and focused on the clinic, by analyzing the data needs of the patient. (2) Design This process is used before entering coding in application development. After the required data has been met in the reqruitment analysis, then design the form of the application that will be made from the main display, sub menus, images and the layout of the buttons on the application. (3) Implementation At this stage, the work on making applications that have been carried out in the previous design stage is carried out. Starting from working on coding with the web, inserting images, animated buttons which will later be combined into one complete Online Registration application module. (4) Testing At this stage, we will test on the clinical web whether there are errors, or errors in the designs that have been made previously. (5) Maintenance This is the last stage where the online registration web is run and maintenance and web development are carried out, because the web created is not always like that. When running, there may still be minor errors found previously, or there may be additional features that are not yet on the web.

Result

Needs Analysis
This chapter describes and describes the System Analysis process, namely the process of gathering system requirements to specify software requirements so that they can be understood as what is needed by the user.
Analysis of Functional Requirements (1) Patient / User Users can register themselves as patients by filling in their data on the registration menu, Users can register to make an appointment through the available menu, User can see the entire appointment schedule. (2) Officer Officers can manage action data, Officers can manage login data, Officers can manage patient data, Officers can manage doctor data, Officers can manage Drug data, Staff can register patients, Officers can carry out administration after treatment, Officers can manage drug sales data, Officers can access all reports.
Overall System Requirements Analysis
Is an analysis of system requirements as a whole. Starting from the hardware and software used to build the system hardware and software needed so that the system can run normally.
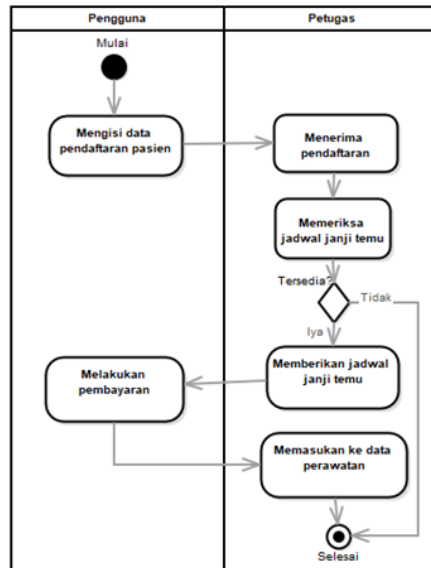
Image 2 : Activity Diagrams

The following is an explanation of the current running system: (1) The user fills in personal data and submits the desired time to meet the doctor and perform treatment. (2) The officer receives patient data and checks the doctor's schedule and the existing appointment schedule, if available, the officer will give the schedule to the patient. (3) The patient pays according to the selected treatment and the required action (4) Officers store patient care data in a notebook.
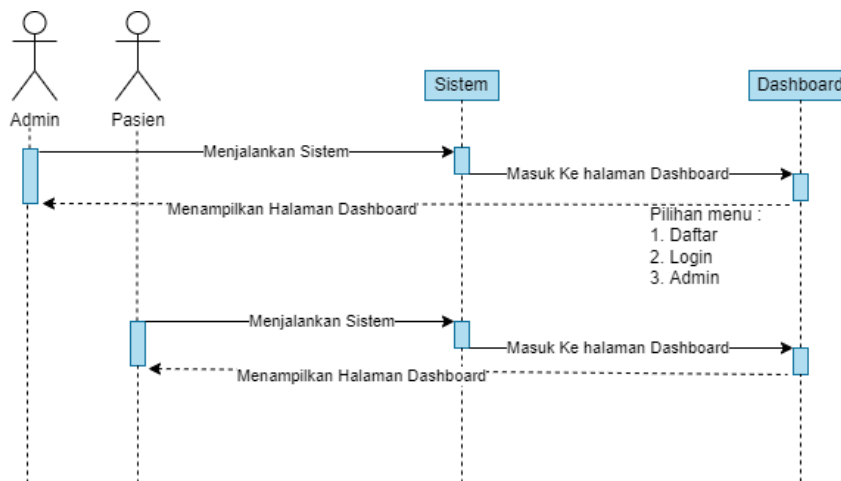

Image 3 : Sequence Diagrams

The dashboard page sequence diagram that was carried out contained: 2 actors, namely: admin and patient. 2 Lifelines, namely: system and dashboard. 6 Messages, namely: run the system, enter the dashboard page and display the dashboard page.
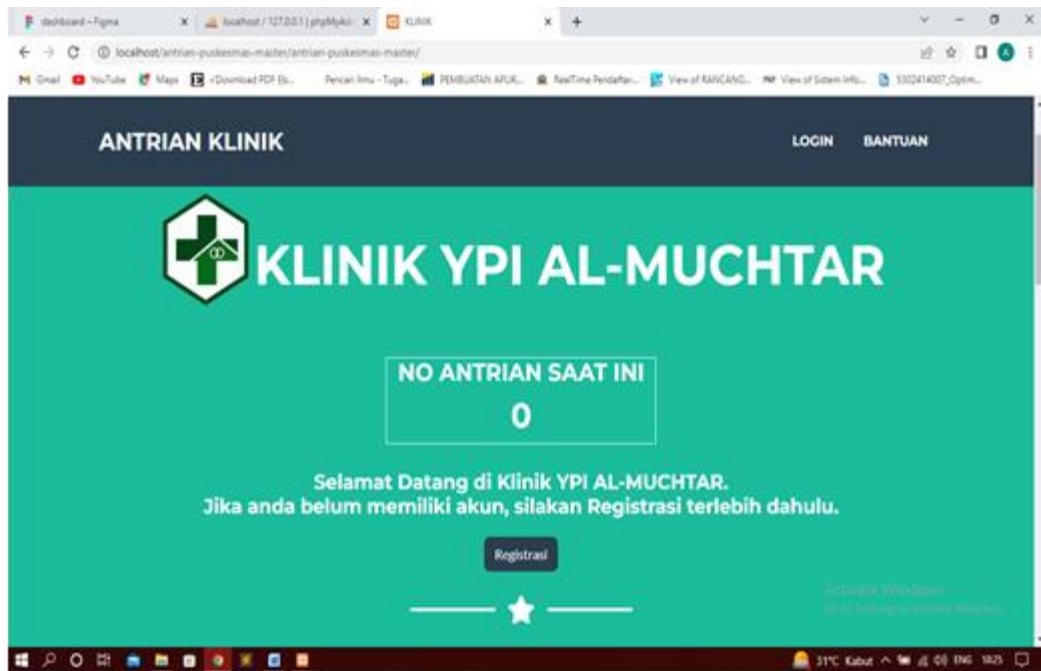
Image 4 : User Interface

In the picture above is the dashboard page of the clinic queue information system, there are several menu options consisting of home, registration, login, and assistance. Users can choose from the 3 menus according to their needs.
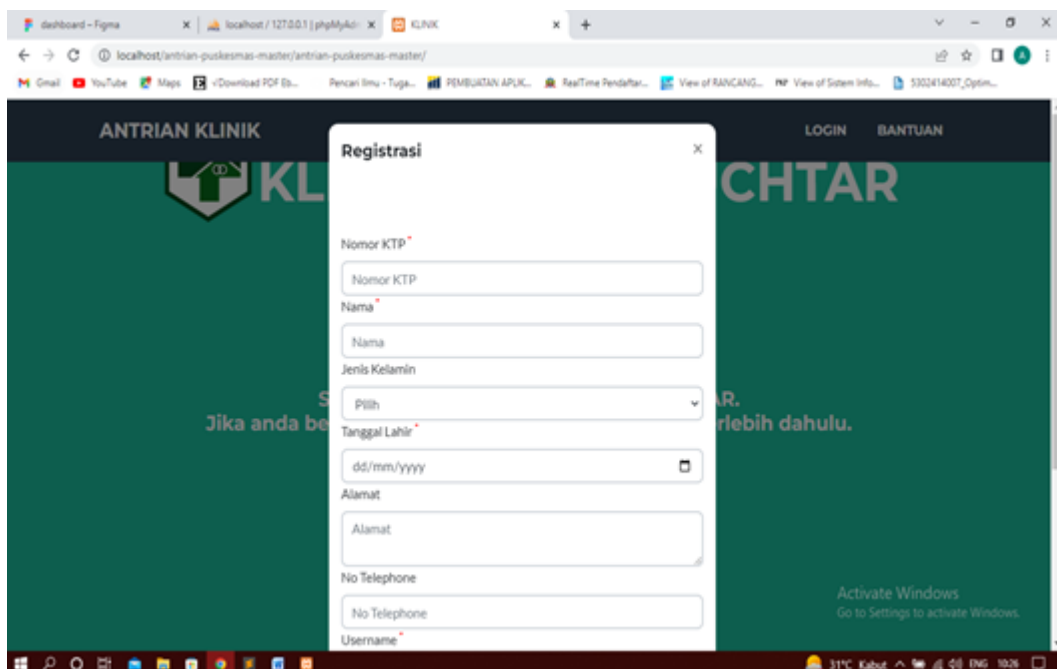

Image 5 : display for patient register

In the picture above is a display for patients registering before queuing, on this page the patient will fill in the ID number, name, gender, date of birth, address, telephone number, username and password that match their identity.
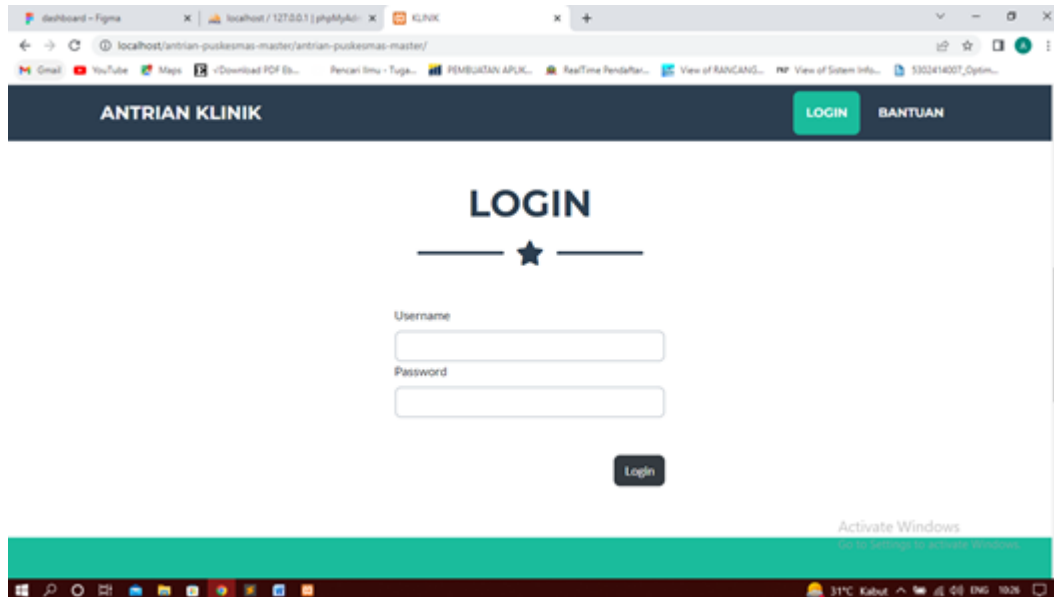

Image 6 : login

In the picture above is a display for patients to log in by entering their username and password. When the username or password is incorrect, an alert will appear that provides information if the username or password is incorrect.
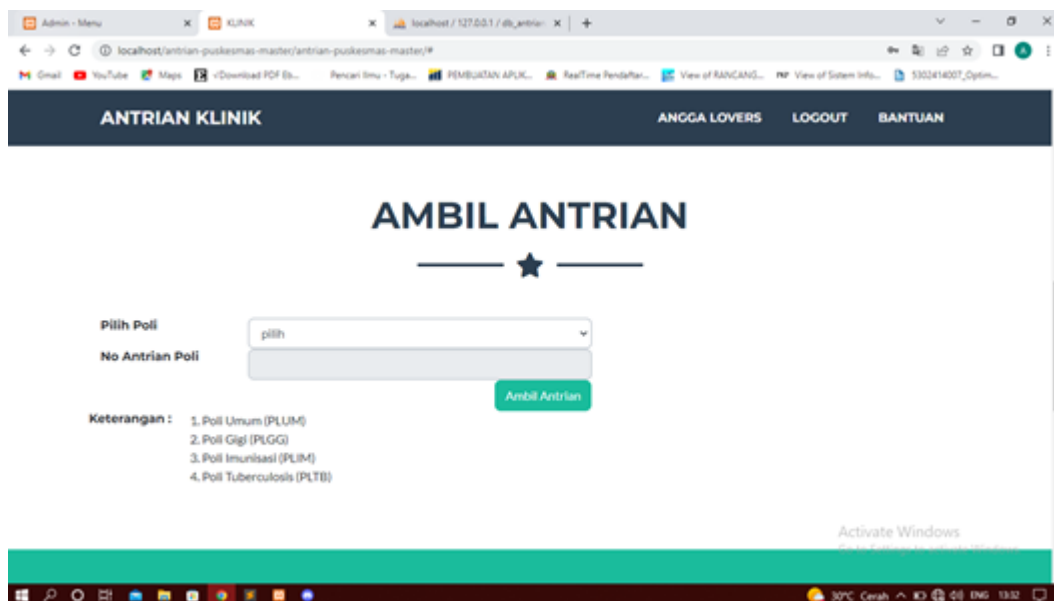

Image 7 : take the queue

In the picture above is a patient page display when successfully logged in there is a poly queue that is selected according to needs.
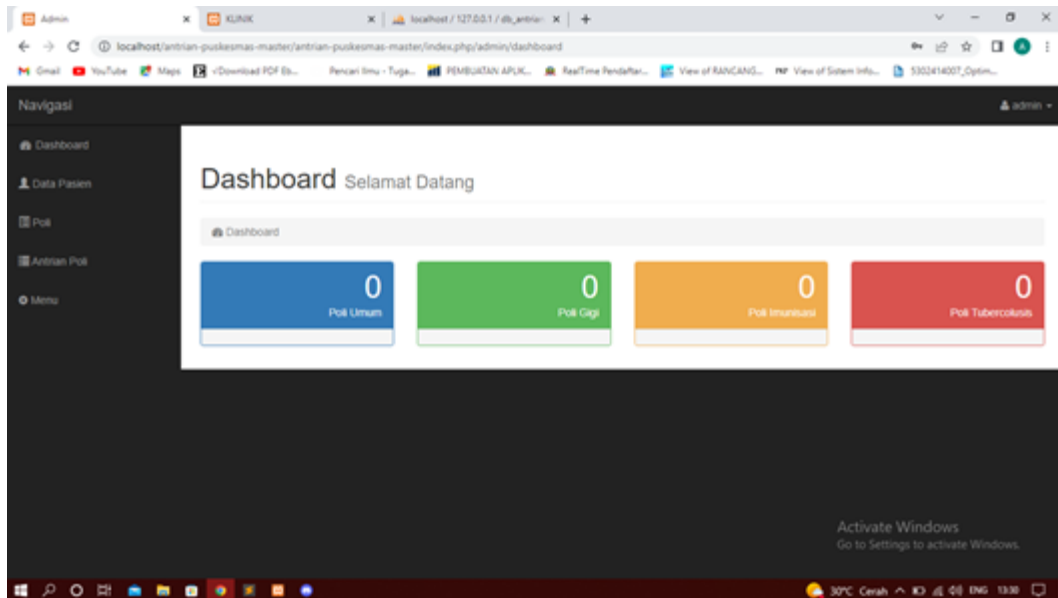

Image 8 : admin page view

In the picture above is the admin page display when successfully logged in, there are several menus, namely the patient data menu, poly, poly queue and menu.

Conclusion

Based on the results of the analysis, implementation and testing of the clinical queue information system, it can be concluded as follows: (1) This Clinic Queue Information System was built using sublime text software with PHP programming language. The methodology used in this expert system is the SDLC method with the Waterfall method. (2) This Clinic Queue Information System is web-based and helps patients to register queues online to make it more practical and efficient.

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