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Design of Patient Complaint Information System at Qadr Hospital for Health Services Website Based

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Abstract— Hospitals are health care facilities that are required to create patient satisfaction. If the services they receive or enjoy are far below the standards they expect, then people will lose interest in getting these services or services. The mismatch between expectations and the services provided will lead to complaints and complaints from the public about the services provided, thus adversely affecting the image of the health care facility. The problem that occurs at Qadr Hospital is that it is difficult for patients to submit complaints about health services, although there is an assessment questionnaire in the form of a google form, the link cannot be accessed when the patient is at home so that user inconvenience can result in reduced patient participation in providing feedback, so that complaints that should be heard by the hospital can be missed, and hospital service quality has difficulty tracking and analysing patient complaints effectively so that it can hinder the process and service improvement. So that Qadr Hospital plans to create a website-based application that will be used as a medium to facilitate patients in channeling complaints related to the health services provided. In designing this application using the Rapid Application Development (RAD) development method.

Keywords— Health Service, Hospital, Information System, RAD, Website.

I. INTRODUCTION

Hospitals are health care facilities that are required to create patient satisfaction. Focusing on ensuring patient satisfaction can make hospitals compete in its fulfillment. Patient satisfaction is the best guarantee to grow and maintain patient loyalty, especially in the face of the globalization era where patients can choose various hospitals according to their needs (Dewi et al., 2021). By looking at the products produced by hospitals, it is clear that they produce not only services but also goods, and some of them have the ability to create brains (Putra et al., 2021a).

Public and private hospitals are constantly looking for ways to be competitive. The public only wants hospital services. One that qualifies. Thus, some hospitals engaged in this service are trying a new approach in serving the community by improving the quality of wellness services (Wiwid Endriani & Sulistyawati, 2019). Qadr Hospital is one of the health facilities that provide services to the community. Therefore, Qadr Hospital is required to provide quality services that are satisfying for its patients in accordance with established standards.

The company's business depends on customer satisfaction (Yani A & Hernawati, 2020). Service Quality is a measure of how well a service meets customer expectations with customer expectations in a consistent manner. Service quality is whatever the needs and desires of consumers are. If the service they receive or enjoy turns out to be far below what they expect, the patient will lose interest in the service / service provision. Since service quality has a lot to do with profits, cost savings, and market share, service quality has become very important (Kurnia Sastradipraja et al., 2020). Thus, quality is a key success factor for a hospital or organization (Dyah Tri Utami, 2018).

Service process assessment activities are essential to obtain the necessary information to improve its quality (Sianipar A, 2019). Satisfaction is an attitude built on experience (Dea Damayanti et al., 2019). The mismatch between expectations and the services provided will lead to complaints and public complaints about the services provided, thus adversely affecting the image of health care facilities. Patient complaints are a form of dissatisfaction with the services obtained so that it leads to public demands, because it is seen as something that is not good for the life of a service organization (Aulia Y & Alfauzain, 2022).

Based on related research on website-based patient complaint systems, namely research (Aulia Y & Alfauzain, 2022) creating a website-based complaint information system to handle complaints about health services in health facilities that are still manual, research (Ambarita A et al., 2018) produces a website-based complaint handling system to improve officer service to customers without having to come to the PDAM unit office to complain about their complaints, research (Nurlita Zaman et al., 2021) created a website to make it easier to handle customer complaints, research (Abdussalaam & Saputra, 2018) provides an information system for managing complaints that is integrated with a website-based database, and research (Rizky Adinata et al., 2019) to analyse and design a complaint service

information system to overcome problems in the community in tracking complaints that have been sent.

The problem that occurs at Qadr Hospital is that it is difficult for patients to submit complaints about health services, although there is an assessment questionnaire in the form of a google form, the link cannot be accessed when the patient is at home so that user inconvenience can result in reduced patient participation in providing feedback, so that complaints that should be heard by the hospital can be missed, besides that the problem that occurs is that the quality of hospital services has difficulty tracking and analyzing patient complaints effectively, which can hinder the process and service improvement. Complaints that often occur to patients such as the speed and accuracy of patient services that require fast action, the unavailability of CT scans that cause patients to be referred back to other hospitals, long waiting times for drugs, doctors who come not according to schedule, ac inpatient rooms that are not cold, and poor service from health workers. Therefore, hospitals need a forum for patients to channel criticism and suggestions that are easily accessible anywhere with the aim of being a communication tool between service implementers and service users, with the existence of these containers, health service facilities in hospitals will be able to improve quality services so as to increase service recipient satisfaction.

Based on the problems described above, Qadr Hospital plans to create a website-based application that will be used as a medium to facilitate patients in channeling complaints related to the health services provided and the development of a website-based patient complaint application is a more optimal solution to improve efficiency, patient involvement, and data security in managing complaints at the hospital. In designing this application using the Rapid application development method, the author uses this method because RAD encourages user involvement in the development process. In the context of patient complaint applications, this means involving patients and related parties to get direct input such as the master admin and the quality of hospital services, so that the application can better suit their needs and preferences.

II. Literature Review

A. Information System

A system consists of a set of components that are connected to each other and to their environment. Data that has been transformed into a form that is more useful and significant to the person receiving it is called "information". Information systems can be defined as systems that collect, process, store, analyze, and disseminate information for specific purposes. The purpose of information systems is to convert unprocessed data into useful information and to provide relevant knowledge for the company's decision-making process (Nofyat, 2018).

B. Website

A website is a collection of pages that contain text information, motion or still images, animation, sound, or a combination of all of these. The network of pages connects the individual static and dynamic buildings (Tim May, Malcolm Williams, Richard Wiggins, 2021). Based on the information above, it can be concluded that a website is a page that contains information to represent individuals or institutions in the form of digital data in the form of text, images, animation, video and audio provided via the internet.

C. Hospital

Hospitals are complex, competitive, capital- and multidisciplinary organizations, and their ever-changing circumstances affect them greatly. Network (CNN) Convolutional Neural Network (CNN) (Putra et al., 2021).Based on the hospital above, hospitals are health facilities that provide health services to individuals as a whole and provide inpatient, outpatient, and emergency services. Health efforts are carried out by applying a maintenance approach, health improvement (promotive), disease prevention (preventive), healing (curative), and recovery (rehabilitative) which are applied consistently, harmoniously, and integrated.

D. Health Services

Health care is any effort to maintain and improve health, prevent and cure disease, and restore the health of individuals, families, groups, and communities (Layli R, 2022). Health workers and health support workers, such as general practitioners, specialist doctors, limited subspecialist doctors, nurses, midwives, pharmacists, environmental health officers, and their assistants professionally manage health services.

E. Unified Modelling Language

The Unified Modeling Language (UML) is a standard language for capturing, specifying, and creating software features. The Unified Modeling Language (UML) is a system development methodology that addresses the subject as well as tools to support system development. UML uses diagrams and paintings to draw, specify, create, and document OO (Object-Oriented) platform application development systems (Ramasenjaya & Karsono Juman, 2022).

F. Figma

Figma has evolved into a superior interface design tool in terms of design, prototyping, collaboration, and design system plug-ins. With a design that uses a cloud system (online), Figma becomes more efficient and consistent. For platforms such as Mac, Windows, and Linux, users of other operating systems can also use Figma through a web browser. (Ferdi et al., 2021).

G. Patient satisfaction

Due to the increasing needs of patients, patients feel satisfied if their expectations can be met through the health services they receive at the hospital. That patient satisfaction is the patient's response to various types of services provided by the hospital related to their needs and needs. expectations, if the patient's needs and expectations are met then If the patient's needs and expectations are not met, the patient will feel satisfied. He will be disappointed if they are not met. (Pasalli' & Patattan, 2021).

H. Rapid Application Development (RAD)

RAD is an object-oriented system development method that includes software and development methods. Shortening the amount of time normally required to design and implement information systems during the conventional system development life cycle is the main goal of Rapid Application Development (RAD). This research chose the rapid software development (RAD) method because of its structured stages, its focus on short cycles, and rapid software development. The main reason for choosing this method is that it will work well for small-scale applications (Jijon Raphita Sagala, 2018).

III. METHODS

A. Research flow

To ensure that the results of the research do not deviate from the original purpose, the author uses this research flow as a guideline in carrying out this research. In figure 1 is the research flow

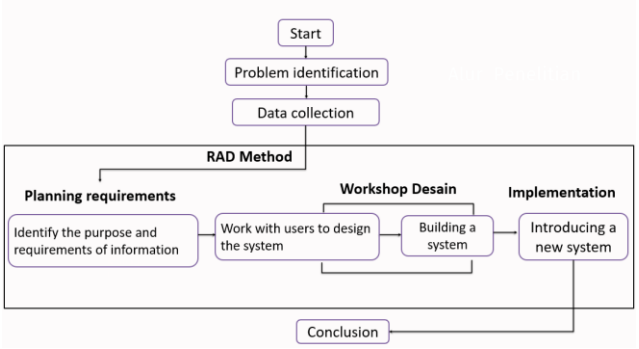

Figure. 1. Research flow

Explanation of the research flow is as follows:

1. Phase problem identification

The author identifies the current system, especially in the patient complaint report regarding how patients submit complaints about health services and the hospital in handling incoming complaint reports.

2. Phase data collection

Data collection was done by observation, interview, and literature study.

3. Phase Planning requirement

At this stage identify the requirements related to the needs of the system to be designed.

4. Phase workshop design

This phase makes the design that will be proposed so that it fits the needs, runs according to plan and is expected to overcome the problems that are happening. After the prototype is approved by the user, the next step is to build the system.

5. Implementation

At this stage the system that has been built will be introduced to users for use.

6. Conclusion

Statements summarised from the results of extensive analysis or discussion.

B. System Design Method

In this study using the system developer method, namely Rapid Application Development (RAD). RAD is an object-oriented system development method that includes software and development methods.

1 Requirements Planning

This stage aims to identify services, boundaries, and identify system objectives and identify the requirements needed to produce the identified objectives.

2 RAD Design Workshop

This phase is the design and improvement phase, this phase can be described as a workshop. This phase makes the design that will be proposed so that it fits the needs, runs according to plan and is expected to overcome the problems that are happening. In this report, the system design is described using the Unified Modeling Language (UML) tool.

3 Implementation

The purpose of the implementation phase is to test the performance of the software prototype that has been built so that it can be seen whether the prototype is in accordance with the analysis and design specifications that have been identified previously. The end result of the implementation phase is a platform, and a test plan. Tests are carried out on the system or parts of the new system, then after the results of the system test are approved, the system will be built and filtered, after which the system will be socialized to the organization. In figure 2 is the RAD method

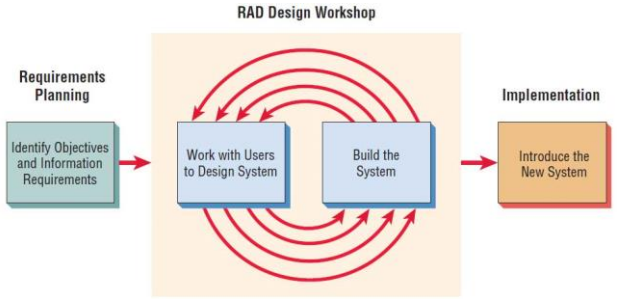

Figure. 2. Rapid Application Development

C. Proposed System

Proposed System Based on the existing problems, the author analyses and solutions in the form of a system that will be used by the hospital. Figure 3 is a flowchart of the proposed system

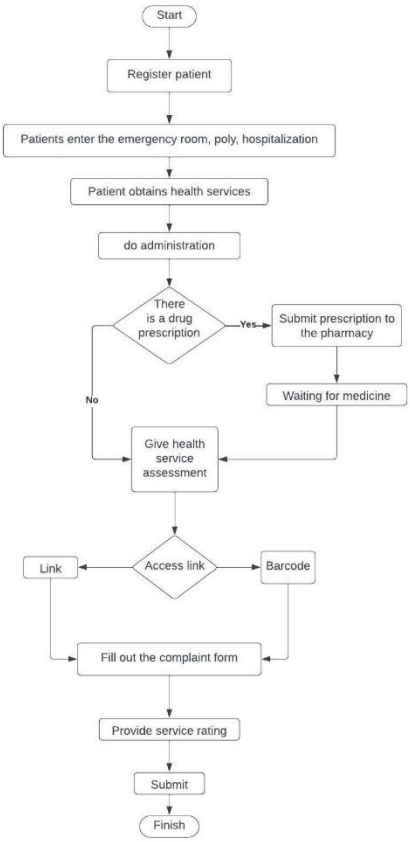

Figure. 3. Proposed System

After receiving services, patients are given directions by health workers to access the website on the level of patient satisfaction with health services, accessing the website can be done in two ways such as scanning barcodes and accessing links, then patients choose the type of treatment destination, for example patients want to submit complaints for inpatient, outpatient or emergency room types. The system will display a form that the patient must fill in. Such as patient name and phone number data and complaint forms and rating ratings for health services. After the patient fills out the form and sends it, the patient complaint report will automatically enter the admin system and will be managed immediately. Furthermore, the admin will take action by asking the problems that the patient is experiencing to the officers at the scene.

D. Design Process

The author describes the process of designing the proposed system, starting from making use case diagrams, activity diagrams, and class diagrams.

1. Actor Identification

Identification of actors to describe who is involved in the Patient Satisfaction Level Information System for Health Services at Qadr Hospital along with a description of each actor. In table 1 is a description of each actor involved in the Patient Satisfaction Level Information System for Health Services at Qadr Hospital:

Table 1. Actor identification

Actor	Description
User/Patient	Actors who provide complaint reports and provide an assessment rating of the health services received.
Admin	Actors who can manage report data that has been provided by patients, view graphs of complaints per type of care, and view assessment rating graphs.

2. Use case identification

After identifying actors, what must be done is to identify use cases. Use cases describe the relationship between an activity and the actors involved. In table 2 is the identification of use cases

Table. 2. Use case identification

Use case name	Description	Actor
Register	Represents the admin registration process	Admin
Login	This is the process to perform admin login	Admin
Processing complaint data	Processing complaint data is the process of managing patient complaint data which includes updating data, deleting data, and printing patient complaint data.	Admin
Dashboard	This is the display of the system's home page when the admin logs in	Admin
Admin setting	This is an admin settings view to view profiles, change passwords, and logout	Admin
Incoming and completed complaint reports	This is an information display on the number of incoming reports and completed reports that can be seen by the admin.	Admin
View a graph of complaints and service setting	This is a graphical information display of complaint data for each type of care and service rating that can be seen by the admin.	Admin
Profile	This is an admin profile information display	Admin
Change password	This is the view to change the admin password	Admin
Logout	This is an exit view from the application	Admin
Home	Is a website dashboard display that can be seen by patients	User
Selecting the type of care	This is a view of the type of care to report complaints about the health services provided	User
Fill out a complaint form and service rating	This is a complaint form and service rating assessment that can be filled in by the patient.	User

3. Use case depiction

After identifying the actors involved and the existing use cases, the next thing to do is modelling the use case diagram. In Figure 4 is a use case diagram of the Patient Satisfaction Level Information System for Health Services at Qadr Hospital.

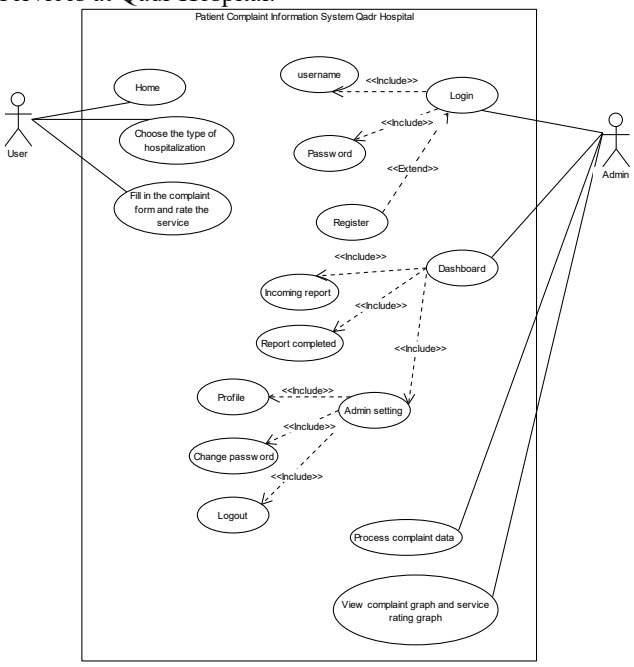

Figure. 4. Use case diagram

IV. Results and Discussion

A. *Implementation*

Implementation after completing the system design, the next thing to do is to implement the results of the design in the form of interface design.

1. Homepage of the website

In Figure 5 on the home page of the website contains a glimpse of Qadr hospital, and if the patient wants to make a complaint about health services, just click the "COMPLAINT" button which will go to the type of care display.

Figure. 5. Homepage of the website

2. Care type display

In Figure 6 is a display of the type of treatment above containing 3 types, namely the types of emergency care, hospitalization, and outpatient care.

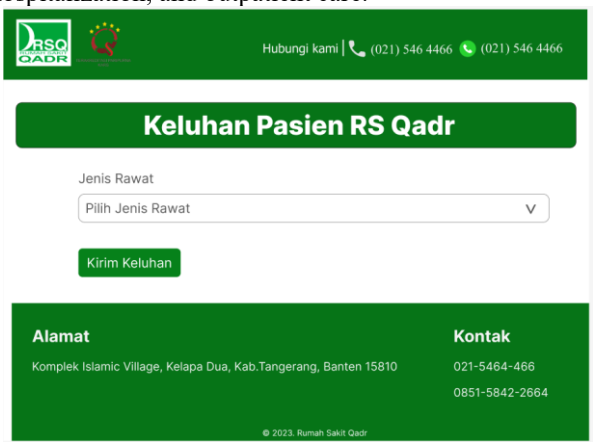

Figure. 6. Care type display

3. Complaint form page view

In Figure 7 Is a complaint form for outpatient types. In the form display contains data that the patient must fill in such as the patient's name, poly name, doctor's name, complaint content, WhatsApp number, and provide a service rating for the health services received.

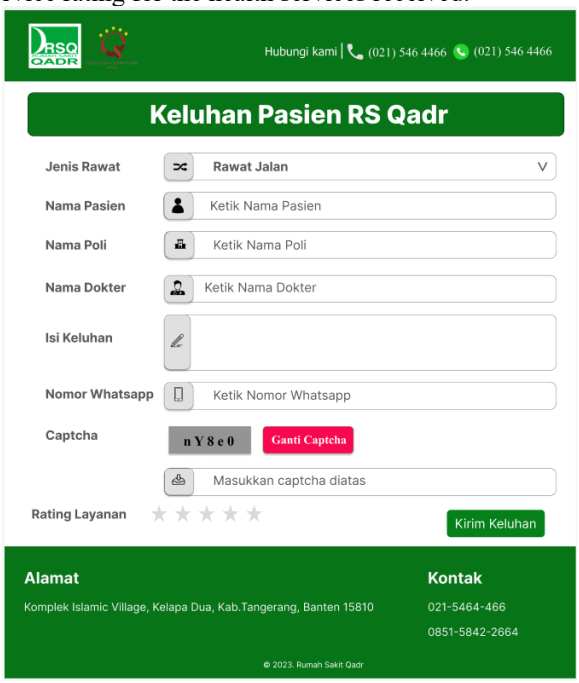

Figure. 7. complaint form page view

4. Successful Display

In Figure 8 Is a successful display when the patient finishes filling out the complaint form.

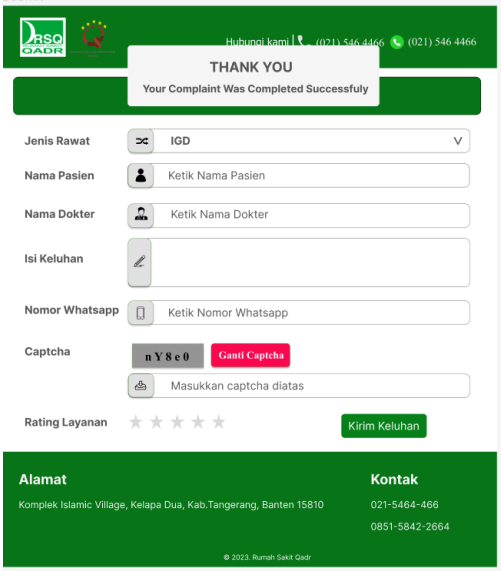

Figure. 8. Successful Display

5. Login view

In Figure 9 Is a login view for admin access to enter the system enter your username and password.

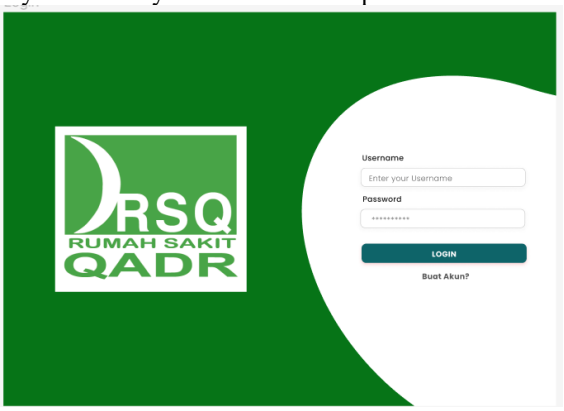

Figure. 9. Login view

6. Register view

In Figure 10 If the admin does not have an account, it will be directed to register first.

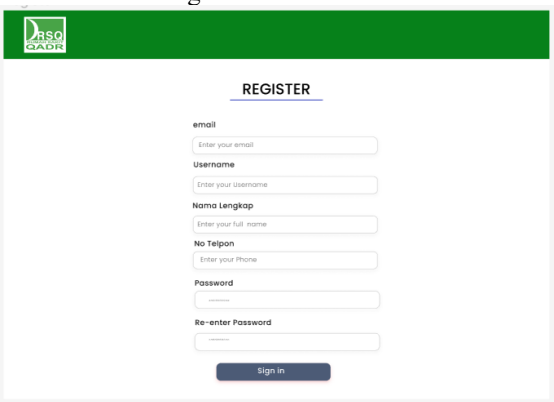

Figure. 10. Register view

7. Admin dashboard view

In Figure 11 the display above is an admin dashboard that contains the number of information on incoming complaint reports and completed reports. In the admin view there are three menus, namely the dashboard menu, the chart menu, and the report menu. On the graph menu there are two graphs, namely the report graph based on the type of care, and the graph for service rating.

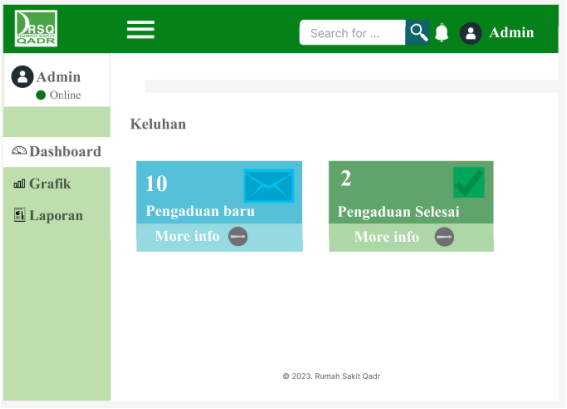

Figure. 11. Admin dashboard view

8. Report graph view

In Figure 12 is a report graph containing the percentage of complaint reports based on the type of care.

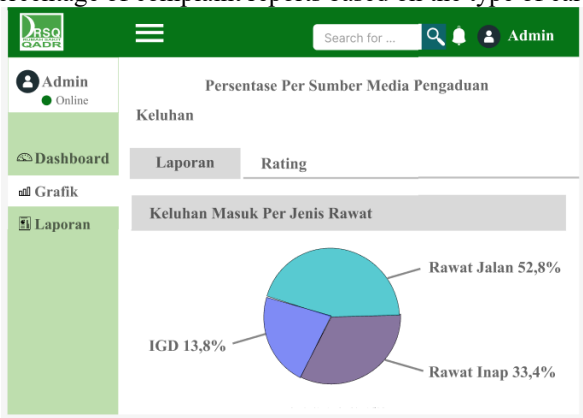

Figure. 12. Report graph view

9. Report view

In Figure 13 is a view of the report menu which contains a table of complaint reports from each patient, in the display tools the admin can delete reports and view report details.

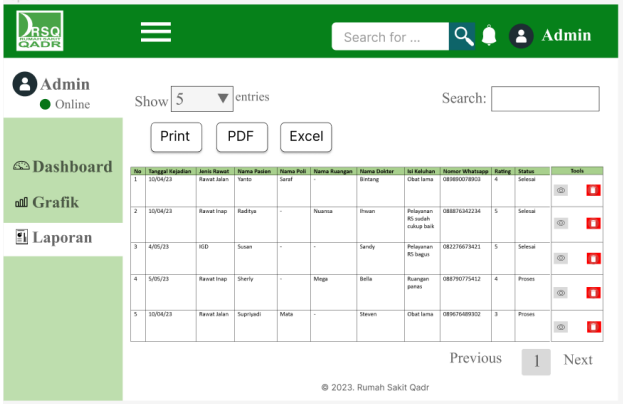

Figure. 13. Report view

10. Report Detail

In Figure 14 the report details view is a view that contains details of patient complaint data, in the

complaint report details view if the complaint has been handled then the admin can immediately update the report data to complete.

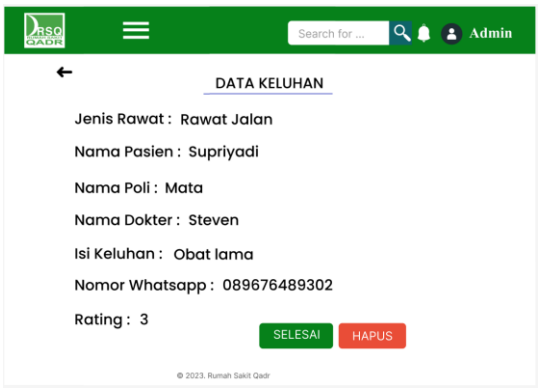

Figure. 14. Report detail

11. Logout display

In Figure 15 is the admin logout view, if the admin wants to enter the system again, he must log in again.

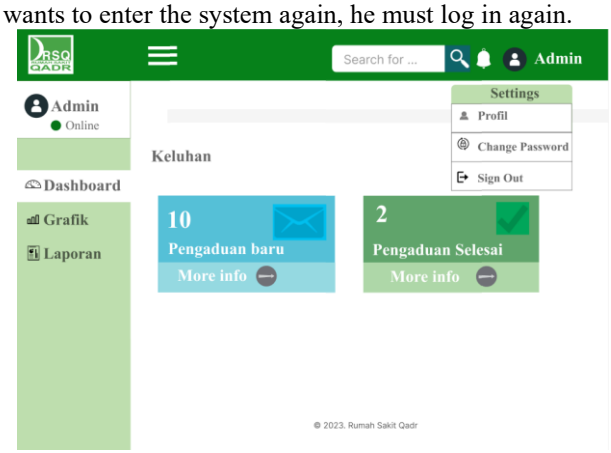

Figure. 15. Logout display

V. CONCLUSION

With a computerised system, it can make it easier for Qadr Hospital to find the complaints needed, find out the number of complaints submitted by patients and there is an additional process in the form of confirmation of the resolution of complaints that have been handled. This system can facilitate patients in the process of submitting complaints about Qadr hospital health services because this system can be accessed anywhere. This system can display a graph of complaint reports from each type of treatment, as well as displaying a health service assessment graph.

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