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Information System for Public Complaints at the Industrial Department of Samarinda City

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***Abstract*—** In the reporting system at the Department of Industry of Samarinda City, reports on problems from the community are distributed to related parties collectively and manually, so the submission process tends to be long. Submission of long reports has an impact on the slow response from the government to the community. In addition, the process of distributing reports manually means that the public does not know how the government will follow up on the report. Therefore, this research aims to help the community in terms by submitting complaints or suggestions to the Samarinda City Industry Office and to assist the Samarinda City Industry Office to serve the community in terms of answering public complaints. The results of this study can facilitate the work of the Samarinda City Industry Office in viewing complaints from Samarinda City residents via the Web and can be monitored online by the Admin. In addition, residents of Samarinda City can voice their aspirations freely and easily without having to go to the Samarinda City Industry Office

***Keywords*—** Information Systems, Complaints, The Public, The Department Of Industry, Web

I. INTRODUCTION

Law Number 14 of 2008 concerning Openness of Public Information underlines thickly that one of the important elements in realizing an open state administration is the right of the public to obtain information by the laws and regulations (UU 14 tahun 2008 tentang Keterbukaan Informasi Publik, 2019).

The rapid development of information technology has now provided benefits to almost all sectors of human life, including the government sector. Information technology in the government environment is used as a tool for various government affairs, ranging from administration, archiving, to public services (Amiruddin, 2012).

In an interview on August 29, 2022, at the Office of Industry of Samarinda City by Mr. Teguh Suyitno, SE as Head of Agro Industry, Forest Products, Chemicals and Building Materials. Complaint data from the industry office is not written down and stored specifically so that the industry office cannot evaluate the complaint at a later date. So that the Department of Industry does not repeat the same mistakes, this research was made as a forum for submitting public complaints.

The purpose of making this website, namely, Designing a website as a means of public complaint service. Assisting the Samarinda City Industry Department in serving the community in terms of responding to public complaints. Assist the community in submitting complaints or suggestions to the Samarinda City Industry Department

The results of this study make it easier for the Samarinda City Industry Department to see complaints from Samarinda City residents via the Web and can be monitored online by the Admin. In addition, residents of Samarinda City can voice their aspirations freely and easily without having to go to the Samarinda City Industry Office.

II. LITERTURE REVIEW

A. Study Of Literature

The research will be carried out by the author with the title "Information System for Public Complaints at the Industrial Office of Samarinda City". The similarities in the themes that the authors read in previous studies are (Masya et al., 2012) with the title "Public Complaint Service System in the Web-Based Police Public Relations Division" The results obtained from this study are to make it easier for the public to submit complaints and requests for information, as well as speed up the Police Public Relations Division to respond to any complaints and requests for information.

Subsequent research was conducted by (Ridwan et al., 2017) entitled "Application of Website-Based Public Complaints at the Palopo Daily Office". Black Box testing is a system testing method in this application where testing is only carried out by observing the execution results through test data and checking the functionality of the software. The result of this research is that this website-based public complaint application can be accessed anywhere and anytime. Not only that, but this application is also able to accommodate more incoming complaints, making it easier for editors to handle all complaints that come in every day compared to receiving complaints via SMS or directly.

Research conducted by (Mahdias et al., 2019) under the title "Development of a Public Complaint Service

Application for the Population and Civil Registration Office of Pasuruan City Based on Android". The development of this system uses the waterfall model method where the system is tested using the Validation Testing and User Acceptance Testing methods. The results of this study resulted in a needs analysis, design, implementation, and testing of the system. The test results on this system indicate that the system runs as expected and can facilitate complaint reports for the Pasuruan City Community or complaint management for Administrative Officers.

Research conducted by (Dahniah and Nuryana, 2020) under the title "Design of Public Complaint Applications at the Web-Based Environtment Service Using the Laravel Framework". This study uses the Waterfall method to facilitate the design of the Public Complaints application at the Environmental Service of Paser Regency. The results of this study are to make it easier for the community to make complaints and make it easier for the Environment Service to receive complaints and the public can monitor the existing process.

Research conducted by (Mahbub et al., 2020) under the title "Analysis and Design of Web-Based Village Community Complaint Services with UML Approach". This study aims to build a prototype of a public complaint service system that is fast and can be monitored for its progress using rapid application development (RAD). The method used in this study uses a unified modeling language (UML) approach. The results of the study show that the public who use the application must receive intensive socialization and training.

B. Information Systems

The system is a collection of people who work together with the provisions of the rules that are systematic and structured to form a single unit that carries out a function to achieve goals. The system has several characteristics or properties consisting of system components, system inputs, system outputs, system processing, and system targets. Meanwhile, information is data that is processed to be more useful and meaningful for the recipient, as well as to reduce uncertainty in the decision-making process regarding a situation. An information system is an organized combination of people, hardware, software, communication networks, and data resources that collect, transform, and disseminates information within an organization (Anggraeni and Irviani, 2017).

C. Public Complaint

As a form of strengthening aspects of public services and a form of good cooperation between the community and the government, public complaints must be properly facilitated. Complaints are a form of a report from the community on aspects of the services provided. The community as service recipients must be given the widest possible space to report on various processes carried out in the public service process (Hayat, 2017).

D. Web Server

A web server is a server software that functions to receive HTTP or HTTPS requests from known clients known as web browsers and sends the results back in the from of web pages which are generally in the form of HTML documents. Web server is software on a server that has a function as a recipient of requests (requests) in the form of web pages from clients and sends back (response) the requested result in the form of web pages (Nugroho et al., 2021)

1. Bootstrap

Bootstrap is a CSS framework library made specifically for the development of front-end websites. Bootstrap is also one of the most popular HTML, CSS, and JavaScript frameworks among web developers used to develop responsive websites. So that the website page will be able to adjust according to the size of the monitor device (desktop, tablet, cellphone) used by the user when accessing the website from the browser (Sunarya and Bahit, 2020)

2. Xampp

Xampp is a computer software package whose embedded system is taken from the acronym Apache, MySQL (formerly)/MariaB (now), PHP, and Perl. While the suffix “X” at the beginning of the word comes from the term cross-platform as a symbol that this application can be run on four different systems, such as Linux OS, Windows OS, Mac OS, and Solaris (Habibi and Aprilian, 2019)

3. Sublime Text 3

Sublime text is an editor application for code and text that can run on various operating system platforms with Phyton API technology. The creation of this application was inspired by the VIM application, this application is very flexible and powerful. The functionality of this application can be expended using sublime-packages. Sublime text is not an open source application and also an application that can be used and obtained for free, but some of the functionality development features (packages) of this application are the result of findings and have full support from the community and have a free application license (Tarmizi, 2017).

4. PHP

PHP stands for Hypertext preprocessor, which is an open source web serve-site programming language. PHP is a script that is integrated with HTML and resides on the serve. PHP is a script used to create dynamic web pages. Dynamic means that the page to be displayed is created when the page is requested by the client (Anhar, 2010)

III. RESEARCH METHODS

A. Research Method

The research method used is the prototype model is software or life cycle using prototyping (life cycle using

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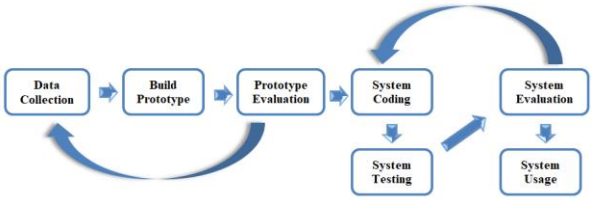
prototyping). Understanding the prototype method is one of the system life cycle methods based on the concept ofa working model.

The stages of the prototype method can be seen in Picture 1.



Picture 1. Prototype Method

According to (Novitasari, 2021) The prototype method consists of 7 stages, namely:

1. Data Collection

The first step that must be done immediately in this method stage is to identify all devices and problems. The stages of the prototype method that are very important are the analysis and identification of the outline requirements of the system. After that, it will be known what steps and problems will be made and solved. Gathering requirements is very important in this process. In this study, there were two ways of collecting data, namely interviews conducted at the Department of Industry of Samarinda City by Mr. Teguh Sulistiono as the head of the Agro Industry, Forest Products, Chemicals, and Building Materials on August 29, 2022. Furthermore, observation is observing when people make complaints or complaints directly to the Samarinda City Industry Office.

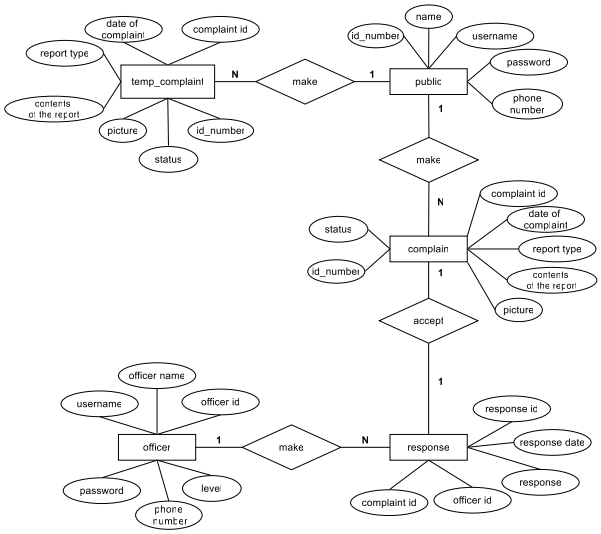
2. Build Prototype

The next step is the prototype method step to build a prototype that focuses on customer presentation. For example, make input and output system results. While it's only a prototype first, then there will be further things to do.

a. Entity Relationship Diagram (ERD)

According to (Brady and Loonam, 2010) *in* (Suprapto, 2021) *Entity Relationship Diagram (ERD)* is a technique used to model the data requirements of an organization, usually by a system analist in the requirements analisis stage of a systems development project .

ERD has several Entity components: One to Many and One to One. One to Many has the number symbol 1 (one) entity N (Many) while One to One has the number symbol 1 (one) entity 1 (one), like in picture Picture 2.



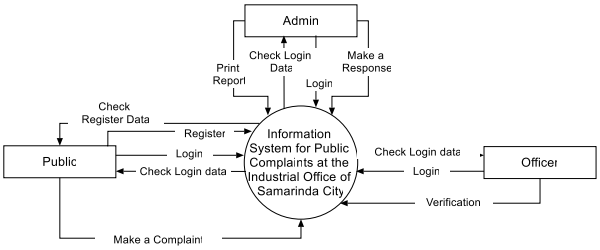
Picture 2. Entity Relationship Diagram

b. Data Flow Diagram (DFD)

According to (Hidayat, 2018) DFD is a model that describes the flow of data to process data in a system and document the current system.

1) Context Diagram (DFD level 0)

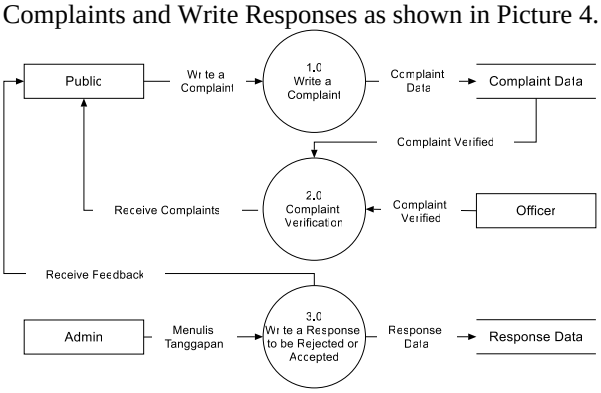
The context diagram created has several components, namely Entities, Data Flow Processes, and also Data Stores. There are several External Entities namely Admin, Community and also Officers as shown in Picture 3.



Picture 3. Context Diagram

2) DFD level 1

DFD level 1 has several components, namely Entities, Data Flow Processes and also Data Stores. There are several processes, namely Write Complaints, Verify Complaints and Write Responses as shown in Picture 4.



Picture 4. DFD level 1

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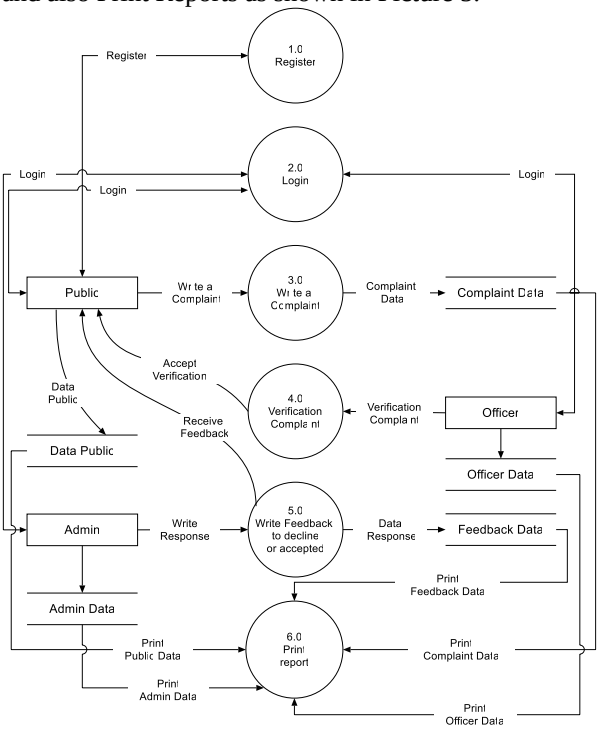
3) DFD Level 2

DFD Level 2 has several components, namely Entities, Processes, Data Flows, and also Data Stores. There are several processes, namely Register, Login, Write Complaints, Verify Complaints, Write Responses and also Print Reports as shown in Picture 5.



Picture 5. DFD Level 2

IV. RESULTS AND DISCUSSION

The results of the public complaint information system at the Samarinda City Industry Office are as follows:

A. Research Stage

1. Data Collection

In this study there are two ways of collecting data, namely interviews conducted at the Industrial Office of Samarinda City by Mr. Teguh Sulistiono as Head of Agroindustry, Forest Products, Chemicals, and Building Materials on August 29, 2022. The next observation is observing when people make complaints or complaints. directly to the Industrial Office of Samarinda City which was carried out for 3 months.

2. Build Prototype

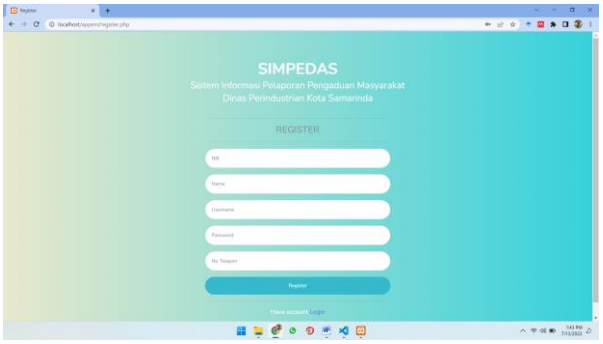
Building a prototype is done when the data collection process has been carried out.

B. Public Page

The following are the results of the creation of a public complaint information system for the community page to make complaints, see the follow-up process for complaints

1. register page

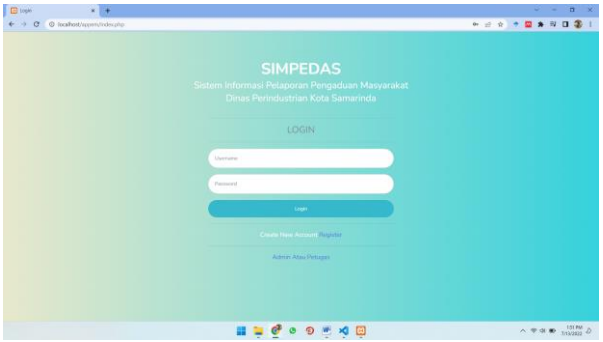
In Picture 6 is the registration page for the public, before the public enters the login page, the public must register by entering the correct id, name, username, password, and telephone number, after successfully registering the community will enter the login page



Picture 6. Register Page

2. Login Page

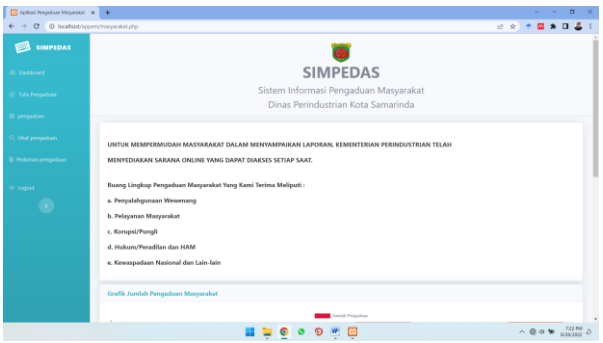
After registering, the public can directly log in by entering the correct username and password according to the registration data that was done previously. After successfully logging in, the community will enter the dashboard page, which can be picture 7.



Picture 7. Login Page

3. Dashboard Page

After logging in, the system will display a dashboard page for the public, on the dashboard page it has a little explanation about what complaints can be filed, which can be seen in picture 8.



Picture 8. Dashboard Page

4. Complaint Write Page

Picture 9 is a page for the public to make a complaint by filling in all the columns according to what will be complained about.

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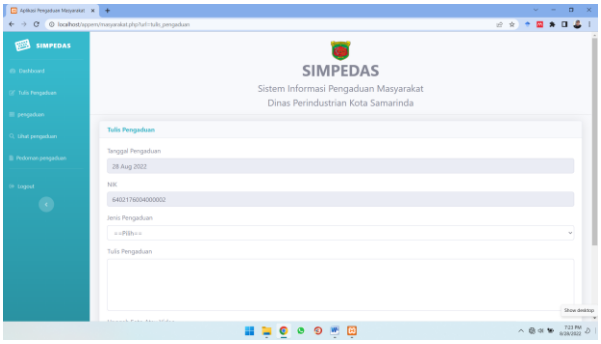
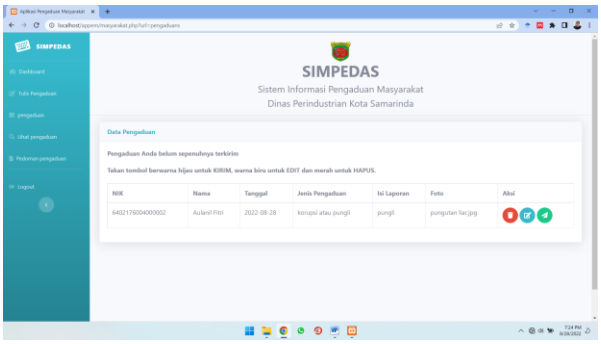


Picture 9. Complaint Write Page

5. Complaint Page

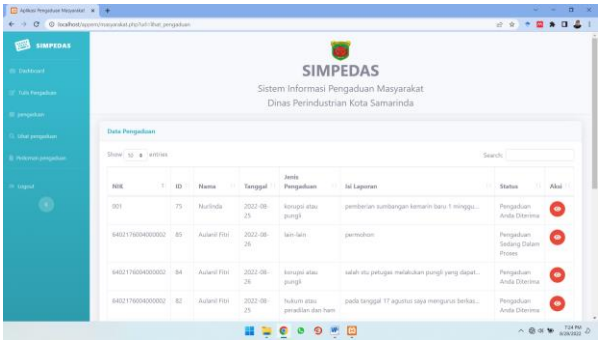
When the community has written a complaint, the next screen can be seen in picture 10. In this section, your complaint has not been fully sent. To send a complaint, press the green button, the blue button to re-edit the complaint, and the red button to delete the complaint.



Picture 10. Complaint Page

6. View Complaints page

picture 11 is a complaint view page that serves to see all complaints that have been sent and can see the complaint process.



Picture 11. View Complaint Page

7. Complaint Guidelines Page

The complaint manual page contains the types of complaints received by the Samarinda City Industry Department, which can be seen in picture 12.

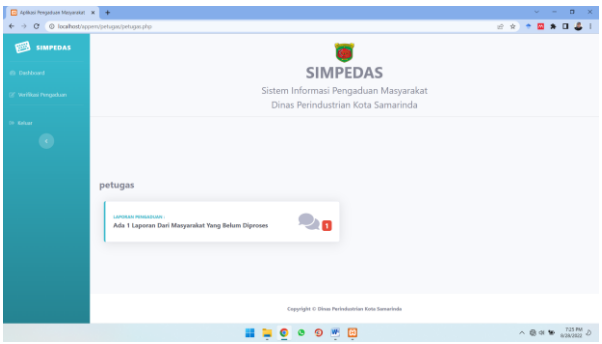
Picture 12. Complaint Guidelines Page

C. Officer Page

The following are the results of the creation of a public complaint information system for the officer page which functions to verify public complaints before being finally responded to by the Admin.

1. Dashboard Page

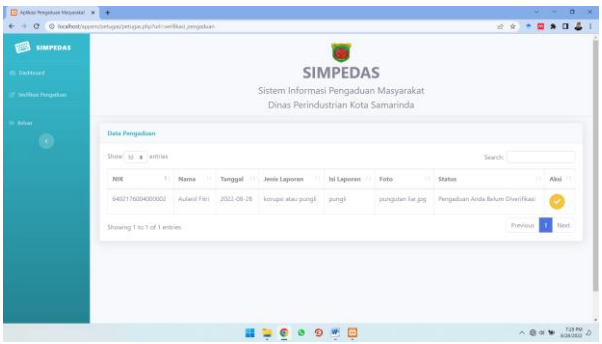
The dashboard page on the officer functions to see the number of public complaints that have not been processed or have not been verified can be seen in picture 13.



Picture 13. Dashboard Page

2. Complaint Verification Page

Before the officers verify complaints from the public, the officers can see all the complaints from the public that have not been verified. On this page, officers can briefly view public complaints, before they are finally verified by pressing the button in the action column, which can be seen in the picture 14.



Picture 14. Complaint Page

If the officer has chosen which complaint will be verified, the display can be seen in the Picture 15. On this

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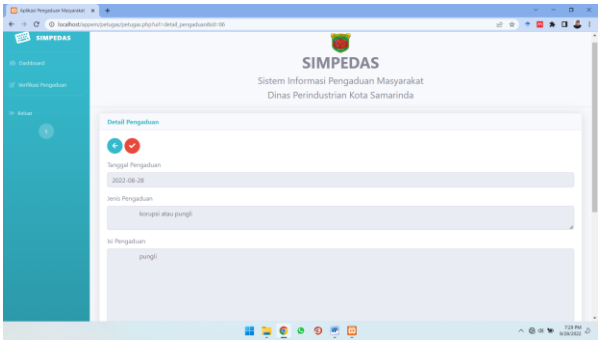
page, officers can view complaints in detail before they are finally verified



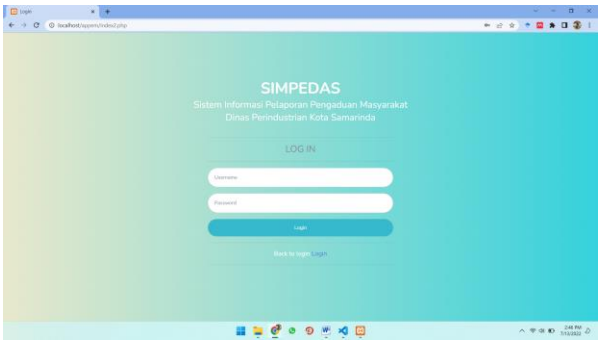
Picture 15. Complaint Verification Page

D. Admin Page

The following are the result of making a public complaint information system for the admin page to be able to respond to complaints, view or print data on officers, the public, complaints, and responses.

1. Login Page

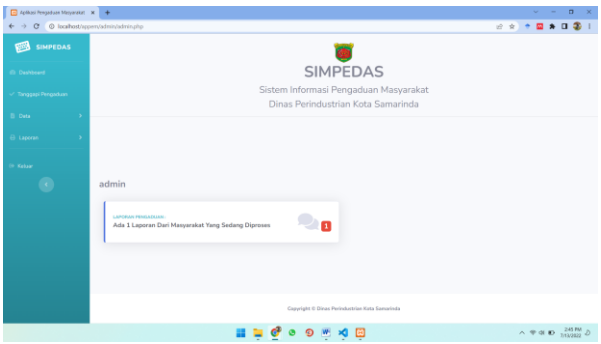
In picture 16 is the login page for the admin, before the admin enters the dashboard page, the admin must login by entering the username and password correctly, after successfully logging in the admin will enter the dashboard page.



Picture 16. Login Page

2. Dashboard page

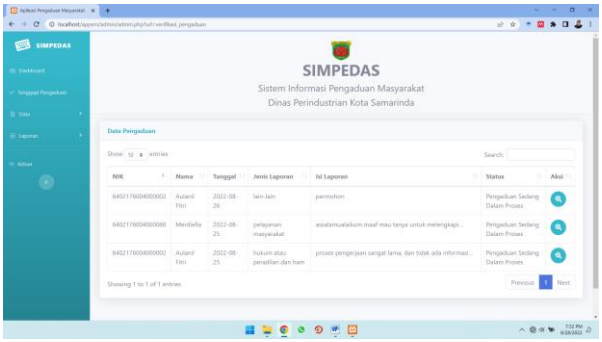
The dashboard page functions to see the number of complaints that are being processed and waiting to be responded to, it can be seen in picture 17.



Picture 17. Dashboard Page

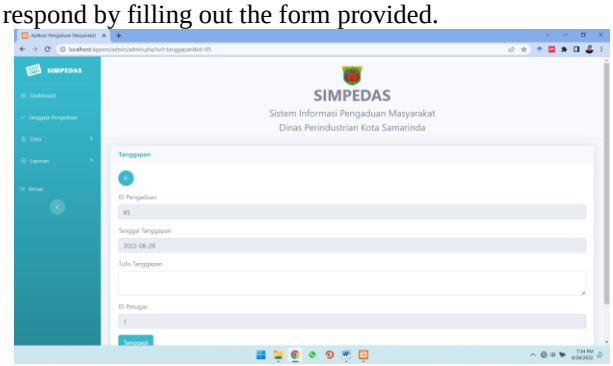
3. Complaint Response Page

On this page, you can see at a glance some of the public complaints that will be responded to, which can be seen in picture 18.



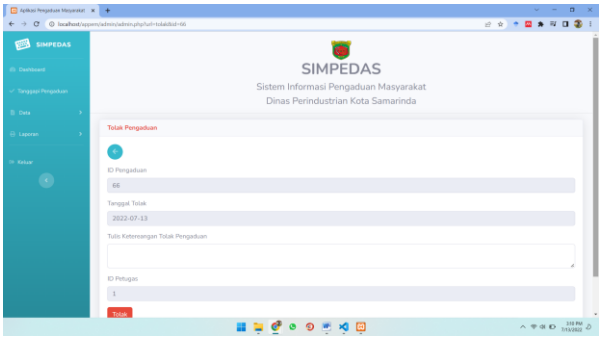
Picture 18. Complaint Response Page

In picture 19 Serves to receive complaints and respond by filling out the form provided.



Picture 19. Complaint Accept Page

Next is the page to reject the complaint and provide feedback by filling out the form provided, it can be seen in picture 20.



Picture 20. Reject Complaints Page

4. Page Add Officer or Admin Data

In picture 21 Functions to add or delete admin/officer data.

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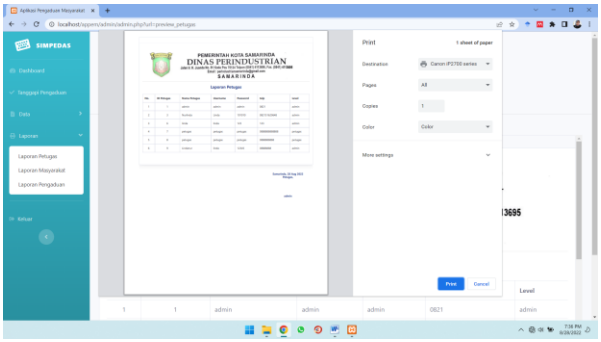
Picture 21. Page Add Officer or Admin Data

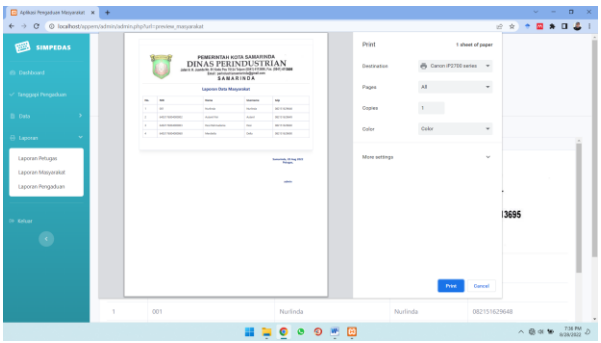
5. Print Page Report Officers and the public

On this page, the admin can print several reports, namely officer reports and complaint reports. Print officer reports can be seen in the picture 22.



Picture 22. Officer report print page

On this page the admin can print a public complaint report, it can be seen in the picture 23.



Picture 23. Community Report Print Page

6. Complaint and Response Report Print Page

On this page the admin can print the complaint in picture 24, before printing the admin can also filter the date to be printed.

Picture 24. Complaint and Response Report Print Page

E. Black Box Testing

Testing of the Public Complaints Information System at the Industrial Office of Samarinda City is carried out using Black Box testing. Black box testing is a test that is carried out only by observing the results of execution through test data and checking the functionality of the software. The Black Box testing of the Public Complaints Information System on the community page can be seen in table 1.

Table 1. Black Box Testing on Public Pages

Testing	The resulting output	Result
Register	Displays the Register page	Succeed
Login	Get access rights after registering correctly, then you can enter the system according to the access rights obtained	Succeed
Dashboard	Displays the dashboard page along with the menu according to the access rights obtained	Succeed
Write a Complaint	Displays the page to make a complaint	Succeed
Complaint	Displays a complaint page that has been made but has not been fully sent, here the public can edit the complaint before it is finally sent or deleted	Succeed
View Complaint	Displays all complaints made and can see the process and responses	Succeed

The following is a black box test on the Officer page, it can be seen in Table 2.

Table 2. Black Box Testing on Officer Pages

Testing	The resulting output	Result
Login	Get access rights, then can enter the system according to the access rights obtained	Succeed
dashboard	Display Dashboard page	Succeed
Complaint Verification	Displays the complaint verification page and details of the complaint	Succeed

The following is a black box test on the Admin page, it can be seen in the table 3.

Table 3. Black Box Testing on Admin Page

Testing	The resulting output	Result
Login	Get access rights, then can enter the system according to the access rights obtained	Succeed
Complaint Response Page	Displays the complaint response page with the choice of rejecting or accepting complaints	Succeed
Complaint Accept Page	Displaying the receiving complaint page and providing feedback	Succeed
Reject Complaints Page	Display the reject complaint page and provide the appropriate response	Succeed
Officer Data Page	Function to view, add or delete officer data	Succeed
Community Data Page	Function to see all people who have registered	Succeed
Complaint and Response Data Page	Serves to view complaint data sent by the public and responses made by the admin	Succeed
Officer and Community Report Page	Function to the print officer and community data	Succeed
Print Complaint Reports and Responses	Functions to print complaints and responses, printing the admin can also filter or select the date you want to print	Succeed

In the black box testing of the community page in table 1, the officer page in table 2, and the admin page in table 3 it can be concluded that this application can run well.

V. CONCLUSION

Based on the result and discussions that have been described previously as well as the result and analysis of the design and development of a web-based public complaint information system can provide a forum for the people of the city of Samarinda to submit complaints and suggestions to the industrial office of the city of Samarinda without having to come directly. This system can make it easier for admins and officers to check any complaints submitted by the public. This system also makes it easier for the public to view the online complaint process.

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