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Designing a Website-Based Tracking of Sales Information System to Improve Business Performance at Estoh Jember Company

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ABSTRACT

Currently, technological developments are starting to become more rapid and have changed so many aspects of human life, including in the business sector. One small example is making it easier for human resources to manage data and making it easier to measure the company's level of achievement. This has a big impact on companies operating in the service sector such as the Estoh company. This research aims to design a sales tracking information system that can monitor the performance of the sales team in the field and minimize falsification of reports, make it easier for admins to make sales performance recapitulation reports every weekend, and utilize the sophistication of QR codes to simplify the process of making sales reports to admins. This research uses a qualitative approach by collecting data through observation and interviews with the CEO of the Estoh Jember company as well as conducting a literature study of previous journals related to the research. Based on the results of this research, show that designing a sales tracking information system is very helpful for developers in realizing a system that can monitor the performance of the sales team in real-time so that problems in the field can be resolved quickly, making it easier to create sales performance recapitulation reports with the accumulated results of organized sales reports. Well by the system, and makes the process of creating sales reports easier with the help of a QR code.

Introduction

Technology in the current digital era has changed so many aspects of human life, including in the business sector (Ardiansyah, 2023). The latest advances and innovations in technology such as the internet, big data, and artificial intelligence have changed the way businesses work (Pakusadewa, 2023). One small example of the use of technology in the business sector that can be taken is making it easier for human

resources to manage data and making it easier to disseminate the information so that it becomes faster and of course, the level of accuracy is more guaranteed (Premana et al., 2020). With the many positive contributions resulting from technological developments in the business sector, it is certain that the quality of service provided by business actors will increase and be able to minimize the occurrence of fraud (Anggraeni & Elan Maulani, 2023).

In this case, it can be described in the Estoh company, where the company is engaged in software creation and software sales services, the services offered by the company in terms of software creation services are software installation, computer network settings or networking, hardware maintenance, and information technology (IT) consultation. (Julyan & Wahyudi, 2023). In addition, the Estoh company also sells software that can be directly installed on laptops or client computers, the software sold is retail business cashier software called Tumbas Series. This business was founded in 2017 and currently has more than 10 regular clients, this is certainly not an easy thing in building companies need innovations every year so that the company can continue to exist and compete with competitors. (Atim, 2024).

In every process of running a business, there will certainly be obstacles that hinder the company's business performance, one of the factors that occurred in the Estoh company was the ineffective sales performance monitoring process in the field considering that this company is engaged in the service sector and every day requires optimal sales performance to serve client needs. However, the fact is that the Estoh company still monitors sales performance manually, namely by using photo evidence sent by sales via WhatsApp groups, this is one of the triggers for fraudulent acts such as falsification of photo evidence by sales in the company. Not only that, the sales performance recapitulation report carried out by the admin to the company's CEO every weekend is often hampered because the photo evidence accumulated during the week is not well organized. This lacks real-time monitoring of sales activities, making it difficult for the company's CEO to access the latest information in the field, and cannot make decisions quickly if urgent obstacles occur. Therefore, researchers are interested in conducting a study at the Estoh Jember company to provide innovations in the form of designing a website-based sales tracking information system with the hope that the company's performance, which had declined, can return to stability and be able to compete again in the market. (Nurkhasanah & Theresiawati, 2022).

The website-based information system chosen by the researcher is intended to make it easier for users to operate the system designed and more flexible in its use, simply by running the system through a web server or browser such as Chrome, firefox, opera, and so on, it can even be easily accessed via laptop, computer or smartphone. The researcher also utilizes the sophistication of QRcode in designing this sales tracking information system, with the hope of improving the business performance of the Estoh company in providing the best service to clients and making it easier for the company to monitor and measure sales achievements in the field. In addition, the researcher also reviewed several previous studies sourced from published journals to find comparisons

and find new inspiration to perfect this research, the following are several previous studies that are still related to the title that the researcher is studying.

First, based on research from (Nur Pratomo et al., 2021) Entitled "Sales Monitoring Information System in Selling Products with Web-Based Verification Code SMS Feature (Case Study of Tunas Arta Mandiri)" published by Jurnal Pepadun discusses the design of a sales monitoring information system due to the lack of monitoring during sales transactions which results in company losses. This study uses the waterfall method, which is a type of software development model that is included in the classic life cycle and emphasizes systematic phases. By using this method, a monitoring software is created that can monitor sales performance and provide information to customers regarding the latest products and discounts provided by the company.

Second, based on research from (Sholekhah & Rahayu, 2022) Entitled "Design of a Web-Based Sales Performance Monitoring Information System Using the Gamification Concept (Case Study of the Sales Team Unit BGES PT Telkom Bekasi)" published by the National Seminar of Computer Science and Software Students (SENAMIKA) discusses the less than-optimal sales performance monitoring process by the Telkom Bekasi BGES Unit so that the achievement of sales targets has not been properly integrated and requires a lot of time in data mapping. In this study, the methods used are data collection methods, system analysis, system design, system coding, system testing to system implementation. With this method, website-based software is produced using the PHP programming language and MySQL database which aims to monitor the performance of the sales team to create a good and structured work ethic.

Third, based on research from (Hurrijal & Gupitha, 2020) Entitled "Web-Based Sales Monitoring Information System at PT. Arifindo Mandiri TDC Pamanukan" published by the Journal of Information and Communication Technology discusses the ineffectiveness of data delivery from admin to sales because the company still uses conventional software in the form of Ms. Excel in monitoring its sales achievements. In this study, the method used is the inception, elaboration, and construction method so that an information system design is created that is expected to make it easier for sales to see achievements and fix their shortcomings in achieving the targets given by PT. Arifindo Mandiri TDC Pamanukan.

Finally, based on research from (Chafid & Sidiq, 2021) Entitled "Design of Web-Based Sales Tracking System Software at PT. Jaya Teknik Indonesia" published by the Proceedings of the National Seminar on Technology Innovation (SNITek) discusses the monitoring carried out by sales managers once a month which has an impact on declining company performance so that innovations are needed to overcome it. This study uses data collection and needs analysis methods to build a Sales Tracking System software by utilizing the sophistication of the Global Positioning System (GPS) in monitoring the delivery of goods and as an alternative to finding the closest route for sales.

Method

The stages carried out in this study are implementing prototype modeling, where in general prototyping can be used to develop a system, both small and large scale systems. This aims to ensure that the development process runs smoothly, is well organized, and meets the deadlines required during the development process (Pressman, 2020:50). The stages of this research can be described as follows :

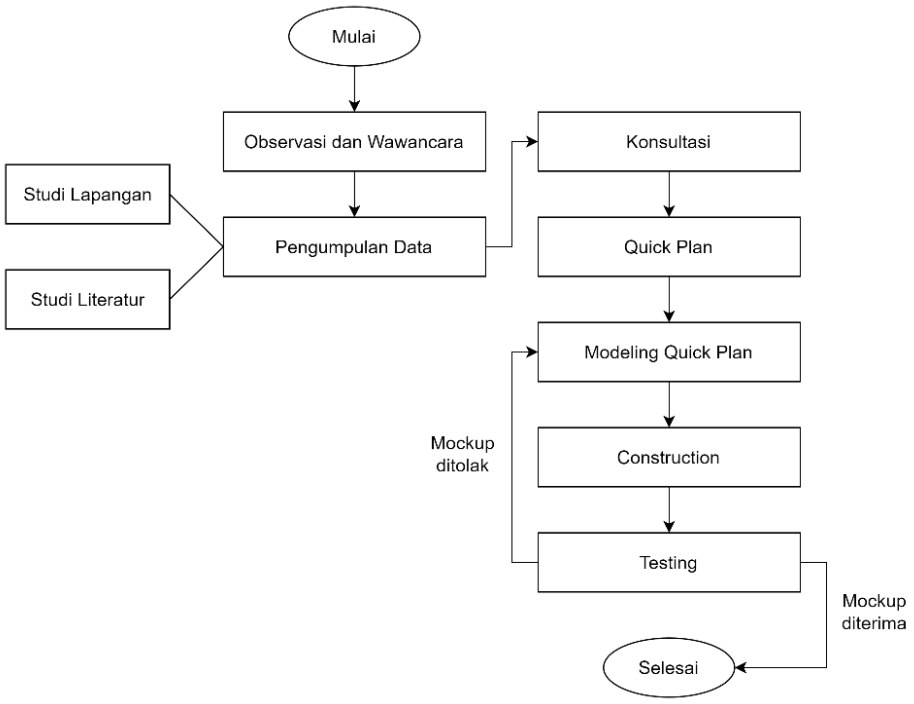

Figure 1. Research stages

The following is a description of the stages carried out in the research :

a. Observation and Interview

Observation and interviews with the relevant parties are the initial stages in this study, the researcher conducted observations at the Estoh company in Sumbersari Village, Jember, East Java to analyze the problems that occurred and find solutions to these problems, but before that, the researcher conducted interviews with the company to obtain initial data from the company before it was later described and developed theoretically.

b. Data collection

The data needed in this study is primary data, where this data is obtained directly through the stages of field studies and interviews with trusted sources to produce valid data. In addition, this data collection is also obtained from literature related to the research.

c. Consultation

At this stage, researchers conduct regular consultations with the company to identify in more depth the problems that occur in the company's service process to clients and analyze the system requirements required.

d. Quick Plan

At this quick plan stage, researchers begin to plan strategies that can be implemented in the company as a form of proposed solution to overcome the problems that occur, this includes selecting the technology that will be used in the system creation process and identifying users who will later use the system.

e. Modeling Quick Plan

The quick plan modeling stage is a more specific and detailed system design stage, namely the researcher will create a Unified Modeling Language (UML) to visualize a design, such as :

1. Use case diagrams are a depiction or representation of the interactions that occur between a system and its environment.
2. Activity diagrams are visual forms of workflows that contain activities and actions and can also contain choices, repetition, and concurrency.
3. Class diagrams are depictions of classes in a system and their relationships with each other.

f. Construction

The next stage is the construction stage, where in this case the researcher will create a system design based on the quick plan modeling that has been explained previously, this is related to the creation of a mockup.

g. Testing

In the testing stage, researchers will conduct a trial process to identify a system that has been designed to get the expected results. With this test, researchers can find out the shortcomings of the system design results that have been made so that they can be fixed before being used.

Results and Discussion

Based on research at the Estoh Jember company which aims to design a website-based sales tracking information system using prototype modeling, the following results were obtained :

a. Modeling Quick Plan

This stage is system modeling using the Unified Modeling Language (UML) which consists of use case diagrams, activity diagrams, and class diagrams.

1. Use Case Diagram

This use case diagram explains all the roles of system users, both users who act as admins and as sales.

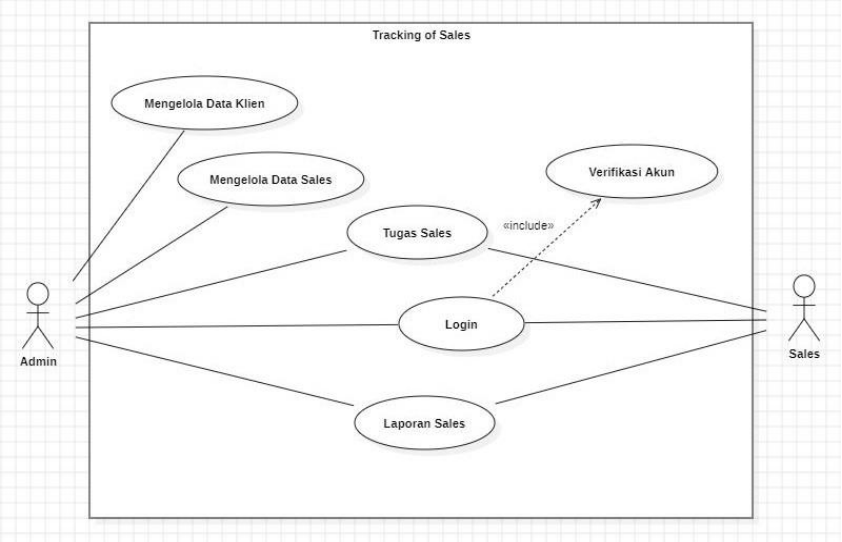

Figure 2. Use case diagram

Table 1
Use case diagram

Label	Use Case
Login	Admin and sales must first log in using the available username and password to access the system.
Managing client data	Admin can manage client data to manage clients who have requested from the company and this data will be the source of QR code creation.
Managing sales data	Admin can manage sales data to simplify the process of dividing tasks every day.
Sales tasks	Admin can send task details to sales and sales will accept the task.
Sales report	Sales can create a report after carrying out the task and send the results of the report to the admin and the admin will approve the report if it is appropriate.

2. Activity Diagram

Activity diagrams aim to explain the flow of activities that occur in a system. The following is a design of an activity diagram of the sales tracking information system at Estoh Company.

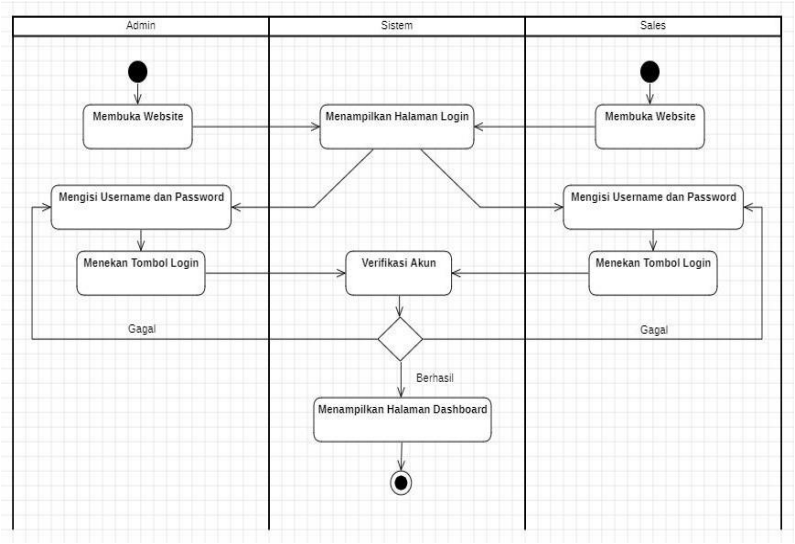

Figure 3. Login activity diagram

Table 2
Login activity diagram

Label	Activity
Admin Login	- Admin opens the sales tracking website - Fill in the username and password correctly - Press the login button after filling in the username and password
System	- Displaying the login page after admin and sales open the website - Verify the account that has been entered - Ask admin and sales to refill username and password when the account fails to be verified - Displays the dashboard page when the account is successfully verified
Sales Login	- Sales opens sales tracking website - Fill in the username and password correctly - Press the login button after filling in the username and password

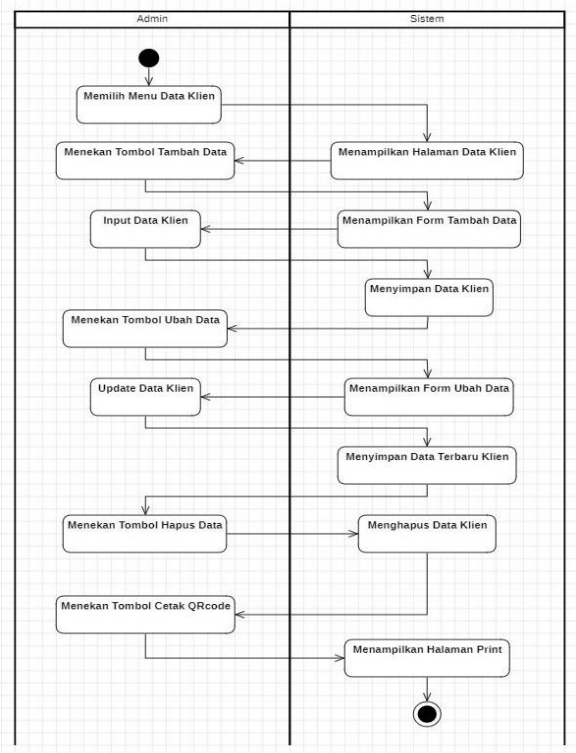

Figure 4. Client data menu activity diagram

Table 3
Client data menu activity diagram

Label	Activity
Admin	- Select the client data menu on the dashboard page - Press the add button if you want to add client data - Enter client data and save the data - Press the edit button if you want to update client data - Edit the data as needed and save the data - Press the delete data button if you want to delete data - Press the print QRcode button if you want to print the client data QRcode
System	- Displaying the client data page after the admin presses find client data - Displays the add data form when the admin presses the add button - Save client data after admin inputs data - Displays the change data form when the admin presses the edit button - Save client data after admin updates data - Deleting client data when admin presses the delete button - Displays the print page when the admin presses the print QRcode button

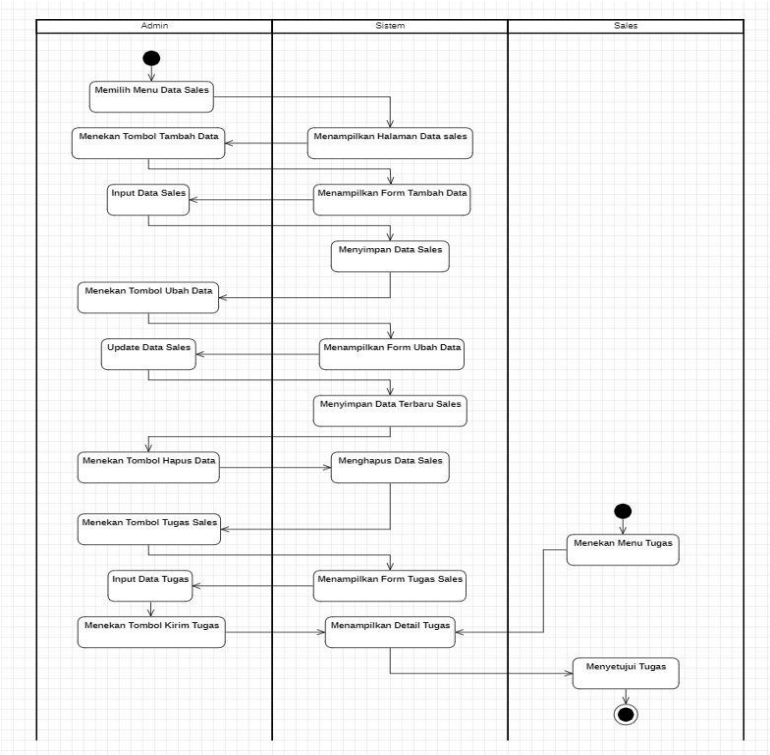

Figure 5. Activity diagram for sales data menu.

Table 4
Activity diagram for sales data menu

Label	Activity
Admin	- Select the sales data menu on the dashboard page - Press the add button if you want to add sales data - Enter sales data and save the data - Press the edit button if you want to update sales data - Edit the data as needed and save the data - Press the delete data button if you want to delete data - Press the sales task button if you want to send a task - Enter the task data and press the submit task button
System	- Displaying the sales data page after the admin presses find sales data - Displays the add data form when the admin presses the add button - Save sales data after admin inputs data - Displays the change data form when the admin presses the edit button - Save sales data after admin updates data - Delete sales data when admin presses the delete button - Displays the sales task form when the admin presses the task button - Displays the sales task form when the admin presses the task button
Sales	- Press the task menu on the dashboard page - Agree to the tasks given by the admin before carrying out the tasks

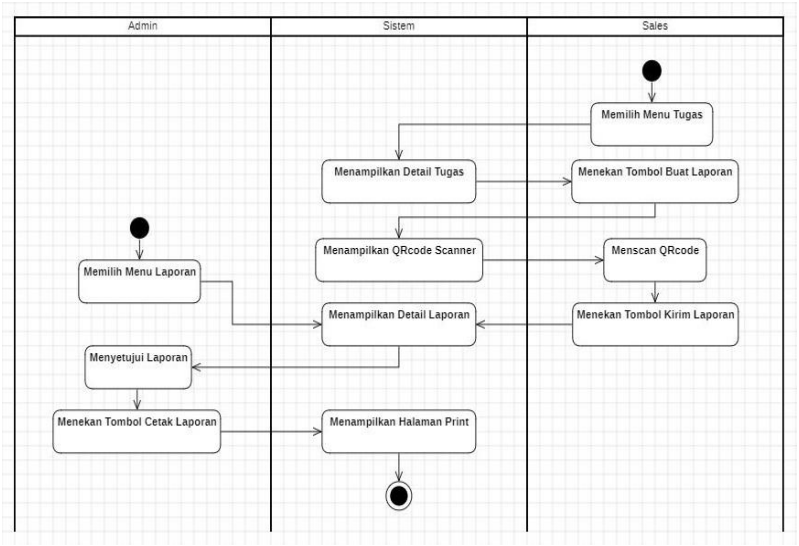

Figure 6. Activity diagram of the report menu

Table 5
Activity diagram of the report menu

Label	Activity
Admin	- Select the report menu on the dashboard page - Approve reports sent by sales if they are appropriate - Press the print report button if you want to print a sales report
System	- Display task details after admin sends sales task - Displays QRcode scanner to scan available QRcode - Displaying report details after-sales sends report results - Displays the print page when the admin presses the print report button
Sales	- Select the task menu on the dashboard page - Press the Create Report button after completing the task - Scan the QR code provided - Complete the report and press the send report button

3. Class Diagram

The purpose of designing a class diagram is to describe the structure of a system and divide it into each class to make it easier for developers to understand. The following is a class diagram from this study.

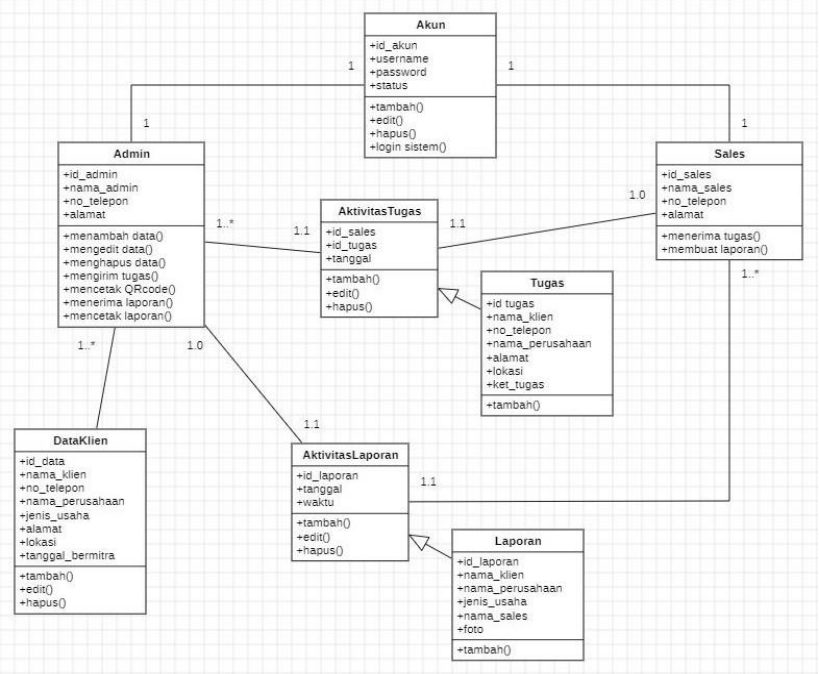

Figure 7. Class diagram

Table 6
Class diagram

Label	Information
Account	Account class has several attributes such as account ID, username, password, and status. Operations that can be done are adding, editing, and deleting data which can be used to access the system. 1 account can only be owned by 1 admin or sales.
Admin	The admin class has several attributes such as admin id, admin name, phone number, and address. Operations that can be performed are adding, editing, deleting, sending tasks, receiving reports, and printing reports. In 1 admin can send many tasks and manage many client data.
Sales	The sales class has several attributes such as sales ID, sales name, phone number, and address. Operations that can be performed are receiving tasks and creating reports. In 1 sales can send many reports.
Client data	The client data class has several attributes such as data ID, client name, phone number, company name, business type, address, location, and partnership date. Operations that can be performed are adding, editing, and deleting data.
Task Activity	The task activity class has several attributes such as sales ID, task ID, and date while the operations that can be done are add, edit, and delete data. 1 activity can only be done by 1 admin and 1 sales.

Report activity	The report activity class has several attributes such as report ID, date, and time. Operations that can be performed are adding, editing, and deleting data. 1 activity can only be done by 1 admin and 1 sales.
Task	The task class is a class inherited from the task activity class where this class has several attributes such as task ID, client name, phone number, company name, address, location, and task description. The operations that can be performed are adding data.
Report	The report class is a class inherited from the report activity class where this class has several attributes such as report ID, client name, company name, type of business, sales name, and photo. The operations that can be performed are adding data.

4. Construction

At this stage, the researcher began to design a visual sales tracking information system using the Figma application. Here are some designs that can describe the system to be designed.

5. Admin View Using a Computer/PC

1) Admin Login Page

This page is the initial display that can be accessed by the admin after opening the website.

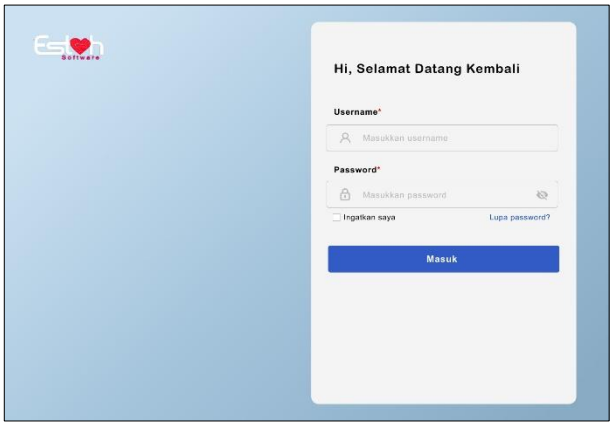

Figure 8. Admin Login Page

2) Admin Dashboard Page

On the system dashboard page, important information will be presented visually regarding the accumulated data, making it easier for the admin to monitor and analyze the data.

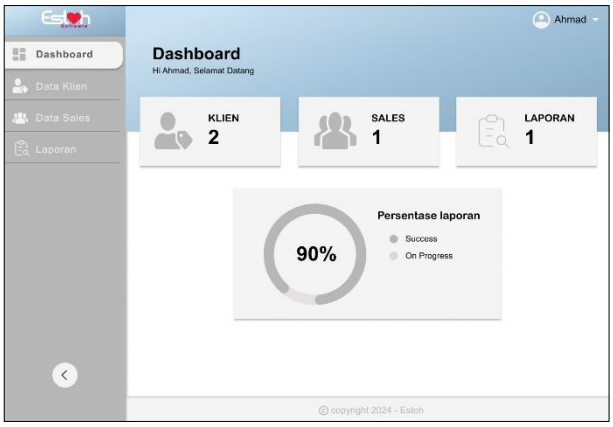

Figure 9. Admin Dashboard Page

3) Client Data Page

On this page, the system displays information about client data that has partnered with the Estoh company. The action buttons listed are the add, edit, and delete buttons and the print QRcode buttons.

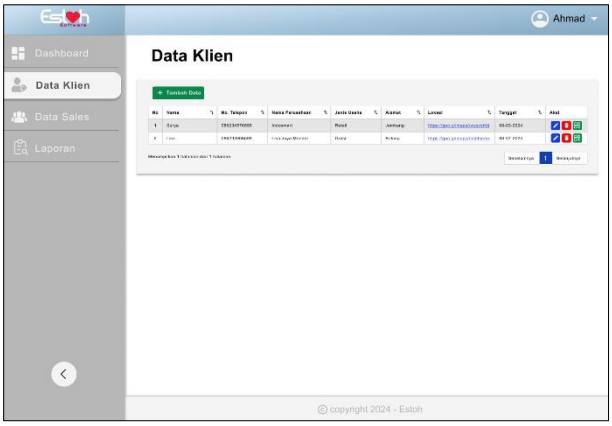

Figure 10 Client Data Page

4) Sales Data Page

On the sales data page, the system will present information about sales working in the company. The action buttons listed are the add, edit, delete, and send sales task buttons.

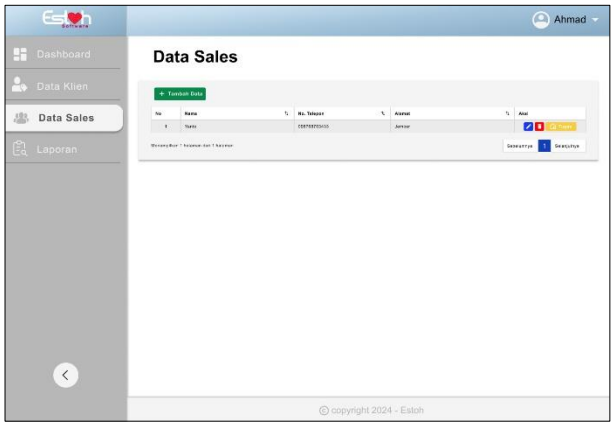

Figure 11 Sales Data Page

5) Report Page

The report page is a display of the results of accumulated reports made by sales through an account with access rights as sales. On this page, the admin can summarize the report results, approve sales reports, and search for reports based on the required period.

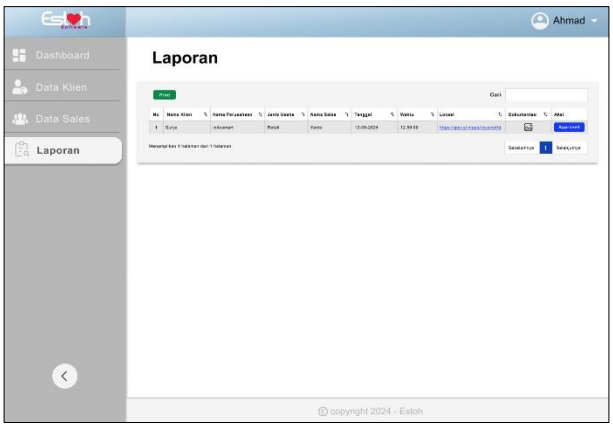

Figure 12 Report Page

6. Sales Display Using Smartphone

1) Sales Login Page

This page is the initial display of the system after sales open the website when accessed using a smartphone.

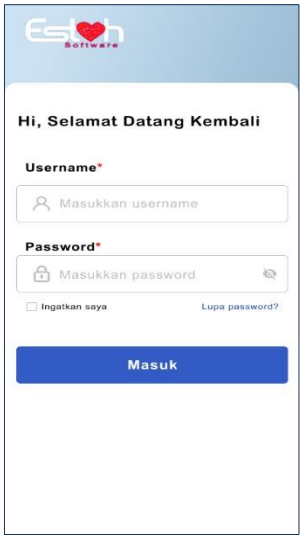

Figure 13 Sales Login Page

2) Sales Dashboard Page

The dashboard page is the initial display after the user successfully logs in using a sales account. On this page, the system will display the name of the user who accesses the page.

Figure 14 Sales Dashboard Page

3) Sales Task Page

On this page, there are detailed task data that must be approved and completed by sales.

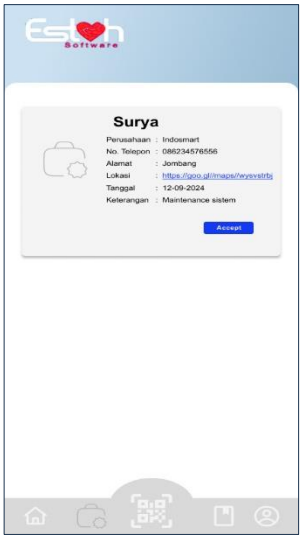

Figure 15 Sales Task Page

4) Sales Report Page

This page is used to create reports by scanning the QR code owned by each Estoh company client, this page is also designed to facilitate sales in the process of creating reports when on duty in the field and can only be accessed when sales have approved the task given.

Figure 16. QRcode Scan Page

Figure 17. QRcode display

7. Testing

Testing is the last stage in the system design process, this is done to test and find out the shortcomings in the system and it is expected that the shortcomings detected during testing can be fixed as much as possible. The conclusion of the results of this test is in the form of a test table that can show whether the system design is appropriate or not.

1) Admin View Testing

Table 7
Admin view test results

Activities	Expected results	Test Results	Information	
			Succeed	Not
Login admin	The system can validate the account and display the dashboard page	The system successfully validates the account and displays the dashboard page	✓	
Dashboard	The system can display visual information accumulated in the system	The system successfully displays visual information about the data accumulated in the system	✓	
Addition of client data	The system can display the form to add client data	The system successfully displays the client data add form	✓	

Alteration of client data	The system can display the form to change client data	The system successfully displays the client data change form	✓
Deletion of client data	Users can delete client data	The system successfully deletes the client's data	✓
Print a QRcode	Users can print QR codes according to the required client data	The system successfully prints the QR code according to the user's needs	✓
Addition of sales data	The system can display a form to add sales data	The system successfully displays the form to add sales data	✓
Changing sales data	The system can display a form to change sales data	The system successfully displays the sales data change form	✓
Deletion of sales data	Users can delete sales data	The system successfully deletes sales data	✓
Send a sales task	The system can display sales task forms and send task data	The system successfully displays the sales task form and sends the task data to the sales	✓
View sales report details.	The system can display sales report details	The system successfully displays the details of the sales report	✓
Logout admin	Users can exit the system view and return to the login page	The user successfully logs out of the system	✓

2) Sales Display Testing

Table 8
Sales display test results

Activities	Expected results	Test Results	Information	
			Succeed	Not
Login sales	The system can validate the account and display the dashboard page	The system successfully validates the account and displays the dashboard page	✓	
View sales tasks	The system can display the details of tasks assigned by the admin to sales.	The system successfully displays the details of the tasks assigned by the admin.	✓	
Scan the QR code	The system can display the scanner	The system successfully displays the scanner	✓	

Send sales reports	The system can display the report form and send the report data	The system successfully displays the report form and sends the report data to the admin	✓
View report history	The system can display the report history after being approved by the admin.	The system successfully displays the report history.	✓
Logout sales	Users can exit the system view and return to the login page	The user successfully logs out of the system	✓

Conclusion

Based on the research above, it can be concluded that the design of this sales tracking information system greatly helps the development team in realizing the system needed by the Estoh Jember company. The results of the system design listed in this study have been adjusted to the company's needs to overcome the problems that occur. Therefore, the development team can directly implement the design into a real system.

The results of this study are expected to be implemented into a system so that it can be used by the Estoh company to overcome the problems that are occurring. The design of the sales tracking information system using the Figma application is expected to continue to be developed so that it can continue to meet the needs of its users in improving business performance.

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