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Web & android based CCTV maintenance application at PT. CCTV Palace

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ABSTRACT

PT. Istana CCTV operates in the field of sales and services. Products sold include finger print, CCTV, access doors, hotel locks and so on. The services provided are product installation, maintenance and repairs. The problem that occurred was PT. Istana CCTV is unable to respond to customers' CCTV maintenance requests because the number of technicians is limited. On the other hand, PT. CCTV Palace often complains that CCTV maintenance requests are not immediately contacted and have to wait for the maintenance schedule. Therefore, an appropriate method is needed to increase sales turnover so that PT. CCTV Palace is making progress. The application of the FCFS method is very appropriate in Customer CCTV Maintenance services. Consumers who are the first to book CCTV Maintenance will be served first. The FCFS method is a scheduling algorithm with the characteristics of prioritizing processes that are submitted first, first come first served. So, the process that arrives first will be executed first.

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Introduction

PT. Istana CCTV operates in the field of sales and services. Products sold include finger print, CCTV, access doors, hotel locks and so on. The services provided are product installation, maintenance and repairs. The problem that occurs is PT. Istana CCTV is unable to respond to customers' CCTV maintenance requests because the number of technicians is limited. On the other hand, PT. CCTV Palace often complains that CCTV maintenance requests are not handled immediately and have to wait for the maintenance schedule. Therefore, an appropriate way is needed to increase sales turnover so that PT. CCTV Palace is making progress.

Computer and Android technology helps people's performance in various fields. Therefore, researchers use computer and Android technology to create a system that can make it easier for customers to carry out maintenance requests and make things easier for PT. Istana CCTV in responding to customers. Researchers created a web application to manage CCTV maintenance data and created an Android application to be used by customers in ordering CCTV maintenance.

The application of the FCFS method is very appropriate in Customer CCTV Maintenance services. Consumers who are the first to book CCTV Maintenance will be served first. The FCFS method is a

scheduling algorithm with the characteristics of prioritizing processes that are submitted first, first come first served. So, the process that arrives first will be executed first. (Agung Prasetiya, 2021)

The aim of this research is to produce a patient queue service application using the First-Come-First-Served method with the PHP programming language and MySQL database (Utami, 2022). Hallo Services Computer Maintenance Ordering Application, Aziz and Rahmadhani concluded that with the design of a system for ordering computer maintenance services at Hallo Services which was designed using the web (Arsie Aziz & Rahmadhani, 2021). Application of the Engineering Division Maintenance Request System for Staff Services at Higher Education. Raharja, Faqih, et al. concluded that the proposed application program provided results in accordance with several objectives from the beginning of the research (Faqih et al., 2018). Desktop Database Application for Checking Vehicle Repair and Maintenance Status in Auto2000 Cilandak, Kurniawan, et al. concluded that the application created worked as expected in order to provide convenience in collecting data and making reports and shortening the processing time (Kurniawan et al., 2021). Designing the Web-Based Asset Maintenance Reminder Application, Rambing, et al. concluded that the application can run quite well and meet user needs (Rambing et al., 2016). Information System for Monitoring Contracts and Kiosk Maintenance at the Pekanbaru Tourism Market Based on Web and SMS Gateway, Siahaan and Gusrianty concluded that having a web-based information system for monitoring contracts and kiosk maintenance can make it easier for admins to monitor the company's operational activities (Siahaan & Gusrianty, 2019).

The web is a collection of interconnected web pages. The web is a system that contains a variety of information in the form of text, images, audio and video and can be accessed via a device usually called a web browser. The web is a collection of information, both static and dynamic, consisting of created pages. (Oktasari and Kurniadi, 2019). Android is a Linux-based operating system that provides users with access to use applications. Android has tools that can help developers when building an application. Android provides an open platform for developers to develop their Android applications. (Wowiling, et al, 2021). With the web and Android-based CCTV maintenance application, PT customers. Istana CCTV makes it easy to order CCTV maintenance and PT. Istana CCTV makes it easy to respond to customers regarding CCTV maintenance orders.

Method

The system being designed certainly requires data collection, in the data collection process there are several ways, including:

a. Field Survey
   A field survey is the first step aimed at obtaining the data needed in the analysis stage. At this stage, ask questions about what form the data usually enters or exits.
b. Literature review
   Literature study is an activity to collect data in the form of supporting theories from a system created with the aim of explaining the theories related to this research. Sources can be in the form of literature, ebooks, and others that are relevant to the research.

In designing the system, the design procedure stage is carried out, the steps needed to achieve the design objectives can be seen in the waterfall diagram model in Figure 1.

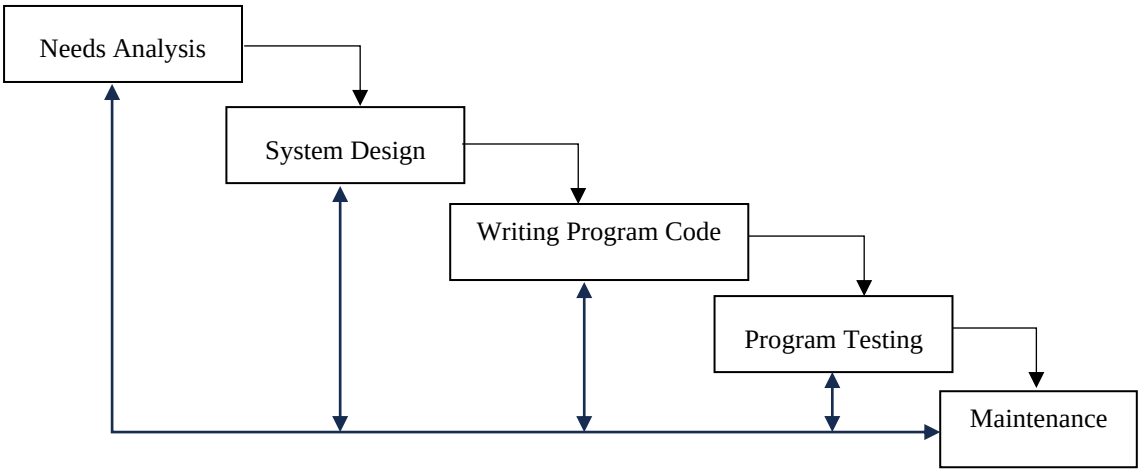

Figure 1. System design waterfall diagram

Based on the flowchart image above, it can be explained as follows:
1. Needs Analysis

Apart from the data collected, there are computer specifications that the author will use during the research, including hardware and software, namely:

1) Hardware
The hardware used includes:
a. Core(TM) i3-5005U CPU @ 2.00GHz Hard disk 500 GB
b. Laptops
c. RAM 2GB
2) Software
a. Windows 10 Operating System.
b. Microsoft Visual Studio Code.
c. MySQL

2. Design

System The system designed uses several UML models, including class diagrams, activity diagrams, and sequence diagrams.

3. Implementation of Program Code

This is the stage of program coding through which the design is translated into a programming language. The programming language used is PHP with the Microsoft Visual Studio Code Text Editor.

4. Program Testing

The final stage is where the new system is tested for its capabilities and effectiveness so that the deficiencies and weaknesses of the system are found and the application is then reviewed and improved to make it better and more perfect.

5. Program Implementation and Maintenance

After the design is created, the application is then built or created which will later be uploaded to hosting so that it becomes an online web display.

Results and Discussions

PT. Istana CCTV operates in the field of sales and services. Products sold include finger print, CCTV, access doors, hotel locks and so on. The services provided are installation of materials, maintenance and repairs. The problem that occurs is PT. Istana CCTV is unable to respond to customers' CCTV maintenance requests because the number of technicians is limited. On the other hand, PT. Istana CCTV

often complains that CCTV maintenance requests are not handled immediately and have to wait for the customer's maintenance schedule. Therefore, an appropriate way is needed to increase sales turnover so that PT. CCTV Palace is making progress. This research creates a Web application to manage CCTV Maintenance data and creates an Android application to be used by customers in ordering CCTV Maintenance. With the Web and Android-based CCTV Maintenance application, PT customers. Istana CCTV makes it easy to order CCTV Maintenance and PT. Istana CCTV makes it easy to respond to customers regarding CCTV Maintenance orders.

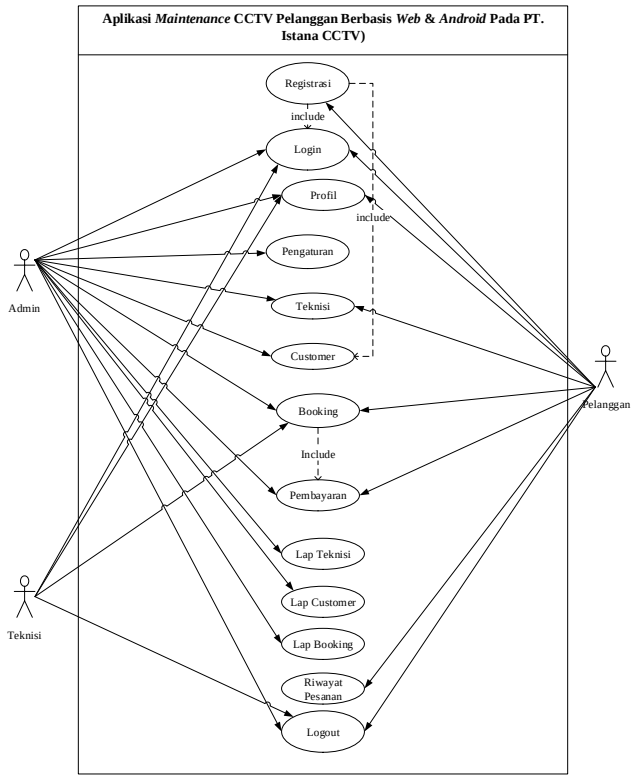

Figure 2. Use Case Diagram

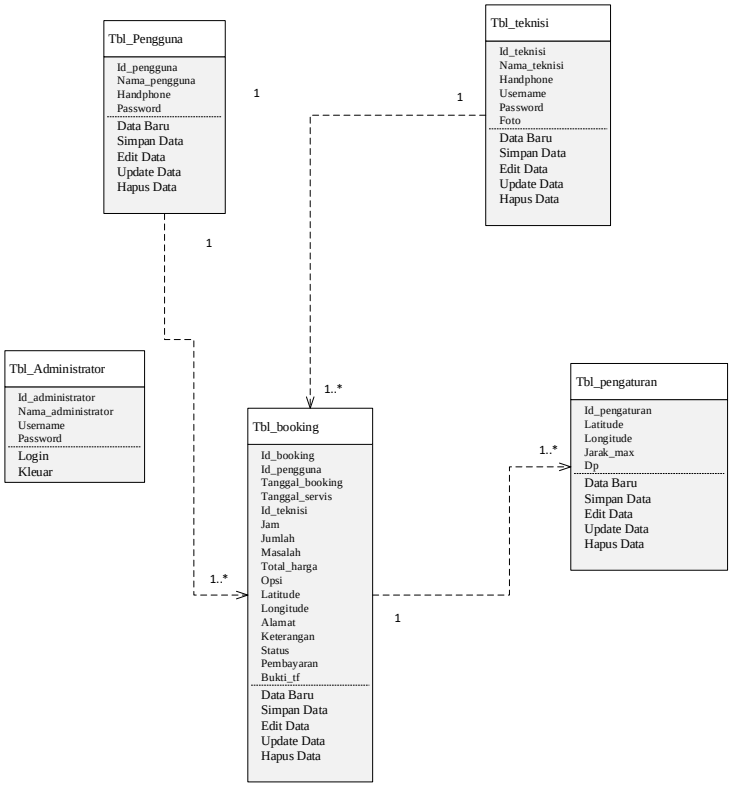

Figure 3. Class diagram

1. Display the Registration Form

This display is a registration display which functions to find out registration. An image of the registration form display is shown in Figure 4:

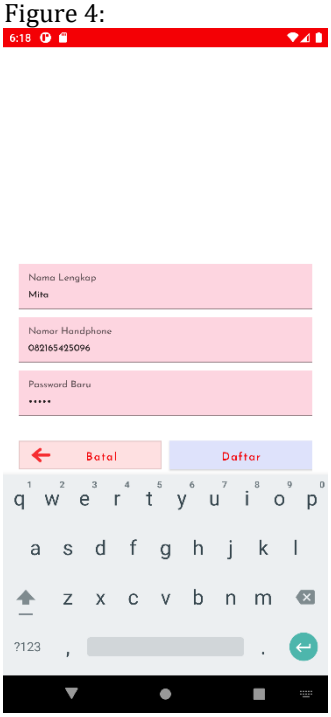

Figure 4. Registration Form Display

2. Login Menu Display

The Login Display is the first display that appears when the program is run. Functions as an input form for program admin username and password. The login display image can be shown in figure 5

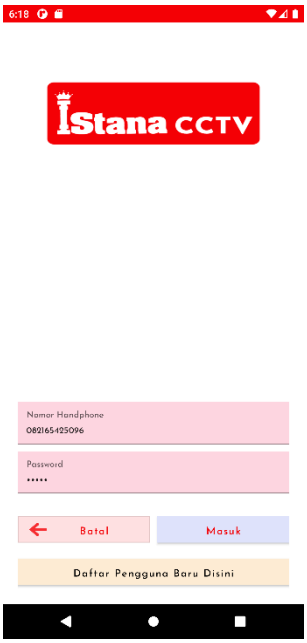

Figure 5 Login Form Display

3. Home Form Display

This form appears after the admin has successfully entered the username and password correctly. An image of the Home form display can be seen in Figure 6:

Figure 6 Home Form Display

4. Display the Maintenance and service Order Form

This display is a maintenance and service data display which functions to find out and display maintenance and service data. The maintenance and service display image is shown in figure 7

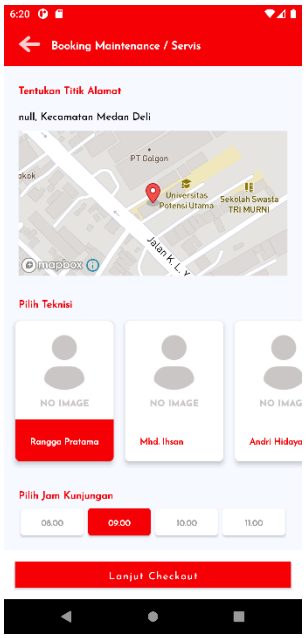

Figure 7. Maintenance and Service Form Display

4. Display Payment Form

This display is a payment data display that functions to find out and display payment data. The payment display image is shown in figure 8:

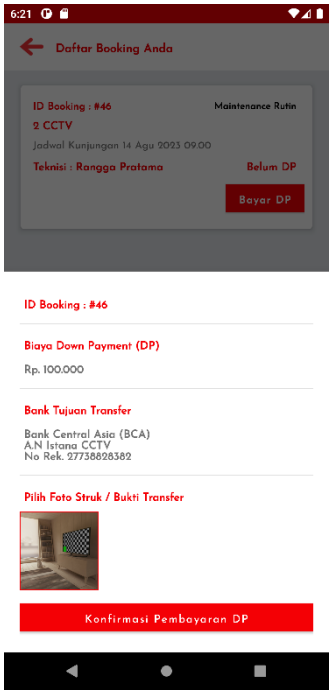

Figure 8. Payment Form Display

5. Display Order History Data Form

This display is a display of Order History data which functions to find out and display Order History data. The image of the Order History display is shown in figure 9:

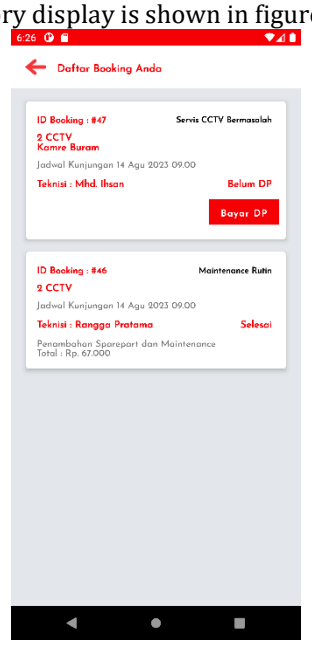

Figure 9. Display Order History Form

6. Display the Maintenance and Service Order Data Form

This form displays the order data options, when selecting order data the program will display the order data. An image of the order data form display can be seen in Figure 10:

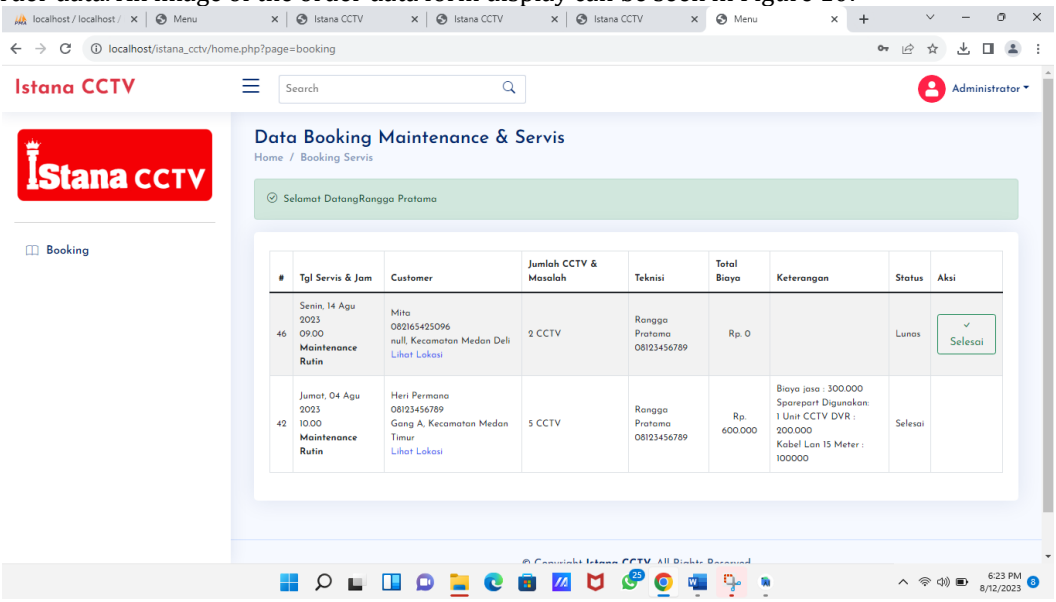

Figure 10. Display of Maintenance and Service Order Form

Conclusions

Based on research that has been carried out while creating an application regarding Web & Android-Based Customer CCTV Maintenance Applications at PT. Istana CCTV), several conclusions can be drawn,

namely the Android-based CCTV Customer Maintenance Application can make it easier for PT. Istana CCTV in accepting Customer CCTV Maintenance, an application designed to implement a transfer payment system that can make it easier for customers to make CCTV Maintenance payments and an Android-based CCTV Maintenance Application that can make it easier for customers to carry out CCTV Maintenance. While the Android-based CCTV Customer Maintenance Application has proven beneficial for PT. Istana CCTV in facilitating the acceptance of customer CCTV maintenance requests and implementing a payment system for streamlined transactions, there are inherent limitations and avenues for future research to explore. One limitation is the potential reliance on stable internet connectivity, which could pose challenges in areas with poor network coverage. Moreover, the application's usability may vary among customers with different levels of technological proficiency, necessitating ongoing user interface improvements and accessibility features. Future research could focus on enhancing the application's offline functionality to mitigate connectivity issues, integrating additional payment methods to accommodate diverse customer preferences, and leveraging emerging technologies such as augmented reality for remote troubleshooting and maintenance guidance. Additionally, conducting regular usability testing and gathering feedback from customers can inform iterative enhancements to ensure the application meets evolving user needs and maintains its effectiveness in facilitating CCTV maintenance services for PT. Istana CCTV.

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