

Web-Based General Affair Information System Development Using Prototyping Method

Arif Amrulloh^{1*}, Yudha Saintika²

¹Software Engineering Department, Fakultas Informatika,

²Information System Department, Fakultas Informatika,

^{1,2}Institut Teknologi Telkom Purwokerto, Indonesia

Abstract. Operations are one of the main activities in the company; almost all companies have a General Affairs (GA) section that takes care of all household and operational matters. The bigger the company, the more complex the problems faced. To overcome these problems, the role of technology is needed. Previously, the general support process at the company was still done manually. At the same time, the number of employees had reached 700 people, so it was tough to support processes such as room lending, asset lending, and vehicle tracking if they were still using conventional methods. This research will build a web-based general affairs information system using the prototyping method. Prototyping is a method that requires the developer's interaction with the client so that it can overcome the incompatibility between the system developer and the client. Tests are carried out using black-box testing techniques focusing on checking system functionality. The results of tests conducted by 26 respondents show that the system built is 100% feasible and meets expectations.

Keywords: General Affair, Website, Prototyping

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INTRODUCTION

Operations are one of the main activities in the company that involves the procurement of goods; operational activities are closely related to procurement management, which aims to ensure the procurement process is following the plans that have been made previously. [1]. Almost all companies have a General Affairs (GA) section that takes care of all household matters and supports the company's operational activities. [2]. The GA department focuses on providing services to all company areas to run the organization efficiently. [3]. The bigger the organization or company, the more complex the problems faced will be [4], so that operational activities will be more efficient if their activities use technology assistance.

In today's digital era, technology is very influential in the direction of change in a company or organization; this is marked by the emergence of new technology to support business lines from various fields in a company [5]. The utilization of technology can also reduce the stage of the work process in the organization [6]. One technology that is widely used today is a web-based information system. One technology that is widely used today is a web-based information system. Web-based information systems have various advantages over desktop-based systems because web-based systems use a browser to access the system. So that it does not burden the device memory for system installation, and the system can be accessed from anywhere as long as it is connected to the internet [7].

Previous studies have carried out research related to general affairs information systems with the following conclusions. The inventory data processing process in the GA department becomes faster and more efficient, which initially took three days or more; with a web-based system, the process can be done in just one day [8]. The web-based purchasing requisition monitoring system in the GA division can be used to solve the problems between the GA section and the purchasing department [1]. Office equipment damage reporting applications can provide information more quickly and efficiently and assist GA in reporting office equipment damage [9].

From the description above, it can be concluded that the general affairs application can be used as a solution in operational activities in the GA section. In this research, a web-based general affairs information system

will be built. The research object is one of the national print media companies based in Jakarta with approximately 700 employees. The development of a web-based general affairs information system was carried out because the company still uses the Microsoft Excel application to record operational activities. The recording process using Microsoft Excel is considered inefficient because there is a lot of data that is managed, so GA has difficulty finding past data, and sometimes files that are stored are lost due to computer viruses. The system development method used in this research is the prototyping method. The prototyping method is a method that requires interaction between the developer and the client so that incompatibility between the system developer and the client can be avoided [10]. The prototype method uses an approach to create a program quickly and gradually so that the user can immediately evaluate it [11].

The difference in application development that will be built in this study with previous research is on the completeness of existing features, whereas research [1] only focuses on the process of requesting goods from the GA admin to the purchasing department. Whereas in [9] it is only limited to making reports for office purposes such as reports on the state of equipment and the condition of goods. In this study, the features made include employee master data, vehicle rentals, meeting rooms, picket schedules (Drivers, Office Boys, Receptionists, and Security), and overtime calculations which include excess working hours and overtime on holidays or red dates.

METHOD

The method used in this research is a system development method using prototyping. The prototyping method consists of four stages, namely data collection, rapid planning, prototype design, and prototype testing [12]. The flow of the prototype method can be seen in Figure 1.

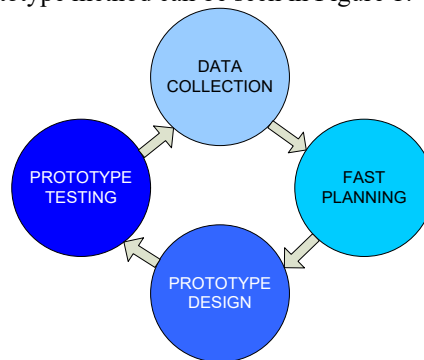


Figure 1. Flow of Prototyping Method

The data collection in Figure 1 collects the necessary data, namely the study of literature and interviews with users, namely in the GA section. Data collection is carried out to analyze system requirements according to user wishes. Next is fast planning using Unified Modeling Language (UML) tools in activity diagrams, use case diagrams, and class diagrams for modeling. The “fast” part of this comes into play with the speed that the initial modelling can be produced, how quickly feedback can be gathered and synthesized, and how fast subsequent iterations can go through the same process. Next stage is to build a web-based application using the PHP programming language and MySQL as storage media and make the prototype adapted to the diagrams that have been made previously. The last is application testing using the black-box testing method, which is carried out to test the function and performance of the system. The test results are used as evaluation material; if in the testing phase there are still problems, the problem will be fixed in the following prototyping phase.

RESULT AND DISCUSSION

From the analysis and modeling that has been done, the following business processes are obtained:

Use Case Diagram

There are four actors in the use case diagram, namely Administrator, Manager, Approval, User as shown in Figure 2.

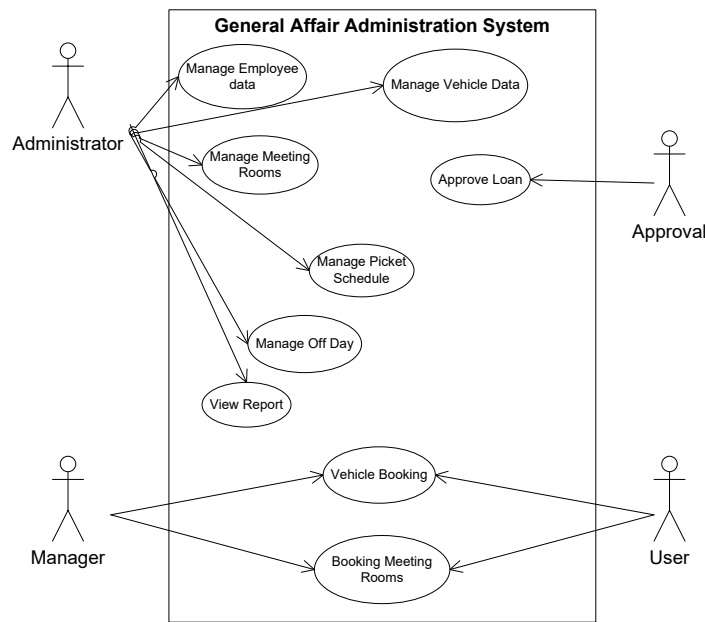


Figure 2. Use Case Diagram

Based on Figure 2, each actor has a different role, namely the administrator managing employee data, vehicle data, meeting room data, picket schedules, holidays, viewing reports and history of activities that have been carried out. Administrator is the staff with the highest position in the GA section who has full access to add, change, delete and view existing data. Furthermore, the manager and user have access to order vehicles and meeting rooms, the user can only order for himself while the manager can order for other employees who are under his leadership. Managers and users are all employees in the company who already have access to the system. Finally, approval is in charge of processing vehicle orders and incoming meeting rooms. Approval is a special staff from the GA section assigned to process order data.

Activity Diagram

Activity Diagram of the process of ordering vehicles and meeting rooms in the general affairs information system can be seen in Figure 3:

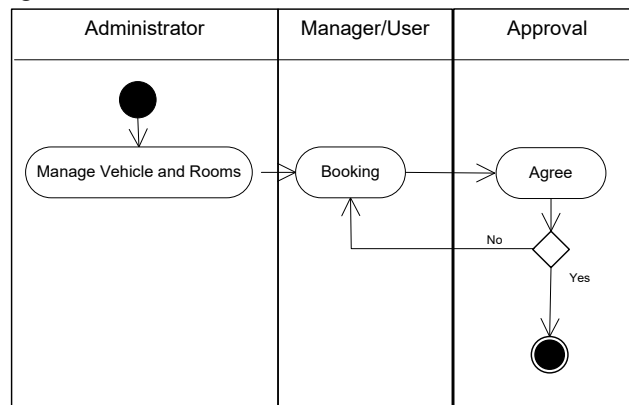


Figure 3. Activity Diagram of the process of ordering vehicles and meeting rooms

Based on Figure 3. Ordering vehicles and rooms start with the administrator making vehicle and room data that can be loaned. Then the manager and user can borrow according to the data that the administrator has created. Finally, the approval section will process the loan application that has been made, and if the application is approved, the GA section will issue an approval letter; if the application is rejected, the data will be returned to the manager or user who submitted it along with a statement of refusal.

Class Diagram

Figure 4 illustrates the class diagram of the general affairs information system designed.

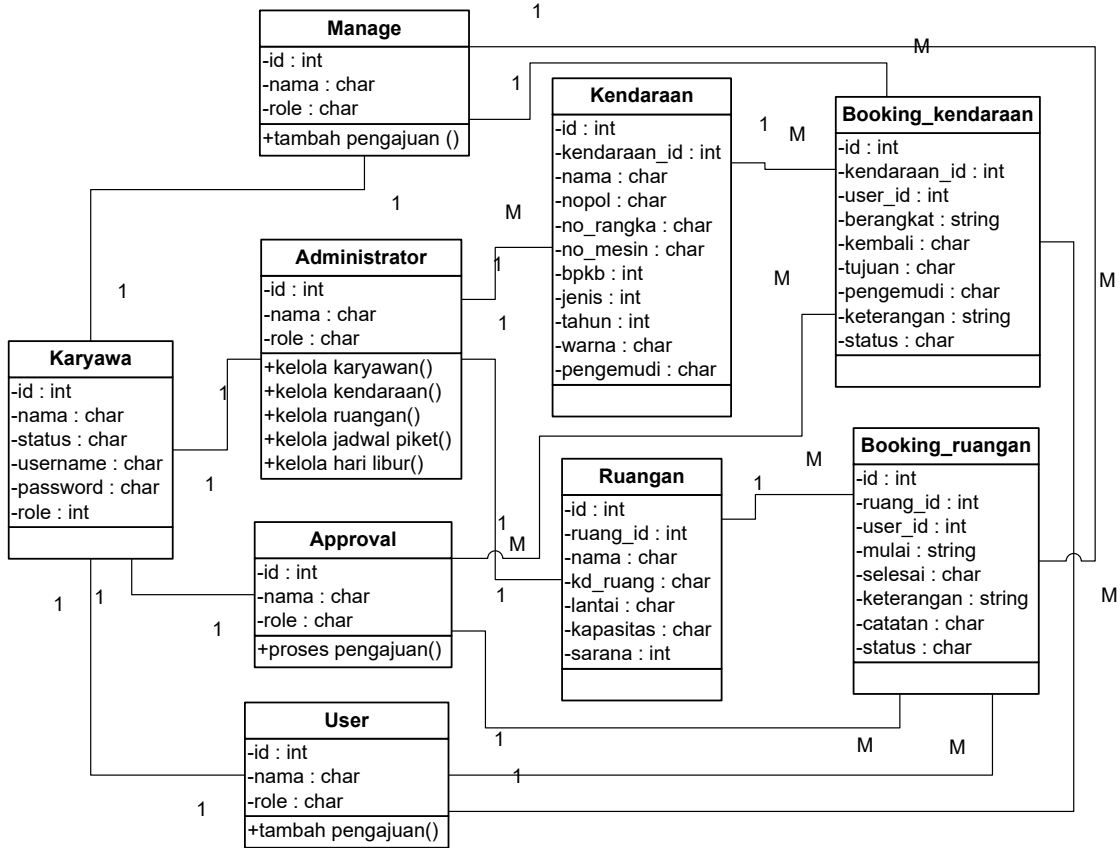


Figure 4. Class Diagram

System Development

The next step is the application design stage or system development using the PHP programming language and MySQL database.



Figure 5. Login Page

Figure 5 is a application login page, which is the earliest page displayed when the application is first opened. The menus available on the developed system are displayed on the login page, but the menu cannot be activated if the user has not logged in.



Figure 6. Data Master Page

Figure 6 is a menu of master data; master data is a menu used to manage employee data, vehicle data, space data, picket data, and national holiday data used to calculate employee overtime hours.



Figure 7. Manage vehicles page

Figure 7 is a page used to manage vehicle data that can be loaned; on the vehicle management menu, the administrator can add, change, view, and delete data stored.

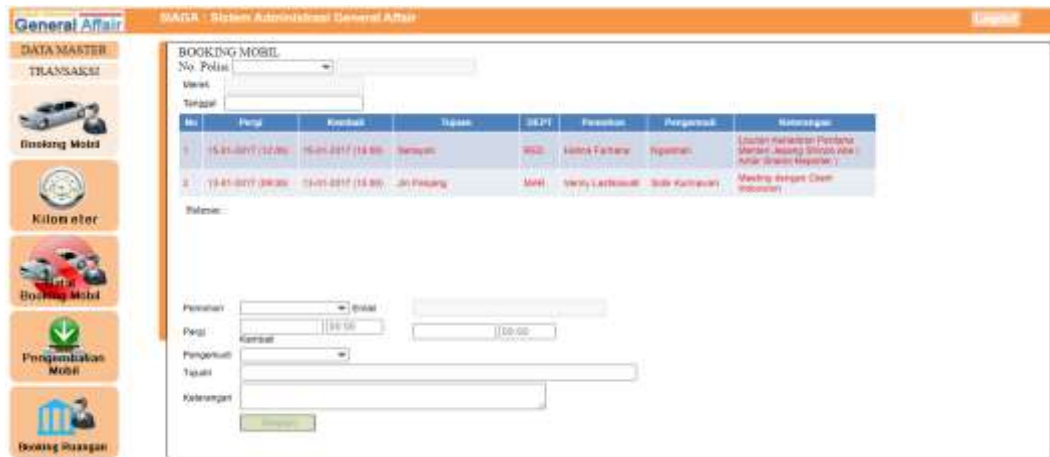


Figure 8. Transaction Menu

The transaction menu is used to process and manage the company's asset lending. The Transaction menu consists of several sub-menus, namely vehicle bookings, vehicle kilometers, vehicle booking cancellations, vehicle returns, room bookings, room booking updates, and overtime.

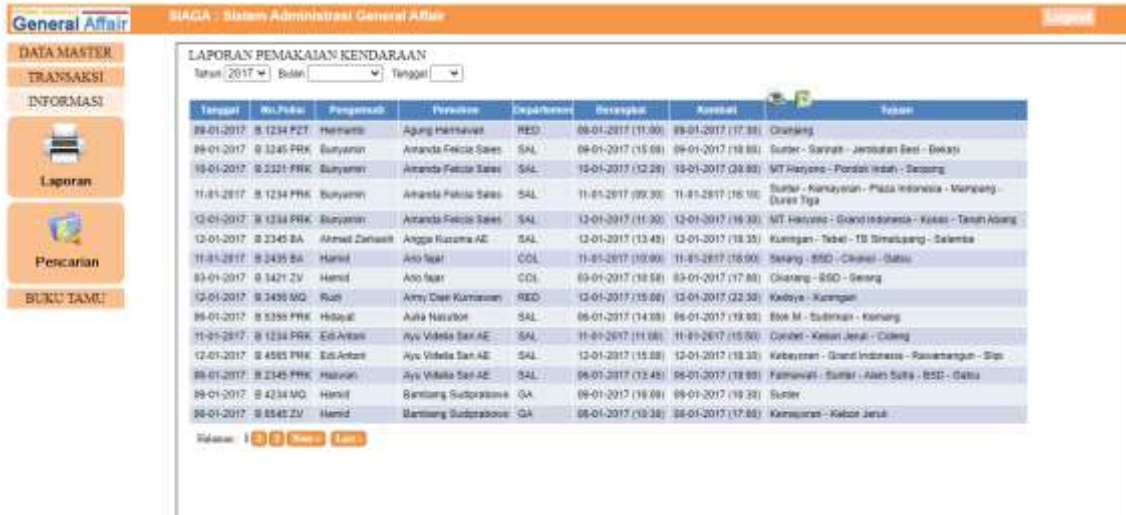


Figure 9. Information menu

The information menu consists of a report and searches sub-menu. The report sub-menu is a feature that can be used to view the history of vehicle usage that has been used. In this report menu, you can find out the activity of using the vehicle, starting from the type of vehicle used, the driver, the applicant, the date of departure and date of return, and the purpose of the trip.



Figure 10. Searching Menu

Figure 10 is a sub-menu of information, and the search menu is a feature that can be used to track or find out the registered driver, the vehicle being used, the meeting room that is being and will be used, the driver who is on standby and the loan application that has been submitted. This menu is beneficial for the GA department in monitoring ongoing operational activities.

Testing

The testing stage is divided into two stages; the first is carried out by the programmer, namely to ensure that the program created is by the needs and no errors are found, the first stage of testing is carried out repeatedly until the program is declared ready for use. The second is carried out by the IT Support team,

the GA section, and representatives from other units. The testing technique used in this study uses a black-box technique. In black-box testing, the tester does not need to have programming knowledge because the test is only based on input and output without paying attention to program details. [13]. Black-box testing only takes execution results through test data and checks the functionality of the software [14].

The IT Support and GA teams carried out the first test to test the administrator page, which contains menus for managing employee data, vehicle data, meeting rooms, picket schedules, and holidays, and reporting the history of operational activities. The test points at this stage are the input function, update, delete and view data; the test results at this stage are all as expected. Further testing is carried out by the manager, user, and approval to test the functionality of the room reservation process, vehicle, and approval process. The number of respondents was 26, with details of 5 IT Support, 6 GA, and 15 representatives from other units. At this stage, a system release and review are also carried out. The test points at this stage are the input, get, update, delete and view data functions. The results of tests carried out by respondents are 100% as expected so that the system is feasible to use.

The prototyping method is suitable for use in this study because the project being carried out adjusts to demand and needs user needs so that it requires a clear picture and interaction during the application development process. The application of the prototyping method in this study has a good impact because feedback from users is fast, so that errors can be detected more quickly.

CONCLUSION

Based on the results and discussion of the general affairs information system using the prototyping method, it can be concluded as follows:

1. The general affairs information system that was built in this research has been used in the company and can replace processes that were previously still being done using Microsoft excelR
2. The results of system functionality testing conducted by respondents using the black-box method get 100% of the system functions declared feasible.

The results of the research conducted there are still shortcomings that need to be developed again. Namely, the system only focuses on employee data, vehicles, and rooms. It is hoped that the following research can develop broader features so that the system becomes more effective and efficient.

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