

Web-Based Cash Contribution Monitoring Information System for Citizens in Graha Sudirman Indramayu Housing

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ABSTRACT

The payment system in economic transactions is experiencing rapid progress along with the development of sophisticated technology. Graha Sudirman is a housing located in Indramayu Regency, West Java. In the cash dues section of residents in the Graha Sudirman Indramayu housing, cash dues collection is still done conventionally by way of the coordinator collecting each resident's house and recording it through a cash book. However, the cash contributions that are collected are not transparent in the data on expenditures or the remaining balance, so that residents do not know the income and disbursements of cash contributions paid every month. This application is designed and implemented using the PHP programming language with MySQL, it can be concluded that the Citizen Cash Contribution Monitoring application using a Codeigniter framework can help admins recap cash dues, expenses, remaining balances and can help coordinators be able to streamline their time in collecting cash contributions because In this application the coordinator only needs to verify cash contribution payments made by residents by transfer and make it easier for residents to make cash contribution payments, provide criticism and suggestions for housing, find out financial data such as cash contribution reports, and expense reports.

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1. INTRODUCTION

Payment systems in economic transactions are undergoing rapid progress in line with the development of advanced technology. Technological advances in payment systems have replaced the role of cash (currency), which is known to the public as a means of payment in general, into a more effective and efficient form of non-cash payment. This is supported by the increasing number of companies or shopping centers in Indonesia that accept payment transactions using non-cash payment systems. Fast, safe, comfortable, easy, and efficient in making transactions is the reason why society has a good response to non-cash payment systems, and this non-cash payment system has been developed by banks and non-banks as payment system administrators.

The collection of monthly fees at Graha Sudirman Indramayu housing uses the conventional method where the coordinator visits each resident. The problem that occurs if the conventional way of collecting residents is often outside the housing space resulting in the payment of fees that are not systematically arranged. With the problem described above, with the website-based monitoring information system for cash donations of residents in Graha Sudirman Indramayu Housing, it is hoped that the community data collection process can be controlled regularly, as well as payment process fees, by paying via bank transfer, residents can upload proof of transfer. through the application to be created, and with this application, residents can find out about the status of payment of their dues, so that residents can cooperate in paying their obligations without having to be billed by the coordinator.

2. LITERATURE REVIEW

The theoretical studies used in community service activities that the author uses are as follows.

Application

An application is a ready-to-use program that can be used to execute commands from users of this application to obtain more accurate results by the purpose of making this application, the application has the meaning of solving problems using one of the data processing techniques applications that usually compete with the desired calculations or expected as well as expected data processing. The definition of an application, in general, is an applied tool that functions specifically and is integrated according to its capabilities, the application is a computer device that is ready to be used for users (Novendri, 2019: 47).

CodeIgniter Framework

CodeIgniter is an open-source application in the form of a PHP framework with an MVC (Model, View, Controller) model for building dynamic websites using PHP. CodeIgniter makes it easier for web developers to create web applications faster than building one from scratch. CodeIgniter was first released on February 28, 2006. The latest stable version is version 3.0.6. (Akbar, 2016).

MVC is a fairly popular concept in web application development, starting with the Small Talk programming language, MVC separates application development based on the main components that build the application such as data manipulation, user interface, and the part that controls the application. 3 types of components make up an MVC pattern in applications, namely (Akbar, 2016):

- a) See, is the part that deals with the logic of the presentation. In web applications, this section is usually an HTML template file, which is handled by the controller. See functions for receiving and representing data to users. This section does not have direct access to the model section.
- b) Models, usually directly related to the database to manipulate data (insert, update, delete, search) handle validation from the controller side, but cannot handle the view directly.
- c) The controller is the part that organizes the relationship between the model part and the view part, the controller serves to receive requests and data from the user and then determines the application be processed.

By using the principles of MVC, applications can be developed according to the capabilities of the developer, namely the programmer who handles the model and controller parts, while the designer handles the view so that the use of MVC architecture (Model, View, Guard) can improve the reliability and organization of code (Akbar, 2016).

However, good communication is required between the programmer and the designer in dealing with the variables to be displayed. There are several advantages of CodeIgniter (CI) over other PHP frameworks.

- a) Performance is very fast: one of the reasons for not using the framework is because its execution is slower than PHP from this practice, but Codeigniter is so fast that even Codeigniter is the fastest framework compared to other frameworks.
- b) Lots of communities: with lots of CI communities, this makes it easier for us to interact with others, whether it's questions or the latest technology.
- c) Very complete documentation: Each CodeIgniter installation package comes with an excellent and complete user guide to get started, the language is easy to understand.

Hypertext Preprocessor (PHP)

PHP or Hypertext Preprocessor is a server-side scripting language capable of parsing PHP code from web code with a .php extension, producing a dynamic client-side (browser) web page display. PHP was first developed by a programmer named Rasmus Lerdorf in 1995. Subsequently, Rasmus released the source code to the public and named it PHP / FI so many programmers were interested in developing PHP. And then in 1997 a company called Zend, developed a better PHP interpreter. PHP code is processed through server-side processing, so PHP is called server-side scripting. So that PHP code cannot be provided directly when there is a request from the client (browser). PHP code is inserted into HTML code by inserting it into HTML code. To distinguish PHP code from HTML code, in front of the PHP code is given an opening tag and at the end of the PHP code is given a closing tag. With PHP code, websites can do many dynamic things, such as access databases, create images, read and write files, and so on. The results of PHP code processing will be returned in the form of HTML code to be displayed in the browser (Sari, 2019).

PHP is designed to work with database servers and is made in such a way that creating HTML documents that can access a database is very easy. The purpose of this scripting language is to create applications in which applications built by PHP will generally provide results on a web browser, but the whole process is run on a server (Susilo, 2018: 99).

MySQL

In its development, MYSQL is also called SQL which is an abbreviation of Structured Query Language. SQL is a structured language specifically used to process databases. MYSQL is an open-source database management system. MYSQL is a relational database management system. This means that the data handled in the database will be placed in several separate tables so that data manipulation will be faster.

MYSQL can be used to manage databases ranging from small to very large. SQL can also be interpreted as a standard interface for relationship management systems, including systems operating on personal computers. SQL lets the user know where it is located, or how the information is organized. SQL is easier to use than a programming language but more complex than spreadsheet and data processing software. A simple SQL statement can generate a group of requests for information stored on different computers in various scattered locations, thus consuming a lot of time and computational resources. SQLite can be used for interactive research, or ad hoc report creation, or embedded in application programs.

SQL is also a programming language specifically designed to send query commands (access data based on a specific address) to a database. Most database software uses SQL slightly differently, but all SQL

databases support standard subgroups. So, SQL is a query that is attached to a specific database or SDB. In other words, SQL is a command or language embedded in SDB. As a query language, SQL is supported by SDBs, such as MySQL Server, MySQL, PostgreSQL, Interbase, and Oracle. In addition, SQL is also supported by non-server databases, such as MS Access and Paradox (Novendri, 2019: 48-49).

3. IMPLEMENTATION METHOD

Software development

The waterfall model is the most widely used model for the development stage. This waterfall model is also known as the traditional model or classic model. Waterfall models (waterfalls) are often called linear sequence models (linear sequences) or classical life cycles (classical cycles). "These waterfall models provide a sequential software life flow approach, starting from the analysis, design, coding, testing, and support (Susilo, M., et al., 2018). The implementation method used in community service activities adopts the waterfall software development model with levels as shown in Figure 1 and the following explanation.

Needs Analysis (Analysis)

The system design level allocates system requirements to both hardware and software by shaping the overall system architecture. Software design involves identifying and describing the abstractions of basic software systems and their relationships.

Design (Design)

At this stage, the system is first developed with small programs called units, which are consolidated at a later stage. Each unit is developed and tested for a function called unit testing.

Writing Program Code (Coding)

The implementation level is the level of implementation of analysis and design results that have been made both systems, databases, and interfaces into a specific programming language (in this study the author uses PHP programming language implemented in the framework CodeIgniter) to produce website applications that can help administrators, coordinators and residents in overcoming problems in housing Graha Sudirman Indramayu, especially in the scope of cash contributions of residents.

System Test (Test)

This testing phase aims to test the application that has been made whether the application works optimally or there are still bugs before the application is sent to the housing of Graha Sudirman Indramayu. At this stage, the author performs the test starting from the admin, coordinator, and occupant pages. With this testing phase, the author can find possible errors so that the author can make corrections to the errors in the application and ensure that the application runs smoothly.

System Repair (Maintenance)

This level is the longest. The system is installed and used in real-time. Maintenance involves correcting errors not found in previous stages, improving the implementation of system units, and improving system services as a new requirement.

Research tools

Tools used in planning and designing geographic information systems using Unified Modeling Language (UML). UML is a set of structures and techniques for modeling object-oriented program design (OOP) and its applications.

UML is a family of graphical notations supported by a single model, which helps illustrate and design software systems, especially systems built using object-oriented programming (Irhamisyah, D, 2018).

4. RESULTS AND DISCUSSION

Needs Analysis

At this stage, the author collects information through the interview method on what information and data are needed in making a cash contribution monitoring application of residents in Graha Sudirman Indramayu housing for analysis. By analyzing the system requirements, the author can find out what problems exist in the housing of Graha Sudirman Indramayu. One of the problems that occur is that the collection and payment of cash contributions are still done conventionally by paying directly through coordinators and administrators by visiting the homes of each resident. Apart from digging up information and finding out what problems are in Graha Sudirman Indramayu's housing. The running system can be seen in Figure 1. Then, the proposed system can be seen in Figure 2.

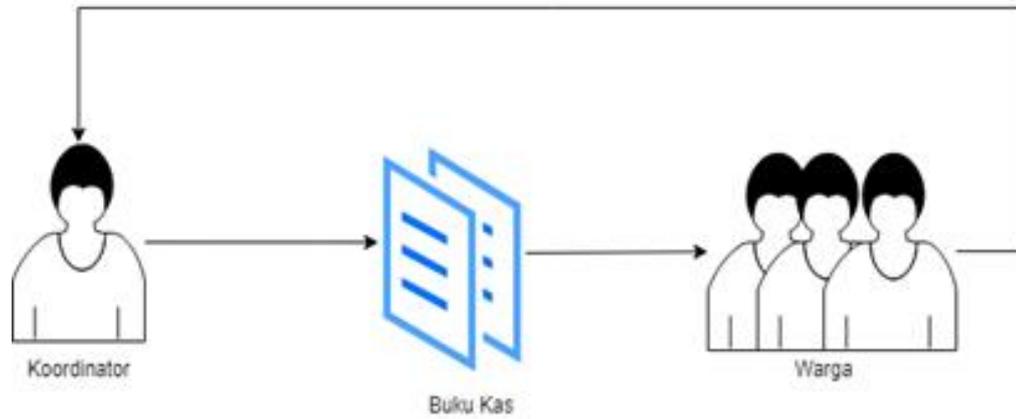


Figure 1. The running system

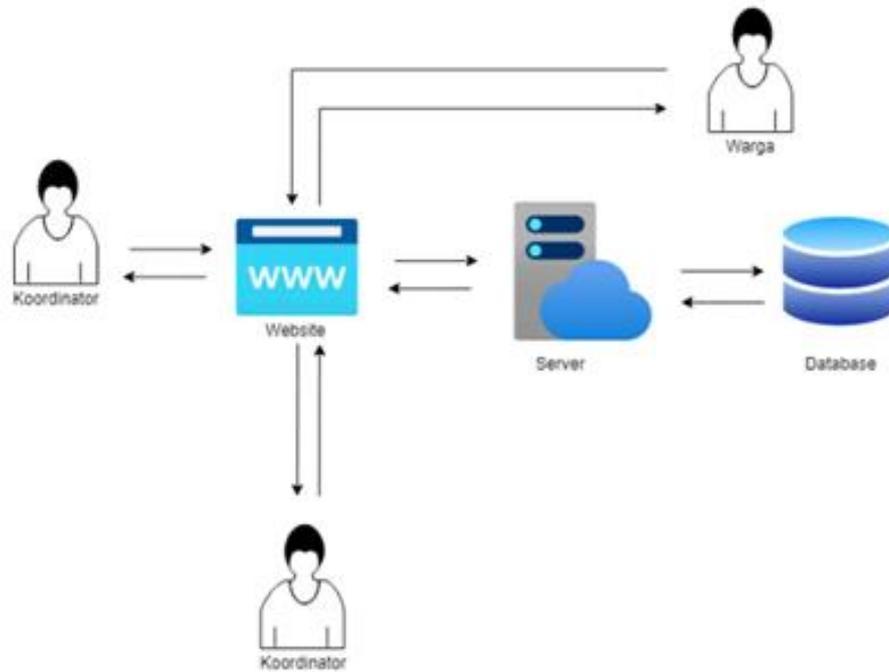


Figure 2. The proposed system

System Design

A description of the functioning of the system from the perspective of the actor or user. The use case describes the special interaction between the user and the system regarding how the system is used. The steps to use the system are called scenarios, which describe each sequence of events in the system (Irhamsyah, D, 2018).

The following is a case diagram of the use of a citizen cash contribution monitoring application based on a website consisting of 3 (three) actors, namely administrators, coordinators, and residents can be seen in Figure 3.

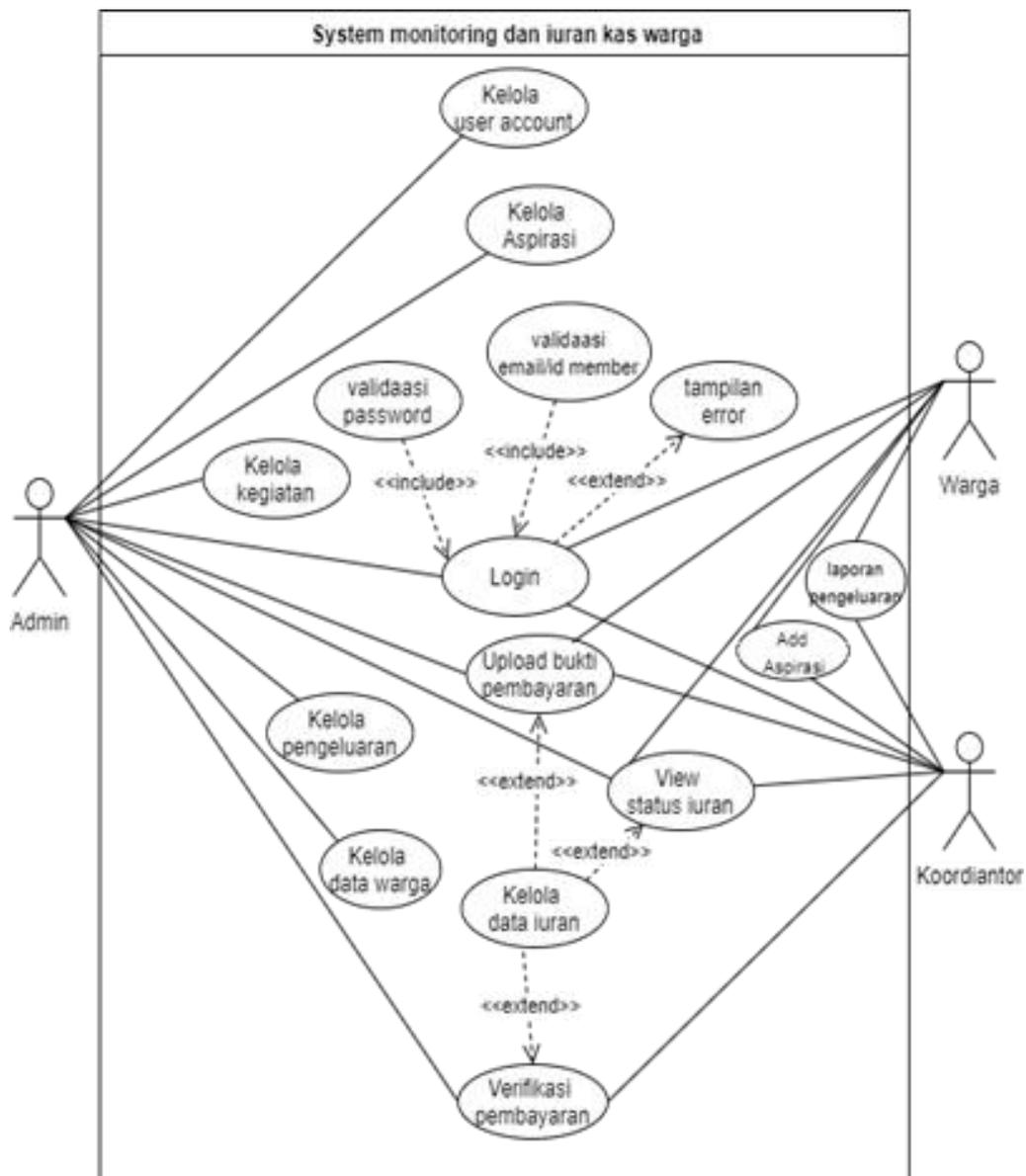


Figure 3. Model Usecase Diagram

Activity Diagram

Activity diagrams model the workflow of a business process and the sequence of activities in a process. The activity diagram can be seen in Figure 4. below.

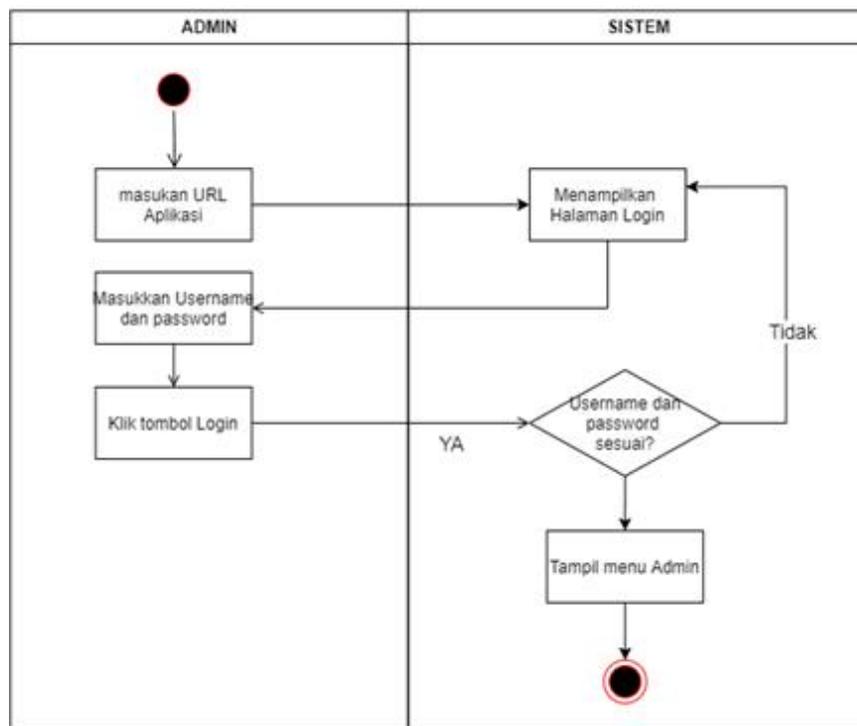


Figure 4. Activity Diagram

Sequence Diagram

The sequence Diagram displays the process in the design of a monitoring application for the monitoring of Citizen Cash Fee in Graha Sudirman Indramayu Housing based on the website in sequence. The sequence diagram can be seen in Figure 5 below.

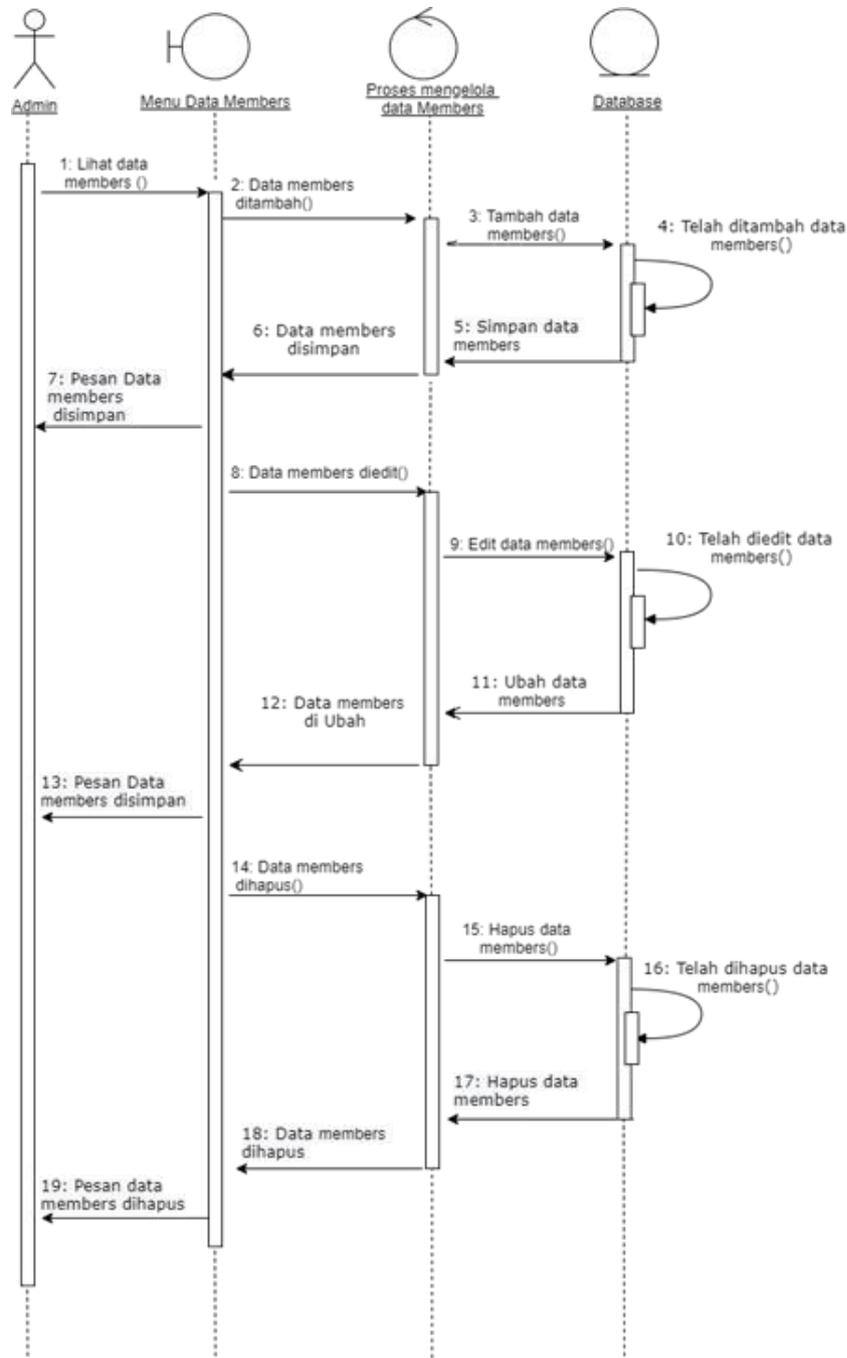


Figure 5. Sequence diagram of manage and members

System Implementation

The implementation level is the level of implementation of the analysis and design that has been made both systems, database, and interface into a specific programming language (the author uses PHP programming language implemented in CodeIgniter framework) to produce application websites that can help administrators, coordinators and residents in overcoming problems in the housing of Graha Sudirman Indramayu, especially in the scope of cash contributions of residents. Login image, admin dashboard page, and contribution cash report, as shown in Figure 6., Figure 7., and Figure 8.

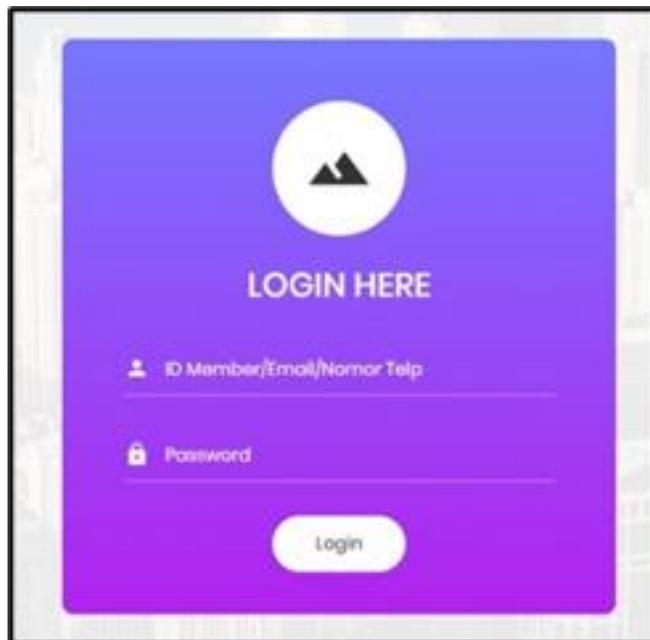


Figure 6. Login Image

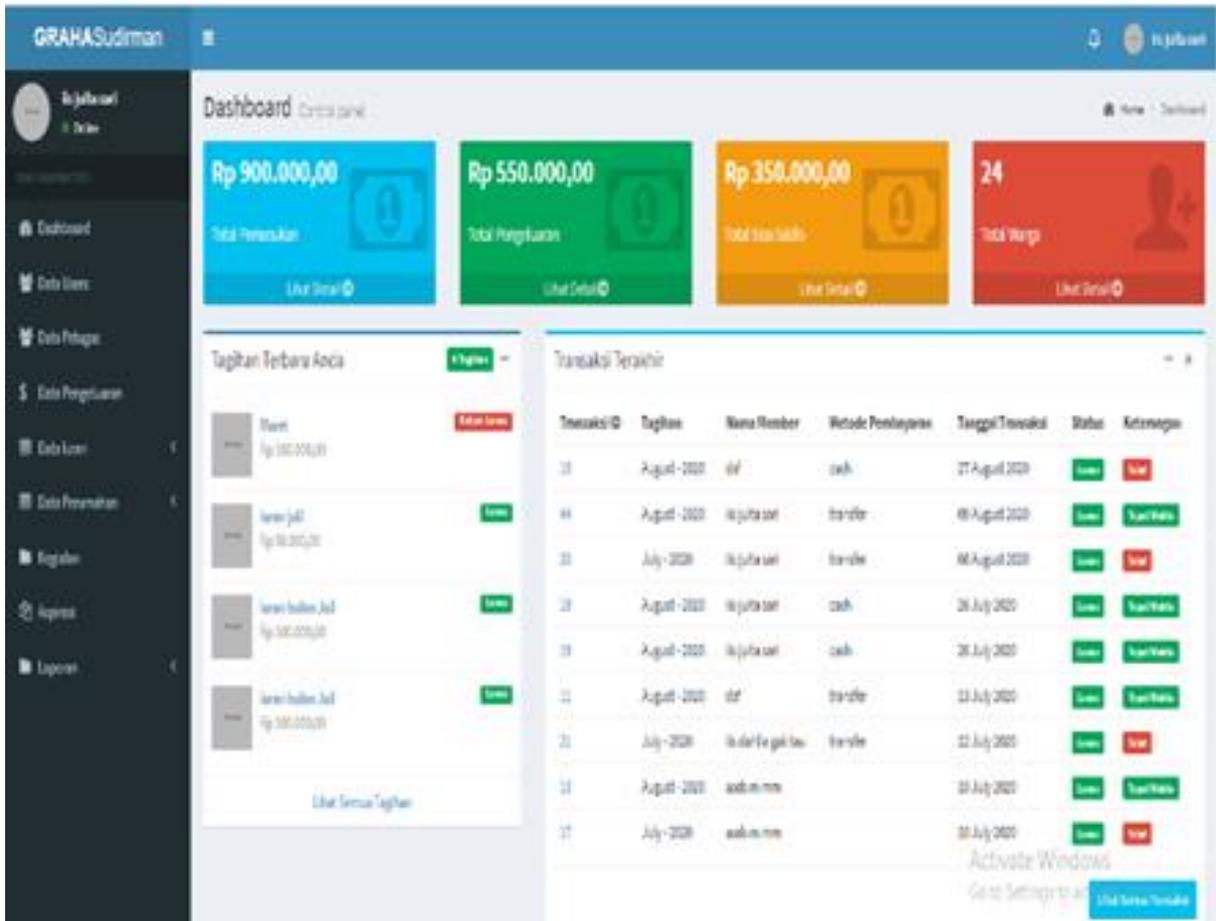


Figure 7. Admin Dashboard Page

LAPORAN KAS
Perumahan Graha Sederma

Periode : 2020-01-01 s.d. 2020-08-31

No	Tanggal	Keterangan	Jumlah	
			Debit	Kredit
1	09 July 2020	Pemasukan Dari iuran	Rp 100.000,00	-
2	10 July 2020	Pemasukan Dari iuran	Rp 250.000,00	-
3	12 July 2020	Pemasukan Dari iuran	Rp 50.000,00	-
4	13 July 2020	Pemasukan Dari iuran	Rp 100.000,00	-
5	14 July 2020	Pemasukan Dari iuran	Rp 100.000,00	-
6	26 July 2020	Pemasukan Dari iuran	Rp 200.000,00	-
7	08 August 2020	Pemasukan Dari iuran	Rp 50.000,00	-
8	09 August 2020	Pemasukan Dari iuran	Rp 100.000,00	-
9	27 August 2020	Pemasukan Dari iuran	Rp 50.000,00	-
10	08 April 2020	Makan Bersama	-	Rp 200.000,00
11	12 May 2020	Gotong royong	-	Rp 150.000,00
12	02 August 2020	Honor	-	Rp 200.000,00
Total			Rp 1.000.000,00	Rp 550.000,00

Figure 8. Contribution Cash Report

5. CONCLUSIONS AND SUGGESTIONS

The conclusions obtained from community service activities are as follows:

- a) The contribution payment process can be done easily and effectively as the coordinator does not have to travel to each resident's home to pick up the money.
- b) The payment verification process performed by the residents can be verified easily, anytime, and anywhere by the online system by the coordinator.
- c) The application that has been made can provide transparency in the report on the fees collected.
- d) The test is done using a black-box test that the created application is already running well. Residents can make payments by transferring and uploading proof of payment through the app, then administrators and coordinators can confirm residents' payments.

Some suggestions for further application development are as follows:

- a) Add notifications to residents when a bill is about to arrive
- b) Add a payment gateway method so that the verification process can be performed by the system automatically.
- c) Improving the security of data related to the rupiah nominal

6. REFERENCES

- Akbar. 2016. An online learning system based on a web application using Codeigniter framework. Jakarta: Universitas Indonesia, Thesis-unpublished.
- Without name. 2019. Definition of Components and Functions of XAMPP with explanation. Education Lecturer [Internet]. [downloaded 27 June 2020]. Available at <https://www.dosenpendidikan.co.id>.
- Cholifah, W. N., et al. 2018. Black Box Test on Android -Based Action & Strategy Apps with Phonegap Technology. *Journal of Strings*, 3 (2), 207-208.
- Destiningrum, M and Adrian, Q. J. 2017. Web -Based Physician Scheduling Information System Using Codeigniter Framework (Case Study: Yukum Medical Center Hospital. *Teknoinfo Journal*, 11 (2), 33.
- Husain, A., et al. 2017. Design of Online Attendance System Using Android to Accelerate Staff Attendance Process in PT. Sintech Eternal Blessing. *Journal of Technomedia*, 2 (1), 112.
- Irhamyah, D. 2018. Web -Based Analysis of Vocational Information System Design and Scholarship for DKI Jakarta Using Deduction Method. *Mercu Buana University Jakarta [Internet]*. [downloaded 17 May 2020]. Available at <http://digilib.mercubuana.ac.id>.

- Novendri, M. S., et al. 2019. Goods Inventory Application in Ms. Nurul Islam Dumai Using PHP and MySQL. *Journal of Management and Information Technology*, 10 (2), 47.
- Pahlevy. 2015. Flowchart Definitions and Data Definitions. [Internet]. [downloaded 2020 March 30]. Available at <http://www.landasanteori.com/2015/10/pengertian-flowchart-dan-definisidata.html>.
- Pasaribu, J. S. 2017. Implementation of YII Framework in PPDB System Development for SMP BPPI Baleendah Bandung Regency. *Scientific Journal of Applied Information Technology*, 3 (2), 158.
- Sari, A. O., et al. 2019. Web Programming I. *Universiti Informatika Bina Sarana* [Internet]. [downloaded 2 June 2020]. Available at <http://repository.bsi.ac.id>.
- Sasmito, G. W. 2017. Application of Waterfall Method in Industrial Geographic Information System Design in Tegal Regency. *Journal of Informatics: Journal of IT Development*, 2 (1), 8.
- Susilo, M., et al. 2018. Design and Build an Online Store Website Using the Waterfall Method. *National Journal of Network and Technology*, 2 (2), 99-100.