

## Design And Develop a Website Application For Waste Retribution Payment

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**Abstract** - Dinas Lingkungan Hidup Kabupaten Serang carries out regional government affairs in the environmental sector in accordance with the Regent's vision, mission and programs outlined in the Regional Medium Term Development Plan (RPJMD). The problem that occurs in the waste levy payment process is that errors often occur in the data collection service for waste levy payments, then in the process of collecting data and recording payment reports, also in the process of recording payments it can still be said to be less efficient because the levy officer has to write the data on proof of payment and wait for it to be recorded. on paper by the treasurer and then summarized in Microsoft Office Excel. The method used in this research is CodeIgniter (CI) for the information system being developed. The system design used in this research uses the waterfall method so that it is easier to develop and uses the Unified Modeling Language (UML) for visual system modeling. The results achieved after implementing this application made it easier for admins to overcome difficulties in inputting waste levy data which had previously been carried out at the Serang district environmental service. The conclusion obtained is that by using this waste levy application, it can support improvements in work so that the data input process is more effective and efficient. Waste levy data becomes more structured and well documented

### Keywords :

*Environmental Service;  
Building Design;  
Retribution;  
Garbage;  
Waterfall Method;*

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### 1. INTRODUCTION

Dinas Lingkungan Hidup Kabupaten Serang (DLH) was formed in accordance with the Assembly Regulations No. 180 of 2011 concerning Changes in Occupation, Organization, Tasks and Functions of the Serang Districts Environment Service. It carried out the administrative work of the districts in the area of the living environment in conformity with the vision, mission and programme of the Bupati as described in the Medium-Term Development Plan of the District (RPJMD), as well as its mission to "Improve the Independence and the Science of the Economic Community, to Optimize the Absorption of Labour Power and the Reduction of Poverty" of the Assault District and its mission is to manage the district's environment both in terms of hygiene and waste that exists in this district.

Waste is a residual material that is disposed of as a result of a production process, be it industrial or household. Waste is also something that the human being does not want after the end of its use. [1]. The problem of garbage is often a very complex problem to be dealt with. This issue is one of the major issues of almost all cities in Indonesia and other developing countries. The increase in population,

accompanied by the high level of social and economic activity of the community, has caused the production of garbage to rise every day. The limited means and means of transportation and the lack of adequate final disposal (TPA) make garbage a heavy job to deal with [2]. The problem of garbage is also a national issue and an important issue in urban environmental issues. It will not decrease or exhaust, nor will it continue to increase as the human population grows and human activities become higher and more complex. The ever-increasing volume of garbage will reduce space and interfere with human activity, so that the human purpose of improving the quality of life decreases its quality of living due to the problem of the waste moon [3]

Accommodation/cleaning service remuneration is one of the general service benefits that contributes to the original income of the region. Which has the legal basis issued by the Central Government and the Regional Government. Accurate, effective and accurate processing of payment deposit data is aimed at facilitating the creation of payment report deposit. Currently, computerized applications are a necessity and have a very important role in various government agencies in processing and presenting payment data to be easy, accurate and fast and can store

payment data automatically especially in the government agency in this case on the UPT Retribution of Personnel in the Environmental Service of the District of Serang. Application of waste payment of retribution to UPT retribution of personnel itself is currently still done conventionally. The process of depositing and recording the payment report is often mistaken. The process of recording payments can still be said to be less efficient because the remuneration officer has to write data on the proof of payment and wait for the recording on paper by the treasurer to be recorded in Microsoft Office Excel.

This research facilitates the government's courageous retribution of garbage to the public [4], so that there is no wild retribution outside of the public's obligations. According to the Law No. 1 of the Republic of Indonesia No. 2022 on Financial Relations between the Central Government and the Regional Government, remuneration is defined as a local charge as payment for certain services or permits specifically provided and/or granted by the regional Government for the benefit of individuals or entities. According to [5]remunerating is an allowance to the government that can be enforced and the repayment can be directly appointed, this compulsion is of an economic nature because anyone who does not feel the return of the government will not be subject to such allowance. But it is a matter of matter, of matter and of thing that is unwanted, whether it is residue or residue, or discarded. However, in the concept of legislation, garbage can also arise, exist or arise as a result of a natural process of solid forms[6]. It is different in the view of Rudi Hartono who sees that garbages do not arise due to natural processes, or in other words that the material that arises as a consequence of the natural process is not called waste, because there is only products that do not move.

This research has developed a web-based application on the payment of garbage repayment by raising the title of the design build a web based application of the payment for garbages repayments in the Environmental Services of the District of Attaang. According to [7]design is to create and create an application or system that does not exist on an instance or object. Otherwise according to [8] design is a general term for creating or designing an object from the beginning of construction to the end of construction. According to [9]explains that the design of the system is a determinant at the time of processing the data used by the new system. The purpose of the creation of this web-based application is to facilitate the staff part of the repayment of garbage so that it does not take long in the search for data and facilitate in the payment. According to [10]the general definition of an application is an applied tool that functions specifically and integrated according to the capabilities it has, the application is a computer device that is ready for use by the user, while according to [11]the application can be understood as a program in the form of software that runs on a particular system that is useful to assist various activities performed by humans.

## 2. RESEARCH METHODS

### Data Collection Methods

Data collection methodology In the methodology of data collection writers do two ways, namely by conducting interviews and literature studies.

#### a. Interview Techniques

Interviews are done to find out the things that are in depth, as well as as data collection techniques to find the problems to be investigated. The advantage of this technique is the ability to obtain information directly and more quickly and in depth. Interviews can be done face-to-face or by phone. In this study, the subject of the interview technique is the Retribution Administrator, Retribution Officer.

#### b. Data collection techniques

Data conclusion techniques by direct observation of all activities carried out by officers in accordance with the issues to be discussed.

#### c. Literary studies

literature studies that are readings of libraries such as reference books, catalogues, research journals and the like. The purpose of the study of literature is to be able to reveal a variety of theories that are important and relevant to the problems that are being faced or studied.

### Problem Solving Method

The method used in problem solving is by using data collection methods with research stages as described in tabel 1 below.

Tabel 1. Problem Solving Method

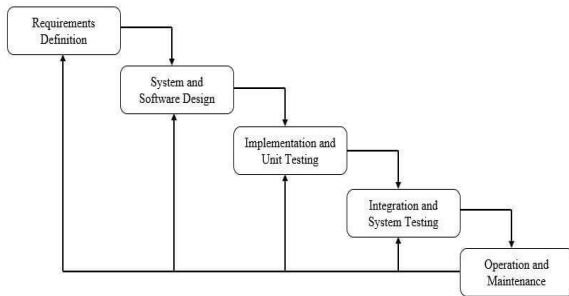
Tahapan Penelitian	Kegiatan	Hasil
I Tahapan Pendahuluan	Mulai 1. Perumusan Masalah 2. Penentuan Judul Penelitian 3. Menentukan Tujuan Penelitian 4. Studi Pustaka	Proposal
II Tahapan Pengumpulan data	Teknik Pengumpulan Data 1. Observasi 2. Wawancara	Data Primer & Sekunder
III Tahapan Analisa Sistem	1. Menggunakan metode waterfall dalam pembuatan sistem 2. melakukan analisa terhadap sistem yang berjalan dan memberikan sistem usulan baru	Diagram UML 1. Usecase Diagram 2. Activity Diagram 3. Class Diagram 4. Sequence Diagram
IV Tahapan Perancangan Aplikasi	Perancangan sistem menggunakan Objek Oriented Design	1. Database sistem 2. Interface Sistem
V Tahapan Pengujian dan Impelmentasi	Pembuatan Coding 1. Pengujian Aplikasi 2. Implementasi Aplikasi 3. User Acceptance Test 4. Dokumentasi Aplikasi 5. Presentasi Hasil Penelitian Selesai	Aplikasi Laporan Tugas Akhir

### System Development Methods

This research uses the waterfall method for the development of the system. The choice of this method of waterfall is because this method is very easy to learn and understand by students. This method is highly sequential

from one stage to the next in detail and minimizes errors in the system construction process [12].

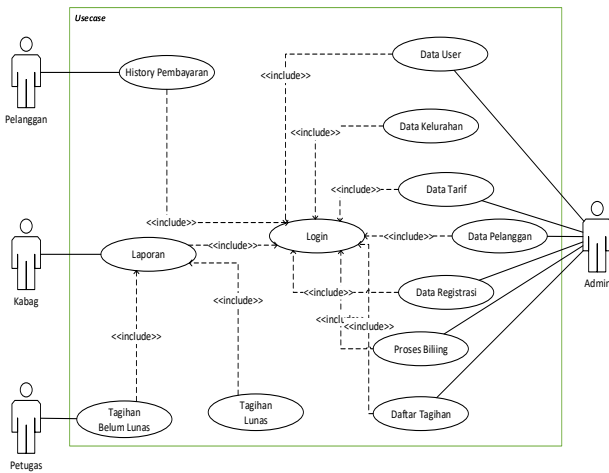
Figure 1. Waterfall Method



### 3. RESULTS AND DISCUSSION

Use Case is a series of related in-system work done by admin to describe the functionality of the system of payment of garbage retribution so that it can be understood by the user, system functions and any menu that is present in the system can be seen in Figure 2.

Figure 2. Usecase Diagram

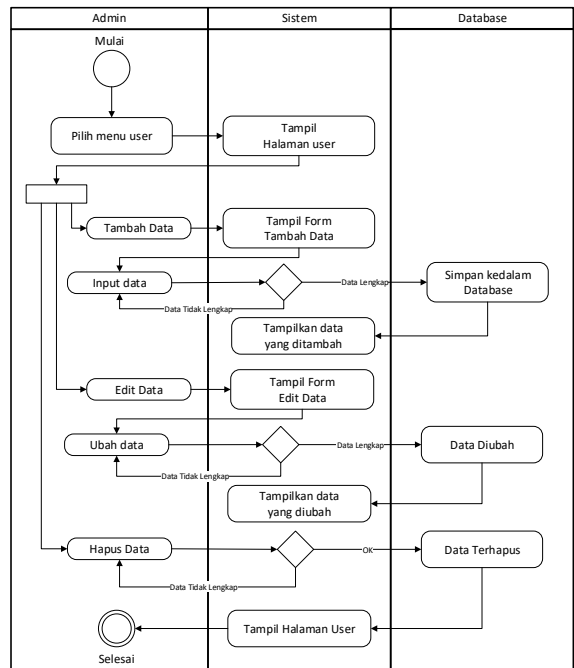


Tabel 2 Definition Use Case

No	Use Case	Description
1	Login	Activity where the process enters the username and password data to run the application
2	Data User	A process or activity that performs user data management
3	Data Pelanggan	A process or activity where customer data input is performed.

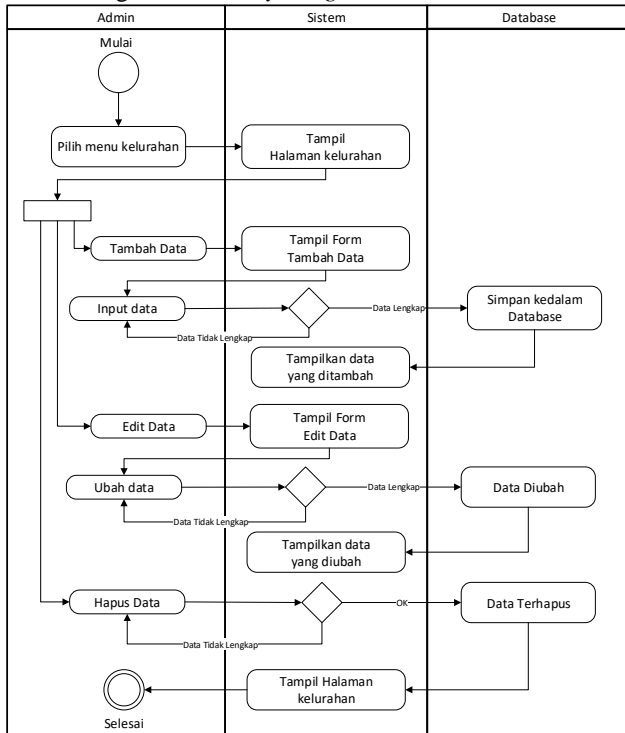
4	Data Kelurahan	A process or activity in which the data is entered.
5	Data Tarif	Activities of the data entry process of the rate of remuneration
6	Data Registrasi	Registration process to become a customer or a member of the garbage retribution
7	Proses Billing	The process of making a refund bill for garbage.
8	Daftar Tagihan	Retribution bill data and update bill data
9	Laporan Belum Lunas	Customer Reporting Activity Not Exhausted.
10	Laporan Lunas	Expired customer report activity
11	History Pembayaran	Customer activity can see the history of payment of garbage repayments

Figure 3. Activity Diagram Menu User



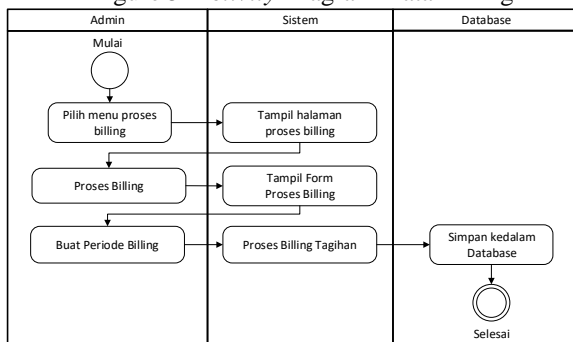
The admin selects the user menu, shows the user page. Then add data, displays the add data form and then clicks on the data input if the data is complete then the save to the database view appears but if data is incomplete then it needs to go back to the data entry until it is complete. In the user's menu there is an edit of the data and then click on the edit data appears change the data, and the data successfully changes. Then there is a delete data view and data will be deleted when the data are complete.

Figure 4. Activity Diagram Data Kelurahan



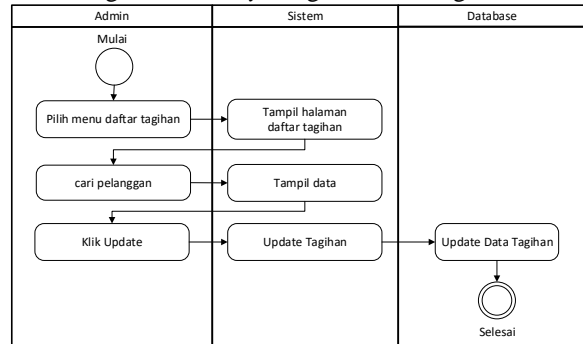
The admin selects the correct menu, shows the correct page. Then add data, display the correct form and then click on the data input if the data is complete and then the save view in the database appears but if it is incomplete then it must go back to the data entry until it is complete. In the user menu there is an edit of the data then click edit the data appears change the data, and the data succeeds in changing. Then there is a delete data view and data will be deleted when the data has been completed.

Figure 5 Activity Diagram Data Billing



The administrator selects the billing process menu and then displays the Billing process page, then the process of billing appears.

Figure 6 Activity Diagram Data Tagihan

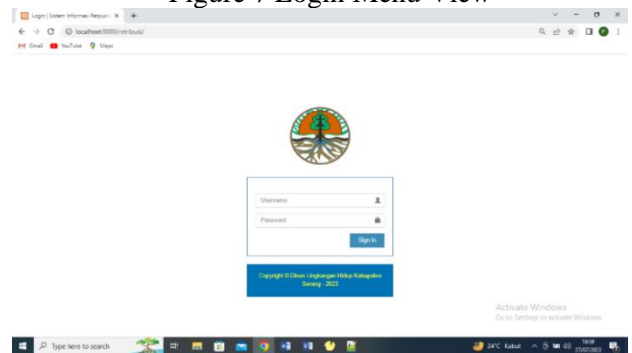


The admin selects the invoice list menu, then the billing list page appears, click Find Customer, then display data, then click, click Update, and then display the bill update and billing data update.

In operating the Application should follow the following procedures:

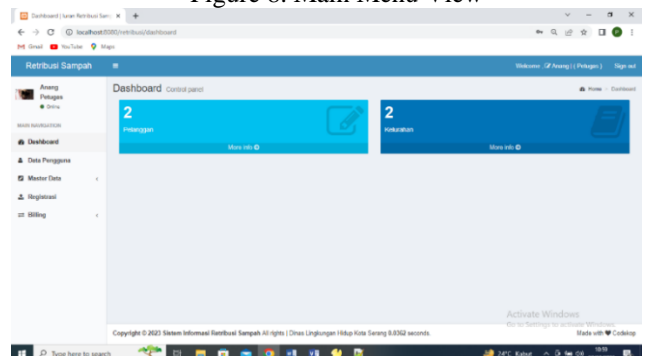
- 1). Start the computer according to the specified standard
- 2). Select Browser–moment localhost/retribution

Figure 7 Login Menu View



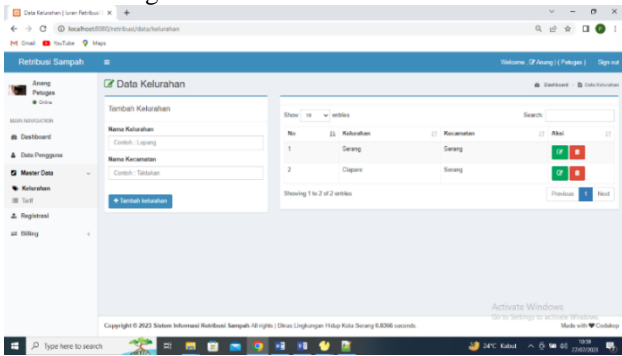
After entering the username and password, click the login button and the main menu for the installation process will appear like the picture below.

Figure 8. Main Menu View



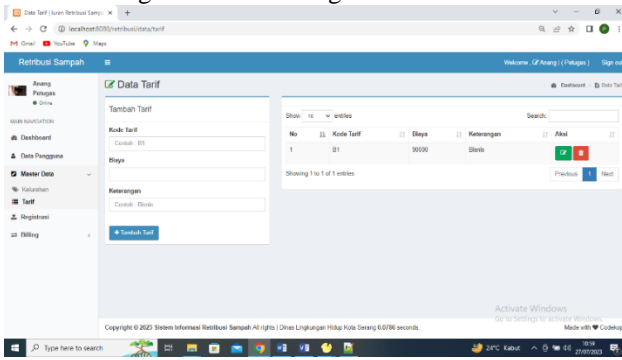
Then go to the filling menu to add data and update filling as shown below:

Figure 9. Menu View Data Keluarahan



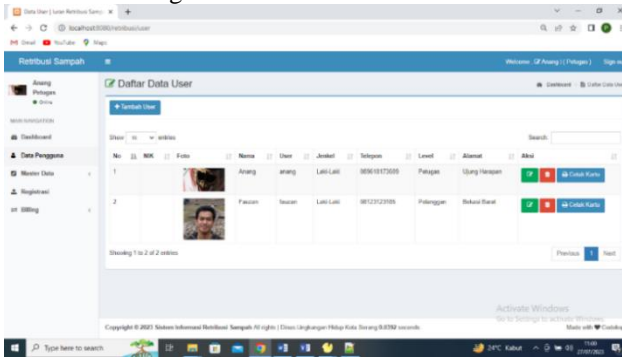
Then go to the rate menu to add data and update the rate as shown below:

Figure 10. Menu Page View Data Tarif



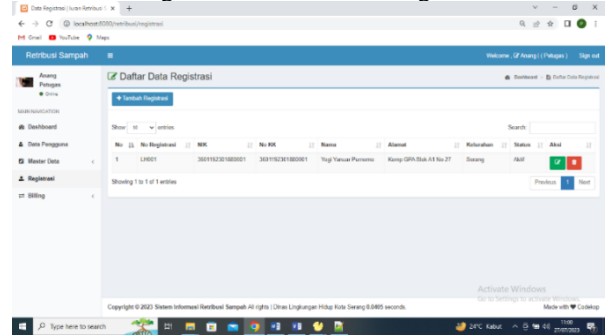
Then go to the user menu to add data and update the user as shown below:

Figure 11. Menu View Data User



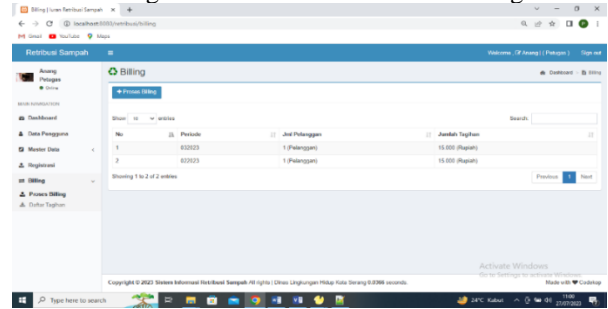
Next for registration customers go to the registration menu to do registration like the picture below:

Figure 12. View Menu Registration



Next for billing process billing go into the billing menu to add billing period like the picture below:

Figure 13. View Menu Proses Billing



Next for billing process go to billing menu to update customer bills like the picture below:

Figure 14. View Menu Data Tagihan

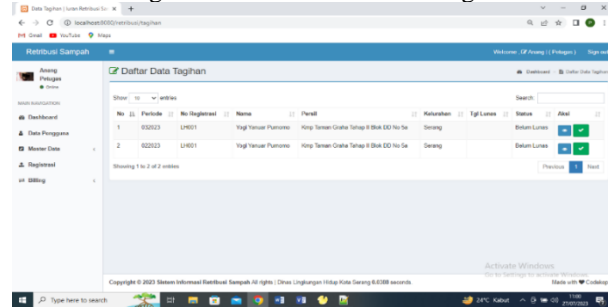
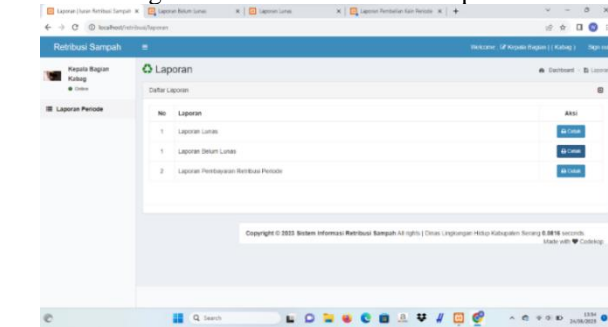


Figure 15. View Menu Data Laporan



#### 4. CONCLUSION

Based on the research carried out, the conclusion was as follows:

1. This application system using the waterfall method makes it easier for the administrator to enter data and create customer reports so that the process is not more efficient.
2. The application system developed using the website so that users can use it online and can be used anywhere and anytime.
3. The user (user) is facilitated in the process of recording and payment of garbage retribution with proof of payment.

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