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DESIGNING OF Z-CLEAN HOME SERVICE WEBSITE

Orlando Claudio[1], Bagus Mulyawan[2], Darius Andana Haris[3]

[1]Information System Study Programs, Faculty of Infomation Technology, University Tarumanagara Jakarta
Email: Orlando.825200021@stu.untar.ac.id
[2]Faculty of Infomation Technology, University Tarumanagara Jakarta
Email: Bagus@fti.untar.ac.id
[3]Faculty of Infomation Technology, University Tarumanagara Jakarta
Email: Dariush@fti.untar.ac.id

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ABSTRACT

Z-Clean is a home services portal that will provide different types of home services that will be needed from time to time. This app is more aimed at today's younger generation who may not have time to do homework or cannot do homework such as ac servicing. This provides new opportunities for the general public who have the expertise to do a field that is included in home service services, so that they can register themselves as one of these service providers. On this home service website where users can become customers or become service providers according to their respective expertise. There is also an admin role that will have its own dashboard to manage the existing database. Making this home service website will be done based on the website and using the Waterfall method. There is also a process design that contains UML, Use Case diagram, Activity diagram, Sequence diagram, Class diagram, ERD, Table Structure, and interface design. The programming languages used are HTML, CSS, PHP and MySQL as the database. The conclusion obtained from the design of the Z-Clean home service portal system is a website-based application that will be useful for users to feel comfortable where this home service allows users to get services without having to leave the house so that it can save time and energy.

Keywords: *Service; Application; Waterfall; PHP; MySQL*

1. PREFACE

Introduction

Home services now focus on providing services that will be obtained by consumers to help consumer's daily lives. This service covers many areas such as environmental care, health and installation of a product that can be done in the client's home. One of the benefits that can be provided through home services is that it provides easy access and provides convenience to consumers because this service eliminates the need for clients to go to physical stores. With nowadays rapid technological advance, it certainly requires innovation and creativity from economic actors. Technology utilization is a very powerful tool to increase business success. Almost all business activities today are carried out using technology with the main objectives of seeking new innovations, profitability, business continuity and business growth and development [1].

This topic of discussion has been carried out several times before [2]. There were several journals that were made with a similar theme [3]. Starting from the pandemic that occurred which had an impact on the wider community on daily activities in life [4]. Therefore, home services are present which provide effective, efficient, and reliable services. The purpose of the the home service website that researchers create will provide new opportunities for people who may have skills and proficiency in a field in services in order to list the services they can offer

according to the types of services that exist. With this website, it will also help the younger generation who may be looking for a specific service that can find it on this home service website, because this home service website will provide various types of service options that can be added over the time.

Problem Formulation

The home service industry can also find several problems that must be overcome such as the lack of information regarding the qualifications of service providers which can make clients hesitate when choosing a service provider. Then there are various prices of several services that make clients quite confused. The existence of limitations with access to technology regarding home service platform can also be an obstacle, especially for a group that is not familiar with the online system.

2. RESEARCH METHOD

The application program will be made using the waterfall method, the Waterfall model is a fairly old method in software engineering. This waterfall model is also sometimes called a linear sequential model, waterfall suggests a systematic and sequential approach to software development starting with the customer. Requirements specifications and progress through Communication, Planning, Modeling, Construction, and Deployment to the ongoing support of the finished software [5]. According to [6], in his/her research state that the waterfall method used in the making of the application to ensure the project is successful.

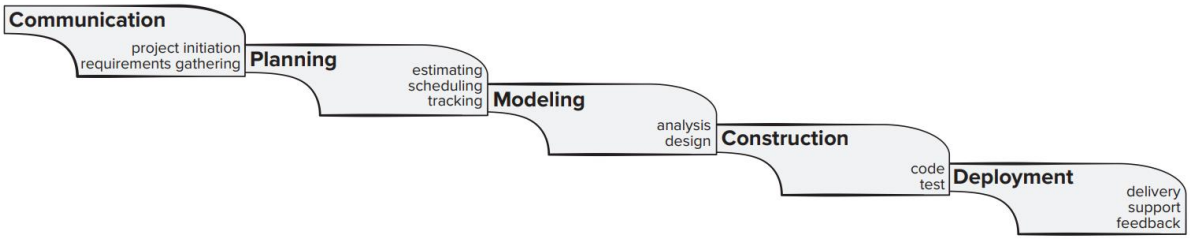


Figure 1. SDLC Waterfall Model
Image Source: Book [5]

- Communication

At communication stage, researchers begin to look for the user requirement. At this stage, interviews will be conducted with service providers such as cleaning service & ac service workers. At the requirement gathering stage, features will be listed based on the results of interviews with service providers. In addition, interviews will also be conducted with people who need service providers.

- Planning

At planning stage, researchers will determine the duration of the project for such as design, application development, testing, and deployment. And make it in a schedule so that it is structured.

- Modeling

At modeling stage, researchers will start doing design and analysis such as using the Unified Modeling Language (UML), namely modeling the system to be created such as: Use Case Diagram, Activity Diagram, Sequence Diagram, Class Diagram, Entity Relationship Diagram, and Prototype User Interface.

- Construction

At construction stage, the coding process will be carried out in accordance with the previously designed system. And a test will also be made to tell whether the program is running properly or not.

- Deployment

At deployment stage, is the last stage by maintaining the system so that it runs well and can be used by users to get feedback to determine whether it is running well or not.

3. RESULT AND DISCUSSION

Z-Clean already has a design in the process of making it such as conducting user interviews, creating use cases, class diagrams, activity diagrams, sequence diagrams, logical & conceptual diagrams, table structures, and interface design.

3.1 Communication

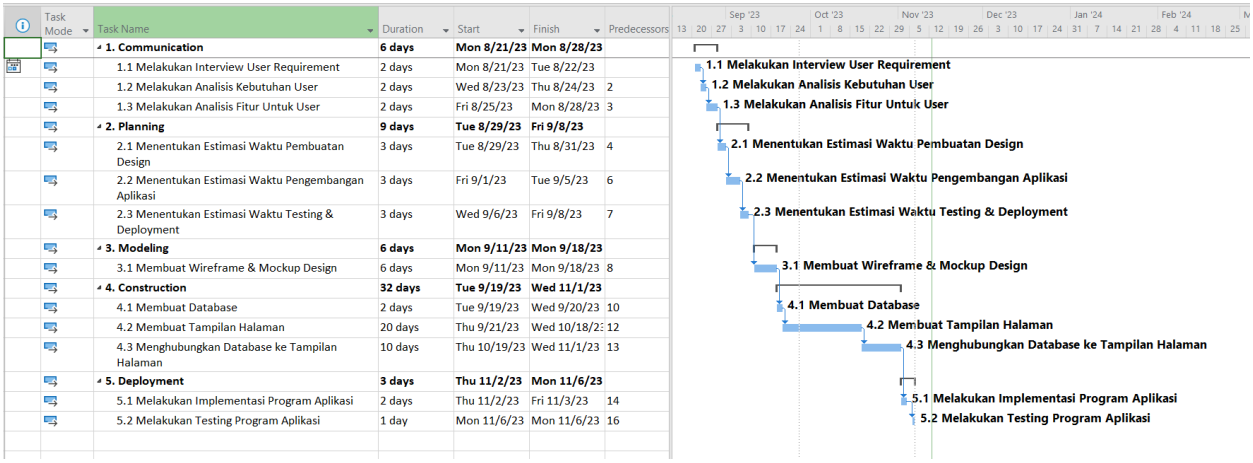
User Interview

In this user interview stage there will be an interview that conducted face-to-face with one person who has experience in the cleaning service field for several years. The results obtained from the interview begin with include what cleaning is done when carrying out the work, whether cleaning tools are readily available or must be prepared by yourself in advance, whether there are separate requirements before carrying out the work and calculations around the cost of services.

3.2 Planning

Gantt Chart

In this planning stage, there will be making a gantt chart. Gantt chart is a visual tool used in project management to illustrate a project work schedule. Gantt charts display project tasks as horizontal bars on a time chart, which makes it easy to see when each task starts, finishes and completed.



Task Mode	Task Name	Duration	Start	Finish	Predecessors
	1. Communication	**6 days**	**Mon 8/21/23**	**Mon 8/28/23**	
	1.1 Melakukan Interview User Requirement	2 days	Mon 8/21/23	Tue 8/22/23	
	1.2 Melakukan Analisis Kebutuhan User	2 days	Wed 8/23/23	Thu 8/24/23	2
	1.3 Melakukan Analisis Fitur Untuk User	2 days	Fri 8/25/23	Mon 8/28/23	3
	2. Planning	**9 days**	**Tue 8/29/23**	**Fri 9/8/23**	
	2.1 Menentukan Estimasi Waktu Pembuatan Design	3 days	Tue 8/29/23	Thu 8/31/23	4
	2.2 Menentukan Estimasi Waktu Pengembangan Aplikasi	3 days	Fri 9/1/23	Tue 9/5/23	6
	2.3 Menentukan Estimasi Waktu Testing & Deployment	3 days	Wed 9/6/23	Fri 9/8/23	7
	3. Modeling	**6 days**	**Mon 9/11/23**	**Mon 9/18/23**	
	3.1 Membuat Wireframe & Mockup Design	6 days	Mon 9/11/23	Mon 9/18/23	8
	4. Construction	**32 days**	**Tue 9/19/23**	**Wed 11/1/23**	
	4.1 Membuat Database	2 days	Tue 9/19/23	Wed 9/20/23	10
	4.2 Membuat Tampilan Halaman	20 days	Thu 9/21/23	Wed 10/18/23	12
	4.3 Menghubungkan Database ke Tampilan Halaman	10 days	Thu 10/19/23	Wed 11/1/23	13
	5. Deployment	**3 days**	**Thu 11/2/23**	**Mon 11/6/23**	
	5.1 Melakukan Implementasi Program Aplikasi	2 days	Thu 11/2/23	Fri 11/3/23	14
	5.2 Melakukan Testing Program Aplikasi	1 day	Mon 11/6/23	Mon 11/6/23	16

Figure 2. Use Case Diagram

Image Source: Personal Documentation

3.3 Modeling

Use Case Diagram

In the use case diagram design on the home service portal website, there will be 3 actors, namely: (i) Visitors who can browse the types of services available and place an order, (ii) Service Providers who are visitors who register to become a service provider, (iii) Admins who have the task of managing all data in the system.

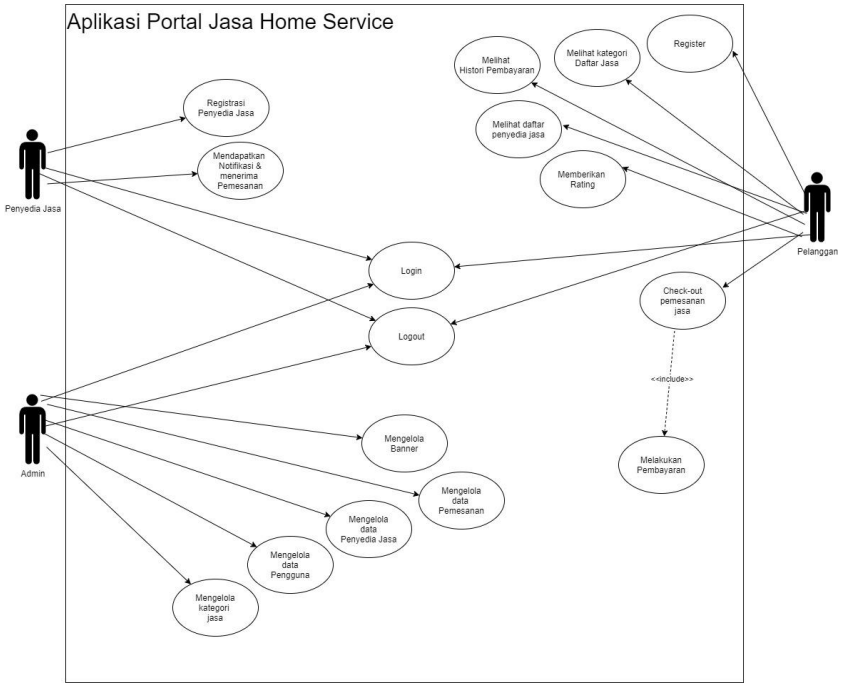


Figure 3. Use Case Diagram
Image Source: Personal Documentation

Class Diagram

This is a diagram that describes the types of objects that exist in the system and their different types of static relationships that exist between them. Class diagram also displays the properties and operations of the class will provides the constraints that apply to the class for how objects are connected [7].

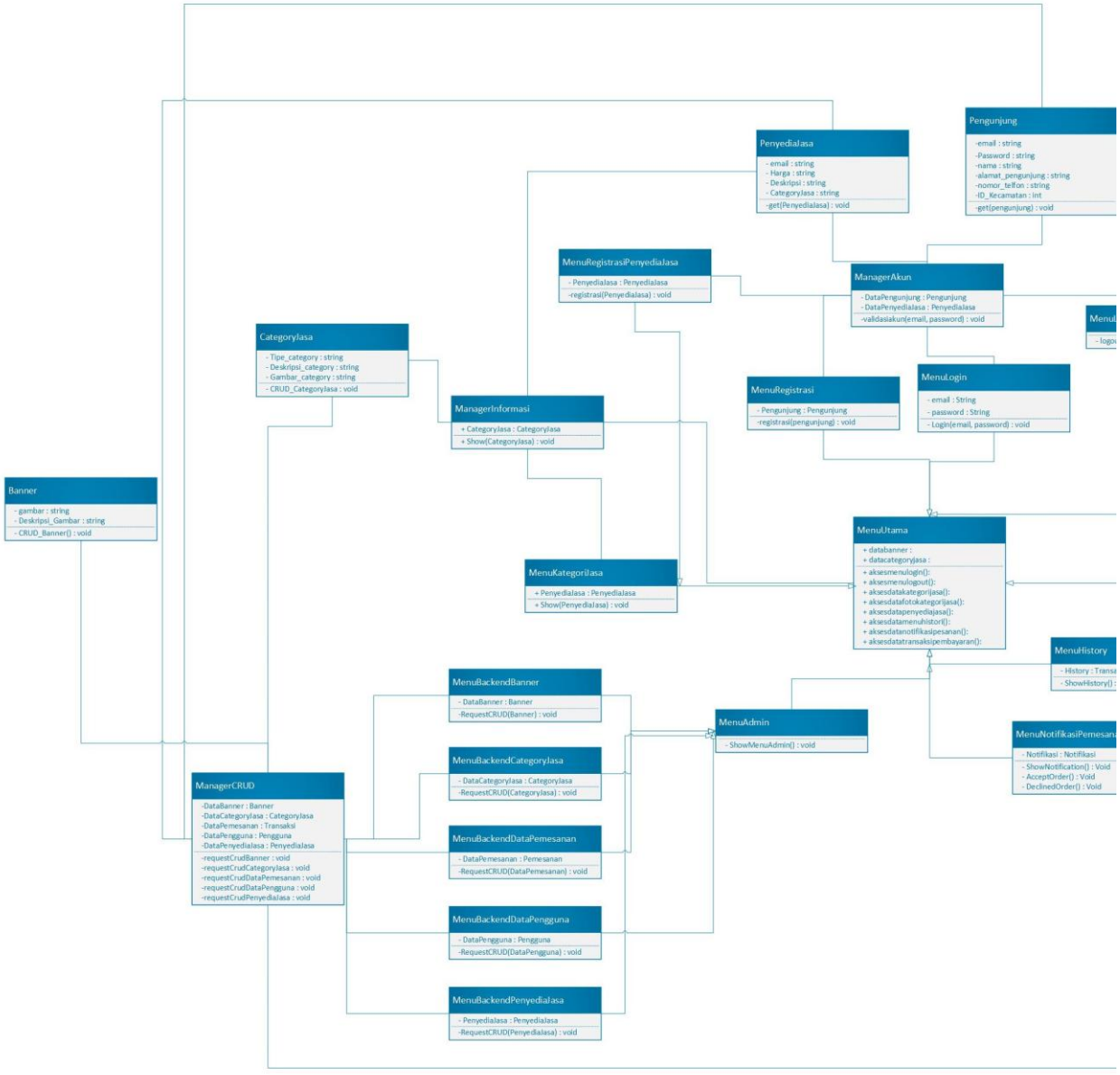


Figure 4. Class Diagram
Image Source: Personal Documentation

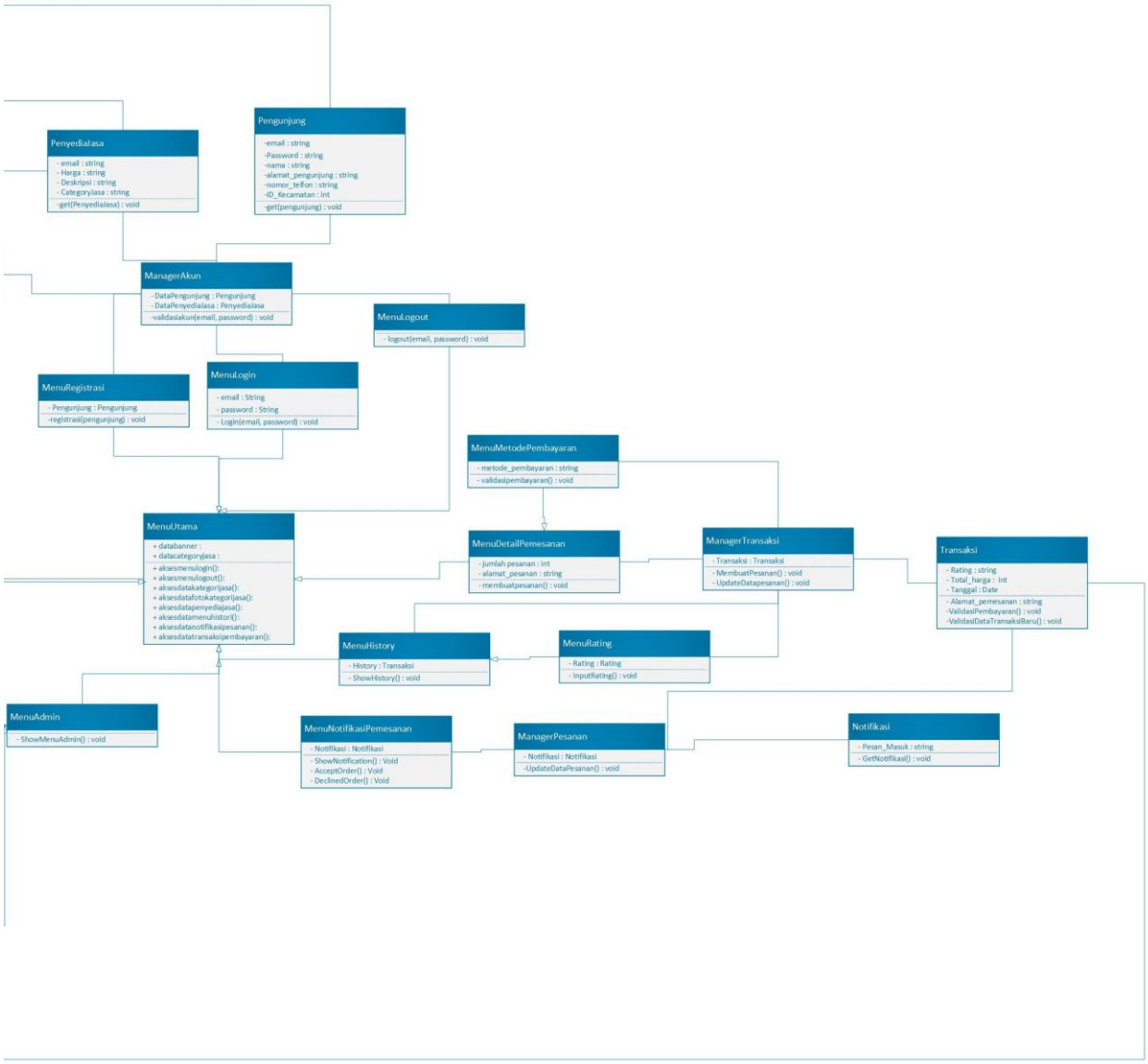


Figure 5. Class Diagram
Image Source: Personal Documentation

Logical Database Design (ERD)

ER modeling is a top down approach in database design that starts from identifying important data called entities and relationships between data that need to be presented in the form of a model. ER modeling is an important technique that every database designer must master and establish on the basis of the methods presented in this book [8].

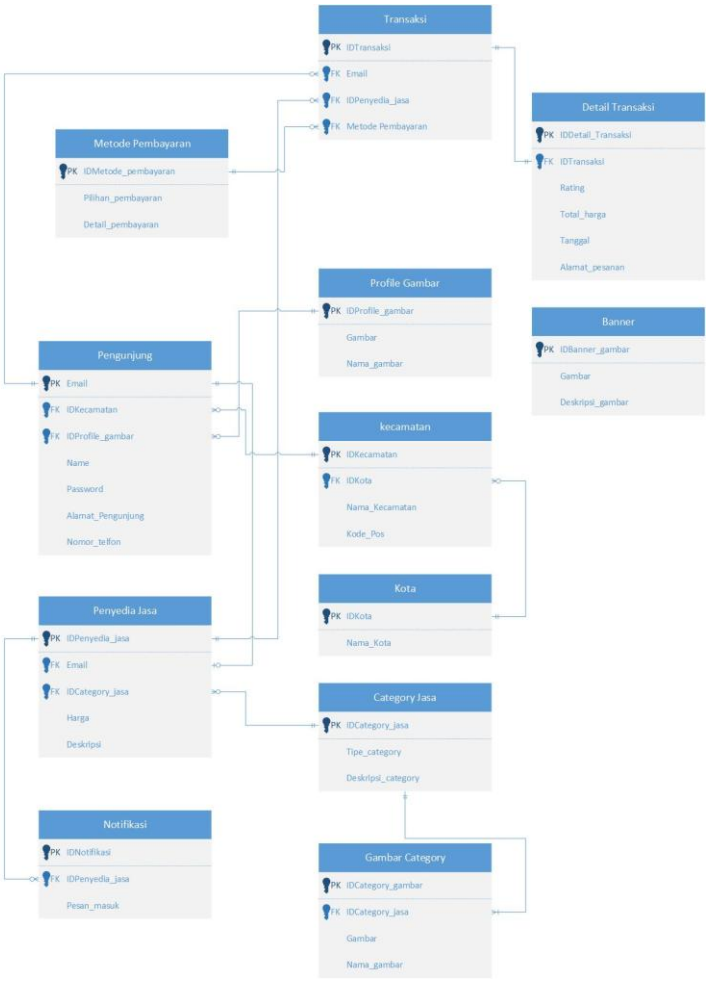


Figure 6. ER Diagram
Image Source: Personal Documentation

3.4 Construction

In this construction stage begin by making programs using the visual studio code application, to create a display on the frontend website and dashboard using html and css with the tailwind framework, on the backend using php with the laravel framework and using phpmyadmin as the database.

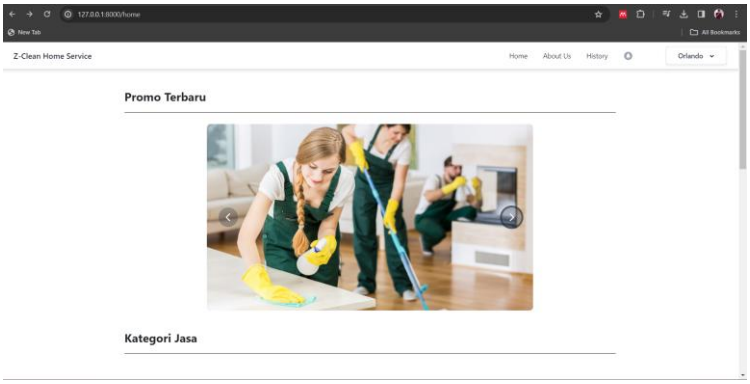


Figure 7. Home Page
Image Source: Personal Documentation

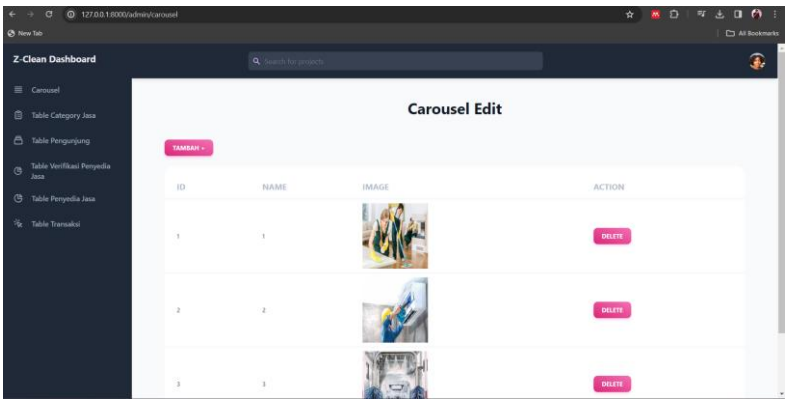


Figure 6. Dashboard Page
Image Source: Personal Documentation

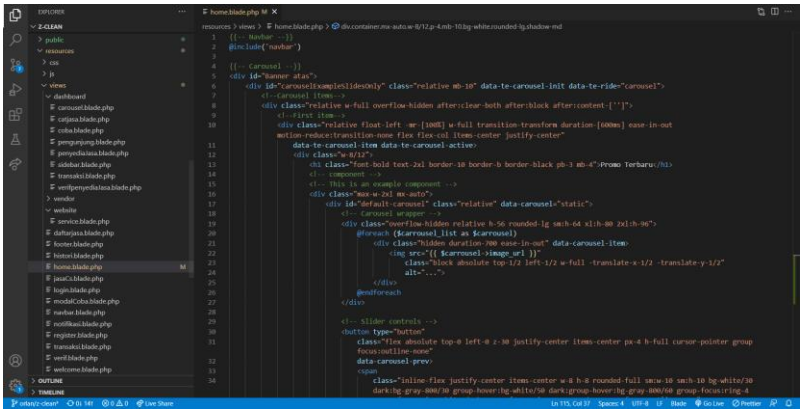


Figure 6. Program Code
Image Source: Personal Documentation

4. CONCLUSIONS AND RECOMMENDATIONS

The conclusion obtained from designing the Z-Clean home service portal system is a website-based application that will be useful for users to feel comfortable where this home service service allows users to receive services without having to leave the house so as to save time and energy. The results of this study are also expected to be a reference to help other parties who may be developing research that has the same needs.

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