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## **The Design of a Website-Based Motorcycle Installment Bill Check Application at Indah Motor KM.5**

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### **ABSTRACT**

Looking at current developments, many activities have implemented the capabilities and advantages of technology in them so that the operational costs, time and energy needed can be found. This technological development also develops this technology also creates needs in the community and even new needs. Along with the need for credit is one alternative carried out by the community and business entities to obtain something with the aim of meeting their needs. This credit or installment activity also does not rule out the possibility of being applied to this type of motorcycle sales business, because in reality the need for motorcycles is currently important and has a high level of demand so that some motorcycle sales provide a payment system for motorcycles that are designed to improve performance. and quality of service, the community needs flexibility to speed up payment for motorbikes that are being sold in installments. From the research that has been done as mentioned above, the author intends to carry out development in terms of installment implementation into a website-based application, so the author takes the title "Designing a Website-Based Motorcycle Installment Bill Check Application at Indah Motor Km.5". From the problems that occur, the researcher intends to simplify credit or installment problems into a website that can make it easier for admins to process and solve problems that apply in the community.

**Keywords:** application, bill, installment, motorcycle, website-based

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### **INTRODUCTION**

Throughout the current development, many activities have implemented technical capabilities and advantages so that technology can find the required operating costs, time, and energy. The development technology is also developing, and this technology has also created community needs and even new needs. In addition to the need for credit, communities and business entities have another option for obtaining something that meets their needs.

This kind of credit or installment payment activity does not rule out the possibility of applying to this type of motorcycle sales business. In reality, the demand for motorcycles is currently significant, and the market is excellent, so some motorcycle sales provide payment systems suitable for purposes—motorcycles in improving performance. And service quality, the community needs the flexibility to speed up payment for motorcycles sold in installments.

The type of research used in this study is research and development (R&D) using the waterfall method. The product of this research is a motorcycle installment management application, which can operate in motorcycle sales business entities.

With the success of the above research objectives, it is hoped that beneficial for all parties and the benefits of this research are as follows: Improve efficiency and activities in business processes, Provide alternative access to customers due to the checking process and information obtained from the company can be accessed from wherecourse, Minimize difficulties in the registration process due to the terms and condition the registration process guide is available on the website, Simplify data analysis, capital analysis, expenditure funds and advantages through website applications, Increase marketing power which can indirectly affect business development in a positive way.

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### LITERATURE REVIEW

In web-based online auction system has become a very popular component in the electronic market. A practical case study will be introduced in this work to highlight best practices for analyzing and designing web-based online auction systems. (Aldaej, R, Alfowzan, L, & Alhashem, R, 2018)

In this study, the author wants to collect data in the form of checking motorcycle installments to make it easier for writers and fields related to data collection. The data that will be used by the author is the process of crediting a motorcycle. The data is taken to determine whether the installments or motorcycle loans can be marketed or not. If it is right then it will be made for sale on the motorcycle. (Asong, 2016)

The implementation of Web Services in the Laravel PHP framework in the article uses the Restful API which became mainstream after soap. This article describes how to effectively build a RESTful API. The microservice architecture is becoming the standard for web services, and why the RESTFUL API has become the mainstream Web service development paradigm because of its light weight, scalability. (Chen, 2017)

Environmental policy is the commitment of an organization or government to laws, regulations, and other policy mechanisms related to environmental issues. (Fay, 1967)

Research demonstrating the benefits of collaborative learning is being conducted across disciplines. This Special Issue discusses the use of the Web and cyber technologies in an information systems class. In this paper, we introduce this Special Issue by discussing the different types of Web technologies looking at how they are used in information systems education, and examining some of the advantages and disadvantages of using them in such research. (Harris, A. L & Rea, A., 2009)

The agility of science and technology in communication has brought a new dimension to the dissemination of information, which may affect human perception, especially about the spread of news related to this pandemic. This study aims to determine student sources of information related to COVID-19 disease and to determine student intentions to share information related to COVID-19. (Hashim, S., Masek, A., & Abdullah, N., 2020)

Individuals with strong self-regulated learning skills, characterized by the ability to plan, manage, and control their learning process, can learn faster and achieve higher grades than those with weaker SRL skills. SRL is especially important in learning environments that provide low levels of support and guidance, as is common with Massive Open Online Courses (MOOCs). (Kizilcec, 2016)

This study will examine what is the rationale for making motorcycles as fiduciary guarantees and their implementation in the field. The arrangement of Fiduciary Institutions in finance companies is regulated explicitly in Law Number 42 of 1999 concerning Fiduciary, namely the transfer of ownership rights to goods as collateral on the basis of trust, while the object itself remains in the hands of the fiduciary giver. (Jayanti, 2018)

Researchers took a different approach and made use of trace data. They first identified the most common pattern of activity between when a student begins a learning session and when a student completes a learning session. The learning pattern is then labeled based on the activities that occur. (Maldonado-Mahauad,, Pérez-Sanagustín, M., & Kizilcec, R., 2018)

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This study describes the relationship and interrelationships of the common issues involved in developing digital skills as an important prerequisite for lifelong learning. While technology is changing faster than ever, it is necessary to develop skills early on in education by incorporating core skills that are appropriate for digital citizenship. (Papers, 2017)

This section describes some of the existing online auction systems and the motivations for designing and implementing them. (Manikandan, 2018)

Motorcycle security systems today still use manual locks that are easily damaged by thieves in seconds. Although there are several motorbike manufacturers that have used Shutter Key Magnets, in fact, this security is not efficient for security because it is prone to damage using only the T key. In this digital era, many new security



systems are safer than manual locks. Therefore, the idea of designing This tool the author uses Ar-duinoUno and Smartphone as controllers in starting a motorcycle easily. For example a computer-based security system. (Panjaitan, Bachtiar, & Rizaldy Khair, 2017)

This paper presents a case study that highlights best practices for designing and building a web-based auction system using UML (Unified Model Language) and component-based programming. We use Use Cases, Class Diagrams, Sequences, and Components offered by UML to design the system. This allows new functions to be added and updated easily. (Sheldon, F, Jerath, K, & Kwon, Y, 2002)

Web programming is a general term used to denote a set of activities for the creation of websites or web applications for the World Wide Web. A large number of web technologies and languages are available for web programming. The core set of technologies for web programming are those recommended by the World Wide Web Consortium, an international community of organizations working together for the development of web standards and the exploration of full web capabilities. (Warf, 2018)

## METHOD

The type of research used in this research is research and development (R&D) with the Waterfall method. Products produced from this research are a Motorcycle Installment Management Application used in motorcycle sales business entities. In the development of this application, the author uses the method Waterfall where this method aims to maximize performance and convenience to reach out. The stages of research and development are as follows: Analysis Stage, Design Stage, Floating Stage, Implementation Stage.(Warf, 2018)

The research and development method that the author uses in this research is using the Waterfall method.

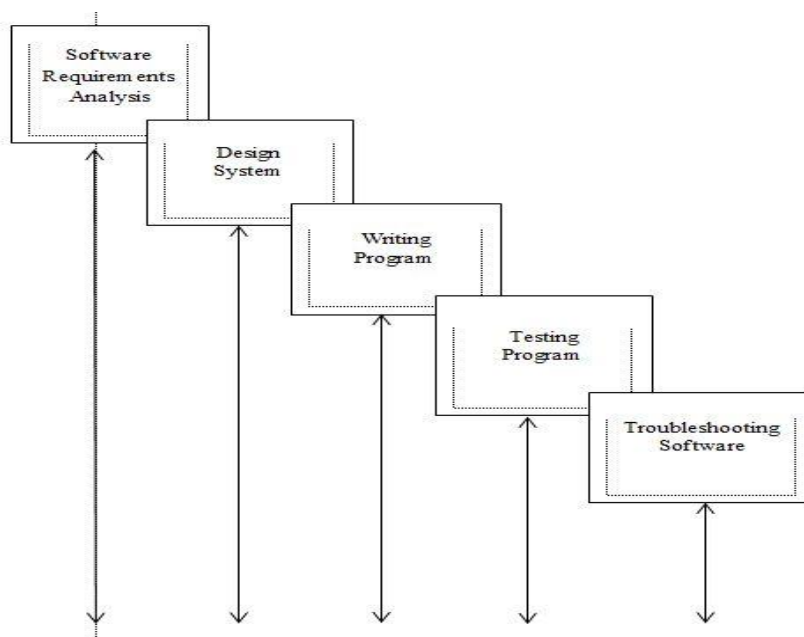


Fig. 1 Waterfall Research Method

The class diagram describes the relationship between classes from the system that the author designed to explain the design of the motorcycle installment bill check application system on Indah Motor KM 5. The following is a class diagram image:

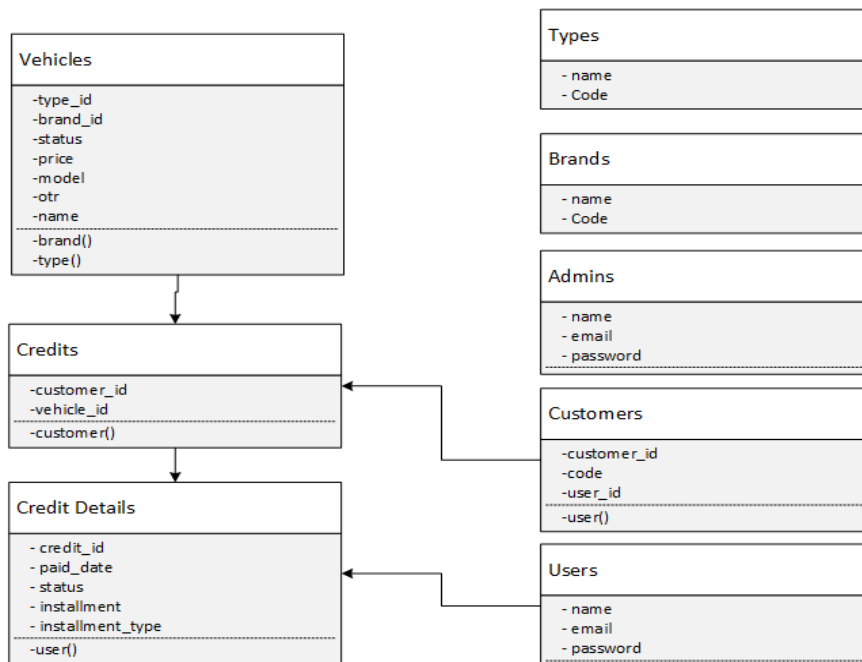


Fig. 2 Class Diagram

**RESULT**

Requirements analysis on the software system to be designed is essential to conclude the overall system requirements. Both development and production need to apply to the system. The following is a list of development and production needs that the authors designed in this study. After the design, both display, strategy, and program writing, the authors get the results as expected as follows. The following is a view that can be seen from the admin side.

Where every operation of a system can run Apache server.Editors are used in development to write program code such as Sublime Text Editor. User data is required for production so that the system can run properly. Meanwhile, the customer's installment information needs, which is the main feature of the application that the author designed.

Table 1 Need Analysis

No	Needs	Description
1	Operating system	The Operating systems that can run Apache Server 2.4 and PHP version 7.0+ need to be used in development and production.
2	Text Editor	The editor is used in development to write program code such as Sublime Text Editor or Visual Studio Code.
3	User	User data is required for production so the system can work properly. This data can also be validated manually or automatically using the system.
4	Product	Product data needed during production mode



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5	InformationInstallment	Customer installment information needs are the main feature of the application for which draft writer.
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### Analysis of Functional

Analysis of functional and non-functional requirements is an essential part of analyzing the development needs of a system. Applicable requirements are analyzed to find out what information is expected on the system to be developed. The following is a table of functional requirements analysis:

Table 2 Analysis of functional

No	Needs	Description
1	Input	a. Admin can add system settings. b. Admin can enter vehicle data. c. Admin can add/change customer data. d. Admins can add new admins with specific access rights.
2	Output	a. Ongoing installment report. b. Financial statements c. Product report d. Customers can see the installation process that is currently running on their accounts.
3	Process	a. Customers and administrators can log in according to the authentication and access rights granted. b. Generate installments according to the data input by the admin.
4	Performance	Customers can easily access the website and see the status of ongoing installments.
5	Control	Customers and administrators are provided with security and authentication through the login process and password verification.

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### Display Design

By the system design and needs analysis that has been made previously, there are several forms and list display framework designs that will apply to the website in this system. By the system design stated earlier, there are two identification actors in the application. The following is a list display design of data that it can display on the administrator page

#	Name	Type	Brand	Model	Year	Color
<input type="checkbox"/>	Supra X125D	Sport	Honda	IVU07777	2018	GREEN
<input type="checkbox"/>	MIO SOUL G	Stardard/Naked	Honda	0987N1867NU1	2015	YELLOW
<input type="checkbox"/>	BEAT 125D	Sport	Honda	X00001	2018	RED
<input type="checkbox"/>	Jupiter Z	sport	Yamaha	TRX00001	2015	BLUE
<input type="checkbox"/>	PRODUK SINGLE	MATIC	Yamaha	X00001	2017	RED

Fig. 3 Vehicle list view

### DISCUSSIONS

At first, customers apply for credit by submitting the necessary documents according to the terms and needs when making credit. After validating the documents received from prospective customers, the administrator inputs customer data into the system, so customers get access rights to apply for credit on products that have been provided

When applying for credit on the product, the administrator can propose a choice of interest rates to be used for customers, including a fixed interest rate (flat) and an effective interest rate (sliding rate). The calculation of the loan interest amount with a fixed interest rate can be done using the formula.

$$\text{monthly principal installment} = \frac{P}{t} \quad (1)$$

$$\text{monthly interest} = Px \frac{i}{12} \quad (2)$$

$$\text{total interest} = \frac{Pxi}{12 xt} \quad (3)$$

While the amount of loan interest with an effective interest rate can be done using a formula.

$$\text{monthly principal installment} = \frac{P}{t} \quad (4)$$

$$\text{month interest in } - n = \frac{(P - (n-1)x \text{ principal installment})xi}{12} \quad (5)$$

P = loan principal

i = interest rate per year

t = length of credit in months

Table 3 Vehicle Table

Colomn	Type	Null	Index
id	Integer	No	Primary
brand_id	Integer	No	
code	Varchar(20)	No	Unique
name	Varchar(225)	No	
model	Varchar(100)	No	
year	Year	No	
color	Varchar(50)	No	
cylinder	Integer(4)	No	
price	Double(15,2)	Yes(0)	

### CONCLUSION

After looking at the needs analysis and details of the method that the author uses, several things can be concluded in the following: Analyze the activities of each actor in the motorcycle loan business flow and apply it to a website-based application, develop a motorcycle credit website application with the Waterfall method, Have understood the concept of motorcycle credit and applied it to a website-based application, Has designed and created a motorcycle loan application using the Laravel Framework, With this credit data processing system in its application, it is hoped that it can help motorcycle loan dealers/leasing businesses in operating their business, thereby improving business performance and performance.

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