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WEB-BASED ONLINE MOTORBIKE DEALING SYSTEM

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Abstract—Motorbikes are an essential mode of transportation in Indonesia. People utilize it on a regular basis to get to work, school, and to transfer goods. According to data from Badan Pusat Statistik, the number of motorbikes in Indonesia hit 112 million units in 2019 [1]. Because of the high demand for motorbikes in Indonesia, many individuals must rely on loans. This, in turn, leads to a rise in fraud cases because people alter paperwork. Increasing fraud incidences by faking identities and documents. Aside from the possibility of fraud, there is also the long process that customers must endure by coming to the showroom, waiting for the list, and following a series of inefficient processes, so that the customers waste their time by doing those activities that cause them to miss other activities that are more productive. Customers may minimize time-wasting activities and fraud as much as feasible by establishing this online system. Because of these issues, this paper will present a web-based system that can assist clients, leasing companies, and dealers in online transactions to ensure that all provided documents are authentic. The system was developed in the website so that can be accessed in both mobile and personal computer. The website will be made based on agile software development process called rapid application development (RAD). Finally, the Web-based online motorbike dealing system has been developed and tested to meet a whole motorbike sales business process properly without any faults, flaws, or issues. Further research will mainly talk about automatic document verification and security issue.

Key words— Motorbikes, fraud cases, online transaction.

I. INTRODUCTION

Motorbikes are now part of the fundamental necessities of humanity, particularly the lower middle class. Motorbikes, in addition to being a status symbol, are designed to aid human mobility in carrying out job duties that demand skill and speed in execution. Motorbikes are now inextricably linked to human activities, and as a result, interest in purchasing motorbikes grows year after year. According to statistics issued by Badan Pusat Statistik (BPS), the number of motorbikes in the nation has reached 112 million units, an increase of 5.66% over the previous year's figure of 106 million units [1].

The huge interest in purchasing bikes indicates a high willingness to acquire a motorbike, which may have an influence on the likelihood of growing the rise of fraud planned by individuals who do not meet the requirements but are eager to have actual benefits as well [2]. It is obvious that the leasing firm would suffer material harm. One of the most common scams is when people submit fraudulent profile data in order to meet the requirements and then conduct fraud by failing to properly repay the credit. Two ladies allegedly defrauded eight leasing firms in 2014 by faking their identification documents in order to buy motorbikes [3]. The identical scam was perpetrated in Surabaya in 2015, when five bikes were bought by using false IDs [4]. In 2017 the joint Subdit Ranmor Ditkreskimum Ditlantas Polda Metro Jaya team was declared to have disclosed falsification of documents such as KK, KTP, and several other documents used to obtain financing for motorbike loans from leasing companies [5]. It is obvious that the leasing firm would suffer material harm. One of the most common scams is when people submit fraudulent profile data in order to meet the requirements and then conduct fraud by failing to properly repay the credit.

Another issue is that the lengthy procedure that customers must go through will take time that is not just a few minutes. The consumer must schedule a visit to the showroom and go through each stage of the procedure in order to gather the documentation required by the leasing company and dealer in person. Customers will waste their time and energy looking for lodging as a result of this offline approach.

In response to these issues, some systems have been invented. The first system is momotorid.id which has a straightforward and comprehensive; the processes that the client must follow are separated into two steps: completing

the identity data and submitting the loan application. The system's flaw is that potential clients are not provided an account to log in to. As a result, clients are unable to trace their purchasing history or the status of their orders. The customer must repeat the entire procedure of giving their identifying credentials if they wish to check on a new motorbike.

The second existing system is Moladin. In moladin, the system only provides a selection of motorbikes for the consumer to choose from and fill out their information, then the procedure is completed on the website. The next process will take place offline, and moladin.com customer support will contact the consumer by phone. Last, the research in [6] also has demonstrated the system to buy the motorbike using online system.

Therefore, with the lack of the previous systems, this paper will focus on creating a web-based online system that will assist clients, leasing companies, and dealers in acquiring a motorbike. Compare to desktop-based application, web-based system can provide more business advantages. In addition, desktop application development has been demonstrated in the research [7]. Next, this web-based online system will reduce client fraud by falsifying papers; this site will have two verification stages. Aside from that, internet transactions may assist buyers save time while purchasing motorbikes. This is due to the fact that three essential parties will be directly involved in this web-based, namely customers, leasing companies, and dealers. Furthermore, this web-based will present numerous vehicle suggestions and leasing that will assist the consumer so that they can select the vehicle of their desires after reviewing the motorbike and installment data. As a result, this solution will benefit all parties, particularly customers, by saving their time and eliminating the chance of leasing companies incurring losses due to fake document by customers, which may occur when doing offline transactions. In addition, Table 1 shows the comparison between this research with the previous system.

TABLE 1. COMPARISON WITH PREVIOUS SYSTEMS

Parameters	**This paper**	**momotorid.id in 2019**	**moladin in 2019**	**Research in [6]**
Profile menu to edit, update, and add	√	×	×	√
Upload documents	√	×	×	×
Search based on some data	√	√	√	√
Choose the leasing company	√	×	×	×
Submission of motorbike loan	√	√	×	×
Set survey date and address	√	√	×	×
Customer login/sign up	√	×	√	√

II. METHODS

The Rapid Application Creation (RAD) approach was utilized to construct the system to help with the development of this system. Rapid application development. RAD is a type of agile software development process. RAD emphasizes working software and user feedback over strict planning and requirements recording. The key benefit of a RAD approach is fast project turnaround, making it an attractive choice for developers working in a fast-paced environment like software development [8]. This rapid pace is made possible by RAD's focus on minimizing the planning stage and maximizing prototype development. There are a handful of steps or phases each development project goes through when using the rapid application development methodology:

- Requirement Planning Phase

A project scoping meeting is the counterpart of this step. This step is broken down into three parts: investigating the present situation, creating project needs, and completing project requirements.

- User Design Phase

This phase will cover the business modelling of the system into modules. This phase to ensure the needs are being met at every step in the design process

- Rapid Construction Phase

This phase breaks down into several smaller steps, there are preparation for rapid construction, Program and application development, Coding, Unit, integration, and system testing.

- Cutover Phase

This is the implementation phase where the product is finished. It includes data conversion, testing, evaluation, and final delivery, also avoid the error occurrence that can be led to fatal failure.

III. RESULTS AND DISCUSSION

This chapter mainly focuses in presenting and discussing the result achieved from the developed system including the system overview, usecase diagram, entity relationship diagram, user interface, and testing plan.

A. System Overview

An online motorbike dealing system is a web-based program that is used as a medium transaction for selling and buying motorbikes by using a loan or credit. This app will primarily assist customers in locating their chosen motorbike, not only based on the brand, but also on their capacity to make the down payment and monthly payment. This method will assist customers in purchasing motorbikes without having to visit a showroom and go through an inconvenient process.

The dealer is the other important user of this system; with this web-based program, the dealer's position is that of an administrator. The dealer has access to all data entered by both the consumer and the leasing company. The dealer has the authority to modify, update, and delete products on the website as the admin. The dealer's other key responsibility is to deliver the chosen motorbike to the buyer. The key tasks of the dealer are also to check all of the data that the consumer uploads.

Besides customer and dealer, this system is also used by leasing company to verify the customer data. The system allows the leasing company to evaluate the detail information about the customer for further consideration before approving the application.

B. Use Case Diagram

Use case diagram is a diagram that consist of actors and use cases [9, 10]. It may be used to illustrate the customer about the system's components and actions. There will be three actors, depending on the requirements and demands. The first actor is the client, who are the individuals who wish to buy a motorbike on the internet. The second actor is the dealer, who is also the administrator of this website. The last actor is the leasing firm, which has the authority to authorize the loan sought by the consumer. The use case diagram for a whole system is shown on the Figure 1.

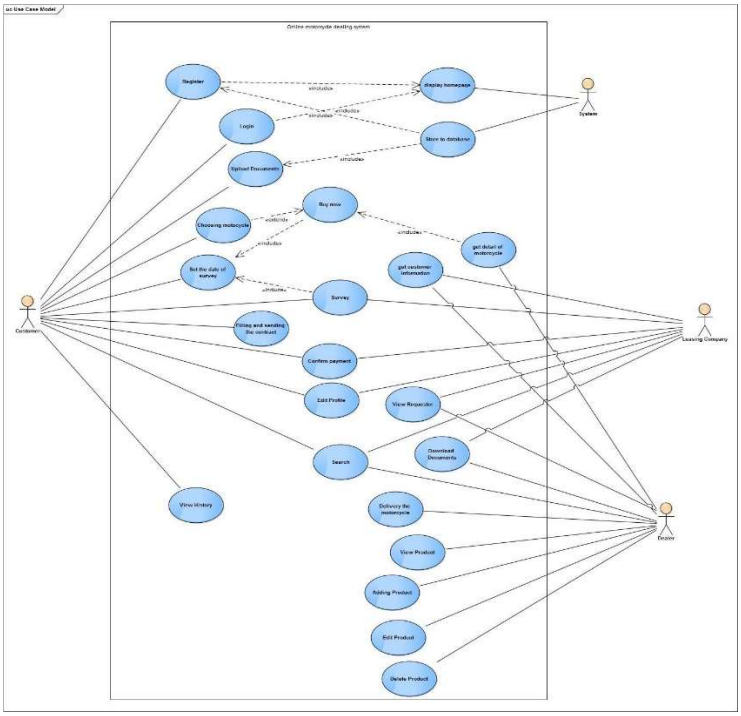


FIGURE 1. USE CASE DIAGRAM FOR THE WHOLE SYSTEM.

C. *Entity Relationship Diagram*

The database design is created to provide the overview of the database that can be used to create and store the information. The database will be built on MySQL. There will be 10 Tables in the system. There are CustomerRegist, Account, History, PO, Down Payment, Fulfill Payment, Survey, Upload Document, Product, and Leasing tables.

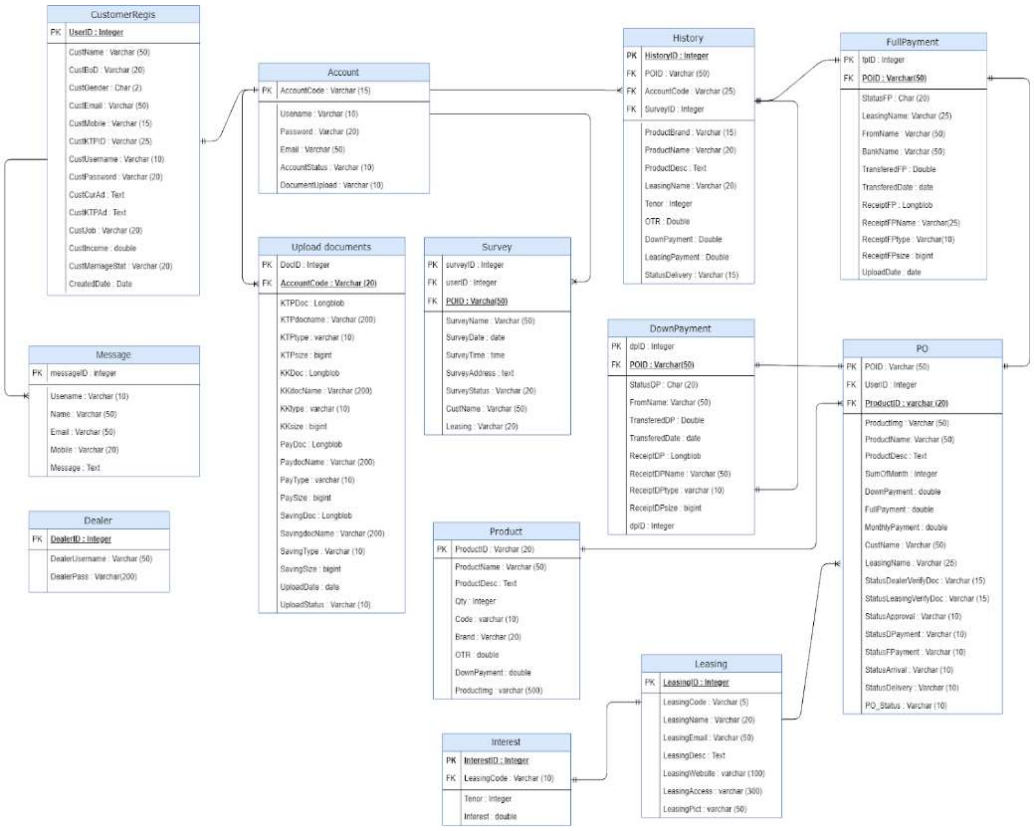


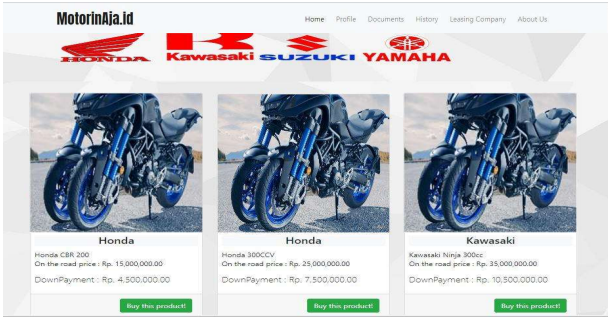
FIGURE 2. ENTITY RELATIONSHIP DIAGRAM.

D. *Customer User Interface*

The customer menu can be categorized into some submenu, they are Dashboard, Register, Login, Home menu, Profile menu, Documents menu, History menu, Leasing Company menu, and About Us. The consumer may sign in and sign up to their account from the dashboard. The consumer may also look at some of the website's ideals, works, and articles. In the home menu, the customer can search their desired motorbike by submitting some supporting data. Also, the customer can view the product before filtered by search and after filtered in the same page. The consumer may examine the search results from the home menu. After the search results are displayed, the consumer can select one of the results to purchase. By hit the Buy this product button, the consumer may also specify the leasing business and term they want to use as their loan provider. Next, after clicking the buy now button payment screen will be appeared. In addition, after the payment has been done, the customers can see their purchasing history. Customer use interfaces are shown on the Figure 3.

(a)

(b)



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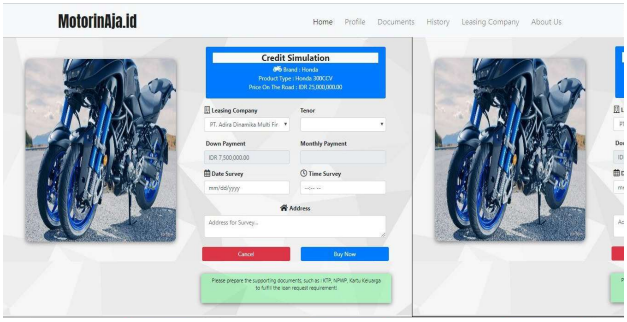

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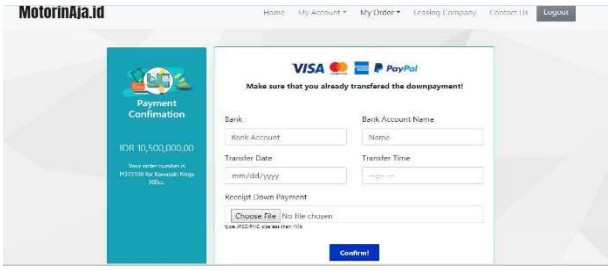

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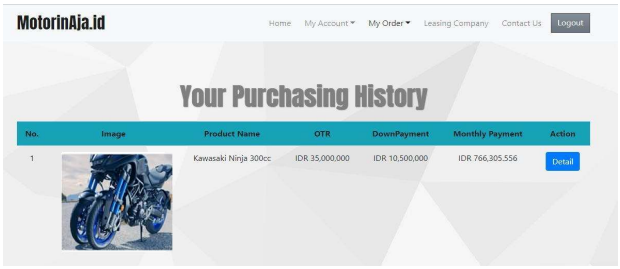


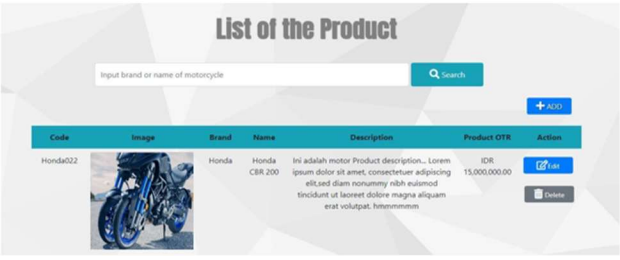
(e)

FIGURE 3. CUSTOMER USER INTERFACE. (A) DASHBOARD, (B) HOME, (C) SUGGESTION, (D) CREDIT SIMULATION, (E) PAYMENT, (F) PURCHASING HISTORY.

E. Dealer User Interface

The dealer menu can be categorized into some submenu, they are Dashboard, Product menu, Requester menu, Adding leasing menu, and About Us. The dealer's administrator can Sign In to their account from the dashboard. The dealer's administrators are routed to the product menu after signing in. The dealer may view, add, update, and delete the product they have in the product menu. The requester menu will allow the administrator to see the customers purchasing history. Early document verification, down payment verification, leasing payment verification, and the shipment of the product will also be covered in the system. Next, adding leasing menu will be the menu that listed the registered leasing company. In addition, about us menu will be the menu to fill the dealer information. The dealer user interfaces are shown on the Figure 4.

(a)



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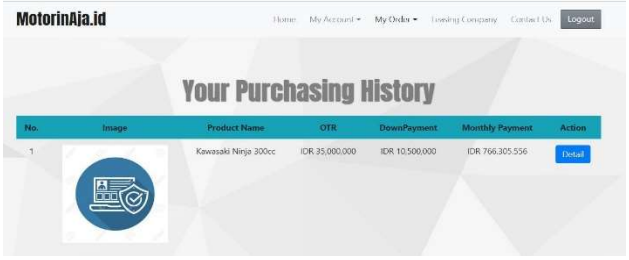

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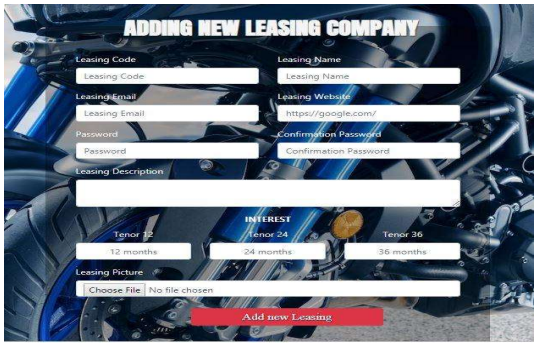
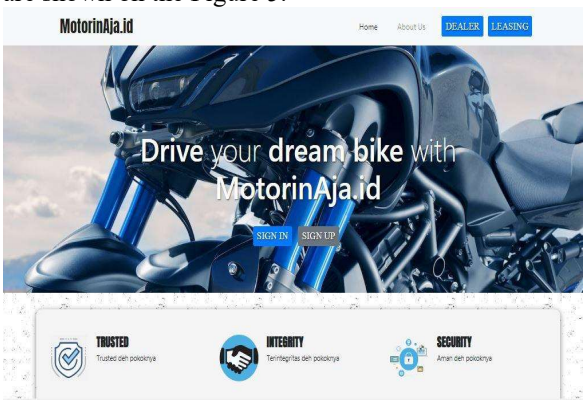


(e)

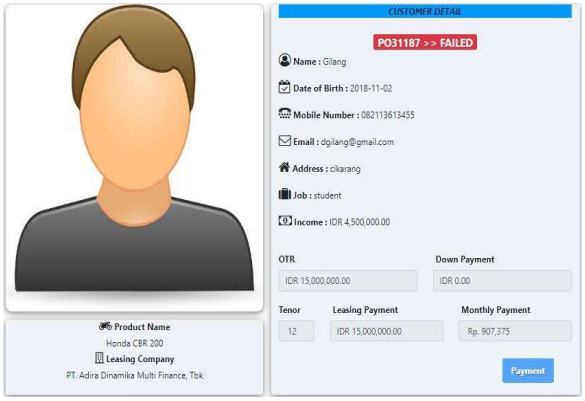
FIGURE 4. DEALER USER INTERFACE. (A) DASHBOARD, (B) LIST OF PRODUCTS, (C) REQUESTER MENU – PURCHASING HISTORY, (D) REQUESTER MENU – VERIFICATION, (E) NEW LEASING COMPANY.

F. Leasing User Interface

The leasing menu is divided into many submenus: Dashboard, Login, Requester menu, and Profile menu. The leasing's administrator can Sign In to their account from the dashboard. Leasing company may look for a client who has already placed a request by entering the customer's name or PO code in the requester menu. The leasing company can examine a list of information about a new client who purchases a product also. Last, the profile menu is used to update the detail information about the leasing company such as name of leasing company, description, link of the leasing company's website, their username and password to access the system. The leasing company user interfaces are shown on the Figure 5.



(a)



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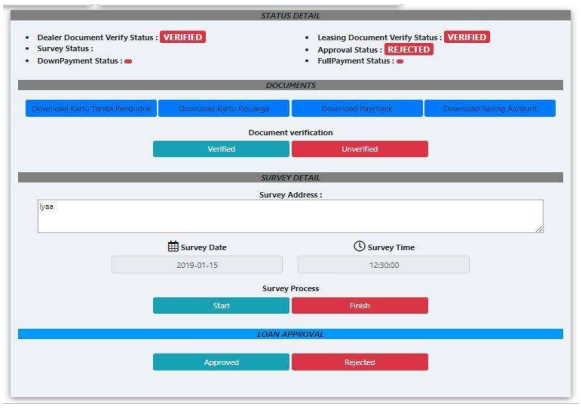

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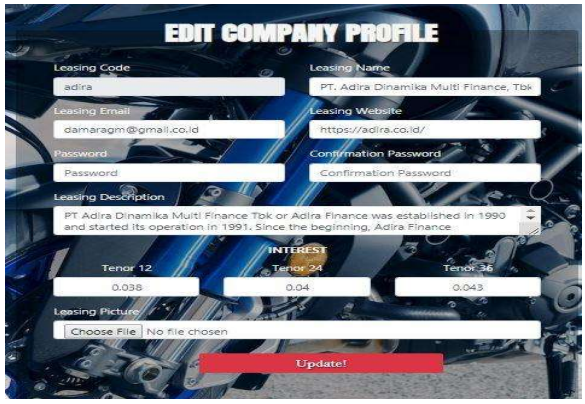

(d)

FIGURE 4. LEASING USER INTERFACE. (A) DASHBOARD, (B) CUSTOMER INFORMATION, (C) DOCUMENT VERIFICATION, (D) LEASING PROFILE.

G. Testing Plan

Before releasing the system to the general public, it should be thoroughly evaluated for quality and performance. Its purpose is to ensure that the system functions properly without any faults, flaws, or issues. It's important to ensure that the system will satisfy the specifications that were established during the design process. System testing will be carried out on all menus and submenus that are related to the system.

IV. CONCLUSION

Finally, the Web-based online motorbike dealing system has been developed to meet the motorbike sales business process. The web-based online motorbike dealing system was developed to facilitate three parties that involved in the process of the motorbike dealing system, those are customer, dealer, and leasing company. The system was developed in the website so that can be accessed in both mobile and personal computer. Because the process was covered all the business process, this online system may replace the manual method. Next, because the procedure will be completed online, it will save time for the consumer. Since the customers was asked to submit the confidential documents, the security issue must be considered for the future study. Last, the document verification is still also done manually, the future research can also focus on implementing image processing for the automatic verification process.

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