

Online Vehicle Service Information System Using the Agile Method

Fahrurrozi Lubis^{1,a)}, Ifan Prihandi^{2,b)}, Nor Alina Binti Ismail^{3,c)}

¹ Faculty of Computer Science and Information Technology, University of North Sumatra, Medan, Indonesia

² Faculty of Computer Science, Mercu Buana University, Jakarta, Indonesia

³ Faculty of Data Science and Computing, Universiti Malaysia Kelantan

^{a)} Corresponding author: fahrurrozi.lubis@usu.ac.id

^{b)} ifan.prihandi@mercurbuana.ac.id

^{c)} alina.i@umk.edu.my

Abstract: In this pandemic era our activities have been limited by the government so that private vehicles are very important for us to use for daily travel which is expected to break the chain of the COVID-19 virus, with the frequent use of private vehicles, the level of damage to our vehicles will increase and also because of this pandemic, it is likely that workshop activities will close so that when prospective customers will find it difficult to find a repair shop, therefore we propose an online vehicle service information system to make it easier for prospective users to find mechanics when they are traveling but suddenly the vehicle we wear suffered sudden damage. With the creation of an online vehicle service application, it is hoped that it can help people repair their vehicles easily and quickly. The purpose of this system is to make it easier for everyone to get good service and make it easier for people to find the right mechanic in any situation. In several previous studies, observations have been made using the waterfall method which in our opinion the waterfall method is less effective in meeting client needs. With the waterfall model, the client cannot see a clear picture of the system. In contrast to the agile model which can be seen well even though it is still in the development process. Therefore, we conduct research using agile methods.

Keywords: pandemics, vehicles, workshops, agile methods, systems

INTRODUCTION

In this pandemic era, our activities are limited by the government, making it difficult for us to interact with many people, especially when we are on public transportation where we meet many people, therefore it would be better if we use private vehicles to travel everyday. With the frequent use of private vehicles, the level of repair will definitely be greater, therefore we propose an online workshop information system. With this system, it will really help potential users to find the right and quality mechanic when the vehicle they use daily suddenly breaks down. Reporting from the National Police Headquarters, it disclosed traffic accident data throughout Indonesia on the first Sunday of March 2021. It was recorded that 1,239 accident incidents occurred from March 1, 2021 to March 7, 2021 [1].

The workshop is a business facility that provides after-sales repair services to consumers. Motorcycle workshops have recently become one of the favorite places for consumers to service or repair vehicles. Punctuality is very important for repair service users. The workshop provides a variety of services, including service services and the provision of official spare parts [2]. In some previous studies, observations have been made using the waterfall method [3]. However, in this research it is less effective to meet client needs. With the waterfall model, the client cannot see a clear picture of the system. Therefore, in this study, we decided to use the agile method. [3]

As for in this study we use agile methods which in our opinion agile methods are very effective with the system we designed because in this method Agile Development Methods are a group of software development methodologies that are based on iterative development, where requirements and solutions develop through collaboration between teams. self-regulating cross-functionality.

A key value in Agile Development is that it enables teams to deliver value faster, with better quality and predictability, and greater talent for responding to change.

FORMULATION OF THE PROBLEM

Based on the explanation above, the formulation of problem is:

1. How to make an application that can make it easy for prospective customers to order vehicle service online.
2. How to make a system which can see the location of the workshop on maps.
3. How to create a system to determine the estimated total cost of customer vehicle damage.

Objectives and Benefits

The objectives of this research are:

1. Create an application that can help drivers find quality and efficient service for repairing vehicles
2. Create an application that can help the workshop in getting customers.
3. Create a system that can track the location between the customer and the mechanic to carry out the customer pick-up process to the location point.
4. Make it easier for drivers to see the nearest workshop.

The benefits of this research are:

1. For users of this application, especially customers, it is hoped that they can help find qualified mechanics to repair their personal vehicles in any situation.
2. Workshops are expected to help them get customers/jobs easily.
3. Make it easier for drivers/customers to see the location of the nearest workshop.

Based on the formulation of the problem above, the limitations of the problem from this research are as follows:

1. This application is mobile based
2. This application has 4 chords namely Rider, admin, workshop, mechanic
3. This application sells repair services on vehicles.
4. This research was conducted in the DKI Jakarta area, where the majority of private vehicle users in this area are quite a lot.
5. This application can be run on Android OS and IOS
6. The google map api requires a complex config process and costs, therefore the application cannot be used as an .apk because it requires an API from google maps.
7. Payment for this service is made in cash

LITERATURE REVIEW

Information System

An information system is an arrangement of procedures within an organization that brings together the needs of collecting, processing data to transform data into information that is used as a basis for decision making.

Supabase

Supabase is a collection of tools that help developers build projects faster by doing a lot of behind-the-scenes work and automated cabling. Create a project and Supabase will give you the Postgres database. APIs for interacting with databases that automatically evolve (and document themselves!) as your database changes; user authentication system compatible with major login providers (Facebook, Twitter, Google, Apple, etc.); storage systems to handle things like image and video uploads; and a user interface to monitor and manage everything. It takes a lot of work that you have to do to create almost any modern application or service and get rid of it in a few clicks

Visual Studio Code

Visual Studio Code is a source code editor developed by Microsoft for Windows, Linux and MacOS. This includes support for debugging, embedded GIT Control, syntax highlighting, smart code completion, snippets, and code refactoring. It is also customizable, so users can change editor themes, keyboard shortcuts, and preferences. Visual Studio Code is free and open-source, although official downloads are under a proprietary license.

Visual Studio code is based on Electron, the framework used to deploy Node.js applications for desktops running on Blinklayout. Despite using the Electron framework, Visual Studio Code does not use Atom and uses the same editor component (codenamed "Monaco") used in Visual Studio Team Services formerly called Visual Studio Online (Lardinois, 2015).

Agile Methods

The term Agile itself consists of two meanings, namely: first understanding in terms of philosophy, and second understanding in terms of software development guidelines. From a philosophical point of view, agile means, among others: encouraging for the creation of customer satisfaction; accelerate the delivery of software gradually (incremental); lean and highly motivated project team; minimize work and simplify (bureaucratic) the whole process [6] while according to software development, agile is a software development methodology that is based on an iterative process where, agreed rules and solutions are carried out with collaboration between each team in an organized and structured manner.



FIGURE 1. Research Flowchart

Translation:

Tim Penulis = Writer Team

Studi Literature = Literature Study

Mengumpulkan Data = Data Collection

Mengelola Data = Data Management

Pengujian System = Testing System

Kesimpulan = Conclusion

In the Research Flowchart, there are several processes. First we created a writing team consisting of 3 people. Then we conducted a literature study regarding existing problems and also pre-existing solutions. Then we collect data by conducting observations and interviews. After the data is successful, we get the data, we manage it, and we do a system test related to the data we get. Only then do we draw conclusions from our research

Usecase

In this use case there are 4 actors, namely the driver, the application admin, the workshop admin and the mechanic. Riders and admin_bengkel can register and login to enter the application. The driver himself can order the service which is included, input the type of vehicle and input the type of damage and also see the service fee. Riders can also cancel bookings. Admin_bengkel can accept orders, manage mechanic accounts, monitor order status, view workshop data appoint mechanics. Mechanics can view orders, view history, perform CRUD on profiles and input payments. Application admins can view user lists, view order data, manage registered workshop data, and view workshop locations

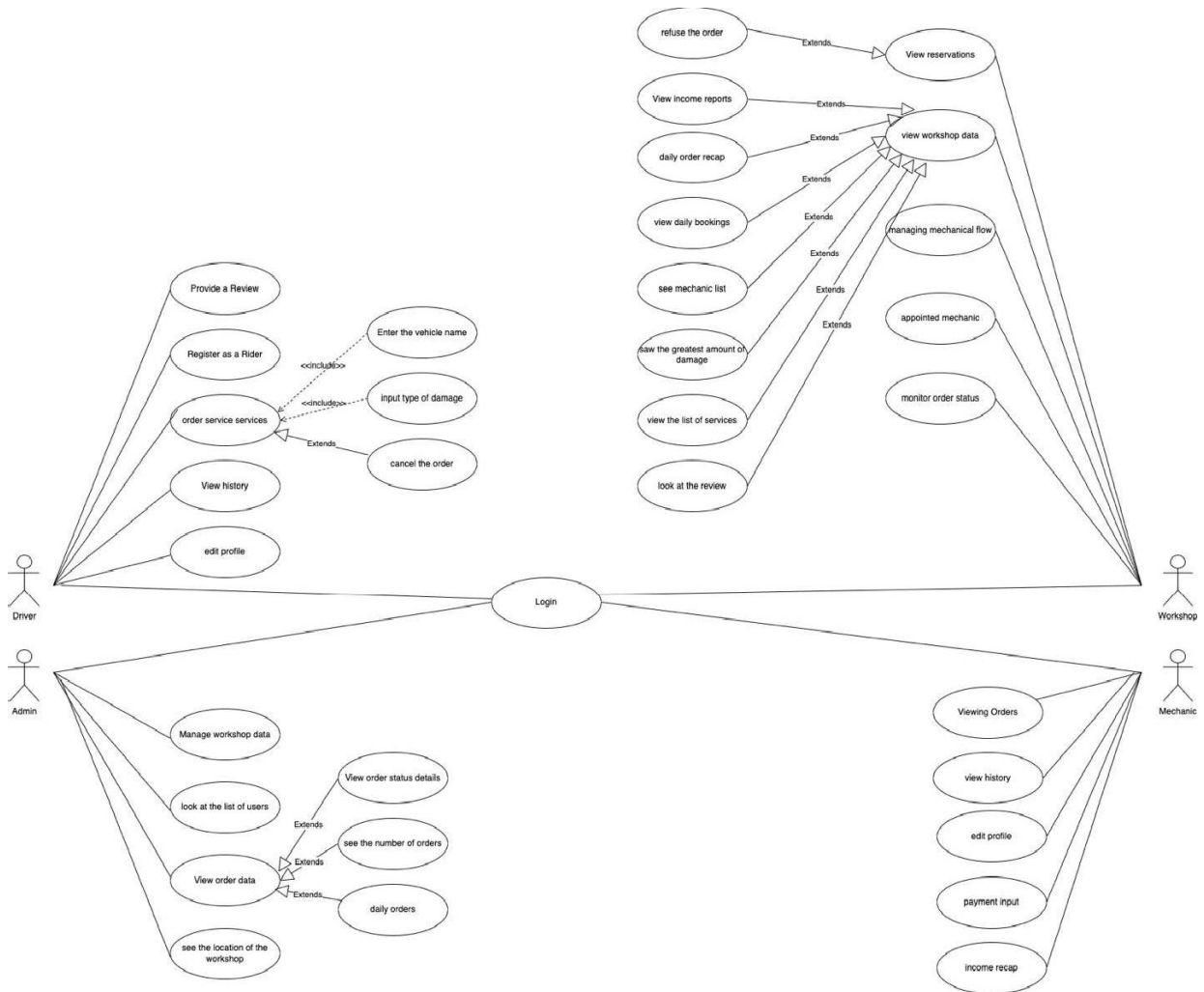


FIGURE 2. Use Case Diagram

Activity Diagram List (Rider)

First the driver opens the application then the system will display a login page, after that the customer will select a list, the system will display a list page, and the customer is asked to fill in personal data and then create an id and password, the system will check if there is a similarity of data that was previously registered then the rider is asked to change his personal data, if available, the rider is asked to click register then the system will save the rider data and the registration is successful

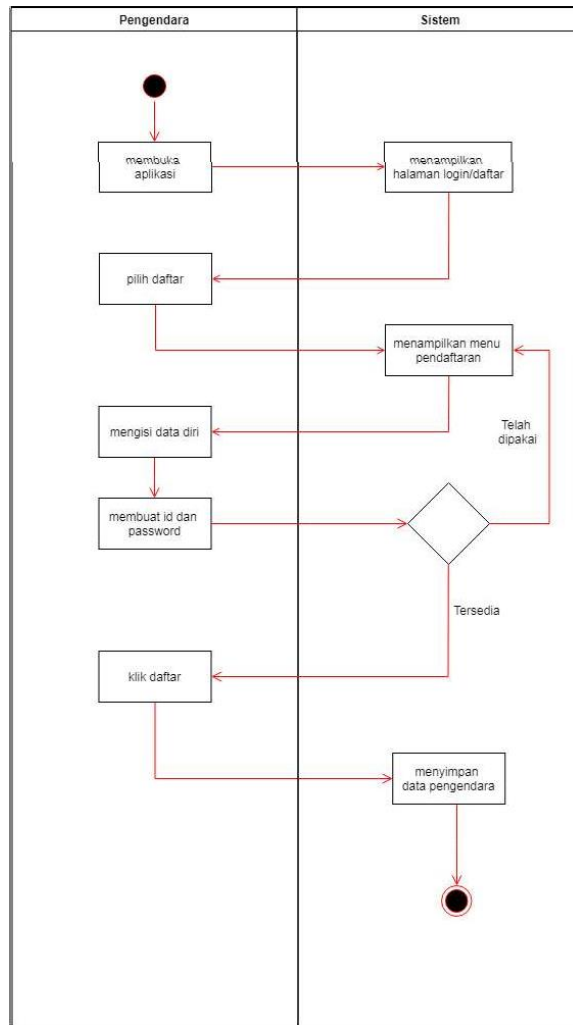


FIGURE 3. Activity Diagram

Translation:

Membuka aplikasi = Open application

Menampilkan halaman login/daftar = Showing login page

Pilih daftar = choose register

Menampilkan menu pendaftaran = Showing registration menu

Mengisi data diri = Fill in personal data

Membuat id dan password = Making id and password

Telah dipakai = Have been used

Tersedia = Available

Klik daftar = Click Register

Menyimpan data pengendara = Saving driver's data

Mock Up/Screen Design

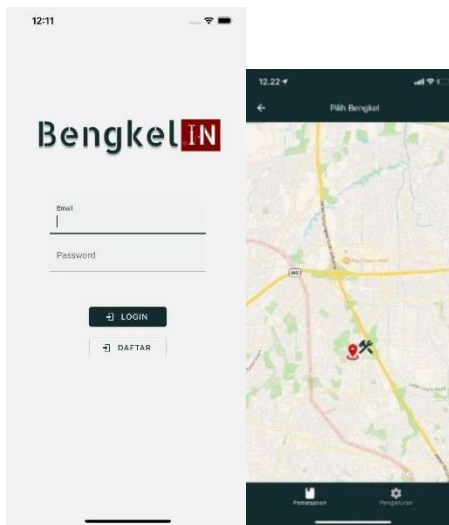


FIGURE 4. MockUp Screen
Translation:
DAFTAR = Register

CONCLUSIONS

The results based on the analysis, the design that has been carried out in making the Online Vehicle Service Information System application, the following conclusions can be drawn:

1. Produces 4 actors consisting of Rider, Mechanic, Workshop, and Application Admin.
2. This Online Vehicle Service Information System application can provide convenience for workshops and drivers/customers to perform repairs on two-wheeled and four-wheeled vehicles.
3. The process of finding a repair shop is easier for motorists because the driver can see the location of the nearest repair shop if at any time they want to do urgent service.
4. Management of mechanics and ordering data becomes more effective and efficient because the workshop can see in detail from daily orders to recap orders and make reports more accurate and faster.

ACKNOWLEDGMENT

From the results of the research above, the authors provide suggestions:

1. Need more knowledge to develop the app.
2. It takes an interview to the workshop to get accurate data.
3. Requires an online database for this application to be integrated.

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