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GOHITCH: WEB-BASED WEBSITE SYSTEM FOR HITCHHIKERS

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Abstract

With the development of the economy and the gradual increase in the ownership of private cars, many people opt for traveling due to vast choices of transportation. However, for travelers, public transportation cannot reach their destinations accurately, and cabs are expensive and unaffordable. Self-driving is expensive and very tiring when traveling long distances. Therefore, a new mode of transportation is important and needs to be both less expensive and destination-accurate. The GoHitch website system aims to provide hitchhikers with a way to get to their destination quickly and at a low cost. This website system not only provides hitchhikers with a low-cost way to travel but also provides drivers with additional income. For hitchhikers, simply post an order in advance, select a specific time of day and a price you can offer, and the order will be pushed to the driver. For drivers, simply select passenger orders with the same or similar destinations as your own to take the order. The GoHitch project uses Bootstrap, Vue, and JavaScript to implement the front end and Java to implement the back end. It provides three roles with different functions, including account login and registration, users posting orders, drivers picking up orders, and administrators reviewing driver information. The project will provide travel assistance to passengers and financial help to drivers in a way that benefits both parties. This approach is in line with the current economic and technological development, providing a unique way of traveling.

Keywords： Hitchhiking, Ride-Sharing System, Web-Based Application, Bootstrap, Java, Vue.js, Transportation Technology

1.0 INTRODUCTION

In Malaysia, urbanization and rural development are very rapid, but some people who do not own private cars find it difficult to get around due to economic conditions and public transport constraints (Thondoo et al., 2020). Hitchhiking, a low-cost and convenient way of traveling, is undoubtedly a good solution, but it is relatively rare in Malaysia due to safety issues, lack of organization, and absence of a formal platform (Li, 2022).

Besides the probable advantages of hitchhiking, cultural perception also plays a major role in its small-scale application. Hitchhiking has been perceived suspiciously by many Malaysians as associated with unsafe situations and some kind of stigma due to relying on strangers for transportation. This perception, combined with a lack of public awareness regarding the potential benefits of hitchhiking and the possible safety measures that could be put into place, has kept hitchhiking from becoming a widely accepted travel option. An organized approach to addressing these issues would not only be needed to promote hitchhiking but also to educate people on its advantages, specifically in relation to sustainability.

Malaysia's underdeveloped public transport infrastructure—including inadequate railway networks and congested roadways—further emphasizes the need for alternative travel solutions.

2.0 LITERATURE REVIE

A literature review involves the process by which relevant materials are systematically gathered and critically analyzed in relation to an identified topic, interpreted in a contextually relevant way for a particular project. The subsequent evaluation will be in the form of a written document constituting the analysis and assessment of previous research or findings related to the chosen topic in a coherent format.

This research is supposed to develop GoHitch as an online network for hitchhiking, to act as an alternative means of commutation within Malaysia. The literature review section discusses various previous research regarding issues in transportation, hitchhiking platforms, and ride hailing systems. The current research will focus on three major systems: BlaBlaCar-a car-sharing platform allowing hitchhiking across several countries, Grab-one of the most demanded ride-hailing services in Malaysia, and Liftshare-UK-based ride sharing that connects drivers and passengers for long-distance traveling. Advantages and disadvantages of all the existing systems are researched, including the comparisons with the existing system. The analysis shall point out possible areas of improvement and indicate how GoHitch can meet the challenges that traditional transport solutions have faced for affordability, and environmental sustainability.

3.0 METHODOLOGY

The GoHitch website project will be developed using the Agile model as illustrated in Figure 1.1. This model is chosen based on several reasons:

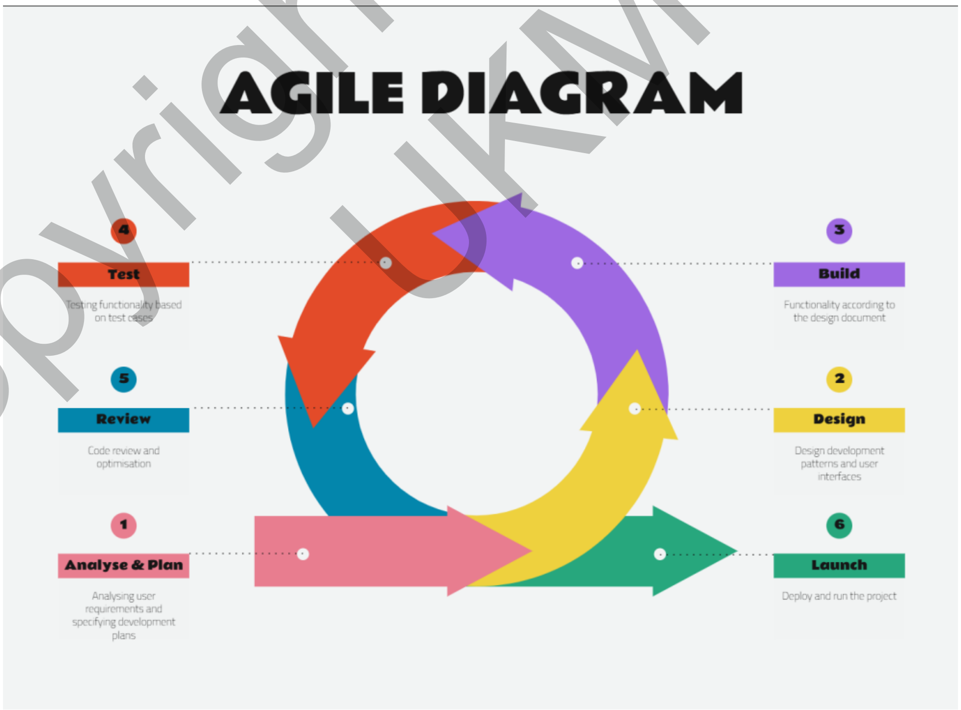

AGILE DIAGRAM
4
Test
Testing functionality based on test cases
5
Review
Code review and optimisation
1
Analyse & Plan
Analysing user requirements and specifying development plans
3
Build
Functionality according to the design document
2
Design
Design development patterns and user interfaces
6
Launch
Deploy and run the project

Figure 1.1 Agile methodology used in developing the GoHitch Website System

1. Agile model means flexibility and quick adjustment, which is very suitable for small projects and small team development.

2. Agile model project scope, requirements and required development process are defined before starting. The project scope, requirements and the required development process are defined before the start of the project, which is in line with the requirements of this project.

3. The Agile model has a clear development process, from requirements analysis to design to development to testing, which is very much in line with the requirements of this project.

Following the explanation of each phases in Agile Methodology for GoHitch Website System

1. Planning and Requirements: During this planning phase, the stakeholders who will utilize the services need to be incorporated regarding the core requirements of the GoHitch platform. The core features identifiable in this stage are account creation and login, ride booking, real-time communication, and driver information verification. After data collection, analysis, and interpret, a guide document will be developed that will keep the development process at par with the users' needs and the prevailing market demand. Planning will be channeled towards flexibility so that new insights gathered are a means of adjustments. This will be the basis for format documenting initial and ongoing development to ensure a user-centered platform is achieved.

2. Design: The design phase will create intuitive interfaces and workflows for users, focusing on simplicity and ease of navigation. Developers will develop wireframes and prototypes for critical parts of the platform, like the booking interface, driver details, and in-app chat for ride coordination. User feedback will be integral at each stage, allowing developer to adapt and refine designs to maximize user satisfaction. In Iterative, developer pre-validate the designs first so that lots of changes may not

be required in the last stage of the development cycle. Normally, the ease of use factor improves as usability and consistency improve.

3. Build: The Development will be taken in short iterative steps that can help focus on building and delivering one feature at a time. Core functionalities are User registration and login, hitchhiker post order, and driver taking order with utmost testing to be done at every point in time as this gives ample scope to change when required, for feedback, or changes in some new requirements coming up as such.

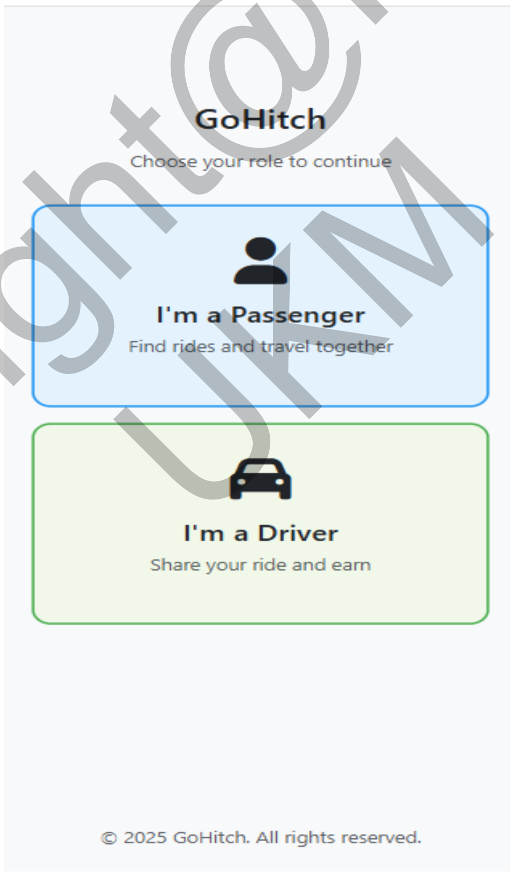
4. Test: Testing will be integrated at every phase to preemptively identify and address concerns relating to functionality, performance, and security. Developers will adopt real-life scenarios through the use of test cases for features such as hitchhiker post order and driver taking order to guarantee the reliability and security of such features. The objective of this approach of testing is to reduce the number of bugs to help enhance the robustness of the system, hence sparing the developers from the trouble of carrying out major corrections after the system has been put in use. In addition, constant testing helps to mitigate the risk of new features disrupting the functionality of existing systems.

5. Launch and Review: This stage will comprise the collection of analytics and user insights for prioritizing upgrades like improved user experience or new functionalities. All of these activities contribute to the continuous improvement of GoHitch, which helps to keep the product timely, competitive, and user-oriented. In addition, after the launch phase, there will also be maintenance that will involve correcting or fixing any problems or threats that may arise. This particular way of developing a product helps to ensure that GoHitch grows in tandem with the users' needs and the market development.

4.0 RESULTS

The GoHitch platform has been successfully developed, and all supporting documentation has been completed. The system was built using Java for the backend and Vue.js with Bootstrap for the frontend. Huawei Cloud serves as the cloud-based database to ensure data persistence and accessibility across devices. The architecture adopts the Model-View-Controller (MVC) pattern to promote organized development and maintainability.

Before accessing the system, new users are first required to select their user role. The Role Selection Page allows users to choose between three available roles: Passenger or Driver. This selection determines the permissions and interfaces they will interact with throughout the system. The role must be selected before proceeding with account registration. The interface is shown in Figure 1.



GoHitch

Choose your role to continue

I'm a Passenger

Find rides and travel together

I'm a Driver

Share your ride and earn

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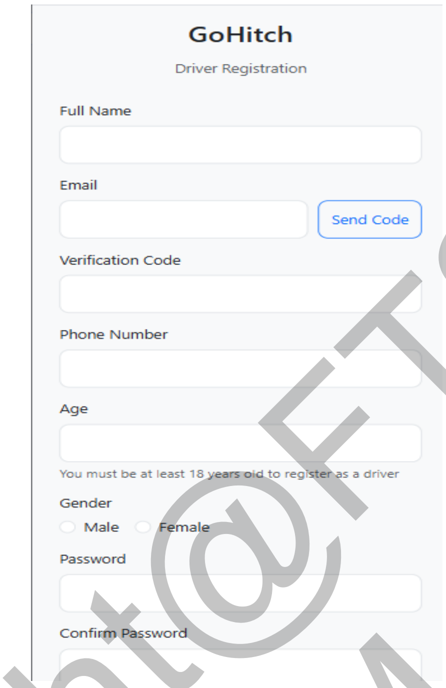
Figure 1 Role Selection Page Interface of GoHitch

After selecting a role, users are directed to the Registration Page, where they must enter their basic account information, including full name, email address, and password. Once all required fields are completed, users may click the "Register" button to create an account. This process ensures secure access and account differentiation across the platform. The registration form layout is shown in Figure 2.



GoHitch

Driver Registration

Full Name

Email

Verification Code

Phone Number

Age

You must be at least 18 years old to register as a driver

Gender

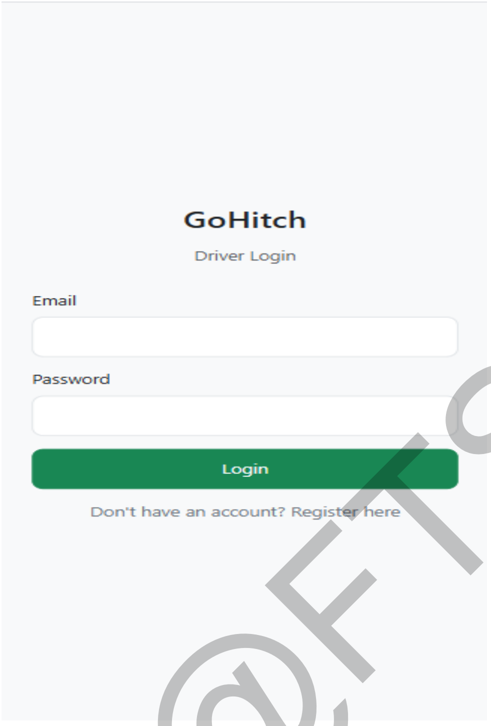
○ Male ○ Female

Password

Confirm Password

Figure 2 User Registration Form Interface of GoHitch

Upon successful registration, users are redirected to the Login Page to access the system. As shown in Figure 3, users must enter their registered email address and password to log in. After authentication, they are directed to their respective dashboard based on the role selected earlier.



GoHitch

Driver Login

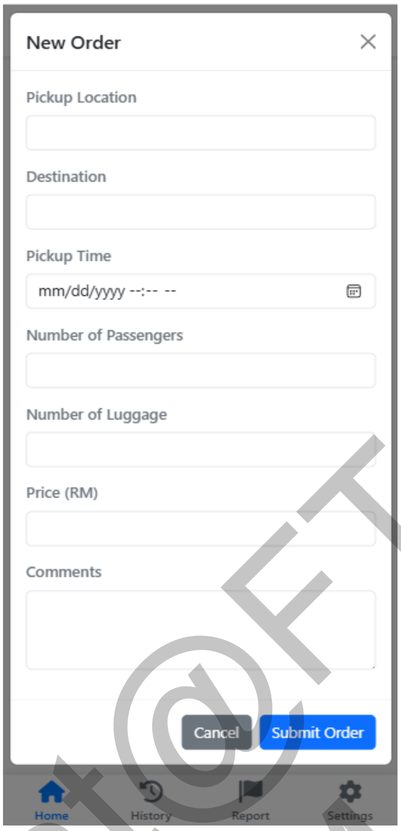
Email

Password

Figure 3 User Login interface of GoHitch

Once logged in, a user with the Hitchhiker role will be directed to their dashboard, which provides access to key functionalities such as posting a hitchhiking request, viewing order history, and communicating with drivers. To request a ride, the user navigates to the Post Hitchhiking Request Page.

On this page, the hitchhiker is required to enter important ride details such as the pickup location, destination, departure time, and the price they are willing to offer. The system ensures that all fields are validated before submission. Once the order is submitted, it becomes visible to drivers who can choose to accept it. The intuitive interface of this feature helps ensure a smooth and efficient ride-requesting process. The design of this page is illustrated in Figure 4.



New Order

Pickup Location

Destination

Pickup Time

mm/dd/yyyy --:-- --

Number of Passengers

Number of Luggage

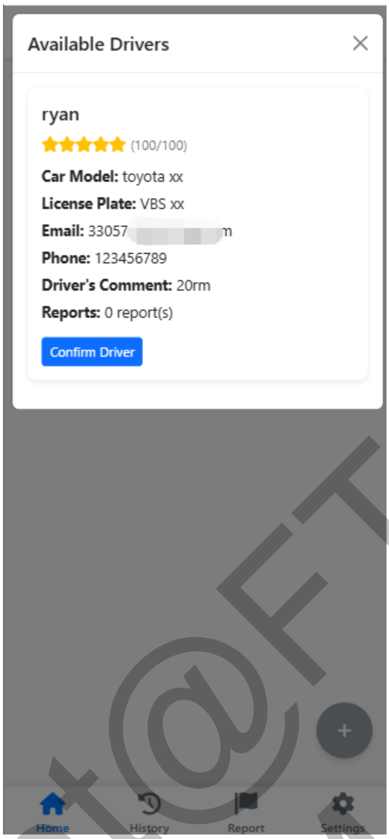
Price (RM)

Comments

Figure 4 Post Hitchhiking Request Page Interface of GoHitch

Once a hitchhiking request is posted, it becomes visible to all verified drivers on the platform. Interested drivers may accept the order, and their information will be sent to the hitchhiker for review. The hitchhiker can then navigate to the Driver Selection Page, where a list of drivers who accepted the request is displayed.

Each driver's profile includes their full name, vehicle information, driver's license status, rating, and any other verified details. The hitchhiker has the option to review multiple drivers and choose one to proceed with. This two-way selection process enhances the safety and flexibility of the system by giving passengers control over who they ride with. Once a driver is selected, the system confirms the match and enables in-app communication. The interface for viewing and selecting drivers is illustrated in Figure 5.



Available Drivers

ryan

★★★★★ (100/100)

Car Model: toyota xx

License Plate: VBS xx

Email: 33057[redacted]m

Phone: 123456789

Driver's Comment: 20rm

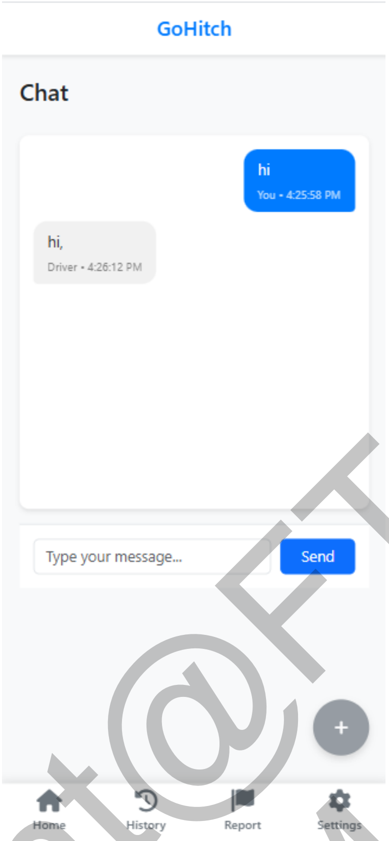
Reports: 0 report(s)

Figure 5 Driver Selection and Information Viewing Interface of GoHitch

After the hitchhiker confirms a driver for their posted order, both parties gain access to the Chatbox feature, which facilitates real-time communication. This feature allows the passenger and the selected driver to coordinate pickup location, departure time, and any other ride-related details securely within the platform.

The chat interface is designed to be user-friendly and ensures that all conversations are order-based, meaning the chat history is linked specifically to the selected ride request. This structure helps maintain clear communication records and improves accountability for both users.

The Chatbox is a key feature that enhances user confidence and safety, ensuring that both hitchhiker and driver are aligned before the ride begins. The layout of the chat interface is shown in Figure 6.

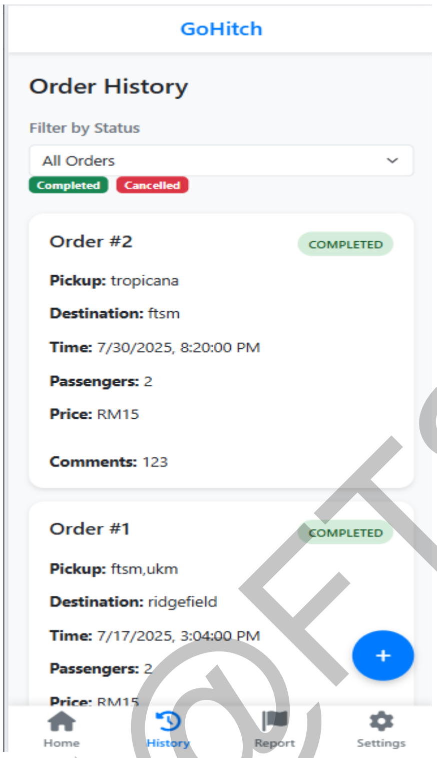


hi
You • 4:25:58 PM

hi,
Driver • 4:26:12 PM

Figure 6 In-Order Communication (Chatbox) Interface of GoHitch

The Order History Page allows hitchhikers to view all their past ride requests and interactions. Each entry includes information such as the pickup and drop-off locations, driver details, order status, ride date and time, and the price offered. This page helps users keep track of their ride activities and serves as a useful reference for managing future travel. The clean and chronological layout of the order records enhances usability and ensures easy navigation. The interface for this feature is displayed in Figure 7.



GoHitch

Order History

Filter by Status

All Orders

Completed Cancelled

Order #2 COMPLETED

Pickup: tropicana

Destination: ftsm

Time: 7/30/2025, 8:20:00 PM

Passengers: 2

Price: RM15

Comments: 123

Order #1 COMPLETED

Pickup: ftsm,ukm

Destination: ridgefield

Time: 7/17/2025, 3:04:00 PM

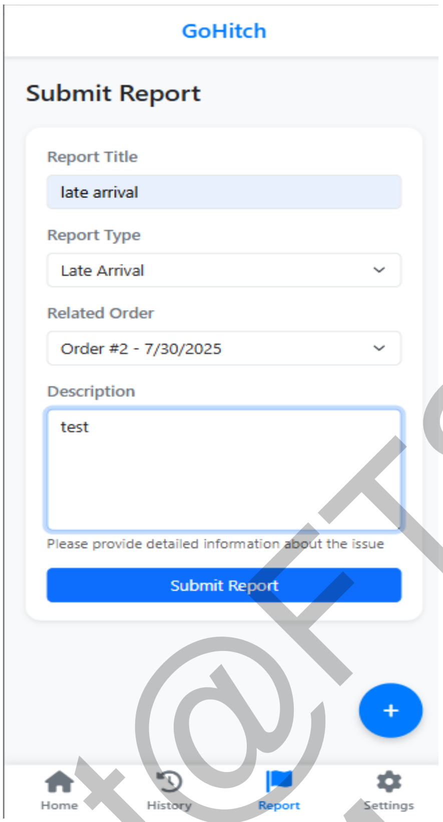
Passengers: 2

Price: RM15

Figure 7 Passenger Order History Interface of GoHitch

To ensure a safe and trustworthy environment, GoHitch provides a Report Driver feature that allows passengers to report inappropriate behavior, safety concerns, or other rule violations encountered during the ride. This feature can be accessed from the order history or immediately after a ride is completed.

When submitting a report, users are prompted to select a reason (e.g., unsafe driving, offensive language, no-show) and optionally provide additional comments. Reports are sent directly to the administrator, who will review the case and take appropriate action, such as issuing warnings or blacklisting the driver if necessary.The simplicity and clarity of the reporting form encourage users to provide timely and accurate feedback. The layout of the reporting interface is illustrated in Figure 8.



GoHitch

Submit Report

Report Title
late arrival

Report Type
Late Arrival

Related Order
Order #2 - 7/30/2025

Description
test

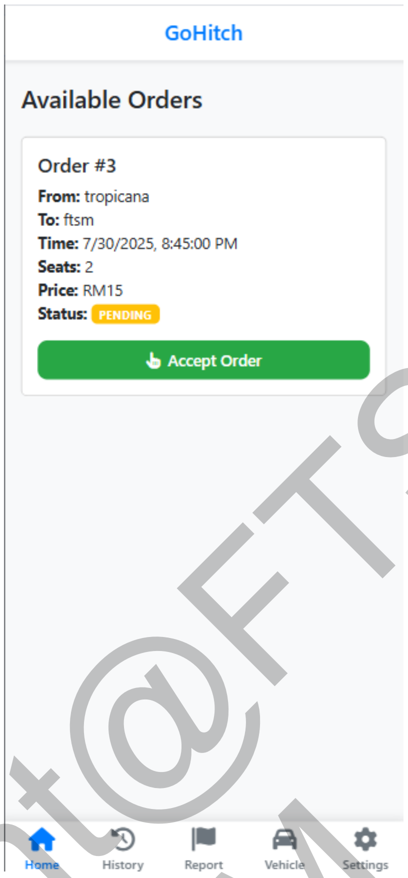
Please provide detailed information about the issue

Figure 8 Reporting Interface of GoHitch

After logging into the system as a Driver, users are directed to the Driver Dashboard, which provides access to key features such as uploading verification documents, viewing available ride requests, and managing accepted orders.

One of the core functionalities available to drivers is the ability to accept hitchhiking orders. Drivers can navigate to the Available Orders Page, where they can browse a list of active ride requests posted by passengers. Each request includes details such as the pickup location, destination, departure time, and offered fare.

Drivers may choose an order that aligns with their route and schedule. By clicking the “Accept” button on the selected order, their driver profile will be sent to the corresponding passenger for review. The passenger will then decide whether to confirm the ride with that specific driver. This feature provides flexibility while maintaining safety and consent for both parties.The layout of the order acceptance interface is shown in Figure 9.



GoHitch

Available Orders

Order #3

From: tropicana

To: ftsm

Time: 7/30/2025, 8:45:00 PM

Seats: 2

Price: RM15

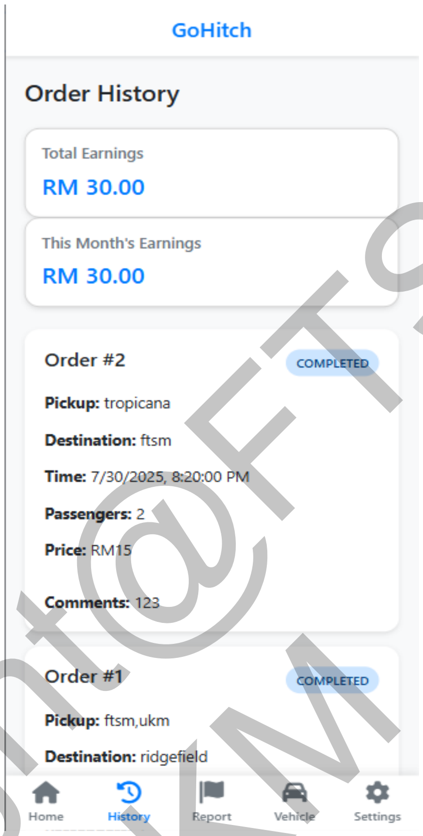
Status: PENDING

Figure 9 Driver Accept Hitchhiking Order Interface of GoHitch

In addition to accepting orders, drivers also have access to the Chatbox and Report Passenger features once a passenger has confirmed the ride. The Chatbox enables drivers to communicate directly with the passenger linked to a specific order. This feature mirrors the passenger-side chat functionality, allowing both parties to coordinate ride details such as pickup time and location within the safety of the system. All messages are securely stored under the associated ride request.

Similarly, the Report Passenger function allows drivers to submit formal reports regarding any inappropriate behavior, safety violations, or issues encountered during the ride. Just like the passenger-side report feature, drivers can select a report reason and provide additional comments. Reports are reviewed by the administrator for appropriate action. These two features—chat and report—are designed with parity in both user roles to maintain fairness, ensure safety, and promote two-way accountability across the platform.

Beyond these interactions, drivers can also access their Order History, which provides a log of all completed or canceled rides. The layout of the driver order history interface is shown in Figure 10.



GoHitch

Order History

Total Earnings
RM 30.00

This Month's Earnings
RM 30.00

Order #2 COMPLETED

Pickup: tropicana

Destination: ftsm

Time: 7/30/2025, 8:20:00 PM

Passengers: 2

Price: RM15

Comments: 123

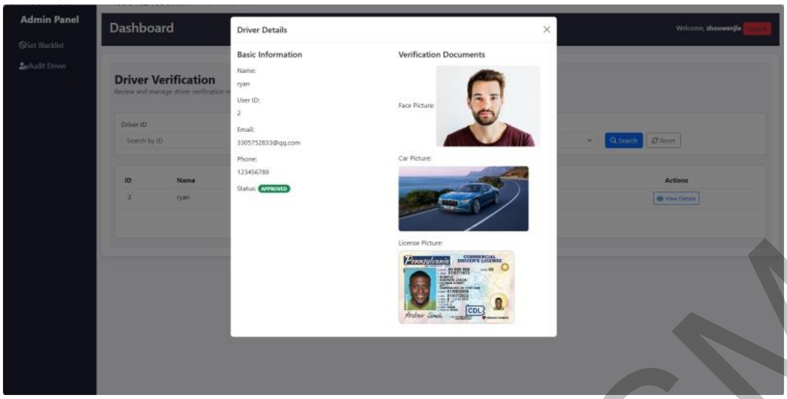
Order #1 COMPLETED

Pickup: ftsm,ukm

Destination: ridgefield

Figure 10. Driver Order History Interface of GoHitch

One of the core responsibilities of the administrator is to ensure the safety and integrity of the GoHitch platform. To accomplish this, the system provides a feature that allows administrators to review and verify driver-submitted information before allowing them to accept ride requests. Through the Audit Driver Information Page, administrators can view uploaded files such as driver's license, vehicle registration, and other supporting documents. Each submission includes the driver's personal details and a timestamp. Administrators can then choose to approve or reject the verification request based on the accuracy and authenticity of the documents. This process acts as a gatekeeping mechanism to prevent unverified or fraudulent drivers from accessing the passenger pool, and ensures that only legitimate users operate within the platform. The layout of the audit interface is shown in Figure 11.



Basic Information

Name:
ryan

User ID:
2

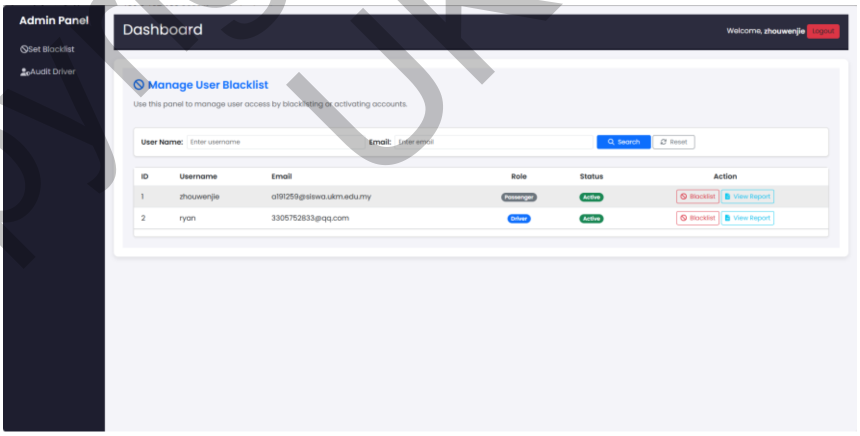
Email:
3305752833@qq.com

Phone:
123456789

Status: APPROVED

Figure 11. Administrator Driver Verification (Audit) Interface of GoHitch

To further enhance platform security and manage community behavior, administrators are granted access to the Blacklist Management Page. This feature allows them to blacklist users—whether hitchhikers or drivers—who violate community guidelines or are involved in repeated reports or serious offenses. The administrator may search for users by name, email, or ID, and view their account history, including submitted reports and past interactions. Once blacklisted, the user will be restricted from logging in or performing key actions on the platform. This tool provides the administrative team with the necessary control to maintain a safe and trustworthy ride-sharing environment. The interface used to manage and apply blacklists is shown in Figure 12.



Use this panel to manage user access by blacklisting or activating accounts.

User Name: Enter username
Email: Enter email

ID	Username	Email	Role	Status	Action
1	zhouwenjie	a191259@siswa.ukm.edu.my	Passenger	Active	Blacklist View Report
2	ryan	3305752833@qq.com	Driver	Active	Blacklist View Report

Figure 12. Administrator Blacklist Management Interface of GoHitch

Usability Testing

Usability testing is a process involving final-stage testing conducted by target users and relevant stakeholders to ensure that the developed system provides the necessary functionalities before it is released to the public. The main goals of usability testing are to evaluate the system’s usability, collect quantitative data, and assess user satisfaction.

Feedback respondent is based on their level of agreement with all items according to a five-point Likert scale as follows: 1 - Strongly Disagree, 2 - Disagree, 3 - Somewhat Agree, 4 - Agree and 5 - Strongly Agree. The data obtained were analyzed through descriptive statistics using the mean score from the entire data. Table 3 shows the interpretation scale table of the mean score.

Table 0: Mean Interpretation Scale

Mean Score	Mean Score
1.00 – 2.32	Low
2.33 – 3.65	Medium
3.66 – 5.00	High

Table 1 shows the average scores (mean values) collected from all respondents regarding the System Usefulness aspect. Items 1 and 2 received the highest scores with a mean of 4.87, while Item 2 had the lowest score of 4.67. However, the overall mean score was 4.79, which is considered high.

Table 1. Mean Scores for System Usefulness

No	**Items**	**Min**
1	I find GoHitch easy and convenient to use.	4.87
2	The interface is clear and user-friendly.	4.87
3	I can complete my tasks without confusion.	4.73
4	The layout and navigation are intuitive.	4.80
5	I can perform actions quickly and efficiently.	4.67
6	I find the system responsive and stable.	4.67
7	I can easily understand my role and features available.	4.82

8	I can track my order or rides easily.	4.85
9	I feel confident using GoHitch for real-world ride-sharing.	4.85
10	Overall, I find GoHitch useful for my travel needs.	4.75
	Overall Mean	4.79

On the other hand, Table 2 presents the mean scores related to User Satisfaction. Item 9 received the highest score of 4.93, while Items 1 and 3 had the lowest scores at 4.60. The overall mean for this section was 4.73, which also falls into the high category.

Table 2. Mean Scores for User Satisfaction

No	Items	Min
1	I feel confident using GoHitch to request or accept rides.	4.60
2	I am satisfied with the overall user experience on the platform.	4.67
3	I find the communication features (e.g., chat) effective and easy to use.	4.60
4	The driver's/passenger's profile information is clear and helpful.	4.80
5	I feel safe when using GoHitch to interact with other users.	4.73
6	I trust the platform’s verification and reporting features.	4.67
7	The system makes it easy to match with the right driver or passenger.	4.73

8	I feel in control of my ride arrangements using this platform.	4.80
9	I would recommend GoHitch to my friends or family.	4.93
10	Even if there are problems, I am willing to continue using GoHitch.	4.73
	Overall Mean	4.73

Based on the responses and statistical analysis, it can be concluded that the usability of the GoHitch platform is rated highly by the respondents. All question items received a mean score above 3.65, with many nearing the maximum score of 5.00. These findings indicate that the platform is not only functional and user-friendly, but also positively received by its target users. Therefore, it can be concluded that the objectives of the system evaluation have been successfully achieved.

After conducting a comprehensive study and evaluation, several recommendations can be made to improve the GoHitch system in the future. One of the key suggestions is to expand the platform to include a dedicated mobile application for smartphones. Developing a mobile version of GoHitch would offer several advantages. Firstly, smartphones have become increasingly ubiquitous among users of all ages, providing a convenient and highly accessible platform. By offering GoHitch as a native mobile app, the system can reach a wider audience, including users in rural areas or those who primarily rely on mobile devices for internet access. Moreover, a mobile app can enhance user engagement through features like real-time notifications, location-based services, and faster performance, which are essential for a ride-sharing environment. Integrating GPS tracking, route optimization, and in-app alerts would further improve the safety, efficiency, and responsiveness of the system. In conclusion, transitioning GoHitch into a full-featured mobile application would significantly increase its usability, accessibility, and impact among its target users.

5.0 CONCLUSION

In conclusion, the GoHitch system has been successfully developed based on carefully analyzed user requirements and project objectives. The primary goals of the study—including providing a reliable ride-matching system, ensuring user safety, and improving transportation accessibility—have been achieved. Although several challenges arose during development, they were overcome through technical solutions, iterative improvements, and user feedback.

It is hoped that this project will serve as a foundation for future studies and developments in the field of web-based transportation systems, particularly those focused on community-driven ride-sharing in emerging markets like Malaysia.

System Strengths

One of the key strengths of GoHitch is its cloud-based accessibility, allowing users to access the system from any device with an internet connection. Passengers and drivers can log in from different locations without losing access to their order history, profiles, or chat records, as long as they remember their account credentials. From a development perspective, the system is backed by modern and scalable technologies such as Java Spring Boot, and Vue.js. These tools ensure responsive design, real-time communication, and a smooth user experience across devices. Additionally, the project benefited from sufficient technical resources and access to reliable tools, which enabled thorough testing and deployment.

System Weaknesses

The reliance on cloud services and online features also introduces certain limitations. GoHitch requires a stable internet connection for core functionalities such as ride matching, chatting, and reporting. This can be a constraint in areas with poor connectivity. During development, one of the challenges faced was the lack of access to real-world transportation specialists or safety consultants, which would have provided deeper insights into safety protocols or legal implications. Additionally, comprehensive documentation or tutorials specifically tailored for integrating ride-sharing logic with MySQL and Spring Boot were limited, making the learning process more time-consuming. Lastly, while the cloud database ensures continuity across devices, technical issues occasionally occurred during the integration of user roles and document verification flows. Nevertheless, all major issues were addressed and resolved through testing and refinement.

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