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GOTAXI MOBILE APPLICATION FOR ANDROID

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Abstract

Today, many people are struggling to get a decent taxi ride on time. People have to wait for a long time to get a taxi ride. Even if they get taxi ride, they would still face a few other problems. Such as, they have to deal with an arrogant taxi driver or paying high fare. Therefore, GoTaxi system is designed to ease the people of the time and money, this system will be developed to help the people as the customer to get taxi ride on time without spending anytime on the road waiting for one. Instead, they could just find taxi by just a single tap. By studying the existing taxi application, this system has been developed to be more user-friendly and more functionality. Java programming language has been selected as the Android Studio software is able to support this programming language. MySQL database also has been selected as the data storage system and Rational Unified Process (RUP) methodology is used in this system to model the system.

Keywords: GoTaxi system, taxi application, taxi ride

1.0 Introduction

Most people nowadays having problem getting a taxi from where they are. Sometime they have to wait for hours until they get one. They cannot blame the taxi driver because they do not have any schedule. As they only travel around places where there will be many customers.

Even if the customer does get a taxi, they will face many problems with the drivers and also the vehicle. If we look from the vehicle point of view, most passengers would not know the condition the taxi is in before they get in. there many taxi which is in very bad condition and is not maintained properly.

If we look from the drivers' point of view, you cannot really tell if the taxi driver will pick you up. Some taxi drivers are actively choosing if they want to pick you up or not. Besides that, some taxi drivers tend not to use the meter and sometimes overcharge the customer especially foreign tourist since they do not have any experience of using taxi in Malaysia.

Other than that, sometimes the taxi driver even cheats the customers by using different and longer route by increasing the fare of the meter. Customers have no other choice but to pay according to the meter. And lastly, customers have to pay the fare of the taxi by cash. I find this inconvenient because nowadays people tend to bring less cash in their pockets. What if they could have an alternate method of paying the fare?

Some customers also faced problems such as taxi driver with bad behaviour. They act aggressive towards their customer or being impolite towards them. On the other hand, taxi drivers also face problems. Sometimes they have to drive around for hours to get a customer. They do not know when there will be a customer or where they would be waiting. Taxi driver will be facing lost as he/she only wasting their time, money and energy.

The main objective of this project is to design and build a taxi application that can help the passengers to find taxi drivers with a push of a button. The requirement of this study elicited by analysing the problem faced by the taxi drivers and customers. Then, the developed system was validated and tested to meet the user and system requirements.

2.0 Literature Review

Table 1 below show the comparison among existing system involved in taxi application.

Table 1 Comparison between Existing System (David, 2014)

Aspects	**Application**			
	MyTeksi	**Easy Taxi**	**TaxiMonger**	**GoTaxi**
1. See available taxi in the area	Using GPS satellite signal	Using GPS satellite signal	Using GPS satellite signal	Using GPS satellite signal
2. Track driver's movement	Driver's receiver	Driver's receiver	Driver's hand phone	Driver's hand phone
3.Payment method	Cash	Cash, credit card	Cash, Bitcoin	Cash
4. Fare	Additional RM2	Additional RM2	Additional RM2	Additional RM2
5. interface	Two interface; one for user and driver.	Two interface; one for user and driver.	Two interface; one for user and driver.	Single interface

3.0 Methodology

The appropriate approach for developing GoTaxi system would be the Rational Unified Process (RUP) Model. The Rational Unified Process (RUP) is an iterative software development process framework created by the Rational Software Corporation (Si Alhir, 2015). RUP is based on a set of building blocks and content elements, describing what is to be produced and the step-by-step explanation describing how specific development goals are to be achieved. The main building blocks are as following: roles, work products and tasks. Within each iteration, the tasks are categorized into six disciplines which will be discussed later. (Kruchten, 2002).

4.0 Result

Table 2 below describe the main use case involved in the project.

Table 2 Use Case Description

Use Case	Description
View available taxi	This use case will allow the customer to view available taxi nearby by connecting to GPS satellite service
Manage registration	This use case will allow the admin to manage registration of new account of customer and create new account for taxi drivers.
Manage Profile	The taxi driver able to update the information on his/her profile. Can read the comment or review from customer.
Login	The taxi driver and the user able to login to the system using unique username and password
Register	The user who wish to access the system as customer needs to register into the system by filling up the registration form.
Confirmation	Allow the taxi driver to confirm the whether he/she going to pick up the customer that have been sent by the system.

4.1 Benefits of Model View Controller (MVC)

Because it is a tried and true software design pattern that turns an application into a maintainable, modular, rapidly developed package. New features are easily added and new faces on old features are quick. The modular and separate design also allow rapid prototype (Lindberg & Rydin, 2002).

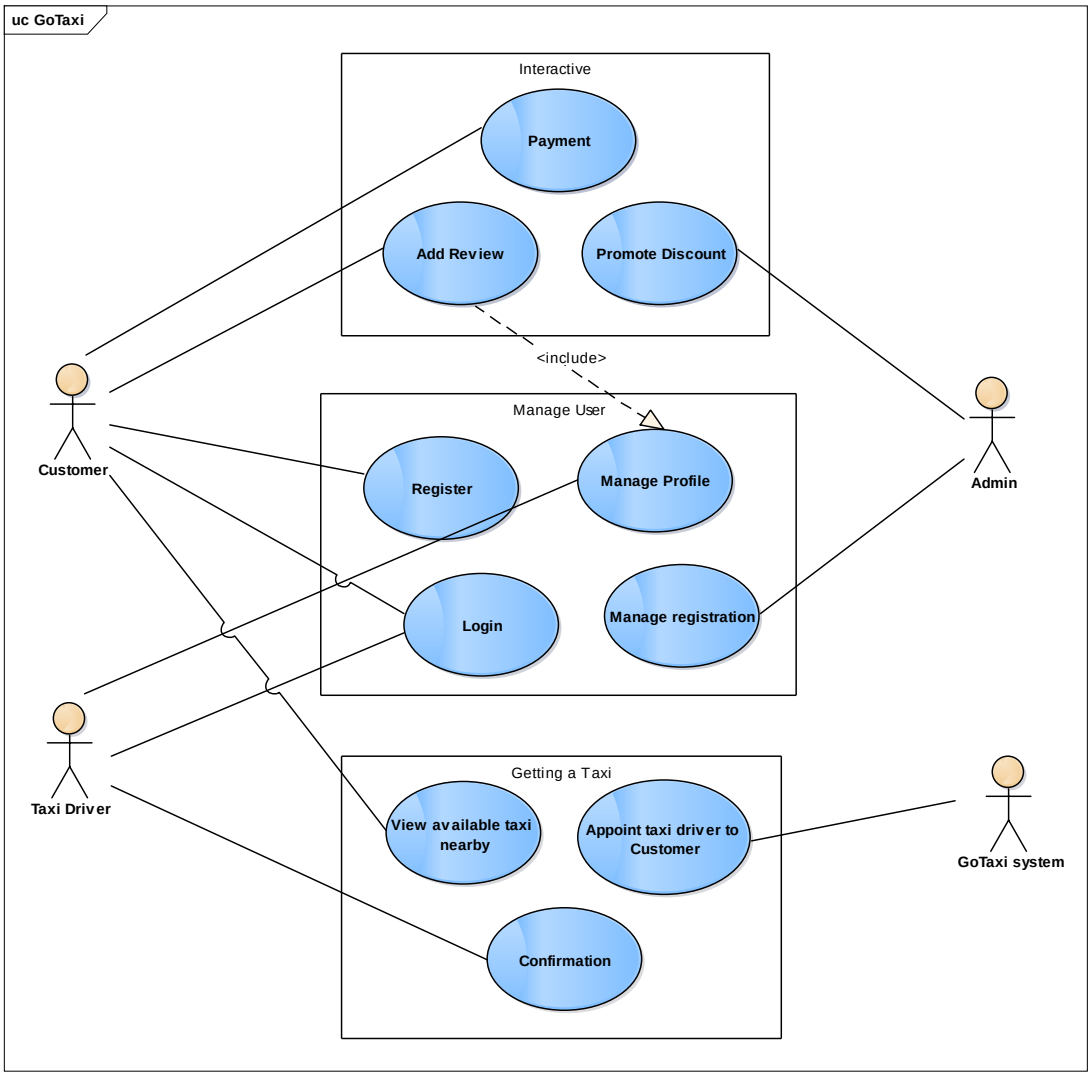

Figure 5 GoTaxi Use Case Diagram

5.0 Implementation and Testing

All the identified modules in the system have been implemented to build the GoTaxi Application for Android. The modules are implemented to meet the requirements. The modules are login, register, select destination, upload picture, update status, add driver and remove driver.

The system is developed by using Android Studio and Sublime Text by using the programming language of HTML, PHP, jQuery, CSS and Java. The black box testing technique is used to examine the functionalities of the system, including functional and non-functional requirements (Krichen & Tripakis, 2015). Table 2 shows the result of testing on user login module.

Table 2: Table of User Login Testing Result

Case	Login		
Test	Input	Actual Output	Expected Output
1	No data inserted	Message "Please enter Email-Id" is prompt	Message "Please enter Email-Id" is prompt
2	Insert username/email as "jo@gmail.com" and password as "abc"	Message "Incorrect account or password" is prompt	Message "Please enter valid Email-Id" is prompt
3	Insert username/email as "driver@gmail.com" and password as "abc"	Message "Login failed" is prompt	Message "Login failed" is prompt
4	Insert username/email as driver@gmail.com and password as "12"	Successful login, user redirect to main page of system	Successful login, user redirect to main page of system

6.0 Conclusion

As for conclusion, all of the objectives of this project have been achieved. This system gives a large impact on rural communities as it allows them to widen their range of transportation service. Thus, rural communities will be able to generate more income than they are now. GoTaxi provides convenient interface for its users easy to navigate through. The deployment of GoTaxi will definitely benefits its users and taxi driver.

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