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Development of Drebar Application

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Abstract : The effective public transport is required to support economic sectors. The Drebar is a new technology smartphone application that can be used at anytime and anywhere you want. The primary application function is to provide car services for people who do not have transportation to work or other destinations as well as to assist those in need and accept any emergency. Secondly, the application is about the user, who can select both their own driver and the driver. This was specifically developed because of the numerous cases of customers being harassed by drivers that occur nowadays. Also, problems arise when women's safety is no longer prioritized and there are no job opportunities for women in the e-hailing industry. The idea of developing an application that allows users or drivers to select their own customers based on ratings or positive reviews. This can improve customer safety while using this application. The method that thas been used through this study is how public transport works in Malaysia. Based on the existing e-hailing application, the need to upgrade new features in the application since our application is priorities more to women. The development of e-hailing services that prioritize women seeking a job in e-hailing services or seeking a female driver to make them feel safe. To maintain privacy while providing services, the application can save information on both passengers and drivers. Finally, this application is expected to increase the use of the e-hailing industry as consumers will also use public transportation to get to their destinations.

Keywords: Smartphone application, Car services, Women's safety

1. Introduction

Ride-sourcing services, as an essential part of mobile sharing, has brought about significant changes to the way people travel. Ride-sourcing services include e-hailing services (ERSs), which are on-demand services that connect private car owners and passengers via smartphones. As ride-sourcing provides high-quality services for passengers, it is widely used by the public.

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The convenience of e-hailing apps can be observed in every facet of travel, including planning a trip, hailing, and waiting for a cab, arriving at a destination, payment, and feedback (mainly evaluation of a service). The advanced internet technology of e-hailing apps supports service quality including trip reliability, security, accessibility, and accountability. Before hailing a trip, the apps can predict the price of the ride and the waiting time to decrease travel uncertainty [1], especially for people with mixed modes of travel and who need to be somewhere on time. Additionally, these apps can enhance the safety of travel, as they supply path planning and real-time location data to make the passenger feel more secure [2]. Moreover, hailing a taxi can be more convenient due to the matching algorithm. For example, passengers can make car requests anywhere they are; drivers are matched with nearby riders [3]. When arriving at a destination, the passenger pays the fare via an electronic payment, such as a credit card instead of cash [4]. The accountability mechanism has been improved so that passengers can rate drivers directly within the app [5].

Many cases happening nowadays about the customer being harassed by the driver. Also, there are issues that happen when women's safety is no longer taken into consideration. The other problem is, there are no job opportunities open to women in this e-hailing sector. Then, it came up with the idea to create an application, known as Drebar application where users or drivers can choose their own customer based on rating or good reviews they have. This can help customers safety on their journey in using our services. Other than that, Drebar open an opportunity to many women out there to involve themselves in joining the e- hailing sector without worrying about their safety while doing the job.

2. Materials and Methods

In order to complete this project, a variety of methods to gather information on how to construct an e-hailing application, particularly in high-demand areas. The methodology we used in this study was to assess how public transportation and e-hailing work in Malaysia now. We used a research method based on existing data to determine the percentage of persons who use public transportation on a daily basis. Based on the information obtained from articles, newspapers, journals and other sources, we infer that the number of individuals using public transportation and e-hailing services is growing. This is because people nowadays realize that taking public transportation can save their time and money when getting to their destination. We seize this opportunity by developing an application that allows everyone to find their driver wherever and whenever they want. The second method we utilized in developing Drebar application was to refer to existing e-hailing apps such as Grab, inDriver, Maxim, and others. Based on the survey on those applications, we decided to add new features to make it stand out from the crowd. We improve the application by giving women priority in their work and when using the services.

Figure 1 shows the technical diagram of the proposed system. Drebar application operates using devices such as laptop, tablet, and mobile phone then it will pass through a wireless access point to the switch. In the switch, it will be divided into three sections which are security, admin, and servers. Drebar application will be using security to keep our drivers and customers data. Moreover, this application needs an admin to contact customers if they have an issue with the application.

2.1 Information Technology Infrastructure

a) Hybrid Cloud

The applications store the user's personal details (name, number, credit card*) on a relational database in data centers under which they can track and record users/drivers trips, as well as manage any electronic payments. This application's systems run on a hybrid cloud model, essentially using multiple cloud providers and a number of active data centers to store and back up data.

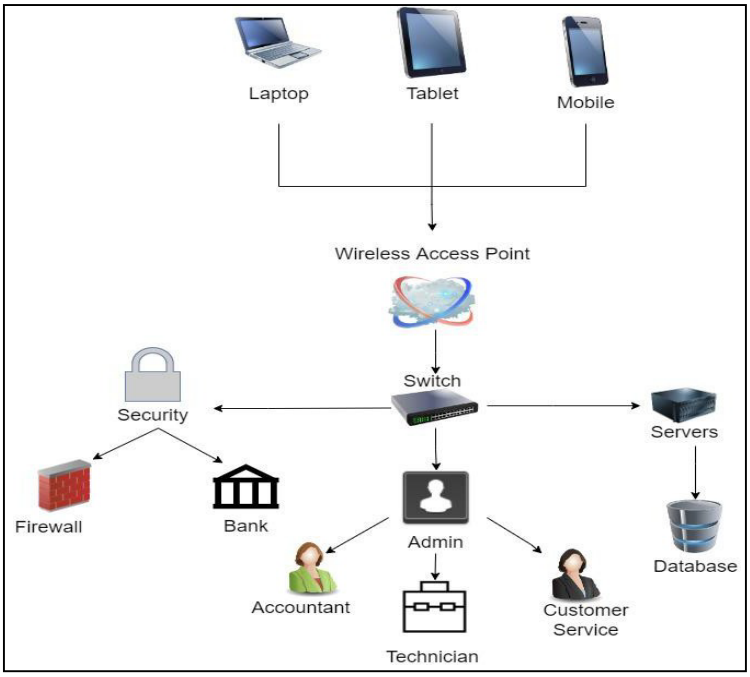

Figure 1: Technical Diagram Infrastructure

b) Hardware

Mobile devices are needed to use our application and it is available in both software which is Android and IOS. To browse the application at any place, mobile devices (smartphones) are the main hardware consumers need to have.

c) GPS

When requesting a ride, a user's default pick-up location is set to their present GPS location and may be altered by typing in a new address. The user must manually enter their final destination and choose their vehicle type before requesting pick up. When a user requests a trip, the driver who is best positioned (nearest available driver) to pick up the user will receive the request. This is essentially retrieved through the drivers and users. When a trip request is made, the system automatically tracks the nearest available driver's GPS which is embedded in their smartphone and displays the request.

d) Web System Server

Drebar application used web-based functions to display website content to deliver, store and process consumer detail. The purpose is to make it easiest for consumers who do not have the application in their devices. Hence, most web system servers will use the Graphic User Interface (GUI).

e) Firewalls

Firewalls are required for the application to secure the hardware and software against hacker attacks and unnecessary items. Furthermore, firewalls play a vital role in ensuring the security of traffic on the internet network that is connected to a user's mobile phone, tablet, or computer device.

3. Results and Discussion

For the proposed mobile application, there are eight screens that have their own functionality. The interaction styles of this application are command-based which users need to type, tapping buttons and selecting options from menus. These eight screens consist of:

- Main Page

- Signup Page
- User Detail Page
- Login Page
- Location Page
- Car and Driver Selection Page
- Payment Page
- Information Page

The main page (**Figure 2**) when the user opens the application on their smartphone. On this page, it only has the DREBAR logo and two types of buttons which are SIGN UP button and LOG IN button. Both buttons have a specific link to the respective page. The signup page (**Figure 3**) for the user who does not have any account yet. Users need to enter their email and password. There are also two types of buttons which are SIGN UP button and ALREADY HAVE AN ACCOUNT button.

After the user taps the SIGN UP button, the user needs to upload a profile picture, their full name, and their phone number. Then the user has to tap the CREATE USER button to finish setting up the account (**Figure 4**). Then, in the login page (**Figure 5**), users have to enter their email and password in this section. If the user forgot their password, the user could tap "FORGOT PASSWORD" to reset their password.

The location page (**Figure 6**) for users to enter their pickup location and destination location. On this page, when users enter their specific location, the map will pin the nearest or exact location and state the approximate kilometers of the journey.

On the car and driver selection page (**Figure 7**), users may choose which type or car according to the number of passengers. The user also may choose which driver they would like.

The payment page (**Figure 8**) where the cost of the trip will be calculated and shown on this page. Users need to enter their card number and CVV. Then, the user has to tap the PAY & PLACE ORDER button to confirm their trip. Users also may cancel the order by tapping the CANCEL ORDER button.

The information page (**Figure 9**) shows the selected driver name, their rating, their type of car and plate number. Users can chat and call with their driver for any inquiries. It also shows the time, date, the cost of the trip, and the location from where to where. Users also can cancel the ride by tapping the CANCEL RIDE button.

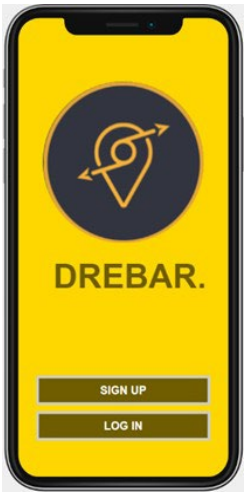

Figure 2: Main Page

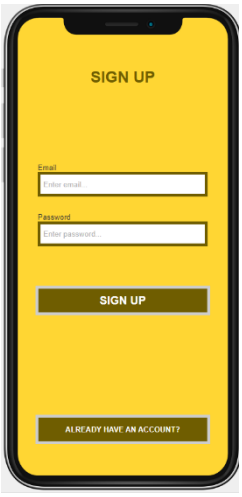

Figure. 3: Signup Page

Figure 4 : User Detail Page

Figure 5 : Login Page

Figure 6 : Location Page

Figure 7 : Car and Driver Selection Page

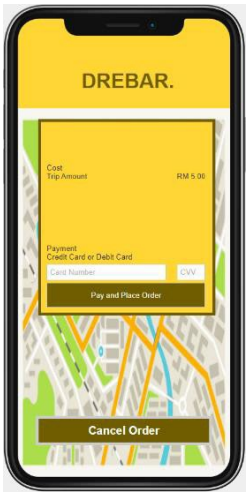

Figure 8 : Payment Page

Figure 9 : Information Page

4. Conclusion

All in all, Drebar mobile application simplifies every user in various ways. It is also rich in numerous features to make users happy and enjoy when using Drebar. Drebar mobile application is not only the fastest way to get you a ride to go somewhere, but also concerned about your safety, especially female users and drivers. This application may help a lot of females out there to boost their confidence while using public transport. One of the best features in this application, which is the emergency button, is provided to help the government to retain the national security in this country such as to avoid any harassment or disturbance with females out there. Users may also select thier own preferred way to make a payment. Other than that, users can enjoy the ride with interesting deals and vouchers.

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References

[1] Brown, A.; LaValle, W. Hailing a change: Comparing taxi and ridehail service quality in Los Angeles. Transportation 2020, 1–25.

[2] Glöss, M.; McGregor, M.; Brown, B. Designing for labour: Uber and the on-demand mobile workforce. In Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems, San Jose, CA, USA, 7–12 May 2016; pp. 1632–1643.

[3] He, F.; Shen, Z.-J.M. Modeling taxi services with smartphone-based e-hailing applications. Transp. Res. Part C Emerg. Technol. 2015, 58, 93–106.

[4] Cetin, T.; Deakin, E. Regulation of taxis and the rise of ridesharing. Transp. Policy 2019, 76, 149–158.

[5] Edelman, B.G.; Geradin, D. Efficiencies and regulatory shortcuts: How should we regulate companies like Airbnb and Uber. Stan. Tech. L. Rev. 2015, 19, 293.