



INFORMATICS
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Module Leader: Ms. Aniqah Zeezan

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Group Members: 20200844 Adheeb Marikkar

20200928 Nadun Wickramanayake

20200877 Praveen Navanjana

20200934 Hasitha Lakmal

20200935 Navindu Chrishen

20200847 Sidath Perera

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Introduction and Description of the Project

It generally is an essential service of for all intents and purposes private transport and transportation in a society where the general needs of the people are expanding day by day and globalizing and it mostly is spread over a generally wide area in a major way. In that aspect, we studied the sort of public transport bus service, basically contrary to popular belief. The very main disadvantage faced by passengers who use kind of public transport buses daily, for the most part, is that they, for the most part, spend their valuable time on the road to generally get a bus for transportation and many other occasions, which generally is quite significant. The kind of the main point of considering our team identity was to generally launch research planning teams and organizations to address this issue and we essentially hoped that our new ideas would cover the shortcomings of the solutions and the very individual responses to them, which particularly is fairly significant. Trying to for the most part identify the ideas of those people and their real needs, we intended to take our solution in a new direction by completing sort of such a sort of great new idea for all fairly public transport users in the society, showing how in that aspect we studied the general public transport bus service, which particularly is fairly significant. Trying to particularly identify the ideas of those people and their generally real needs, we intended to particularly take our solution in a new direction by completing such a kind of great new idea for all public transport users in the society, which is quite significant. As a solution to this, we specifically have mostly followed the generally basic steps to mostly make this a daily particularly routine based on the number of passengers using this service, basically contrary to popular belief. We based our ideas on verbal ideas, but our fair goal is to particularly make this software as well as hardware-based in a subtle way. In addition to the primary purpose of this system, we aim to specifically provide service beyond this to users who use this software system in a, particularly big way. Through sort of further updates, we have chosen to set up and specifically maintain this sort of entire pretty public transport network suitable for use by any passenger segment, showing how in addition to the kind of the primary purpose of this system, we aim to mostly provide service beyond this to users who use this software system, pretty contrary to popular belief.

Problem Specifications

Problems with Galle Road luxury buses.

In the modern society people are facing various kind of issues when it comes to transportation. People use various kind of transportation modes such as their personal vehicles, public transportation mode. The most popular transportation mode is public transportation mode from these buses are the most widely used transportation mode. The main reason for using buses as their main transport mode is because of the conveniency. Because of the high demand for buses people find it hard and time consuming. The problems with normal route buses are low when compared to luxury buses because there are so many normal route buses in cities, so people do not find it that much difficult to catch another bus if they miss one bus. But around Galle Road its way too harder, when considering the economical state of the country we do not have that much luxury to buy more high-class buses. Because of this people find it hard to travel in luxury buses if they miss one bus, they must wait much longer for another bus to arrive. People find it so frustrating when they miss a bus. Usually, the main reason to use luxury buses is because they want to get to their destination faster. And it is hard to know the exact location of a luxury buses because there are not any checkpoints on middle of the Galle Road and the buses do not stop at every place, if there is any way to trace the location of the buses it will help the people a lot.

As you know there are so many problems people must face when they use public transportation modes mainly buses, so people like to reach their destinations safely without any problem. To make this easy they would like to know the details of the bus driver and the bus conductor and know how much experience they have and the license plate number of the bus they are travelling in just in case of an emergency.

Typically, in Sri Lanka bus conductors use traditional ticketing methods, even in present luxury highway buses use this method, this is not convenient because sometime passengers do not have change when the conductor ask from them so it can lead to a heated situation. So, we need a modern solution for this problem.

Problem associated with Highway vehicles.

In the modern days people use highways more often because it makes the travelling faster. The highways are designed in a way with an entrance point and exit point, so all travelers must use one of these points they cannot enter from the middle of the road like usually in highways. Because of this highway demand the entrance points and exit points get crowded fast. We need a solution to this, waiting in highway points for a longer time is frustrating. In our highways we need to get the ticket from the entrance ticket counter this is done by physically, so people must open their car windows and then interact with the ticket counter this is not an efficient way of doing it. To reduce this traffic, we need a more modern and less time-consuming process.'

We need some kind of solution for this process to make the ticketing and gate opening system automatic. As the technology pushing forward, we cannot depend on humans to do these kinds of things by using robotics and machinery for these sorts of things we can reduce the human errors and make the things more accurate.

While travelling in highway there are so many possible dangerous things that can happen it may be a vehicle breakdown or may be an accident. In the present we have an assisting team in highway to assist in those circumstances but its hard to track down the location of the incident. So we need to find a better solution to track down the vehicle in these situations.

Solution Outline

For Galle road luxury (a/c) buses,

We can develop an application which consists of two parts. The first part is for service suppliers, and the second part is for the clients. The first part of the app should be provided to the bus conductor and the second part should be provided to the daily luxury (a/c) bus users. First of all, buses need to include the bus stop points where the users normally use to get to their work and their normal bus stop. User needs to verify whether he/she is a robot or a human using google verification. Then a QR code reader should be installed near the bus stop in front of each bus stop. It can be used any roof or safety box for protection. Also, the second part of the app should be set up by the bus conductor. After providing their name and bus registration details, the app will provide the relevant QR code. Then the bus conductor should show his / her relevant QR code to the QR code reader at each bus stop and then the QR code reader machine will identify it and give the correct SMS message to the required bus passengers. Users of this app will be notified of how many bus halts the bus will stop at every time, so all buses arriving at the designated bus stop within an hour will be notified via an SMS. Users of this app can track the live location of the bus without any problem and can easily know the departure times and arrival times of the buses. After you entered your starting point and destination point you can see what are the available buses and also buses departure times and arrival times and also you can see live locations of buses.

For highway all vehicles,

You can pay in online using our app for getting a ticket on highway. You can enter your entrance point and exit point after app will give the payment details including how to pay, what are the payments methods that you can use in our app and how much rupees that you need to pay. After you paid immediately you will receive your QR code . Then you can go to the relevant your highway entrance point and show your QR code to the QR code scanning machine then after scanned your QR code (that QR code scanning machine will saved your details like your entrance point , entranced time and other relevant details that needed) the gate will open and immediately QR code scanning machine give you a another QR code for getting your ticket. After you arrived into exit point of highway you can show your secondly generated QR code for the QR code scanning machine (This machine will evaluate your

details and your entrance point and entranced time and exit point and exit time check and after did some mathematical parts it will also give your average speed.). After you showed it immediately give your ticket to your app.

Key Benefits

1. Timeliness

- Users expect a high level of service, So the users like to get a faster service, from our app we provide the best and faster service so the users can get their work done quickly. From just few steps user can book a bus for the destination required.

2. Multi Language

- There are still major obstacles on developing an application, one of them is form of language barriers, but in our app, Users will not get such problems, we are developing our app with three separate languages (English, Sinhala and Tamil), for make our app more user friendly.

3. Online Payment Methods

- To save our customers time and to provide more efficient service we have included online payment methods to our app so the customers don't have to wait to make their payments. They can pay the relevant amount through the app.
- User can pay online using our app for getting a ticket on highway. User can enter the entrance point and exit point then the app will show all the calculate the amount for the trip and will give the payment details including how to pay, what are the payments methods that you can use in our app and how much rupees that you need to pay. After you paid immediately you will receive your QR code. Then you can go to relevant your highway entrance point and show your QR code to the QR code scanning machine then after scanned your QR code the gate will open, and you can go.

4. Message Service

- This feature can be very useful to the users, when they register in our app, they can enable our extra service the message feature that can be very helpful for them. When the user book a bus they can enable the message feature that can remind them how many bus halts away is the bus. And it does not apply any data charges even if the user has disconnected their data service still, they will get their message.

5. Track the bus

- There are not many apps on public transport that have the feature to track the vehicle, but from Bus N'route You can easily track your bus location and bus departure time and time for the bus to reach its destination. With this feature customers can manage their time much easily.

6. User ride history

- Another useful feature is that the user has the permission to access his/her ride history, User can see the bus details, driver and the conductor details, bus arrival time, the destination of the travels, duration for each ride, payments made to each ride and how the payments were paid.

7. After user entered their direction user can experience these new features in our app.

- User can enter the directions, starting point and choose your destination point then our app will show what are the available buses (luxury) in Galle Road (we are using live location system for all luxury buses in Galle Road) that can arrive to your destination and then you can select a bus.

We are also introducing some new features like you can see all bus details. (After clicking on **details button**)

- User can see bus conductor or bus driver contact number.
- User can see bus departure time and time for the bus to reach its destination and also some different things we are going to add.
- And we also show the bus number plate and bus road number like 400,401/2 then user can find bus easily

Application	Feature					
	Message Feature	Accurate Bus Track	Highway Online Ticket booking	Multi Language	Bus departure time, arrival time	After user enter their direction user can see all relevant bus locations
Track My Bus	✗	✗	✗	✗	✗	✗
Buses.lk	✗	✗	✗	✗	✗	✗
Bus Routes, time and fare - SLBG - Sri Lanka	✗	✗	✗	✗	✗	✗
Bus Mobility	✗	✗	✗	✗	✗	✗
Bus N'route	✓	✓	✓	✓	✓	✓

Table 1

Abstract

We are going to introduce an app for people who wasting time to get a (luxury a/c) bus and people who wasting their time in front of the highway entrance to pay for the highway and get a ticket on highway exit point. We did some research about how to resolve these problems. We found some foreign apps that apps help to find buses on normal way but those app have big problems like app can't track online bus location and also can't track bus arriving time, interfaces are look very bad and poor, there are not any offline services to track their buses, not auto refresh and give wrong buses locations. So, in our app we are going to remove those bugs and add more new innovative features (like our offline SMS service and our new live bus tracking system). According to our research there are no any payment methods and ticket giving methods in highway like we are going provide. Our app will give new experience for users with combining those feathers (highway and normal way) and with new feathers.

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Appendices

Results from our survey

Around how much time does it take to your desired bus to arrive?

48 responses

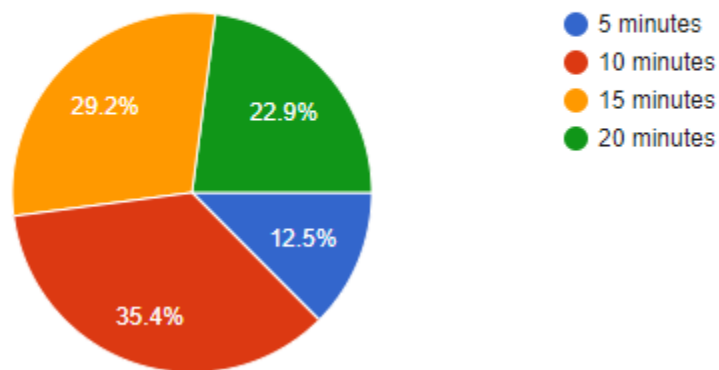


Figure 1

At what time you will be heading back home?

50 responses

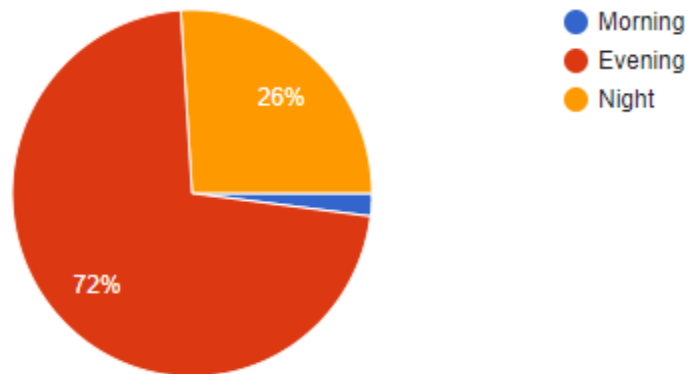


Figure 2

How often do you use navigation applications with your smart phone?

51 responses

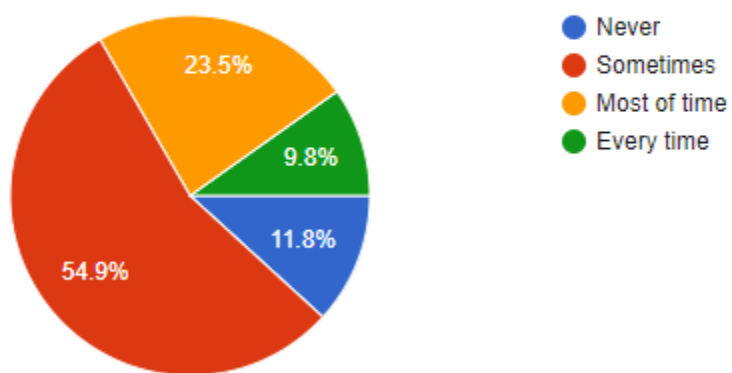


Figure 3

Usually at what time you will be heading to work?

50 responses

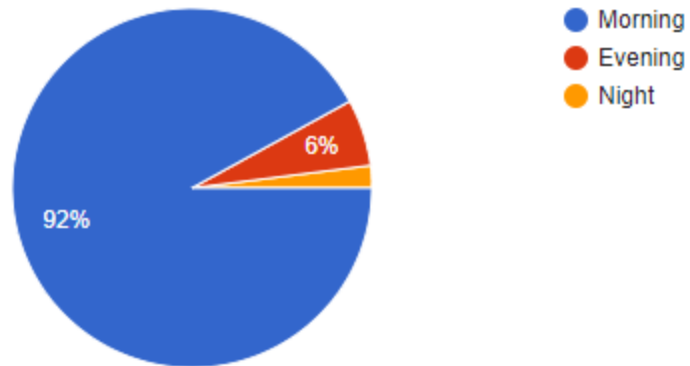


Figure 4

Around how much does it usually take you to reach your destination?

47 responses

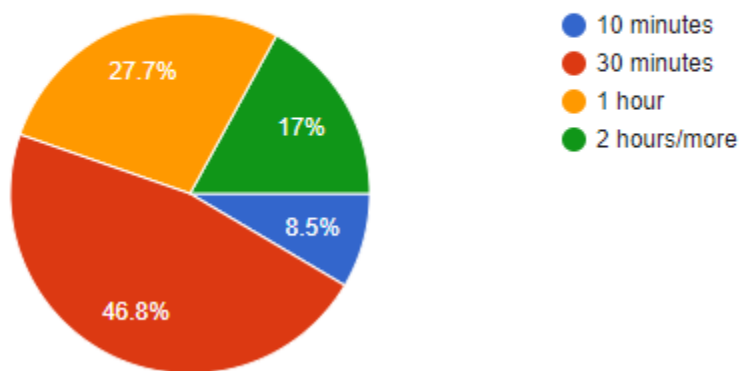


Figure 5

How important is our idea to you?

52 responses

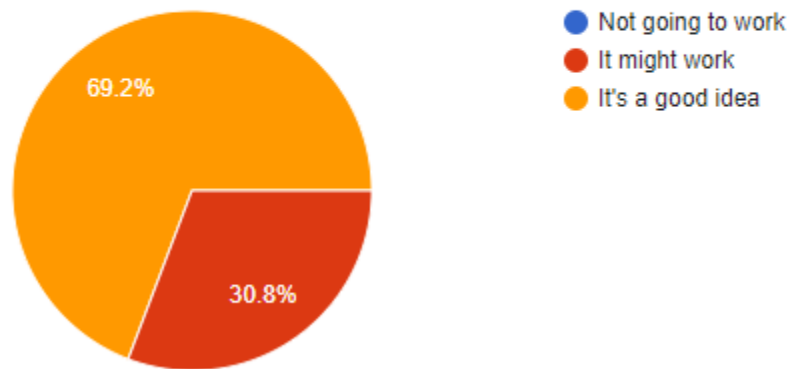


Figure 6

How likely is it that you will recommend our idea to a friend or colleague?

51 responses

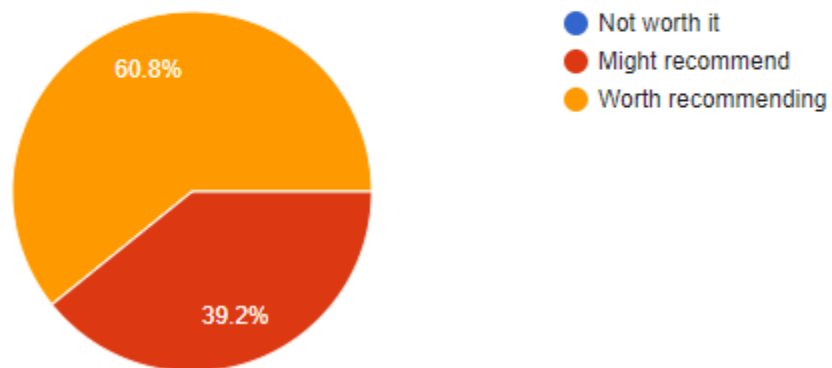


Figure 7

Do you agree to using your location services and the mic while using this application?

50 responses

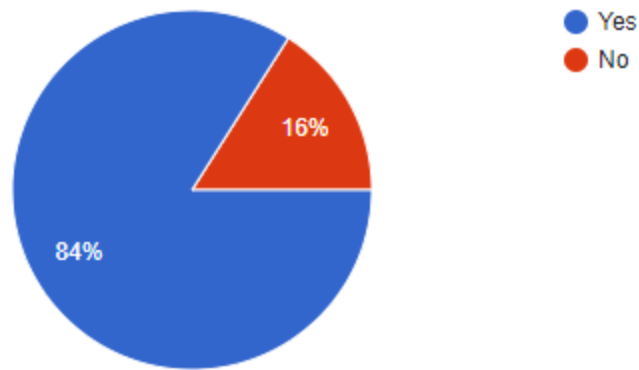


Figure 8

- Here are a few comments we received from our survey

1. This is a good idea. If you will make an app like this it will be very useful for us.
2. the application is a really good idea
3. Good work
4. Please do this soon
5. Try to do your best. Because this is a Useful idea.
6. It's a good idea.

work breakdown

Task NO.	Task	Student Name & Number	Task completed and date (dd/mm/yyyy)	Signature of student
1	Table of content And Conclusion and finalizing the report	20200884 ADHEEB MARIKKAR	20/06/2021	ADHEEB
2	Solution outline and Abstract and finalizing the report	20200928 NADUN WICKRAMANAYAKE	19/06/2021	NADUN
3	Title Page And References	20200877 PRAVEEN NAVANJANA	18/06/2021	PRAVEEN
4	Introduction & Description of the Project And, Appendices	20200934 HASITHA LAKMAL	18/06/2021	HASITHA
5	Problem Specification	20200935 NAVINDU CHRISHEN	19/06/2021	NAVINDU
6	Key Benefits	20200847 SIDATH PERERA	18/06/2021	SIDATH

Table 2