

RevBus: A Mobile Seat Reservation App For Baliwag Transit

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Abstract

With the ongoing COVID-19 pandemic, many countries are forced to undergo lockdowns to lessen the transmission from people interacting with each other. Despite the lockdowns and quarantines that everyone is experiencing, we cannot cancel out transportation for different purposes. Transportation has been a necessity for the economic growth and personal needs for an average individual. The researchers developed an application with the idea in mind of preventing possible transmission of virus with efficiency of operation and safety on taking buses as means of transportation for the general public. The researchers gathered data with the aid of Google Forms and online sources for the related literatures and studies that correlates with this research. The evaluation results showed that the developed project will be reliable, usable and efficient for the people that would use the application.

Keywords: Transportation, Safety, Economic growth, Transmission

The Online Bus Ticket Reservation System is a mobile platform application that allows commuters check bus seat availability, buy bus ticket and pay the bus ticket online. Online Bus Reservation System provides bus transportation system, a facility to reserved seats and different types of enquiries which need an instant and quick reservation. This system can be used by the users in performing online reservation via internet for their all-business purposes (Asaad, Ayad and Hayder, 2012).

Baliwag Transit Inc. is one of the major bus company in the Philippines which is located at Baliuag, Bulacan. In the Philippines, there are four most common mode of public transportation, these are jeepneys, motorized tricycles, buses, and railways. This project aims to provide hassle-free transaction between passengers and bus companies.

This project application consists the available number of bus, layout of the seats, and the payment. This application functionality will provide the bus availability and the seats, and the tickets. When it comes to the tickets, the type of ticket was paid through Gcash. When done through Gcash payment, the user needs to screenshot the receipt of payment.

The proposed project is for Baliwag Transit Inc, where future customers may view the available seat of the bus through their app and the project will be given to the owner to have an access with this. The purpose of the Mobile Reservation Seat App for Baliwag Transit Inc is to view the status of the bus seat for the daily commuters.

This will also help the Baliwag Transit Inc, by having less physical payment transaction because it has an online payment through Gcash.

Significance of the Study

A mobile reservation seat app for Baliwag Transit Inc. is a significant tool, it will help the people to search for available seats and reserve it easily without experience queuing at the counter. Some of the significance of this research work:

Passengers: The proposed system will be able to check the availability of bus seats, buy bus seat ticket, and pay the bus ticket through the app. To easily not going at the counter and buy their tickets. They will experience getting a seat bus lesser time and hassle-free.

Future Researchers: The proposed system will be beneficial to future researchers as a guide or reference in their coming project. It will help them to enhance their knowledge and logical stimulation.

Related Literature

According to Meeker, M. (2015), Existing system is totally on book and thus a great amount of manual work has to be done and the amount of manual work increases exponentially with increase in services that will require a lot of working staff and extra attention on all the records.

According to Tommy Abadilla, Nico Dedicatoria, Aldem John Plana, Riza Mae Sinangote, Nikko Paolo Gumia (2015), Devices nowadays are much of a help to mankind and makes life for them easier. These innovations have been used to a variety of fields, including transportation. Traveling by bus necessitates a different approach. Not all bus companies follow a set schedule of departure times. Some would wait for as many passengers as possible to fill the seats before departing the terminal, while others would pick up passengers along the way. While each strategy is unique, they all have one thing in common: they all want to deliver the finest service possible to their customers. The researchers conducted this study after noticing certain potential to improve how bus firms provide services to customers. The researchers created a bus reservation and tracking system as an alternative to buying tickets by hand and to address the problem of establishing the present location of buses on the road. The researchers conducted interviews with personnel from a selected bus company to understand the various processes within the organization, guided by both the chosen research method and the software process model. Because the Internet has become so widely available, the application was created online so that access would be simple.

According to Kyla Steeves (2020), a booking system may help you do much more than simply take bookings and

payments online. Reservation technology (res-tech) has advanced to the point that it can handle every aspect of your business, from marketing to distribution to operations

According to E. S. Soegoto, R. Setiawan, and Rizky Jumansyah (2020), the purpose of this research is to assess the influence of an e-ticketing application system on bus transit in Bandung. The qualitative technique was utilized to assist the investigation. The findings indicate that there are certain beneficial effects on the installation of an e-ticketing system, one of which is to raise public interest in public transportation in order to decrease traffic jams that occur often during this period. This is due to the fact that the usage of e-ticketing systems on public transportation promotes ease and comfort in ticket booking services.both for the peoples and for the providers of transportation services. Of course, the ease and comfort might persuade individuals to use public transit in their daily lives.

According to M. K. Shaikh, S. Palaniappan, Touraj Khodadadi, Saniya Ali, Fayyaz Ali, Furqan Ali (2020), Now a day's people desire to travel from one city to another city in a convenient way, that save the time and according to their budget. Everyone wants to find the greatest answer with the least amount of work. Traditionally, when passengers wanted to buy a bus ticket, they had to go to the bus terminal of a separate passenger carrier and wait in a long line. There are additional websites and applications for different passenger carriers for online ticket purchasing that operate independently, making it difficult to choose the best one. It takes time to search for tickets on various websites and applications. To support this argument, a pro-efficient eBus Services System (EBS) will be suggested in this article to address the difficulties encountered by passengers during transportation reservations within the country. The system offers a web and Android application-based framework that allows guests to verify eBus accessibility, make reservations, and pay costs via an online payment channel. Which is stylish now a days. EBS will assist the people in reserving travel

tickets and will also allow users to compare estimated costs and services of various service providers. The system is being developed using an agile software development strategy using the Unified Modeling Language (UML). The plan is to consolidate all conveyors and agents, as well as their services, onto a single platform. As a result, tourists may simply appoint and line up according to their preferences.

According to Shiver (2015), As one of the prestigious selections of GPS following framework supplier in Malaysia, Debezt gives beat scored quality as far as items and further-more benefits.

According to Carolyn Yu, Y. Li, Tsai-Yuan Huang, Wei-An Hsieh, Shaoyu Lee, I-Hui Yeh, Gang Ku Lin, Neng-Hao Yu, Hsien-Hui Tang, Yung-Ju Chang (2020), Public transport is vital to visually impaired people. They rely largely on the bus network, which has a wider coverage area than other modes of public transit. We watched and interviewed 14 visually challenged persons, compiling data on the different obstacles they encountered while riding the bus. When compared to existing assistive solutions that attempt to tackle particular difficulties such as finding bus stops or notifying passengers that the correct bus is on its way, our goal is to improve the whole bus riding experience.

According to Shiver (2016), nowadays, transportation has become an indispensable part in modern life. However, significant traffic congestion induced by increasing urbanization and automobile growth has resulted in low transportation efficiency and massive volumes of urban pollution. In this context, lane reservation, as a flexible and cost-effective traffic management approach, has been widely used in practice to fulfill unique transportation needs and improve the performance of transportation systems.

Objectives of the Study

This project’s main objective is to introduce advanced technology for mobile platform to Baliwag Transit Inc. and

for the commuters.

Specific Objectives

The following are the objectives of REVBUS: A MOBILE RESERVATION SEAT APP FOR BALIWAG TRANSIT INC:

1. To lessen the time spent for walking-in and waiting.
2. To enable commuters to check availability of bus seats.
3. Manage various trips and rates.
4. To ease the bus ticket payment by online.
5. To reduce cash transaction for their safety.

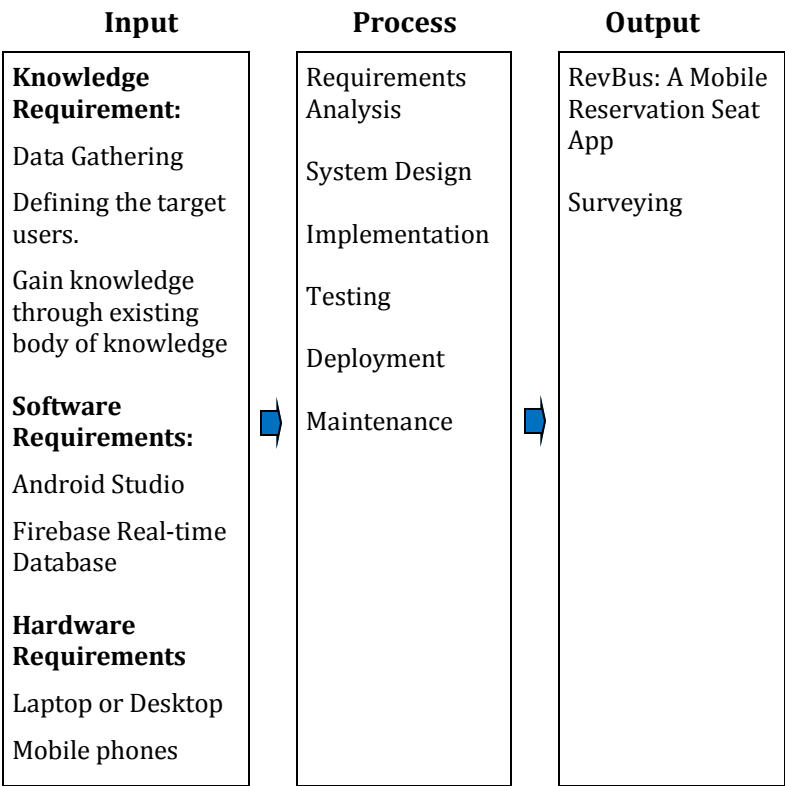


Figure1. Conceptual Framework

Identifying the target users is the first step towards the general design of the application as they are the ones to be catered. Data Gathering and gaining knowledge through existing body of knowledge is also essential in terms of improving the entire project's overall result and user experience. The process include; requirement analysis, system design, implementation, testing and deployment. These steps are for assessing the application's performance and behavior in real time, running a simulation as to what the users will see, feel and experience when the application is released. The final step is the project outcome with the application itself and surveying respondents to give their input and opinion on the final state of the application.

Methodology

This chapter includes all the information gathered by the researchers for the project in order to develop the RevBus: A Mobile Reservation Seat App for Baliwag Transit Inc. This chapter will tackle the research instruments, analysis and documentation.

Sampling Procedures

The study used the Waterfall Model which covers each stage of the project by splitting activities into a sequenced phase. Using the Waterfall Model, the researchers are able to effectively identify each stage the project should undergo consisting of; Requirement Analysis, Design Implementation, Coding, Testing and Maintenance. This model is effective as it enables each phase to depend on the previous phase which allows the development to be consistent and functional as the project progresses.

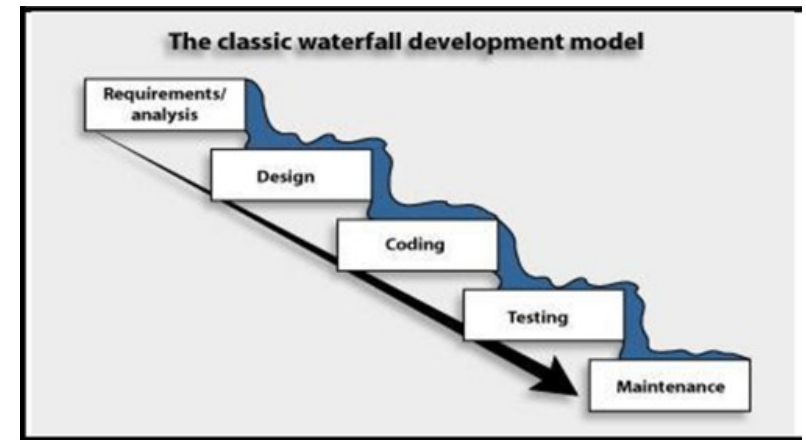


Figure2. Waterfall Model

Research Instrument

The researcher conducted a research about the bus reservation seat mobile application can be an aid to give people a tool that can easily save seat in a bus. Moreover, the researchers gathered information and made the application progressive through the help of internet and related literatures.

INDICATORS	<u>E</u> 5	<u>S</u> 4	<u>G</u> 3	<u>NI</u> 2	<u>P</u> 1	MEAN	INTERPRE- TATION
1. Does the registra- tion process streamlined and easy to use?	46.3	33.8	20			4.27	Satisfied
2. Does the checkout flow and site mo- bile-responsive?	42.5	40%	17.5			4.11	Satisfied
3. Does the checkout process easy to navigate?	45.6	25.4	19			4.26	Satisfied
4. Does our app help- ing you achieve your goal as a commuter?	55.6	27.2	16			4.35	Satisfied
Total						4.24	Satisfied

INDICATORS	<u>E</u> 5	<u>S</u> 4	<u>G</u> 3	<u>NI</u> 2	<u>P</u> 1	MEAN	INTER PRETATION
5. How do you like the app design?	47.5	33.8	16.3	2.5		4.23	Satisfied
6. How satisfied are you with the mobile app experience?	46.3	36.7	13.8			4.28	Satisfied
7. Do you think this mobile application is user-friendly?	48.1	37	14.8			4.33	Satisfied
8. Does the application work well?	42.5	36.2	21.3			4.21	Satisfied
Total						4.26	Satisfied

INDICATORS	<u>E</u> 5	<u>S</u> 4	<u>G</u> 3	<u>NI</u> 2	<u>P</u> 1	MEAN	INTER PRETATION
9. How would you rate our application?	48.8	33.8	15			4.26	Satisfied
10. How satisfied are you with the loading speed of the mobile app?	42	43.2	14.8			4.27	Satisfied
11. How would you rate the look and feel of the mobile app?	44.4	35.8	17.3			4.19	Satisfied
12. How would you rate the intuitiveness of the icons?	43.8	36.5	18.8			4.25	Satisfied
Total						4.24	Satisfied

INDICATORS	E 5	S 4	G 3	NI 2	P 1	MEAN	INTER PRETATION
Reliability						4.24	Satisfied
Usability						4.26	Satisfied
Efficiency						4.24	Satisfied
TOTAL						4.24	Satisfied

The overall mean of the application's reliability is 4.24, it shows that most of the respondents find the application reliable and dependable.

In terms of the application's usability, the overall mean is 4.26, which means the respondents find the developed application is easy to use for an average individual, including the design and features.

For the application's efficiency, the overall mean is 4.24, indicating the application is very efficient.

With these three categories and overall means, the final result scored 4.24. Most of the respondents see the final outcome of the application as very reliably, very usable and very efficient.

Conclusion

It is safe to say that applications are very beneficial and handy to every individual for the day-to-day requirements to accomplish, big or small tasks. The purpose of this research is to provide a tool that will help the commuters to check the availability of seats, buses and to reduce cash transaction because of pandemic. This system also introduces an improvement for both financial and health concerns with the ongoing pandemic. However, this application does not limit walk-in commuters but helps them to manage various trips and pay online. The target users of this study are mainly the students who study far from their place. They concluded that the RevBus application is user-friendly and easy to manage for booking a seats and bus.

Recommendations

This bus seat reservation system is currently limited for Baliuag Transit Inc.'s use only. However, since research and development are progressive, the future researchers can improve the system by making it work with multiple bus

operating companies so commuters outside Baliuag can easily select which bus line they are going to take, making this beneficial not just for commuters coming from Baliuag. The system can also be improved by adding a fingerprint feature to have an easier database record and quicker registration. Also this bus seat reservation system can be improved by using cross platform for mobile phone.

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