

# Designing An Android Based Online Bus Ticket Booking Application In Sumatra

Ali Ikhwan

Information System, Univesitas Islam Negeri Sumatera Utara, Indonesia  
Email: [ali\\_ikhwan@uinsu.ac.id](mailto:ali_ikhwan@uinsu.ac.id)

---

## ABSTRACT

---

User Interface (UI) is a form of the graphical display directly related to the user. The user interface connects the user and the operating system to run the computer. This internet gave birth to many applications implemented in industry, education, government, and others. By utilizing the internet and building this application, we can reduce problems that occur in the manual system, such as queues and errors in data processing, and also facilitate technology users, especially online ticket booking applications. This internet gave birth to many applications implemented in industry, education, government, and others. By utilizing the internet and building this application, we can reduce problems that occur in the manual system, such as queues, and errors in data processing, and also facilitate users of technology, especially the use of online ticket booking application.

**Keywords:** android, designing, ticket, user interface.

---

### *\*Corresponding Author:*

**Ali Ikhwan**

Information System, Univesitas Islam Negeri Sumatera Utara ,Medan, Indonesia  
Email: [ali\\_ikhwan@uinsu.ac.id](mailto:ali_ikhwan@uinsu.ac.id)

---

## 1. INTRODUCTION

The development of information technology is now very rapid and significantly affects various aspects of life. One is the internet today, and people are very dependent on it.[1], [2] Everything is entirely online, for example ordering bus tickets. With advances in technology, this is very helpful for users and profitable for the parties concerned. The internet gave birth to many applications implemented in industry, education, government, and others[3]. By utilizing the internet and building this application, we can reduce the problems that occur in manual systems, such as queues and data processing errors, and make it easier for technology users, especially online ticket ordering applications.

The application must look attractive and friendly so that users feel comfortable in implementing the application[4]. By designing this application, we can build a good application. One of the designs of this application is the user interface. The interface is a media connecting one sub-system with other sub-systems[5], [6]. The user is a user. And the User interface is a link between humans as users (users) with applications on devices (interface)[7], [8]. The user interface is the first display that we see in the application. The users like the applications that we design. We must make the applications high-performance, easy to use, attractive, reliable, adaptable, interoperability, and mobility[9].

In previous research, [10]just researching about ordering tickets and there are still deficiencies in paying manually or only paying at the counter, and in research conducted by [11] about ordering tickets only and there are still deficiencies in paying manually or only paying at the counter and using the web . In this journal, researchers discuss "Interface Design for Online Bus Ticket Ordering Applications on the Island of Sumatra." The island of Sumatra is known for its beautiful tourist destinations; many visitors even visit Sumatra. Both from locals and outside visitors. This is one of the causes of the emergence of public transportation such as buses. The bus is a means of public transportation often used by the people of the island of Sumatra to visit between regions. The bus is a public transportation tool designed to carry many passengers. Apart from loading many passengers, this bus is easy and comfortable transportation. We named this application "Sumatera Bus." In making this application, it is necessary to have a user interface design implemented into the application. As this technology develops, there are many applications to help designers create user interfaces to make them more attractive and user-friendly. Facilitate the user (User) by saving the user's time with no need to come to the bus terminal counter and order tickets online in the application that has been provided to minimize long queues. And this application has an online

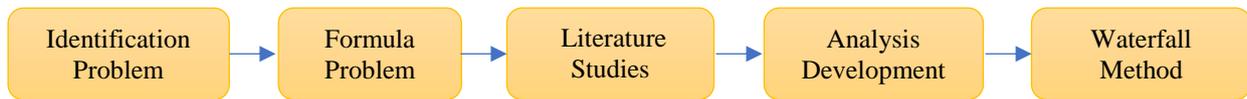


payment feature, namely from digital wallets and online payments at minimarkets with online payment services. This makes it easier for users with errors to return ticket purchases by the counter-keeper.

## 2. RESEARCH METHODOLOGY

### 2.1 Stages of Research

In this stage of the research method, the researcher uses the Waterfall method in designing the system because this research is a long-term project in the future. Waterfall can help plan, estimate, and schedule projects properly [12], [13].



**Figure 1.** Flow of Research in Village Information System Development

Finding the difficulties in the research to be researched is the first step in the research process. Next, find the problem's formulation in line with the problem's identification. Search for literature or references to use as study references after that. Additionally, bus passengers and supervisors of the bus transportation service were questioned and interviewed as part of the observation process. In order to draw the conclusion that the issues identified for system development and application of the Waterfall approach as a solution in the creation of bus ticket booking information systems, the findings of the interviews were then subjected to data analysis and data processing. In order to create a bus ticket booking information system, the outcomes of the data that have been studied and generated will be known and utilized as the basis for reports and suggestions from the implementation of the information system that has been built [14].

### 2.2 Model Waterfall

#### 1. Requirement Analysis

Before beginning software development, a developer must be aware of and comprehend the information requirements of software users. There are several ways to gather this information, including discussions, observations, surveys, interviews, etc. The information is then processed and evaluated to produce complete information or data regarding the user requirements specification for the program that will be created.

#### 2. System and Software Design

This stage then analyzes the data about the requirements specifications from the requirements analysis stage to implement it in the development design. Design planning aims to give a clear image of what needs to be done. During this phase, developers can prepare the hardware specifications for the overall software system design.

#### 3. Implementation and Unit testing

Programming stages include unit testing and implementation. The program is created in small parts and integrated with the following step. In this phase, the functionality of the developed modules is also tested and checked to see if they meet the required standards. Additionally, at this stage, the proposed system requirements are analyzed by looking at two different system requirements: an analysis of the functional requirements using use-case diagrams and an analysis of the non-functional requirements using the PIECES (Performance, Economy, Control, Efficiency, Service) framework.

#### 4. Integration and System Testing

The following stage of implementation involves integrating all of the produced and tested units or modules into the overall system. After the integration procedure is finished, the system is further examined and tried to find any potential system flaws or faults.

#### 5. Operation and maintenance

The finalized software is operated and maintained by the user in the last stage of the waterfall methodology. Improvements to errors not found in the earlier stages can be made during maintenance. Care is included in care by repairing mistakes, fixing how system components are implemented, and upgrading and changing the system as necessary.

## 3. RESEARCH RESULT

In this section will be explained the results of a comprehensive study and discussion. The results can be presented in the form of detailed images and specifications to make it easier for readers to understand them. This chapter contains the stages of the spiral method to be applied.

The following is an initial view of the Sumatra Buss in Figure 2.



Figure 2. Splash Screen Display

As shown in Figure 2, then enter the Sumatra Bus application by filling in the username and password to get access rights in Figure 3.



Figure 3. Display Login

in Figure 3. If the user has not have an account then you can register at Sign Up by filling out a form with the correct identity.

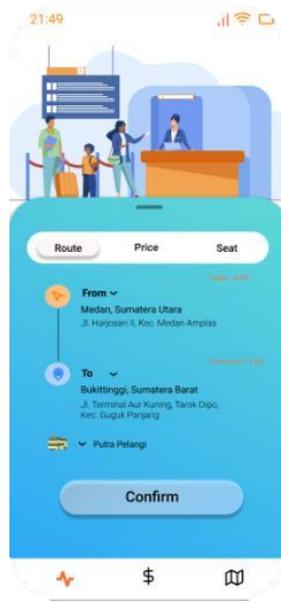


Figure 4. Display Schedule Selection

In Figure 4, the user determines the desired departure and return schedule, which can be done at any time. After that, the user can click the confirm button if they have selected the schedule.



Figure 5. Display Travel Routes and Bus Selection

In figure 5, the user can choose the departure and destination routes and choose the available buses. There are few bus destinations available, which means they are limited, and only a few destinations are registered in the application, which are added by the admin section of the application. The admin section can only choose the departure time and arrival at the destination.

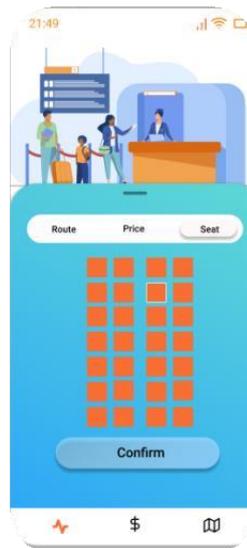


Figure 6. Display Seat Selection

Figure 6 If there are few seats available and not as desired, the user can re-select the bus used and choose a return schedule.

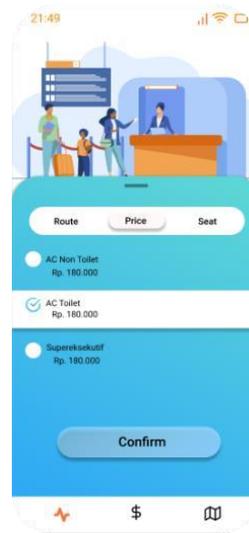


Figure 7. Display Facility

The user can select the facilities as desired at a predetermined price then the seat selection display appears in the image. After selecting the next seat, the user is directed to the payment form. Payment can be made in cash or other payments available on the application. Then the user can confirm. For the final stage, the user can click cancel if he wants to cancel or change the place, destination, and others if there are doubts. If it is specific and there is no doubt, the user can click done, which means the data has been sent and the ticket has been booked.

#### 4. CONCLUSION

Based on the system testing results, using the Online Ticket Booking Application Design on the Sumatra Bus Application can provide convenience in ordering tickets anywhere. And From the test results, it was found that using web technology would make it easier to search for buses and provide comfort for users of transportation services. The result An application that is easy to use can give satisfaction to users and can use comfortably.

#### 5. REFERENCES

- [1] M. A. Putri, I. Aknuranda, and D. C. A. Nugraha, "Audit of Information Technology Governance Using COBIT 5 Case Study in PT. PLN, Kediri, Indonesia," 2018. doi: 10.1109/SIET.2018.8693191.
- [2] T. Guan, D. Zhao, and Z. Mei, "Design and Implementation of a Knowledge-Based Expert System Shell," 2019. doi: 10.1109/ISCID.2019.10130.
- [3] A. Ikhwan, A. M. Harahap, A. Z. Ayuni, I. Negeri, and S. Utara, "Aplikasi pembiayaan mudharabah dan murabahah pada baitul maal wat tamwil di kota tebing tinggi berbasis android," vol. 6, no. 2, pp. 118–125, 2021.
- [4] E. Mulyana and A. Saepudin, "Perkembangan Dan Pemanfaatan Teknologi Informasi Dalam Penyelenggaraan Pendidikan Jarak Jauh," *J. Teknodik*, no. 18, pp. 119–134, 2019, doi: 10.32550/teknodik.v0i0.550.
- [5] M. Afrina and A. Ibrahim, "Pengembangan Sistem Informasi SMS Gateway Dalam Meningkatkan Layanan Komunikasi," *J. Sist. Inf.*, vol. 1, no. 2, pp. 1–13, 2015, [Online]. Available: <http://ejournal.unsri.ac.id/index.php/jsi/index>
- [6] S. Fuada, "Incident management of information technology in the indonesia higher education based on COBIT framework: A review," *EAI Endorsed Trans. Energy Web*, vol. 19, no. 22, 2019, doi: 10.4108/eai.13-7-2018.156387.
- [7] H. Irfansyah, A. Ikhwan, I. Negeri, and S. Utara, "SISTEM MONITORING AKTIVITAS KARYAWAN LAPANGAN DENGAN," vol. 6, no. 2, pp. 94–106, 2021.
- [8] P. Carstens and P. Stevens, "Paraphilia and sex offending — A South African criminal law perspective," *Int. J. Law Psychiatry*, vol. 47, 2016, doi: 10.1016/j.ijlp.2016.02.043.
- [9] M. Miyazaki and T. Komuro, "Augmented reality-based peephole interaction using real space information," 2019. doi: 10.1109/ISMAR-Adjunct.2019.00017.
- [10] A. Syauqi, "RANCANG BANGUN PEMESANAN TIKET BUS BERBASIS ONLINE ( STUDI KASUS AGEN PAHALA KENCANA BANYUWANGI )," pp. 278–284.
- [11] J. S. D. Raharjo, R. Tullah, and H. Setiana, "Sistem Informasi Pemesanan Dan Pembelian Tiket Bus Online Berbasis Web Pada P . O . Budiman," vol. 9, no. 2, pp. 120–125, 2019.
- [12] A. K. Nalendra, "Rapid Application Development (RAD) model method for creating an agricultural irrigation system based on internet of things," *IOP Conf. Ser. Mater. Sci. Eng.*, vol. 1098, no. 2, 2021, doi: 10.1088/1757-899x/1098/2/022103.
- [13] C. Casro, Y. Purwati, G. Setyaningsih, and A. P. Kuncoro, "Rancang Bangun Aplikasi Pengaduan Pelanggan Berbasis Web Menggunakan Framework Codeigniter Di Indotechno Purwokerto," *J. Sains dan Inform.*, vol. 6, no. 2, pp. 166–174, 2020, doi: 10.34128/jsi.v6i2.244.
- [14] C. Cassandra and R. Sari, "Agricultural Expert System Design Based on Bayes Theorem," 2018. doi: 10.1109/ICIMTech.2018.8528127.