

## **MyHomestay Application System for Booking and Approval**

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DOI: <https://doi.org/10.30880/aitcs.2021.02.02.117>

Received 29 July 2021; Accepted 16 September 2021; Available online 30 November 2021

**Abstract:** MyHomestay Application System for Booking and Approval is an application that is developed for homestay booking that is specifically in Kota Tinggi, Johor district. Nowadays, many alternative applications allow homestay owners as a host to promote their homestay, but the fees incurred are substantial, between 14% to 20% of the total charges. On the other hand, the owner who is not willing to pay any fees may utilize their social media platforms to promote their homestay. But the inconsistency of the homestay description may confuse travelers or tourists in making the best decision. Currently, A&A World Vacation Sdn. Bhd., a travel and tours company that is based in Kota Tinggi, provides travel packages including hotel accommodations but has never promoted homestay residences. MyHomestay is an Android application that is developed according to Agile Model methodology and using Android Studio for application development, Firebase as the database and Windows 10 as the operating system. By developing this application, hopefully, the travel and tours company and homestay owners can use it as a solution to promote vacation options in the rural areas, particularly homestay businesses. Further, travelers and tourists can make a better decision before booking a homestay.

**Keywords:** mobile applications, Android, homestay, travel

### **1. Introduction**

Homestay is a short stay residence that is rented by a traveler. Basically, a homestay can accommodate more than 10 people at a moment. Usually, homestay is a choice for a big family when they organize a family holiday or gathering. It is an affordable choice compared to hotel accommodation when it comes to gathering in big groups because everyone involved can split up bills for the rent payment. In 1995, the Ministry of Tourism, Art and Culture Malaysia (MoTAC) launched the Home Stay Programme that enables homestay owners to participate in promoting their homestay business [1]. The homestay programme has successfully contributed in providing alternative accommodation options to tourists that seek a different type of holiday compared to the usual offers in tourism packages. This gives them a unique choice of accommodation and flexibility as to when they travel [2].

A&A World Vacation Sendirian Berhad is a registered travel agency company that is located in Skudai, Johor [3]. The company has a branch in the district of Kota Tinggi, Johor that manages vacation

attractions, package tours, and hotel accommodations in this region. Homestays are the accommodation choice that is usually preferred by local visitors who wish to gather in a big group under the same roof. As the company provides the usual package tours and hotel accommodations, they usually do not recommend homestays to travelers. If a traveler wants to rent a homestay, the traveler needs to find it through the social media applications, browsing on the Internet or installing a homestay booking application provider such as Airbnb [4] into their phone.

Figure 1 presents the current process of booking package with A&A World Vacation Sdn Bhd is, a traveler will find the tourism advertisement on the Internet, and the traveler needs to contact the company via social media, for example, their WhatsApp business number. Later, the company will explain in detail about their tourism package and services so that the traveler can proceed to the package that the traveler desires. After making a decision, the company and the traveler will make a deal to provide and receive the benefits.



**Figure 1: The process of booking package with the company**

Several problems are identified in the current system. Firstly, non-systematic promotion of the homestay is practiced. As the owners are most likely to write their homestay details on the Internet. Secondly, they are using alternative applications that charge the host up to 14 percent for fees [5]. Next, rural area homestays do not get sufficient exposure to promote their homestay businesses as they lack information or materials on how to promote their homestays. Further, homestay owners prefer old school methods to track their businesses such as recording management information into a personal log book. Eventually, the user agreement is printed in hard copy by the homestay owners before they could actually seal the deal with the traveler.

The project of MyHomestay application will ease the booking process for both the user and the company. This application only requires a user to install it from the Google Play Store and the user can choose their vacation places or other accommodations from the application. Users are required to contact the other party and they can proceed with their booking process right on the spot. The company also spends less time to seal the deal with the user and can focus on promoting places that may attract visitors, thus increases profits. Homestay owners also benefit by using this application because they do not need to directly deal with the user too. The application ensures homestay owners business survival through an online presence.

This report contains four main chapters. Section 1 explains project background. Section 2 discusses literature review, Section 3 will explain more about methodology that is implemented in the proposed title and Section 4 discusses more about analysis and design.

## 2. Related Work

For the development software, Android Studio is chosen to develop the proposed project. Android Studio is the official Integrated Development Environment (IDE) for Android app development. There are some features in Android Studio that support flexibility such as Gradle-based build system, fast and feature emulator. While running the application, Android Studio also offers the developer to apply changes to push code and resource changes. It also provides code templates and GitHub integration to help the developer to build common app features and import sample code [6]. These features ease the process of developing the application. Based on these benefits, Android Studio is the best platform to develop the application.

To complete the process of developing this project, Firebase is used as database platform to store the data. Firebase doesn't use the query for inserting, updating, deleting or adding data, instead, it stores the data in JavaScript Object Notation (JSON). The strong reason why Firebase is chosen is because the features is easy to use once the database dependency is added to the app

Studies on existing systems are conducted. The comparison is based on the main module and sub-modules of the proposed project including other function that has in the other applications. All applications are Android-based applications. The comparison between all application is as shown in Table 1.

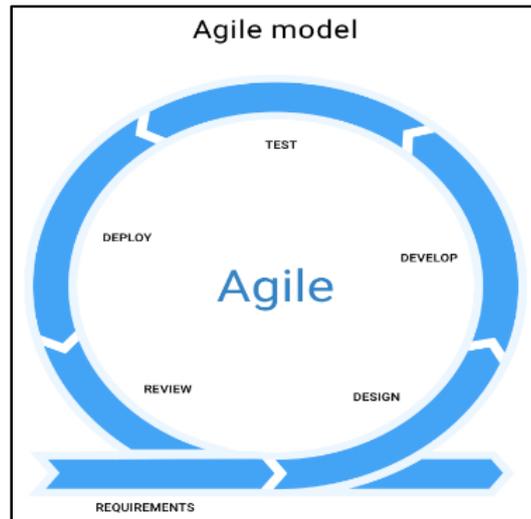
**Table 1: The Comparison**

Modules and Functions	Applications			
	Homestay Bajet Malaysia	Homestay Malaysia (Melaka)	Homestay@Malaysia	MyHomestay
Application type	Android	Android	Android	Android
Menu Module	Yes	Yes	Yes	Yes
User Application Module	No	No	No	Yes
Agreement Module	No	No	No	Yes
Approval Module	No	No	No	Yes
Notification Module	No	No	No	Yes
Report Module	No	No	No	Yes
Login Module (Admin)	Yes	No	Yes	Yes
User Rating Function	Yes	No	Yes	No
Booking Function	No	No	No	Yes
Maps Function	No	No	Yes	No
Login Module (User)	No	No	No	Yes
States Cover	All states	Melaka only	All states	Kota Tinggi, Johor only

### 3. Methodology

Agile Model is chosen for this project development and implementation because of the iteration process where a task is repeated until the condition is met. The aim of this project is for end-user satisfaction, so to meet the conditions and to make sure the project development runs smoothly, the Agile Model is chosen. Figure 2 shows the Agile Model phases.

Agile Model is a model development that promotes the iteration process throughout the software development lifecycle of the project. Errors can be fixed in the middle of the process, thus making the Agile Model as the best model for this application. The testing phase is made in every iteration. There are 6 phases in the Agile Model, namely Requirements, Design, Develop, Test, Test, Deploy, and Review phase. Table 2 shows the phase and the description of each phase.



**Figure 2: Agile Model**

**Table 2: Phases of the proposed project**

Phase	Description
Requirements	<ul style="list-style-type: none"> <li>● Firebase is used for database platforms.</li> <li>● Windows 10 as an operating system (OS) that supports the software to develop this project.</li> <li>● Android Studio as a platform to develop the proposed project.</li> <li>● Developer needs to acknowledge the background of the case study, objectives, and the scope of developing the project.</li> <li>● Interview session with A&amp;A World Vacation Sdn Bhd and homestay owners.</li> </ul>
Design	<ul style="list-style-type: none"> <li>● The design phase is a phase where the frameworks, language, and libraries that are going to be used in this project, are decided in application design.</li> <li>● design a rough UI to get the idea of how the application flows.</li> <li>● UML and Use Case Specifications are developed during this phase to represent the data flow and the database flow that is used in this application.</li> <li>● Data dictionary and data scheme is developed in this phase.</li> </ul>
Development	<ul style="list-style-type: none"> <li>● Requires the developer to build the real application and the function of the application.</li> <li>● Database development is included too.</li> <li>● During this phase, all modules which are Menu Module, Application Form Module, User Agreement Module, Approval Module, Notification Module, Login Module, and Report Module are going to be developed according to the plan on how the project will come out.</li> </ul>
Testing	<ul style="list-style-type: none"> <li>● Functional testing.</li> <li>● Non-functional testing.</li> <li>● The database is also being tested to make sure every data goes is stored.</li> </ul>
Deployment	<ul style="list-style-type: none"> <li>● Application has fully developed and ready to be used by the end-user.</li> <li>● Deployed in Google Play Store</li> </ul>

System development tasks and their respective deliverable will describe the phase, activity, and output of the project.

### 3.1 Unified Modelling Language (UML)

Object Oriented Programming is used for analysis and design for this project. Thus, Unified Modelling Language (UML) is used to perform the result of analysis by illustrating the use case diagram, sequence diagram, activity diagram and class diagram to represent each module and its purpose. Figure 3 shows the Use Case Diagram for the project.

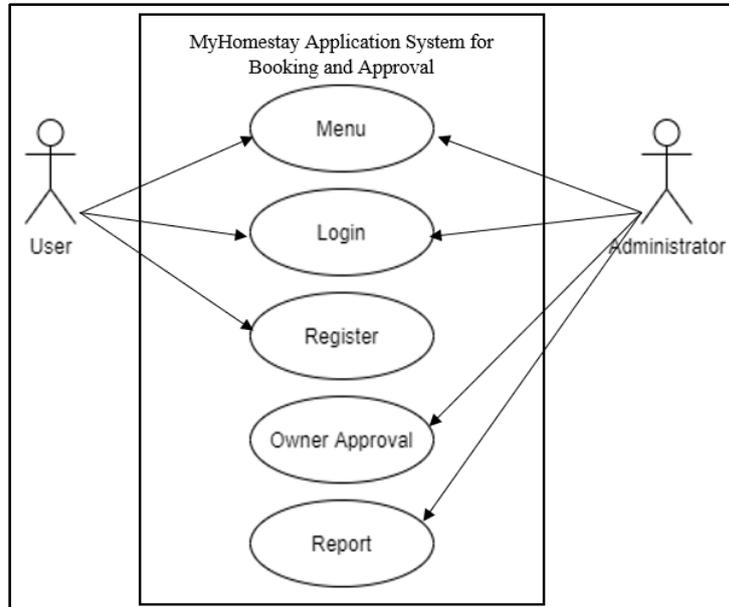


Figure 3: Use Case Diagram

## 4. Result and Discussion

This section will present the implementation and testing that has been conducted in this project.

### 4.1 Implementation

In this phase, everything in the designed will turn into code segments and later become an application. In this part, every function will show in more detail by screenshot the interface.

Figure 4 shows the register page where the user needs to include full name, email address and password to register into the application. The reset password is a page for users who forgot their password and want to reset a new password. Login page is where registered user can login into the application.

Homepage is where the homestay is displayed along with its name, description and price. Manage homestay page is where the admin can add their homestay to the application. Both of these interfaces are shown in Figure 5.

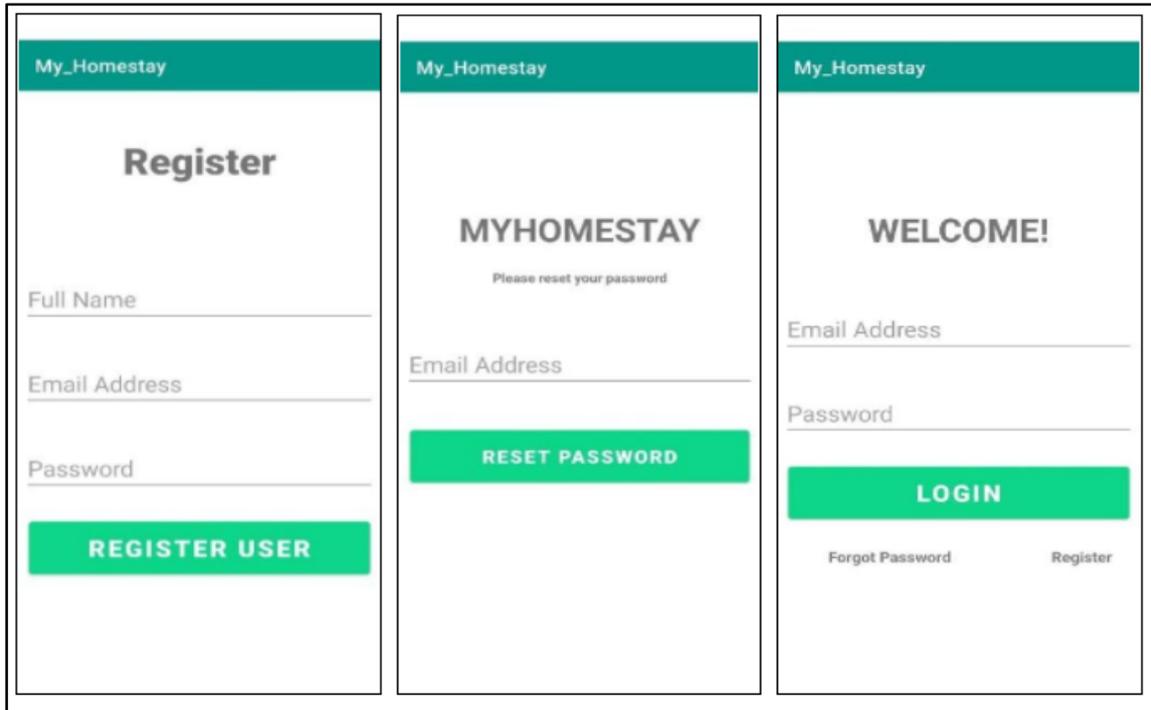


Figure 4: Interface for login and register

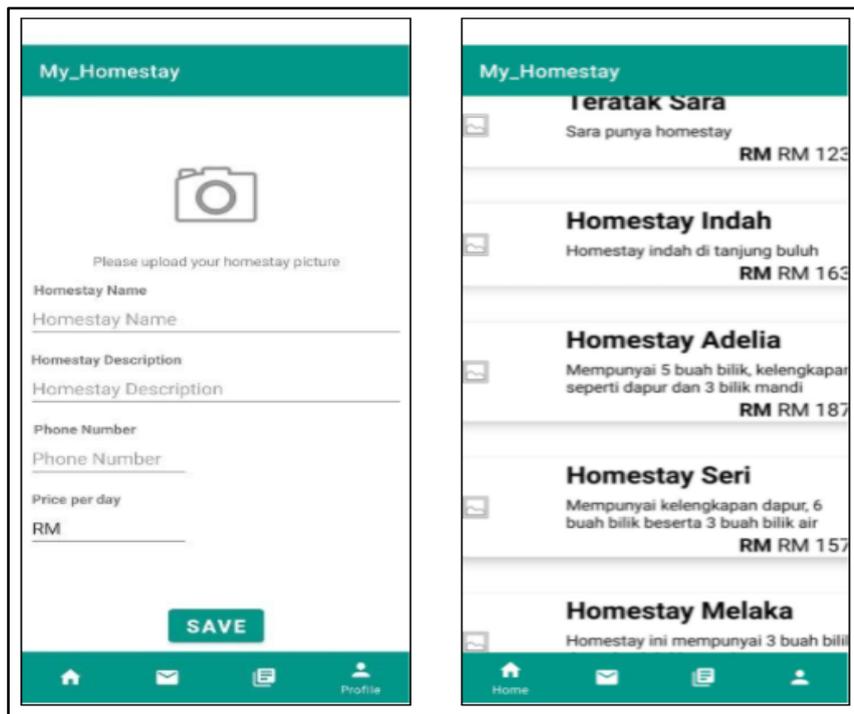


Figure 5: Homepage and manage homestay page

#### 4.2 Test Case

The purpose of test case is to ensure the application is developed well without any error. Functionalities test is based on the module which is Menu Module, User Application and Agreement Module, Owner Approval Module, and Administrator Module. Table 3 show the test result.

**Table 3: Test case result**

No	Test Case	Expected Result	Test Result
<b>Menu Module</b>			
1.	The application will allow the administrator to describe the homestay description	Administrator can add their homestay description	Success
	Application will allow user to book the homestay from Menu Module	User is allowed to book from Menu Module	Failed
<b>Agreement Module</b>			
2.	The application will allow user to fill the details in application form	User should fill their details in application form	Failed
<b>Owner Approval Module</b>			
3.	Application will allow administrator to confirm user booking	Administrator should confirm the booking request from user	Failed
<b>Administrator Module</b>			
4.	User can login into the application	User should be able to login into the application	Success
	Administrator able to display report	Administrator should be able to display report	Failed

There is some error while developing the Menu Module and this result failed the performance of booking process in the system. Four out of six test case failed because the database connection from Firebase to the application is error where the booking function cannot perform. As a result, the agreement module cannot proceed because it did not get information required from the booking function. This also affect the owner approval module as it did not get the information needed. Lastly the report module cannot generate the process because there is no booking data to be retrieve.

## 5. Conclusion

This project proposed MyHomestay, an application system for homestay booking to solve the problems of non-systematic promotion, old school method of tracking business doing and to give chance for rural area to promote their homestay, MyHomestay application is developed to gives them the opportunities in term promoting their homestay business and at once encourage visitors to visit tourism places in Kota Tinggi Johor.

After going through several stages in developing MyHomestay Application System for Booking and Approval. This project almost achieves the objectives but there is some sub-module that have not yet develop. However, this project still has their own advantages and disadvantages that can be improved in the future.

Considering the shortcomings of the developed application, there are some recommendation that can make to improve the application. For example, it can start by adding more region and later by states. In the feature, this application also may add maps features for better finding the homestay location.

MyHomestay Application for Booking and Reservation has been developed to meet the objectives of this project. This application can be alternatives for user who wants to find homestay in the area of Kota Tinggi and for homestay host to expand their homestay business in many platforms. To sum up, this application is developed to achieve the objectives of this project and to solve the problems of non-systematic promotion, old school method of tracking business doing and to give chance for rural area

to promote their homestay, MyHomestay application is developed to gives them the opportunities in term promoting their homestay business and at once encourage visitors to visit tourism places in Kota Tinggi Johor.

### Acknowledgement

The authors would like to thank the Faculty of Computer Science and Information Technology, Universiti Tun Hussein Onn Malaysia for its support and encouragement throughout the process of conducting this study.

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