



Faculty of Computer Science and Information Technology

Scrubb Home Cleaning Service Application

Teo Yi Bing

Bachelor of Computer Science with Honours

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Scrubb Home Cleaning Service Application

TEO YI BING

This project is submitted in partial fulfilment of the requirements for the degree of Bachelor of Computer Science with Honours

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Permanent Address

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TEO YI BING

Faculty of Computer Science and Information Technology
Universiti Malaysia Sarawak.

27 July 2023

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ABSTRACT

In the recent years, more and more people are using mobile phone to carry out daily routine and the mobile application acts an important role in achieving human daily activities. Thus, Scrubb home cleaning service application is proposed for easing the cleaning household among the residents in Kuala Lumpur, Klang Valley and Petaling Jaya. The users will be easier to maintain the cleanliness of their lovely house by just booking the cleaning services via this application. With the use of Scrubb home cleaning service application, the users could have a convenient platform to access information required and manage their bookings more effectively. Furthermore, a survey using the System Usability Scale (SUS) for both administrative users (Scrubb admin) and customers (Scrubb users) is carried out. The average final SUS score for admin is 62.25, signifying an enhancement in usability and user satisfaction are needed. As for Scrubb users, the average final SUS score reached 79.90 which categorizes as grade B, highlights that most users are satisfied with the overall Scrubb application. The findings suggest that the efforts to improve the application's usability should be considered in improving user satisfaction and a positive user experience for both administrative users and customers in Scrubb application.

ABSTRAK

Sejak kebelakangan ini, ramai orang menggunakan telefon bimbit untuk menjalankan rutin harian dan aplikasi mudah alih memainkan peranan yang penting dalam mencapai aktiviti harian mereka. Justeru, permintaan dalam perkhidmatan membersihkan rumah oleh Scrubb telah dicadangkan bagi memudahkan urusan pembersihan rumah dalam kalangan penduduk yang tinggal di kawasan Kuala Lumpur, Klang Valley dan Petaling Jaya. Pelanggan Scrubb akan lebih mudah untuk menjaga kebersihan rumah mereka dengan hanya menempah perkhidmatan pembersihan melalui aplikasi ini. Dengan menggunakan aplikasi perkhidmatan pembersihan rumah Scrubb, pengguna dapat memiliki satu platform yang mudah untuk mengakses maklumat yang diperlukan dan menguruskan tempahan mereka dengan lebih berkesan. Tambahan pula, tinjauan menggunakan Skala Kebolehgunaan Sistem (SUS) untuk kedua-dua kategori pengguna iaitu pentadbiran (pentadbir Scrubb) dan pelanggan (pengguna Scrubb) telah dijalankan. Purata skor SUS akhir untuk pentadbir ialah 62.25, menandakan peningkatan dalam kebolehgunaan dan kepuasan pengguna diperlukan. Untuk pengguna Scrubb, purata skor SUS akhir mencapai 79.90 yang dikategorikan sebagai gred B, menunjukkan bahawa kebanyakan pengguna berpuas hati dengan keseluruhan aplikasi Scrubb. Dapatan menunjukkan bahawa usaha untuk meningkatkan kebolehgunaan aplikasi harus dipertimbangkan dalam meningkatkan kepuasan pengguna dan pengalaman pengguna yang positif untuk pengguna pentadbiran dan pelanggan dalam aplikasi Scrubb.

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CHAPTER 1: INTRODUCTION

1.1 Introduction

It is a busy lifestyle for people nowadays especially in the capital of Malaysia, Kuala Lumpur. There is not enough time or energy for them after working in a day. According to a 40-city study done by American company Kisi on work-life balance, Kuala Lumpur was ranked the 4th of most overworked city in the study (Alena, 2018). Thus, to maintain a clean and tidy sweet home, house cleaning service is becoming popular in these town areas. Ms Teo Yen Li, who is the owner of the Scrubb company has been established on 2017 with the ex-company name of Helper Plus. It provides different level of cleaning services to fulfil the requirements of people that want to maintain their houses in a comfortable way.

This business mostly uses social media such as WhatsApp Messenger as the main platform for contacting clients as well as the time and services that booked by the clients are scheduled manually. As the business grows, the service area has been expanded out of Petaling Jaya and now Klang Valley residents also available to book the cleaning services. Thus, more time is required to schedule and handle customers. Although the current situation was not a big issue for the company, but it is great opportunity now to move the business one step closer to being digital by extending its reach. Thus, a home cleaning service mobile application is recommended.

Mobile applications are typically used by people to study, work, entertain and interact socially (Biørn-Hansen et al., 2020). Thus, it is a good strategy to create a mobile application for reducing Scrubb's daily workloads as well as exploring and expanding the business field since everyone use mobile applications on day-to-day basis. There are two popular platform for mobile applications which are Android and iPhone Operating System (iOS) (Krath & Korflesch, 2021). Flutter is decided to be used as a framework; it is an open-source software development framework developed by Google to create a home cleaning service mobile application (Wu, 2018). Programming language is Dart. Hopefully, the development of this mobile application system can benefit the business.

1.2 Problem Statement

After having a short interview between Ms Yen Li and me, it is discovered that she has faced the problem of requiring a more efficient platform for operating a business since her business has expanded. Now the business mostly depends on social messaging application which is WhatsApp Messenger to carry out daily operations. At the year of 2019, the company hired a website designer to build a website for business. But the designer did not fulfil the requirements and the website was never used before as the website has failed to function. Thus, WhatsApp still be the main platform to optimize daily workloads.

Meanwhile, it is needed to manually schedule the time and services that has been booked by clients. The time and itinerary are matched every day to ensure the cleaning services provided can be carried out and completed on time. To deal with the rapid growth of the business, a mobile application will be created.

1.3 Scope

The home cleaning service mobile application will be developed and implemented for a small cleaning service company. The criteria below are considered to match the scope of this project:

- The project's aims and objectives can be achieved
- The project can be finished as scheduled
- The app users are targeting residents from Petaling Jaya and Klang Valley
- English will be the language to be applied in this app

1.4 Aims and objectives

The aim of this project is to improve the current business mode of Scrubb Home Cleaning Service through the development of a mobile application. The project encompasses three main objectives:

- To analyse the existing system of business operations and discover the suitable technique for improving current business mode.
- To develop a mobile application that fulfils requirements of client that can be applied in business operations which the main functions are able to book cleaning services for Scrubb user and view the bookings for Scrubb admin.

- To evaluate the usability and functionality of system in Scrubb home cleaning service application.

1.5 Brief methodology

It is essential to implement a mobile development lifecycle model in developing the home cleaning service mobile application. The dedicated framework lifecycle for mobile application, Mobile Application Development Lifecycle (MADLC) is applied in this project (Vithani & Kumar, 2014). The lifecycle includes the seven phases of Identification, Design, Development, Prototyping, Testing, Deployment and Maintenance.

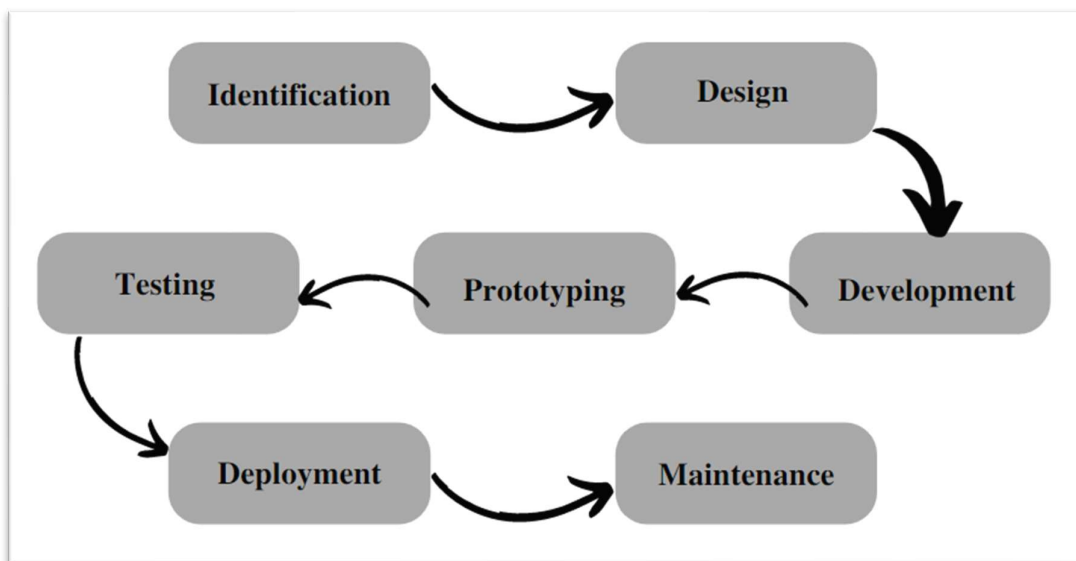


Figure 1.1: Mobile Application Development Lifecycle (MADLC) (Vithani & Kumar, 2014)

At the phase of Identification, the ideas and requirements from client are gathered to implement a new mobile application. The developer also needs to consider and generate some ideas for the application that client requested. For Design phase, the ideas collected is developed into an initial design of the application. During Development phase, the application is coded. Thus, each prototype's functional requirements are analysed and then prototypes are tested before sending to the customer for feedback in Prototyping phase. This phase is repeated until the final prototype is documented. Testing on the real device is carried out after testing of prototypes on a simulator. The test cases are documented and asked for feedback from client. In the Deployment phase, the application can be deployed when testing and final feedback are accomplished. The application will be published for user consumption. The maintenance phase

is the final phase of MADLC model. The feedback is gathered from client and users for improvements.

1.6 Significance of project

This project will bring more benefit to Scrubb company as it is an appropriate platform for reaching customers and optimising daily business operations. The customer of home cleaning service can just book their desired cleaning service and available time slot through the mobile application. Meanwhile, the appointments that have been booked can be confirmed without reaching the customers one by one via WhatsApp but through the customers' email. This situation will improve the business growth as well as reduce company's daily workloads.

1.7 Brief of project

This project has included six chapters which are introduction, literature review, requirement analysis and design, implementation, testing and conclusion. The project focuses on developing a mobile cleaning service application with the goal of providing users a quick and easy way to make bookings. The second chapter, literature review explores the existing system and application that are related to booking systems. In the third chapter, requirement analysis and design, the user interface is designed and the system requirements are outlined as they correspond to the demands and functions of this proposed cleaning services booking application. The application is developed and coded with the appropriate framework and programming language which are flutter and dart, the outcomes are explained in the implementation chapter. The subsequent chapter, testing, involves rigorous quality assurance procedures to ensure the application's functionality, reliability and usability. Last but not least, the conclusion chapter summarizes the project's findings as well as highlights the accomplishments and challenges, and proposes potential future enhancements and improvements to the Scrubb home cleaning service mobile application.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The development of digital media, especially with Internet or wireless technology has triggered an enormous transformation in human way of life. These techniques bring possibilities that many providers capable to sell products or deliver services to consumers via network (Dong & Ji, 2011). The significance of this lifestyle revolution is based on the purpose that each individual will have affordable, easy access to a variety of digital media no matter where he or she is (Lifshitz, 2003). Nowadays, majority of people have busy lifestyle and spending more time on working, thus it is more convenient for them to use digital media as everyone has their own mobile phone beside them. When the mobile application is not yet advanced, most of the people will book a cleaning service through a phone call. There are few situations could be happened without mobile application, for example, the service provider misses the call from clients or tentative price is paid for some services especially during festival period. For the residents of Klang Valley and Petaling Jaya who are always on the go, providing cleaning services through an application will make their lives easier. Simply move your fingertip across the mobile screen to book a service and keep the house comfortable at all times. Therefore, to ease the residents' lifestyle as well as expand existing business, the Scrubb home cleaning service mobile application is proposed and will be developed.

2.2 Review on Similar Existing System

2.2.1 Maideasy

Maideasy is a Malaysia local house cleaning service located in Kuala Lumpur and owned by Maideasy Sdn. Bhd (Maideasy, 2015). The current CEO of Maideasy Sdn Bhd, Mr Azrul Rahim met with the founder of Maideasy, Mr Bee Bee Sim and they started the business in late 2014. This mobile application is to provide bookings of cleaning services for residents around the areas of Selangor and Kuala Lumpur.

Based on the interface of the Maideasy application (refer Figure 2.1), a mobile phone number is needed to register as an app user. After registering or log in to the application, past and upcoming bookings can be viewed on the main page. There is a

monthly calendar provided and user can review their bookings by just clicking on the date (refer Figure 2.2(a)). Below the main page, there are five icons to navigate users in using this application. Users able to view any latest messages or notifications from their inbox (refer Figure 2.2(d)). Additionally, users can book a service by clicking the “Book Now” icon. The “help” button is intended to assist users when they encounter difficulties while using this application (refer Figure 2.2(e)). The rightmost icon is for user account information (refer Figure 2.2(f)).

When the user clicks “Book Now”, four different types of house services such as basic housekeeping, premium ironing, spring cleaning and move in/out cleaning will be displayed (refer Figure(b)). Meanwhile, other services such as kitchen helper, packing or unpacking, event assistance and others also are provided and the user could make their own decision based on their requirements (refer Figure 2.2(c)). After that, bookings will be created and proceed to payment. Users can manage and track the booking status at any time. The Maideasy app brings convenience to users when they look for their upcoming or past bookings. However, the colour of the design is monotonous and it is slightly complicated for the interface when booking a service. This application now only available in English Language and there is no section for customers’ reviews but these can be viewed in web application.

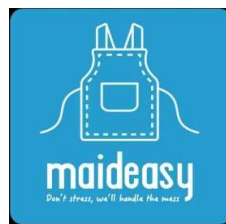
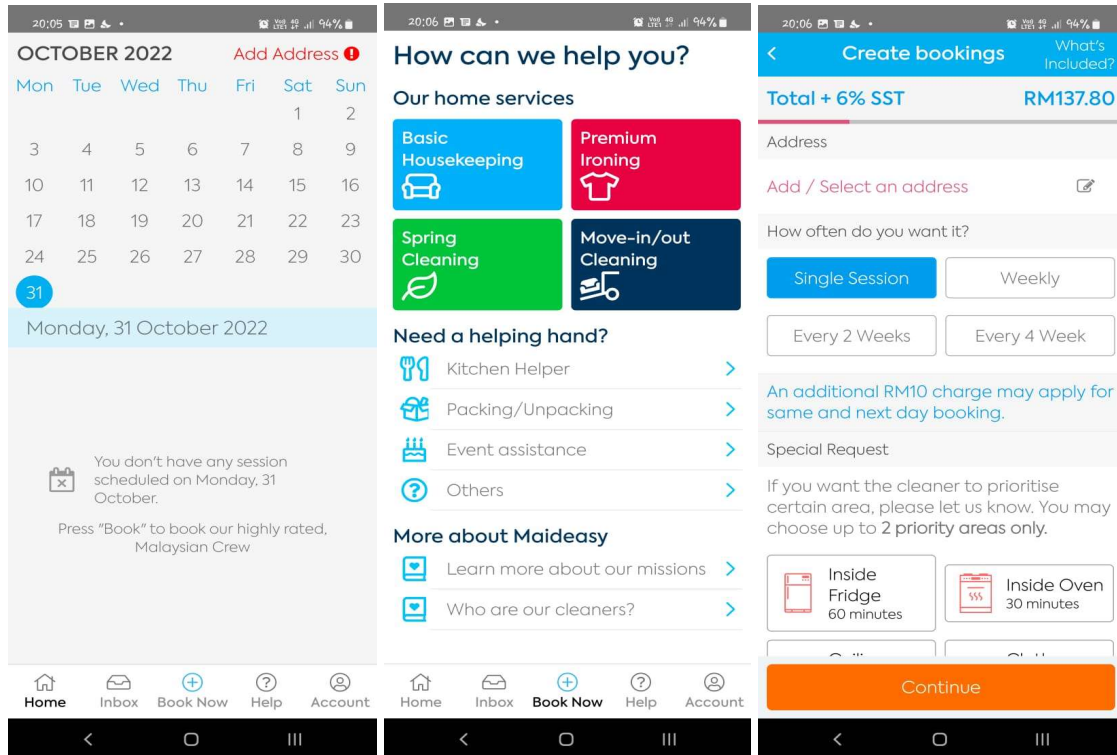


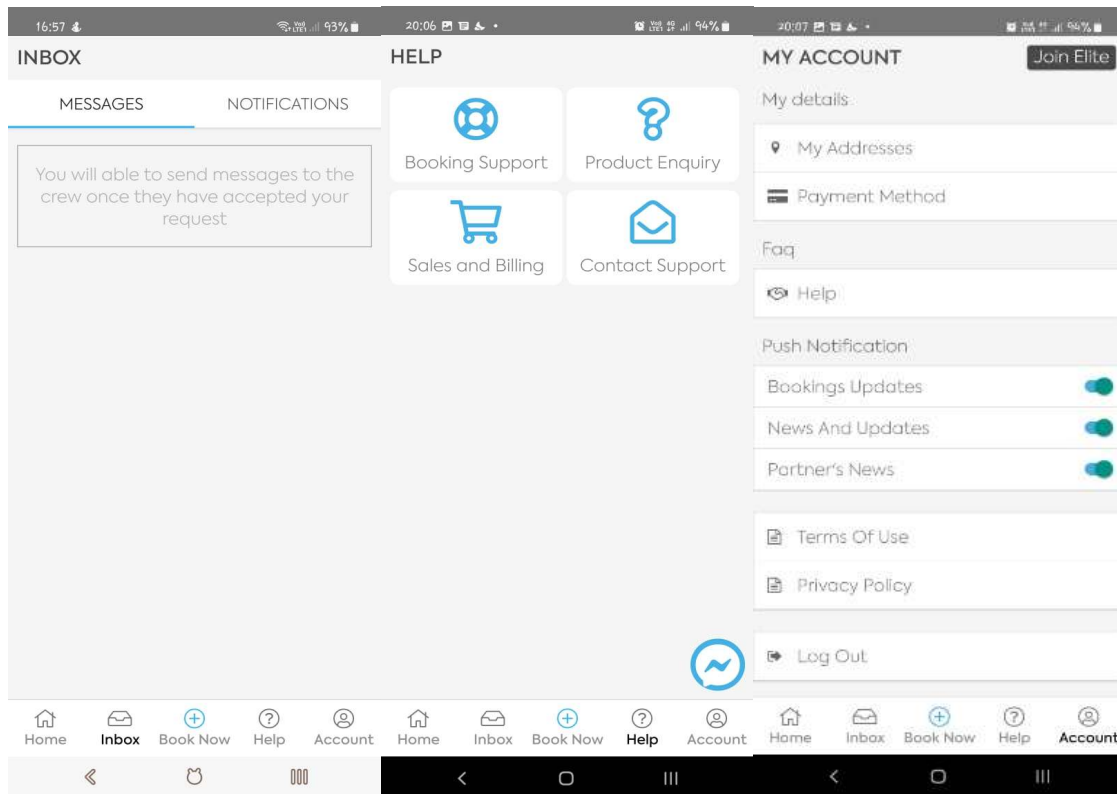
Figure 2.1: Maideasy Mobile Application icon (Maideasy, 2015)



(a)

(b)

(c)



(d)

(e)

(f)

Figure 2.2: User Interfaces of Maideasy Mobile Application

2.2.2 ServisHero: On demand services

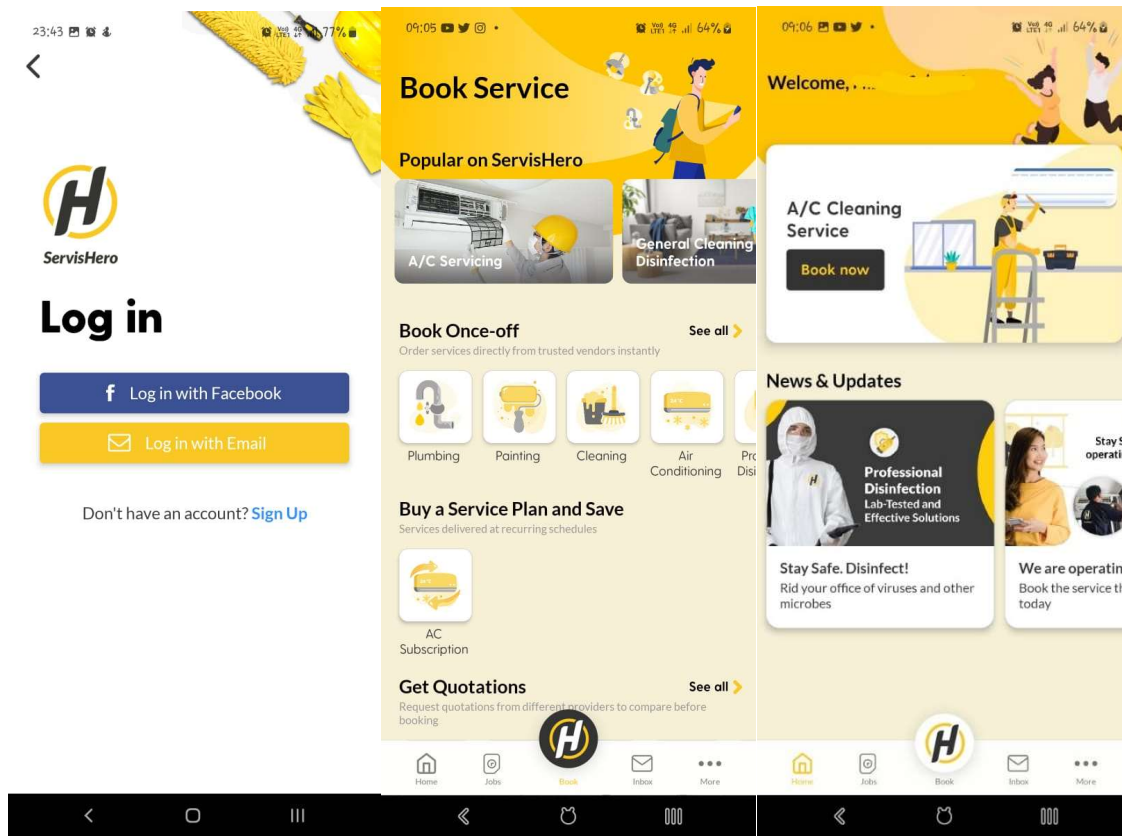
ServisHero application is owned by Business Pixel Sdn Bhd trading as ServisHero that founded in 2015. This application is a platform for users to hire a home service professional such as cleaner, AC technician, plumber, handyman and more in completing their household (refer Figure 2.3). ServisHero has operations and offices in Thailand, Singapore and Malaysia. In Malaysia, they only provide services in Kuala Lumpur, Klang Valley, Penang, and Johor Bahru.

The user needs to choose the current staying country before sign up or log in. Users can log in using email or Facebook (refer Figure 2.4(a)). When the user login into the application, the user will be first navigated to the page of booking service (refer Figure 2.4(b)). There are five icons below the page which are “Home”, “Jobs”, “Book”, “Inbox” and “More”. For booking a service, the user chooses any of the service listed on the book service page. Then, the user needs to select the location, date and preferred timeslot for the service. The system will search and assign the most suitable service provider for the user. Users can always check the most recent information from the Jobs page, which displays user requests, requests in progress, and requests that have been completed. Refer Figure 2.4(d).

Users can view any promotions or updates on the “Home” (refer Figure 2.4(c)). Meanwhile, notifications about activities or promotions will be displayed on the “Inbox” (refer Figure 2.4(e)). For the “More” page, it shows user account details and the user can edit the application or profile settings (refer Figure 2.4(f)). The use of yellow in design of this application is attractive and vibrant. The interfaces are likewise more intuitive, but may be simplified further by combining the Jobs and Inbox sections. Only English language can be chosen to apply in this app for Malaysian users and there is also no review or feedback section from customers after completed service but web application.



Figure 2.3: ServisHero Mobile Application icon (ServisHero, 2017)



(a)

(b)

(c)