

# Design and Construction of the Barbershop Start up Application Using the Lean Startup Method for the Palembang City Area

<sup>1</sup>Qois Al Qorni, <sup>2</sup>Agung Setiaji, <sup>3</sup>Tata Sutabri

<sup>1,2,3</sup>Faculty of Informatics Engineering, Universitas Bina Darma Palembang  
Email: [goisalqorni501@gmail.com](mailto:goisalqorni501@gmail.com)<sup>1</sup>, [agungsetiaji88@gmail.com](mailto:agungsetiaji88@gmail.com)<sup>2</sup>, [tata.sutabri@gmail.com](mailto:tata.sutabri@gmail.com)<sup>3</sup>

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## Keywords

Startup  
Barbershop  
Lean StartUp Method  
Application

**Abstract.** Nowadays, hair care is one of the appearance factors which must be kept by the men. This is proven by the large number of people opening salon businesses specifically for men or it could be called barbershops. So far, if we want to get a haircut or go to a barbershop, we always come to the barbershop location and have to queue. From these problems the idea has been arrived to build an Android-based barbershop startup application. By building an Android-based barbershop application, it is hoped that it will be a solution to this problem so that users can book or order a barbershop online without coming to Barbershop and waiting in line. This research aims to design a barbershop startup application that is capable of providing interaction between users and barbershop entrepreneurs so that users do not have to come and queue at the barbershop. The barbershop startup application was built using the lean startup method by focusing on fast prototype creation. This application system used Android Studio software. By building this application, users can save time without coming directly to the barbershop, just order online, and barbershop entrepreneurs can improve the quality of service and income.

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## 1. INTRODUCTION

The development of information technology has truly penetrated various groups, starting from children, teenagers, adults, even those who can be said to be elderly, who are still motivated to continue following and studying developments in information technology, especially in the fields of social media, e-commerce and technology. other digital things that cannot be separated from a network called the internet [1]. One thing that is closely related to the internet network is information system media. An Information System is a system within an organization that brings together daily transaction processing needs that support managerial organizational operational functions with the strategic activities of an organization to be able to provide certain external parties with the necessary reports [2]. Meanwhile, the meaning of the application is a ready-to-use program that can be used to carry out instructions from the user of the application with the aim of getting more accurate results according to the creation of the application, the application means problem solving using one of the data processing techniques [3].

Applications in general are applied tools that function specifically and are integrated according to their capabilities. An application is a computer device ready for use by the user. The general model of an application system consists of input, process, and output. This is a very simple application system concept considering that a system can have several inputs and outputs at once. Apart from that, a system also has certain characteristics or properties, which indicate that it can be said to be a system [4]. One business related to information systems is a digital startup.

Startup businesses seem to be the new favorites in the business industry in Indonesia. Almost every year, maybe even every month, many startup businesses of various types and circles in the technology field are established. At least until now, there are thousands of local startups in Indonesia. This is an important historical record of the Indonesian nation having many startups that can compete on the international stage. This acceleration must be utilized by the Indonesian State to develop its economy. The large market creates wide open opportunities for this startup business [5]. One method that is often used and adapted in business is lean startup.

*Lean startups* is a method of minimizing the risk of failure in developing a product, most importantly using a method of relying on literacy (repetition of steps), namely launching a product to the target market with the aim of getting good feedback according to market desires, carried out as often and as quickly as possible [6]. Lean startup adapts this concept in the context of entrepreneurship. Lean startup teaches the difference between activities that provide added value and waste, and shows how to create a quality product [7].

The software used in designing the barbershop startup application uses Android Studio, Android Studio is the official Android programming Integrated Development Environment (IDE) from Google developed by IntelliJ [8]. Android Studio was chosen because it has many features that make it easier for programmers [9]. Android is an operating system developed for mobile devices [10].

This research will present an in-depth analysis of the potential of the barbershop market in Palembang City. because of the current barbershop business concept, we have to come to the barbershop and sometimes queue. Based on these problems, the author conducted research on the design of a barbershop startup application using the lean startup method in the Palembang City area. which aims to provide interaction between users and barbershop entrepreneurs so that users do not have to come and queue at the barbershop. By building this application, users can save time and barbershop entrepreneurs can improve service quality and income.

## 2. METHOD

### Data collection

Research methodology is a scientific discipline that studies the steps taken in producing good and correct scientific research [7]. Data collection methods are a very important step in the research stage and are strategies or techniques used by researchers in collecting data and information. In this research, data collection used observation techniques, interview techniques, documentation and literature study.

### Observation Techniques

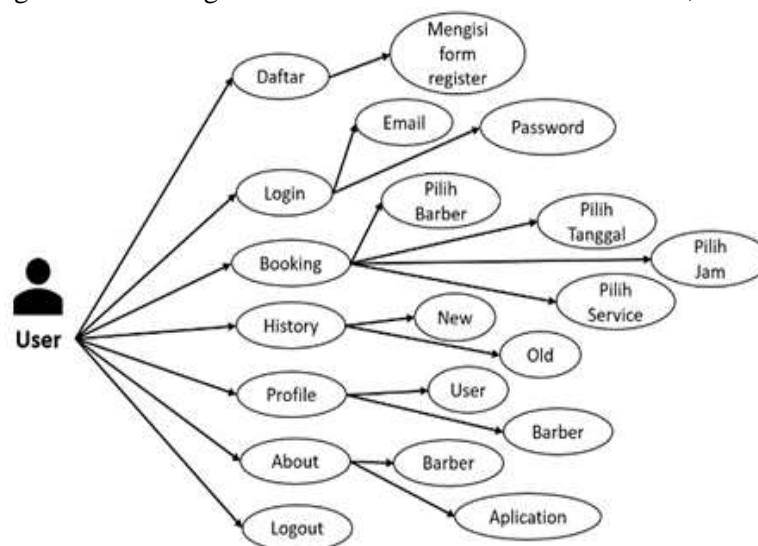
Observation techniques are a way of obtaining data by direct observation using specific methods for the object under study. It is not limited to humans but can involve other objects such as places, natural conditions and so on [11]. In this research observation activity, we studied consumer behavior and the environment. Interview data was collected by means of questions and answers with barbershop business owners and users. The technique is carried out using documented data. Data collection is carried out by taking data from books, journals and reports or information that can be used as research support.

### System Design Methods

This design is intended to make it easier to prepare applications. In this case with use cases. *Use cases* is a UML (Unified Modeling Language) diagram which is a technical tool for solving a problem with an object-oriented approach [12]. Use cases can be used to model functional requirements from the perspective of the business and its software products [13].

### Use cases Diagram

Use case diagrams are a design tool that is used to find out what users, known as actors, use.



**Figure 1.** Use Case Diagram

A use case diagram consists of several actors and use cases. Actors are people who use the system, in this research only one actor is used, namely the user. Meanwhile, what use case is carried out by the actor? towards the system. Here the user must register first in order to get login access, after getting login access, the user can make a booking.

### Activity Diagram

Activity diagrams are diagrams that describe system user activities from all menus in the system [13]. The activity diagram below is a sequence of depictions of the system that will run on the barbershop startup mobile application.

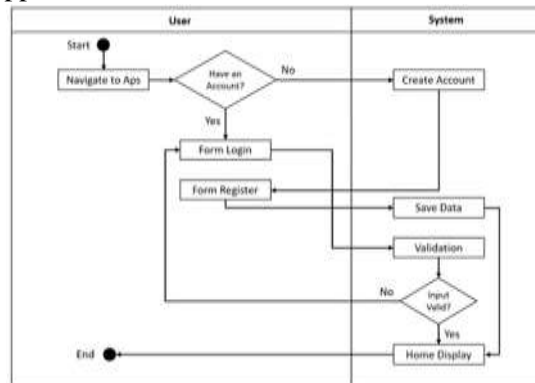


Figure 2. Login and Register Activity Diagram

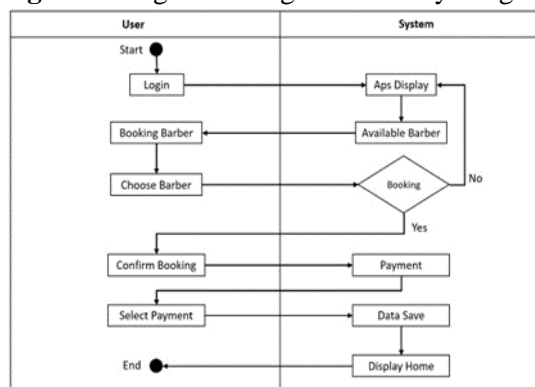


Figure 3. Barbershop Booking Activity Diagram

## 3. RESULTS AND DISCUSSION

Design and build a barbershop startup application based on Android mobile using the Lean startup method. This method is used because the work process carried out will be fast and efficient [12]. Below is a description of each stage.

### Market Validation

This stage is a process to ensure that the problem concept taken is correct and needed by many people. The activities carried out in this stage are processing survey data obtained from customers.

### Product Validation

At this stage, what is done is to ensure that the design concept developed is the right solution for creating the application

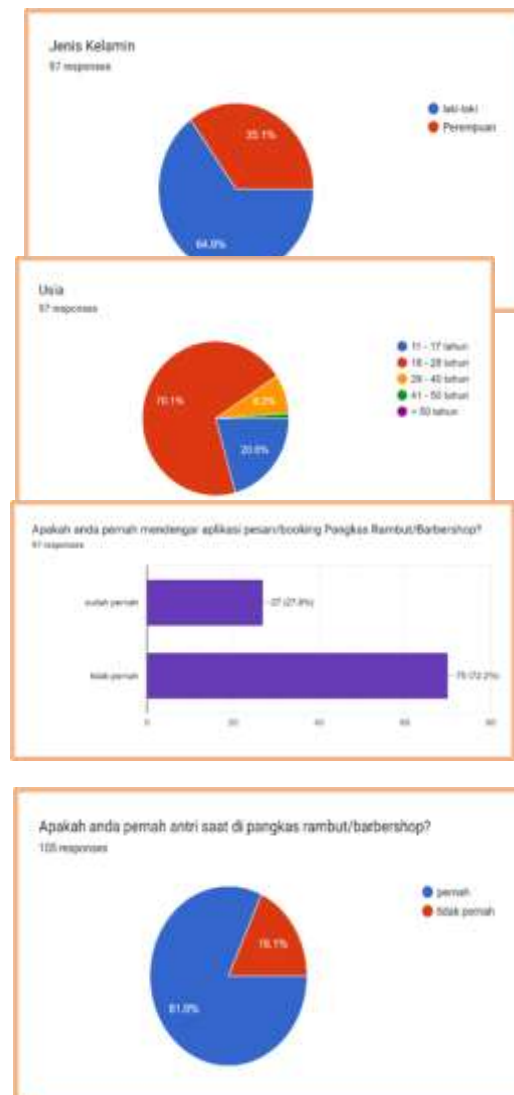
### Business Validation

The final stage of the lean startup method, looking for conclusions and solutions from stages 1 and 2 and ensuring that the features available in the application make it easier for users. Apart from that, looking for solutions so that the applications created have sustainable and growing value.

The Android mobile-based barbershop startup application was built using the lean startup method. To test the startup application that is being built, market validation is carried out by processing survey data.

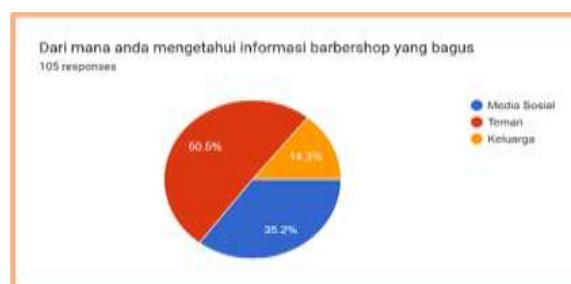
## Survey Results

The survey was carried out by filling in several questions on the Google form. The survey was conducted within a week and was completed by 97 respondents.



**Figure 7.** Respondents' answers regarding queues

Based on the data in Figure 4, there are 64.9% of respondents who are male and 35.1% of respondents who are female. Figure 5 explains that the highest age range of respondents is 18-28 years old with 70.1% of respondents. And Figure 6 explains the respondents' opinions regarding the barbershop startup application, that 72.2% of respondents have never heard of the barbershop startup application. This is a great opportunity to develop this application in the city of Palembang.



**Figure 8.** Respondents' answers regarding existence Barbershop



**Figure 9.** Results of Respondents Regarding Barbershop Services



**Figure 10.** Features Expected by Respondents

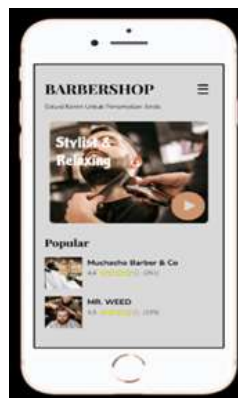
Figure 7 explains the queue of customers at the barbershop when getting an offline haircut, where 81.9% of respondents answered queuing when getting a haircut. Figure 8 shows that 50.5% of respondents learned about the barbershop information from friends. Figure 9 explains the problems faced in looking for barbershop services, 55.2% of respondents answered that they were confused about finding a place. In Figure 10, it explains the appearance of the features that users want. As many as 29.5% of respondents answered the place search feature.

### Application Page

Android mobile based startup barbershop application, this application is designed with features available on each application page.

### Initial Display Page

On this initial display page the user can select the features in this application such as:



**Figure 11.** Initial View

### Feature Selection Menu Page

On this page the user can select the desired feature menu.



**Figure 12.** Feature Selection Menu Display

### Registration Page

Before entering the login, the user, in this case the customer, can register by filling in their full name, telephone number, email and password



**Figure 13.** Registration Display

### Login Page

On this page the user can enter the registered email and password



**Figure 14.** Login Display

### Search Page

On this page the user can search for which barbershop to choose



**Figure 15.** Search Display

### Booking Page

On this page, after the user selects a barbershop, the user can make a booking by filling in the date, time and service in the booking menu. Next, the user can click booking Now



Figure 16. Barbershop booking display

### History Page



Figure 17. History page display

## 4. CONCLUSION

Based on research conducted, startup applications require various stages, in this case the method used is the lean startup method. where in a survey conducted to develop startup applications in the city of Palembang, the results were obtained: Not many people know about the barbershop startup application/users don't use it, therefore there is a very big opportunity to carry out this research. There is still a queue at the barbershop when you want to get your hair done, this is what led to the development of the barbershop startup application. With the concept of developing a barbershop startup application, customers can immediately make bookings online without having to visit the barbershop in person. With online access, information and services regarding barbershops offered can be easily accessed by the wider community. In this way, the online mobile-based barbershop startup application is able to provide benefits and satisfaction for barbershop business owners and customers.

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