

## Notification Of Customer Service In Computer Shop Using Android-Based Cloud Message Firebase

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### ABSTRACT

Notification is used to send a notification of current events to application users who are already using a particular system. So users do not get the floating message. Computer Store Application using Firebase cloud message is one form of application means that aims to help customers or application users in getting information about the goods being serviced. System development research using the Prototype method, this method is appropriate to be used to develop a software that was developed again. This method starts with gathering user needs. Use of Notification Services for Customers in Computer Stores is very appropriate to retain customers. The results showed that the Computer Shop Application using Firebase cloud message can help users get information on services in the Computer Shop quickly and accurately.

**Keywords:** Mobile Application, Android, Firebase Cloud Massage, Prototype, Computer Service

### 1. INTRODUCTION

Nowadays, the development of science and technology improves rapidly. It has demanded humans to consume it. One of many technological developments is smartphone. Smartphone has become a very important need so that it cannot be separated from the community. Within that development, it also developed the operating system to run it. It is Android Operating System. There are advantages and disadvantages in technological development. Basic computer store is a computer shop that is well known to the public in Bandar Lampung. This place is a place for buying and selling computers. It also provides services. For those who want to use the service, they can directly come to the store and the customer's computer will be inspected by employees to find out the damage. Nevertheless, the problem is the inspection takes a long time and the customer will be asked to wait until the next day to acquire the problem information and costs charged. Furthermore, it depends on customer request whether repair or replace the damage item. Employees prepare items to be returned to the customer. Based on the background, this system was built to get more efficient service. It also reduces misunderstanding between employees and customers.

## 2. LITERATURE RIVIEW

### 2.1 Application

Explained that application software is a subclass of computer software that utilizes the computer's ability to perform a task the user wants [7]. It usually compares to system software that integrates various computer capabilities, but it does not directly apply the ability to do a task that benefits the user. The main examples of application software are word processors, worksheets, and media players.

### 2.2 Mobile

The development of mobile devices today is very rapid. Mobile devices have turned into a multifunctional device[4]. One of which is a multifunctional device. It is a mobile application as a medium to access information daily. The development of mobile applications is supported by the development of the programming language. One of which is an increasingly programming language for mobile. The programming language for mobile is Android.

### 2.3 Mobile Application

Explained that mobile applications are derived from the words application and mobile. This application means application and usage. In term of “application”, it is a program that is ready to use to carry out a function for users or other applications. Moreover, it can be used by the intended target and mobile can be interpreted as a move from one place to another.[7]

The term of “mobile” is a moving so that a mobile application is a term for an application that runs on a mobile device. By using a mobile application, you can easily do a variety of activities. They are entertainment, selling, studying, doing office work, browsing, etc.

### 2.4 Basic Computer

Basic Computer Store is a popular computer shop in Bandar Lampung. This shop provides for buying, selling computers, and services. This store is located at Jalan Teuku Umar No.37E, Kedaton, Bandar Lampung. The marketing area for Basic Computer services is only in the Bandar Lampung city area.

### 2.5 Firebase Cloud Message

Firebase has the main product. It is to provide a real-time database and backend as a service. This service provides application developer APIs that allow application data to be synchronized on the client and stored in this Firebase cloud. Firebase provides libraries for various client platforms that allow integration with Android, iOS, JavaScript, Java, Objective-C and Node Js applications and it can also be referred to as DbaaS (Database as a Service) services with real-time concepts. Firebase is used to add features that will be built by developers. Figure 2.1 shows an example of the architecture of the Firebase system with Android.

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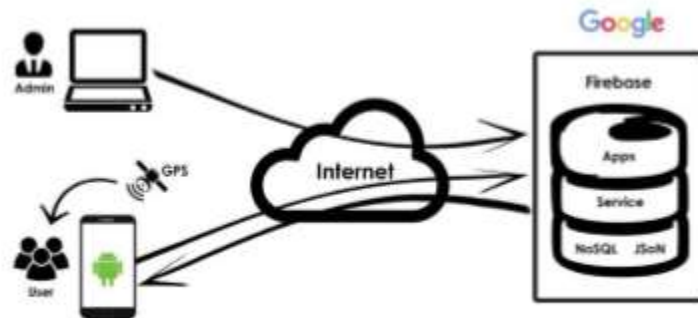


Figure 1. Firebase Cloud Message System Architecture

## 2.6 Android Studio

Android Studio is an Integrated Development Environment (IDE) for developing applications on the Android platform. Android Studio was announced on May 16, 2013 at the Google I/O conference by Google Product Manager, Ellie Powers. Android Studio is open source in Apache License 2.0. Android Studio is at the access preview stage starting from version 0.1 in May 2013. It enters the beta stage from version 0.8 in June 2014. Android Studio with stable capabilities released in December 2014. Android Studio Version 1.0. is available for download on Windows, Mac OS X and Linux.

## 2.7 Android

Android is an operating system for smartphones and tablets. The operating system can be illustrated as a 'bridge' between a device and its users, so users can interact with their device and run applications available on the device[8].

## 3 HTML (*Hyper Text Mark-up Language*)

Stated that HTML is a markup language for disseminating information on the web. When designing HTML, this idea was taken from the Standard Generalized Markup Language (SGML)[2]. SGML is a standardized way of organizing and structured information in documents or groups of documents. Although HTML is not easily understood by most people, when it is published its use becomes clear.

## 4 *Prototype Method*

The Prototype Method is incomplete module, but it must be evaluated and modified. All changes can occur when the prototype is made to meet user needs and at the same time allows development to better understand user needs[1].

The stages in using prototype method as follows:

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- 1) Collection of needs Developers and clients meet to determine general goals, needs that are known and an overview of the parts that will be needed next. Furthermore, an analysis of what data is needed.
- 2) Design  
The design is done quickly and the design represents all known aspects of the software, and this design forms the basis of making a prototype.
- 3) Evaluation  
Prototype Prospective users evaluate the prototype that was created and used for to clarify software requirements. Software that has been run, will be improved if it is unsatisfactory.

Furthermore, *prototype* model can be seen in figure 2.1.

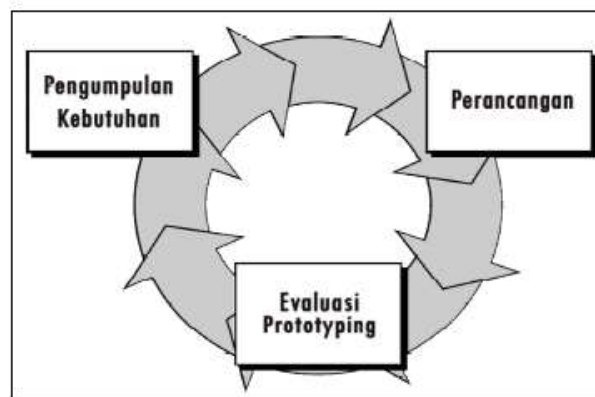


Figure 2. Prototype Method

## 5 Black-Box Testing

Explained that Black Box Testing or Behavioral Testing focuses on the functional requirements of the software. The Black-Box Testing technique makes it possible to obtain a set of input conditions and it will implement all functional requirements for a program[10].

## 3. METHOD

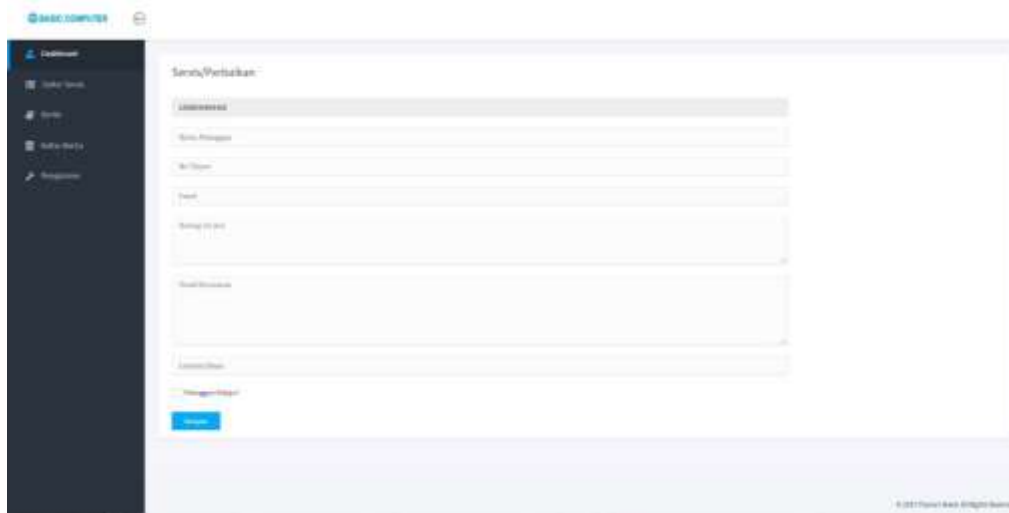
This data collection had an important role to get information for research. Objective data and relevant to the subject matter were indicators of the success of a study and also data collection must be done in an appropriate manner. In this data collection method, the researchers used several data collection methods. The software development method used to create a Notification Application on a Basic Computer store using Android-based Firebase Cloud Message. Moreover, the method was the Prototype method

## 4. RESULTS AND DISCUSSION

The result of this study was a continuance of the design stage. In this stage, the design was able to be implemented in usage-application. The display of the Computer Store Notification Application Using Firebase Cloud Message. The stages were namely:

### 4.1. The Display of Guest Page

The Guest Page was a page where the admin at a computer shop serves customers who come to the store to repair or service on his computer. In this page, the admin felt in customer identity data and it also provided transaction numbers to customers in checking on the android application. Display of the Guest page showed in Figure 3



### 4.2. The page for Admin Service List

This page was a list of services that customers had been done, completed, or being done. When checking the item, the admin chose the edit button to add details of the damage along with the repair or service cost. There was also a complete button when the repair is complete. Display of the Admin Service List page showed in Figure 4.

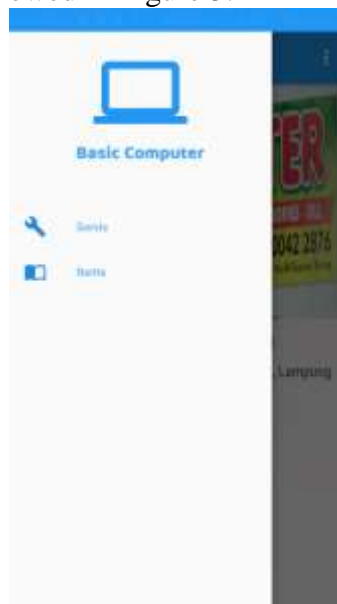
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## 4.3. The Display of Main Menu Page

This page was use was able to choose the menus in the application. There were two menus that were able to be chosen by the user, the service menu and the information menu. The appearance of the Android Main Menu Page showed in Figure 5.



## 4.4. The Display of Transaction number Input Page

This page was used to enter the service transaction number. It had been obtained by the customer from the admin. Display page input Android transaction number showed in Figure 6.

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## 4.5. The Display of the Service Confirmation Page

This page was able to appear when selecting the service confirmation button on the service details page. On this page, the customer decided to do repairs or cancelation. Page views Confirm service showed in Figure 7.



## 5. CONCLUSION

Based on research, it can be concluded that:

- a. Computer Store Notification Application Using Android-based Firebase Cloud Message eased for customers to make computer service transactions at the Basic Computer store.
- b. This application makes a contact to the customers for Basic Computer stores.
- c. This application is a prevention of misunderstandings between employees and customers because the goods to be serviced must be approved by the customer.

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