

Barcode Scanner using Android Platform

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Abstract— In this 21st century era, technology become much more effective and efficient, less time consuming, less human resource needed, less expense, etc. During the development of technology, everything turned out to be easier. The idea of using barcode are spreading with its barcode scanner with limited functions (ex : the distance limited with its cord), and we must buy the specific device to use it; not to mention that some scanner provide scanning a bar lines only, not QR-Code one. In this paper, the barcode scanner will be installed in the smart device that is using the android operating system with its extended function such as text to speech implemented, signal strength display, and ping and connect function. The purpose of this scanner is to scan a data and send the decoded one to the server that has been set up. The Scanner itself can look at the main database if we are far away from the server. The server itself functions just like in medicine shops; it has the medicine database with its supplier and log history. Also it has two functions that only the admin can access it, confirming and deleting data. Confirming data will input the item that has already scanned to the main database, while deleting data will reduce the amount of item in the database. The server itself will be put on the internet so it can be accessed everywhere if there is an internet connection. This research aims to overcome its limitation, the scanner will be used in a smart device that modified to fulfil its requirement and make it become more effective and efficient.

Keywords— barcode scanner, android

I. INTRODUCTION

As the rapid technology goes by, the user that control it must follow the flow of development. The current known technology is the wireless technology. The movement from wired to wireless one is simply amazing that many peoples have doubt that it will work. But as we can see right now we are using the wireless technology. Nowadays gadgets are using higher technology. When using cellphone, people only give text message and voice calls. As technologies increased its functionality we can use colorful polyphonic mobile phone that using MMS (Multimedia Messaging Service). With MMS people can send pictures, mp3, and others multimedia file. After that there are smartphones which is a mobile

phone that built on a mobile operating system with more advanced computing capability and connectivity. Many modern smartphones also include high-resolution touchscreens and web browsers that display standard web pages as well as mobile-optimized sites.

This research aims to create and develop a wireless barcode scanner that works in a system to see its functions. Barcode scanners are needed in many corporates that implement inventory checking's system, like production type companies. Rather than laptops, using a wireless barcode scanner will reduce the risk of getting damaged, increase mobility, etc. Since gadgets phenomena are worldwide, writer will use a smartphone that using androids as its operating system rather than a wireless barcode scanner. The device itself can scan both bar lines code and QR-code.

Both barcode and QR-code are used in many companies as an inventory's ID, still people are using barcode because of its simplicity and the device are cheaper than a barcode that can scan QR-code. Writer will create a barcode scanner that can scan barcodes and QR-code in an android that later it will be installed on a smartphone. Later this smartphone can scan a barcode and decode so it will produce a text. Then the result that has been decoded will be put on a textbox which is directed to a database that contain a lot of items data.

This device consists of software and hardware that are interconnected to form a sophisticated system. A PC that connected with a Wi-Fi device that works as a server and the smartphone will work as a barcode scanner.

The system will be created based on the web application program so it can be accessed through the network by other devices and the smartphone will work as a barcode scanner to scan items and the result will be an output in the server, later it will validate the result in database.

II. METHODOLOGY

The methodology used for developing barcode scanner follows the main phase of the Software Engineering methodology.

III. RESULTS

This barcode system has a connection between its hardware and other hardware. In this case, they have their roles in this system. Just as in a human body, this system has a brain, eyes, and a warning notifying the media. As shown in Figure 3.1 we can see how the system gives each role and have a relationship of mutual help. If on one of the hardware was not right, then this system will not be able to run properly.



Figure 3.1 Hardware Layout Design

The system will read the library already owned by the barcode scanner which in this case is using the ZXing Library will be the source of this system. After system load the library, system will use the library to make scanner for the barcode. System will scan a barcode from the smartphone's camera. After that system automatically run the barcode scan function to capture and decode the image and convert it to a text. When it is finished then it will be displayed on the device for users.

The system will extend its' function not just as an ordinary barcode scanner, but it will work as a scanner for inventories input. The android device will be the scanner because it has both the camera for image capturing and mobile network for connecting to another network.

After that the android itself will have another function such as text to speech. Text to speech is for the android to convert text into a speech and it will speak the text.

Figure 3.2 is the main GUI for user barcode scanner. Before users can use the scanner, it must be connected through the server first, so that's why users must fill the address first and ping it. If the server respond, then it will display the full function. While barcode scanner interface is shown in Figure 3.3 .

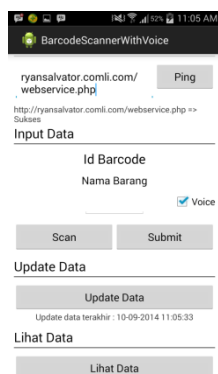


Figure 3.2 Main interface of barcode scanner

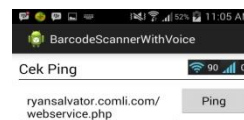


Figure 3.3 Barcode scanner interface

After successfully connected with the servers, all function will be displayed. There are scan the items, submit the data, update the local data, and list of items.

IV. CONCLUSIONS

Barcode Scanner using Android Platform, has achieved the goal of this study. Lots of points achieved, either in the application or in hardware. Not a few are also constraints that ultimately solved with some new solutions, these points are:

1. This Barcode systems, successfully use all the materials that have been provided, either of software and hardware. This system can do a good job as expected from the initial design to the system can be complex and can be received by all users. In this case, it could be crowned that this security system is also already qualified that is easy to use by anyone. These systems can be categorized as a system that has an excellent function for the user. Because by using this system, users can easily use it and get the features that correspond with what they expect. This system can be said to be successful also in matters of barcode scanning, because it meets the criteria as a barcode scanner system or a decent tool. Like how this system has been successfully scanned an items and submitted into the main database, after that confirmed by admins.
2. The system is very simple and easy to use. First, these systems do not actually need a lot more equipment and troublesome, this system was able to work well. Not forgetting to any application that does not require a high spec computer to run applications and computing this security system.

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