

# Barcode Generator & Scanner for Mobile Handheld Device

Kunal. S<sup>1</sup> Rishabh. S<sup>2</sup> Dewang. V<sup>3</sup>

<sup>1,2,3</sup>Department of Computer Science

<sup>1,2,3</sup>Shivajirao Jondhale College of Engineering, Mumbai University, India

**Abstract**— The proposed system is capable of generating and reading Linear Barcodes as well as QR codes. Modern mobile devices like smart phones have become increasingly powerful in recent years. The extra features added to these devices made them very popular. In particular, most cell phones include cameras, processors equal to PC and internet access. Hence we fully intend to utilize the camera feature in order to implement barcode scanner.

**Key words:** Barcode, Barcode Scanning, Barcode Generator, QRcode

## I. INTRODUCTION

In today's busy world people don't have time to spend for shopping. By using this application one can generate or read the barcode on the particular device using the cameras attached with the mobile phones. The project is developed in Android programming language by using the Android studio. We here have involved the use of SDK (Software Development kit) which in turn will provide a variety of tools for developing the needful API (Application program interface). Over the past few years imaging technology has advanced significantly to enable high performance, imaging-based barcode scanners. The improved performance and decreased cost of imaging technology has enabled the wide deployment of 2D barcodes for many applications across many versatile applications for industries.

## II. EXISTING SYSTEM

A normal scanner scans the intended barcode and displays the needful result. Barcode device, reads the code and shows the relevant information of the product which was scanned. Also the generator is associated to the generation of the unique barcode that generates the barcode according to the information that is been feeded.

## III. PROPOSED SYSTEM

For scanning purpose the Barcode device will use inbuilt camera to do the needful. Our system will decipher the code and reveal the information entitled in it. The main aim for the barcode scanning is to make shopping for all the entities involved easier. The advantage here is any product scanned by the end user will be saved in the history database for future reference. Also we have the generator which can generate the barcode for the given input data of a product, which can in turn generate QR or Linear Barcode.

## IV. SCANNING

A barcode scanning is the initial step in the procurement process. It makes a lot of variations in scanning as 1Dimensional & 2Dimensional. Barcode are machine readable data codes that consist of series of lines with varying width printed on a product. Barcode are of two types Linear barcodes and 2D barcodes. Linear barcodes which reads only the numeric values and 2D is similar to linear barcode but can show more data per unit. In our

project we call an application called Zxing. It's the source that is used to read the barcode. The code is read and retrieved using the integrated camera attached in the mobile devices which should have the resolution above 2 megapixels. The type of barcode may vary according to the type of product which also sometimes contains the manufacturers details, product rate, as well as source of the product name. In the barcode type Extended Code 39 you can find the 128 character support for the ASCII code printed on a product which is called as HIBC LIC LOGMARS. Likewise the barcode contains many different types of code in it, which on successful interpretation you can find the entire details about what you want to do it on your own. The code is retrieved in the numerical and alphanumeric format, which is useful what the product is and the entire specifics about it.

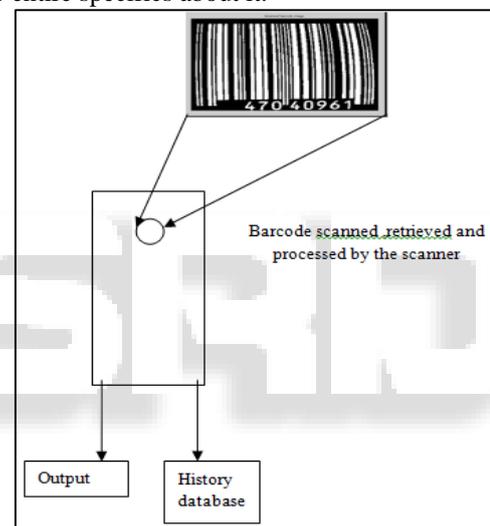


Fig. 1: Conceptual Model

## V. GENERATION

As implied earlier we have an algorithm for generation of barcode. Now, generation of barcode refers to encoding of given data of a product.

### A. Algorithm

- STEP 1: Start
- STEP 2: Import the source file(infile)
- STEP 3: Call GenSig(infile)
- STEP 4: Compress "sig" and infile into "result.zip" file
- STEP 5: Create an empty string data
- STEP 6: Convert "result.zip" into a Base64 encoded string and store in "data"
- STEP 7: Input the image format and resolution of the QR Code to be generated
- STEP 8: Input Error Correction Level
- STEP 9: Using zxing[1] library method convert 'data' into a BitMatrix object 'bitmatrix'
- STEP 10: Write bitmatrix to an image
- STEP 11: End

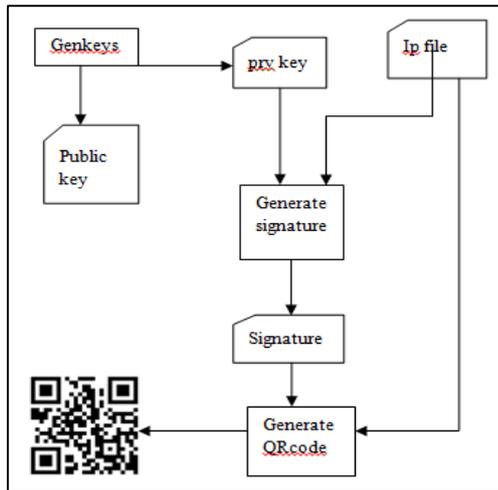


Fig. 2: Generation Flow

## VI. TABLES

### A. Table: Types of Barcode

| No | Types         | Features  | Name         |
|----|---------------|---|--------------|
| 1  | 1D            | Contains numeric values                         | Linear       |
| 2  | 2D            | Contains alphabets, numeric, special characters | 2-D          |
| 3  | Extended code | Full 128  | HIBC         |
| 4  | 39            | ASCII Character                                 | LIC LOGMA RS |

Table 1: Types of Barcode

## VII. CONCLUSION

In this we have investigated the scanner, as well as the ciphering the barcode with the context to the product attached to this application will be useful time taken and it will provide good shopping experience. Developing this application for android proved fairly straight forward to accomplish and we did not have many problems along the way.

## ACKNOWLEDGMENT

We wish our sincere thanks to our project head, Prof. Deepali Narkhede, for her untired support for guiding us in this work and the anonymous review, constructive comments and insightful suggestions improved the quality of this paper.

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