

# Product Details and Its Expiry Date Recognition through Speech

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**Abstract-** It is difficult for visionless people to read any type of text like products or medicine tags and many more. Therefore, the development of system that can give an audio output to them is necessary so that they can easily move and do their work without any type of hindrance. This application is for visionless people focusing more on shopping facilities for providing details of products through speech. Few products can't last forever, especially when it comes to food and medicine it is necessary to know the description, manufacture and expiry date of products. To give consumers an indication of when the product must be used by, an expiry date is usually printed on the product packaging. When staying at home alone, if the visually impaired consumes some expired food or takes some expired medication, the result could even be life threatening. Keeping this in mind, this application describes the development of Quick Response Code detection and product recognition through speech. Hence we have developed a product recognition application by detecting QR code from which the user gets information of products through speech with the help of text-to-speech. From this application the users can also get the directions of the supermarkets, medical stores or other places where they want to buy or purchase the products.

**Keywords:** -text-to-speech, Quick Response Code (QR Code)

## I. INTRODUCTION

Android in mobile phone is becoming the important part of people's life. A user having a camera phone equipped with the correct reader software can scan QR code and decode it to launch and redirect a phone's browser to an embedded URL or to resolve text embedded in the scanned QR code. The benefit of such a feature in modern mobile phones can be further extended to include blind and Visually Impaired (VI) people. Also, with the introduction of speech technologies in cell phones such as the use of Nuance TALKS, which converts the displayed text on the mobile handset into speech, the blind and VI person can easily interact with the mobile handset as a sighted person do. A system is needed for visually impaired to identify the product using QR code with voice announcement using a Smartphone. The motivation behind

taking this project is that the data on the QR codes are not so easily understandable without previous knowledge of the manner of their formation. Quick Response Code (QR Code) as a new identity is used in the world, it looks like a small box which includes a random series of black and white pixels. Even though QR Code is a tiny symbol, a website address, specifications of particular products or personal information can be included in this symbol. In addition various information accesses can be done through smart-phones.

This paper shows an Android-based system for identification of objects based on reading of QR codes. The system is developed to facilitate identification of various items that exist in already created inventory. The designed system is composed of a database, Web service for intermediary access to the database via Web, and the client Android application, that can be run on mobile phones or tablet computers. It is shown how this system can be used for cataloguing the computer equipment, but the usage of the system is not limited solely to this. This paper shows an Android-based system for identification of objects based on reading of QR codes. The system is developed to facilitate identification of various items that exist in already created inventory. The designed system is composed of a database, Web service for intermediary access to the database via Web, and the client Android application, that can be run on mobile phones or tablet computers. It is shown how this system can be used for cataloguing the computer equipment, but the usage of the system is not limited

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*Objectives:*

Objective of this paper is to study the general information of QR Code in order to guide blind people to know information stored in products.

- To provide large storage of data or information using QR Code because using conventional barcode only limited data can be stored.
- To provide security of information. Since security of barcode is questionable.

II. LITERATURE SURVEY

[1] In “Compressed QR code based mobile voice guidance service for the visually disabled” proposed by Jung Hoon Kim, Minseo Kim, Taejun Yang, Insu Kim, Jun Seo, Sunmoo Kang

In this paper QR Code and text compression algorithm SMAZ and TTS(Text to speech synthesis)is used Here a system is developed that reads the story books ,its location information and so on.The QR Code is scanned with help of libraries of Zxing android which is used as the scanning library and similiary for text to speech the libraries are used,the compressed QR Code is restored through mobile application and information is provided to visually impaired people,this application also provides guidance to the of location of the book in the library for visually impaired person.

[2] In “Product Barcode and Expiry date detection for visually impaired usind a smart phone” proposed by En Peng, Patrick Peursum, Ling Li.

The proposed system in this paper has focused on helping the blind people to locate the barcode and the expiration date on the product package,after locating the barcode on the packaging it is decoded and OCR(Optical Character Recognition) technique is utilized to obtain the required information of the product,here the text detection technique is used to extract the expiry date on the packaging.

[3] In “Image Based Barcode Detection and Recognition to assist visually impaired persons” Proposed by Wendy P.Fernandez,Yang Xin,Yingli Tian.

The proposed system uses the parallel segment detector that is used to detect the barcode, the barcode is recognized with the help of phone application that provides the detailed information of the product in real-time to assist visually impaired. The barcode image is been captured by the user as the input to extract the product information. The input image is fed to the line segment detection and necessary information from the barcode is cropped and given in form of audio to the visually blind person.

Conclusion of Literature Survey:

From above literature survey we got know that there are many methods incorporated to implement in order to solve the problem of visually blind people and make their shopping process much easier.

III. METHODOLOGY

This application proposes QR code detection and product recognition through Speech which can be used to overcome existing system drawbacks.From this system we can get the product description and directions to different places through speech.There are two options either the person can choose scanning of the QR Code or the person can locate the places such as super markets, medical stores etc.below figure 1 shows the process of audio output of product details.

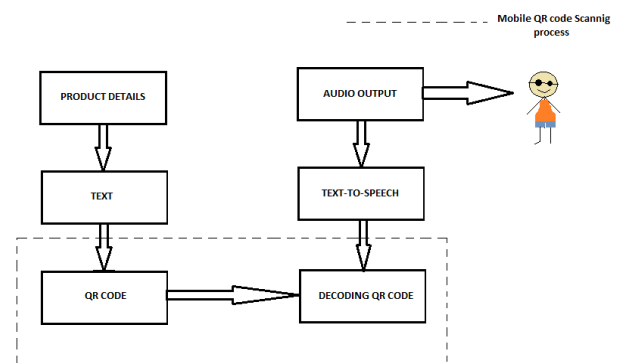


Figure 1:proposed system process

#### A. Generation of QR Code:

This application is basically designed to perform all the tasks that previous system cannot perform. The system is based on the idea of utilizing QR codes (two-dimensional barcode) affixed to an object and scanned using a camera phone equipped with QR reader software. The reader decodes the barcode to a URL and directs the phone's browser to fetch an audio file from the Web that contains a verbal description of the object. Our proposed system is expected to be useful where QR Code generated with help of Zxing libraries of android.

#### B. Scanning of QR Code and restoration of original text:

The product details that are compressed within the QR Code is read by the proposed application. The QR Code is scanned and decoded using the Zxing android and java getByte function to decode the QR Code into original text.

#### C. Text-to-speech:

The information from the QR Code is extracted and the output of the text is given through audio or voice. The blind person in this application can also get to know only the particular information rather than the entire product information. Suppose if the blind person wants to know only the expiry date of the product then it is possible for him to do so. If the blind person has not heard the product details properly then he can say repeat in the application to get to know the product details again through audio.

#### Advantages

- The project aims at introducing a voice based message for blind persons through an android mobile regarding the product description stored in the QR Code and display location direction through map and give place description and direction through speech.
- User will scan the QR Code and recognize the product and get the details of expired products and other description through speech.

### IV. EXPERIMENT ANALYSIS

The QR Codes given below are generated by using the proposed application among these QR Code. Figure 2a contains the information of chocolate such as its name, allergic substance (lactose), nutritional facts, manufactured date and expiry date, and another QR Code Figure 2b gives information about the skin cream through speech.

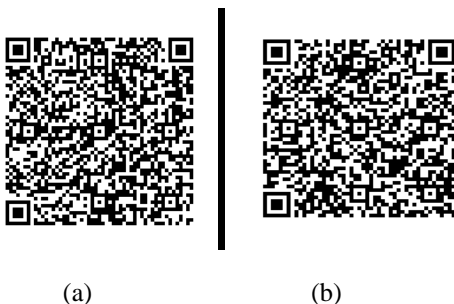


Figure 2: Generated QR Code Datasets

### V. CONCLUSION

The proposed system provides ease for shopping to visually impaired people, since they can buy the products and get to know the details of it even at home. With the help of this application, the visually impaired or the blind person can avoid consuming the expired product or product containing allergic substance by gaining prior knowledge of the product through speech. There is also a facility of locating nearby places (supermarkets, medical stores) direction for the visually impaired through speech.

### VI. FUTURE SCOPE

In the current system, as we know that much information cannot be stored in the barcode, so in further development, storing more information in the barcode is required so that more information can be extracted even through the barcode for the blind or visually impaired people.

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