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Real Time Barcode Scanning without Eye Contact on Smartphones

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Abstract: ***This research is designed to make life easier for visually impaired people. It is a camera-based system that scans the barcode on the back of the image and uses the ID stored in the barcode to display the model of the product. This will help visually impaired people see the contents of the market so they can buy packaged products. This is because blind people have a hard time distinguishing between grocery stores. To use this technology, users simply have to capture the image of the product on their phone and then identify the barcode; that means it scans the image to find the ID to hide. So this app is really helpful for blind and visually impaired people to do their job of identifying things easily It is very easy to use and inexpensive as it requires a scanner to scan the barcode and a phone camera to capture the image containing the image of the barcode. This is now very easy to do as most modern phones have a solution to scan the barcode to identify the ID stored inside and read the description of the goods. This program is usually available in all shops, department stores, bookstores, pharmacies, etc.***
Keywords: Smartphone app, Barcode reader, Android, Eclipse, AWT, AVD, White Box Testing, Black Box Testing.

I. INTRODUCTION

The ability to identify items such as food and other items is very useful for the blind and visually impaired who do not yet have access to these cookies. As a result, they were attracted to barcode readers that could read product barcodes, many of which uniquely identify products. A smartphone can be a useful tool for reading products barcodes, as most of us carry a smartphone and don't want to carry an avid barcode reader (though a high-end reader would be more convenient than a smartphone reader). There are many smartphone applications for barcode reading, such as the RedLaser and ZXing projects (for iPhone and Android, respectively), and many studies have been published on the subject (Kongqiao; Wachenfeld). However, since most of these systems are designed for visual users, they must center the barcode in the image.

II. LITERATURE REVIEW

1) Use A Real-Time Blindless Barcode Scanner In Video Mode On A Smartphone

A smartphone can be a useful tool for reading product barcodes because most of us carry a smartphone and don't want to carry around an avid barcode reader (even an avid reader will find it easier than a smartphone reader). There are many smartphone applications for barcode reading, such as the RedLaser and ZXing projects (for iPhone and Android, respectively), and many studies have been published on the subject (Kongqiao; Wachenfeld). However, since most of these systems are designed for visual users, they must center the barcode in the image.

In addition to the authors' previous work ("Algorithms to support visually impaired users..."; "Use of mobile phones..."), we can see that the same work published in relation to BLaDE belongs to Kulyukin and collaborators, A. smartphone for visually impaired users. who also developed the video-based barcode scanner (Kutiyanawala; Kulyukin). However, this reader requires the user to frame the camera with a barcode so that the barcode appears horizontally or vertically in the camera frame. In turn, BLaDE removes this limitation (see next section), thereby reducing the user's limitations and simplifying the hassle of finding and reading barcodes.

2) An Algorithm That Allows Visually Impaired People To See And Navigate Barcodes

Most camera-based systems for finding and reading barcodes are designed for the user to see (such as the Red Laser iPhone app) and assume that the user carefully inserts the barcode in the image before reading it.

Visually impaired people can use these systems to see foodstuffs (for example, cans in grocery stores), but unfortunately these systems cannot access their current form as they rely on feedback from users. To solve this problem, we propose a computer vision system that processes video at a few frames per second to identify barcodes within a few inches; algorithm guides the hand holder User does not see the webcam or other portable camera to find and locate the barcode.

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3) Blind Barcode Scanner On Smartphone Using Niblack's Binary Decoding And Support Vector Technology

provides a vision-independent barcode search algorithm for blind and visually impaired users. The algorithm uses Niblack's binaryization filter and support vector machine (SVM) to detect the presence of a barcode in the image area. The algorithm is based on and used by Google Nexus One smartphone with Android 2.3.3. The algorithm was tested in software tests on real product images and in another test by three blind people using smartphones to capture UPC barcodes on real food products. Our approach supplements existing R&D efforts in blind barcode scanning by suggesting a location for VI smartphone users to generate barcode scans in some cases where sophisticated vision techniques may not be required.

III. EXISTING SYSTEM

The blind, the visually impaired and the elderly often rely on others to meet their needs. The busy schedule doesn't allow people to always help them. Therefore, there is a need for a fast, efficient and inexpensive way to scan multiple barcodes and read information about the same product.

Process analysis is a qualitative analysis of project data from various programs, processes, workgroups, and organizations, including computerized data analysis, the project's content language, algorithmic information, and other internal and external information about the work. Systems analysis is a collection of analyzes used to make certain decisions necessary for operational planning. The design process does not require special work in mechanical engineering to meet specific needs. Many publications related to the project work were analyzed in system analysis and the design was created using various tools such as diagrams, charts, data flows and data dictionary to create a conceptual model of the system.

IV. PROPOSED SYSTEM

We provide camera-based product identification in applications for the blind and visually impaired. Every business today will be a small pin on a large product, a business card using a barcode or QR code on its website. That's why we use these technological innovations to help visually impaired people use barcode scanners and speech recognition products. The user opens the application, then opens the camera and prepares to scan the barcode, the product's name, description, price, expiration date, etc. He sees that he has read all the details.

V. ARCHITECTURE

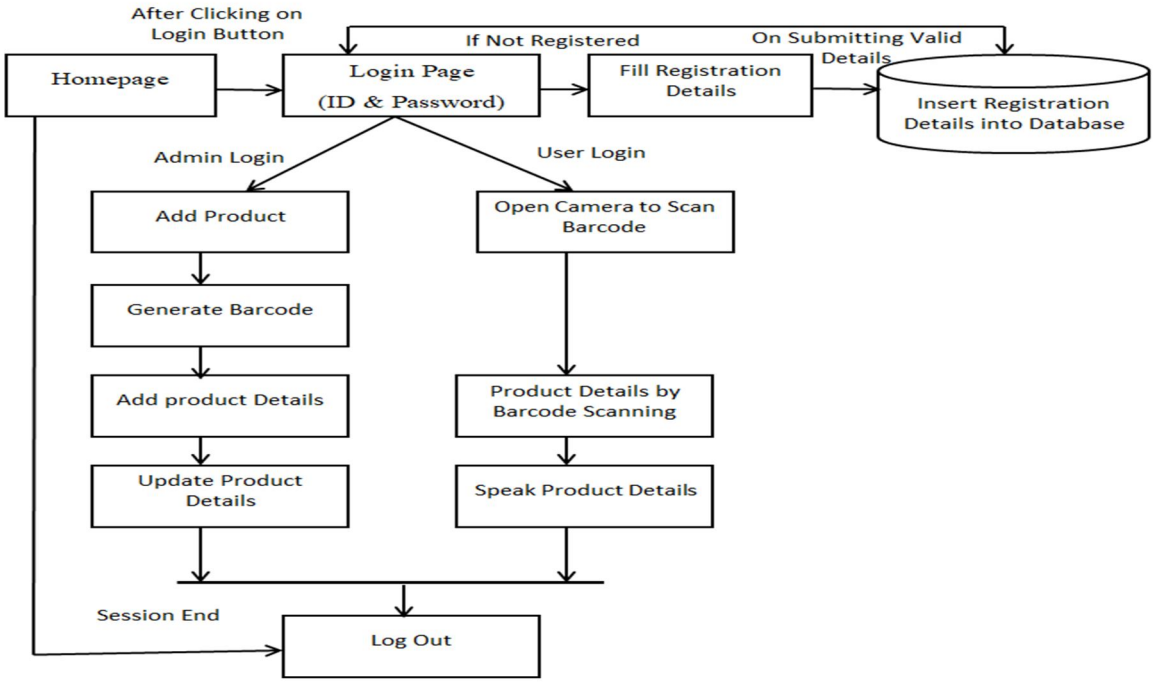


Fig1. Proposed System Architecture

VI. RESULTS AND DISCUSSION

1) Welcome Screen



Fig 2. Welcome Screen

2) Login user



Fig3. User Login

3) Uploading the Details by generating QR Code

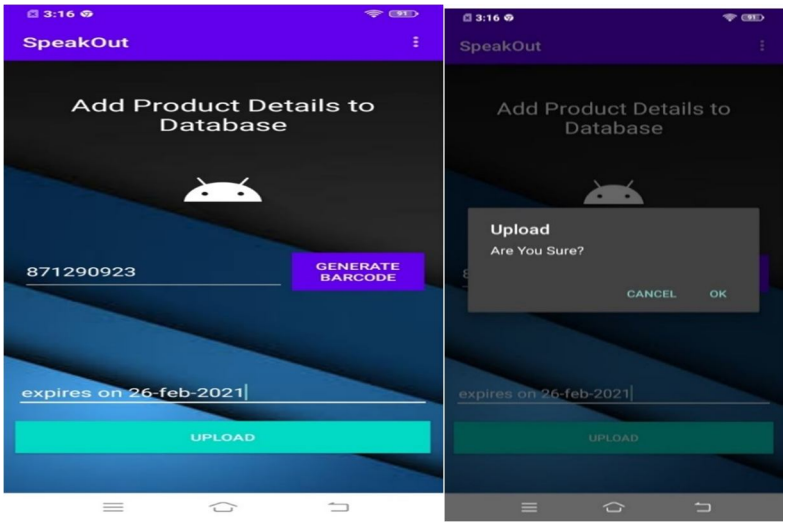


Fig4. Generating QR Code

4) Storing Details and Scanning barcode in app

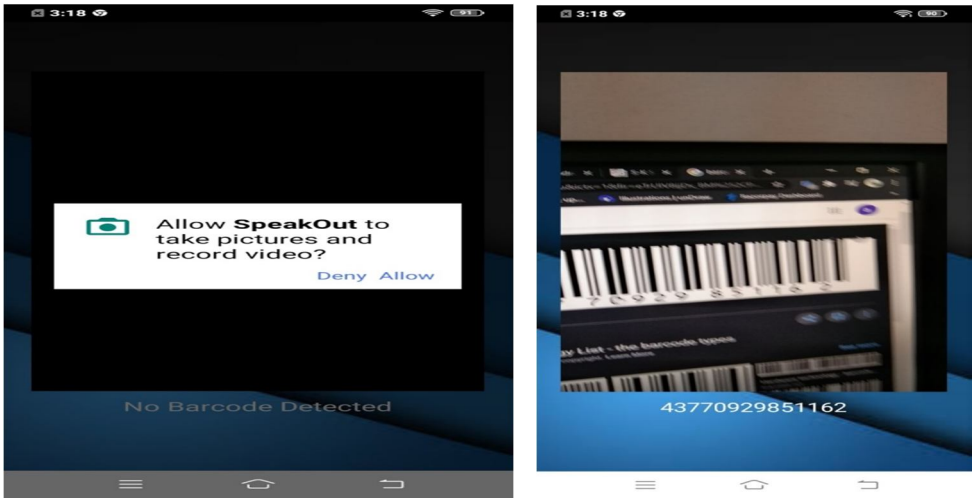


Fig 5. Storing details and Scanning barcode in app

There are 2 main modules and sub-modules in the system as follows:
Admin Login ID:
Login ID:
The administrator must log in to the modules given below with the correct credentials.
Items Added:
All items and their information will be sent by the administrator.
Product Update:
The system will allow administrators to modify and edit the product's content.
User login:
Voice Search:
Using Google Voice Commands, users can search for programs to be launched by Google.
Product details of Barcode scanning:
Visually impaired user will use vision to see product identification application downloaded on mobile phone, Scan button to touch through user is blind, and voice assistant will tell you which button to press. The scan button will open the barcode scanner.

VII. CONCLUSION

Our app ultimately includes collaboration with organizations interested in publishing consumer smartphone apps containing barcode content. Administrators can add additional functionality here according to their needs. In this way, we aim to contribute to the development of good barcode printers that can be used by visually impaired and visually impaired people. We can also add functionality such as allowing the user to check for deleted files in the application folder.

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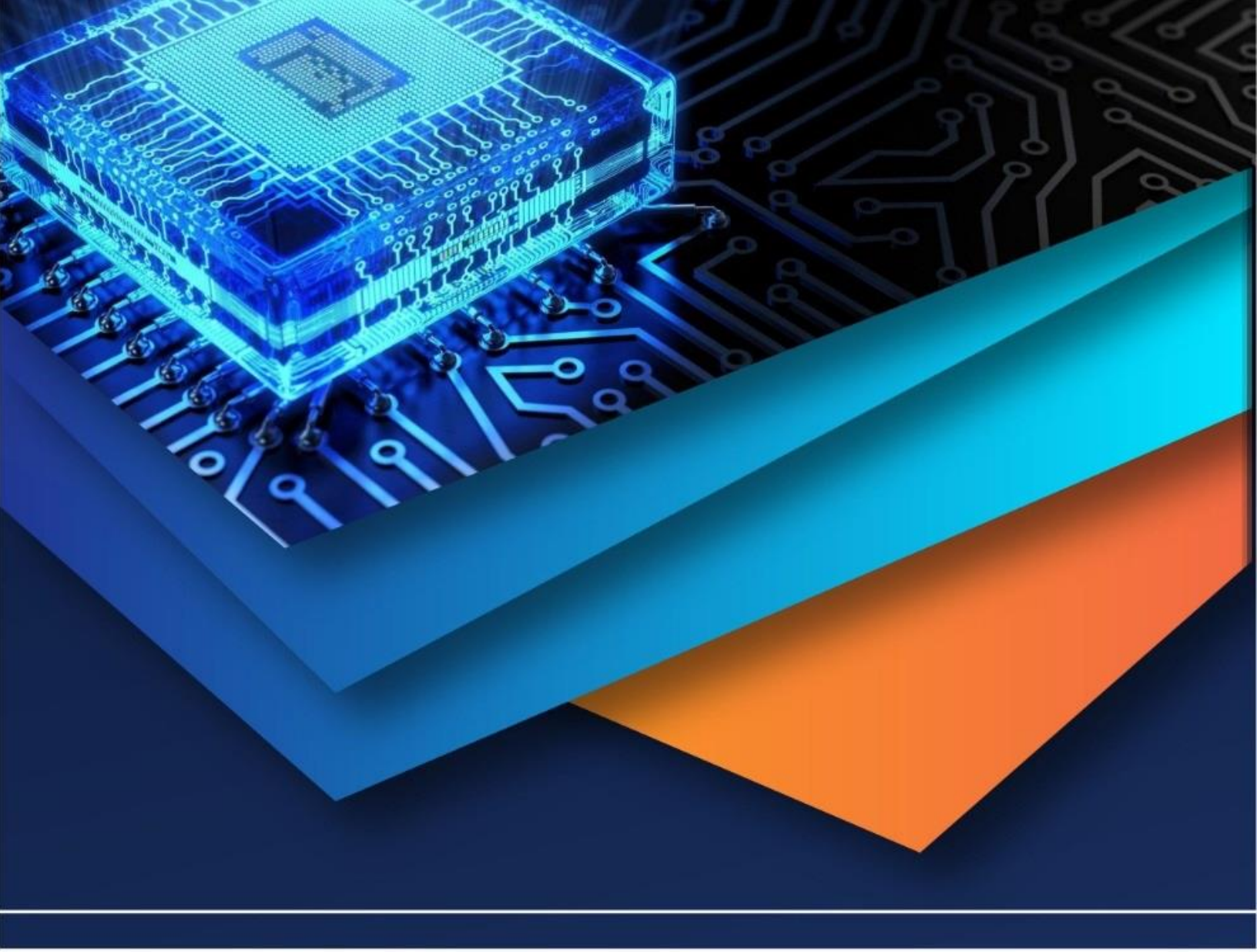
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