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Smart QR Code Based Application as Medicine Spotter for Visually Impaired

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ABSTRACT: This paper proffers an application with a particular ultimate objective to encourage basic and characteristic way to deal with find the answer for the apparently incapacitated people and to take it as showed by their Doctor's cure. Ostensibly crippled people require not be poor and search for others help to watch the remedy to be taken. This android application is used to beat the difficulties they go up against in this circumstance. In this application, a refresh is set which exhorts the customer when to take the arrangements, as voice yield. The QR code of the arrangement strip held in the hand is gotten by the inbuilt camera of the convenient. The QR code is taken care of and in this manner message imprisonment and extraction is done by which the name of the pharmaceutical is recognized. A spotter region is also joined with this application which checks the cure which has been starting at now moved in the customer's compact, contrasts and the name of the pharmaceutical perceived and if the remedy must be taken around at that point, by then it educates the sum regarding drug to be taken to the customer as voice yield. On getting the voice yield from the adaptable, the customer confirmations their pharmaceuticals according to their answer. It can similarly be profitable for uneducated people who persist to find which arrangement must be taken. Especially senior people who are not educated generally persist to examine their remedy names in solitude. This idea would achieve incredible results before long.

Keywords: *visually impaired, medicine identification, Text localization and Extraction, SQLite.*

I INTRODUCTION

Outwardly tested individuals and uneducated individuals confront a considerable measure of unfriendly difficulties in their everyday life. More often than not they are puzzled in another condition or encompassing because of issues identified with availability. Along these lines, this keeps them from encountering the world similarly as others do. Distinguishing and getting to things is something a considerable lot of us may underestimate it. Be that as it may, the outwardly tested individuals are controlled by their handicap. Particularly in a solution taking situation, it is troublesome for them to discover whether they have distinguished the pharmaceutical effectively or not. They should look for others help for it. In addition a versatile application will be anything but difficult to utilize and the equipment required is extremely constrained. In this paper we propose a picture handling based android portable application that gives start to finish direction and help to the outwardly debilitated client for taking their solutions. All through the procedure the client is guided utilizing the voice yield as opposed to content. The Android stage has been utilized to assemble this application for the most part in light of its wide notoriety and cost viability in the PDA showcase. Android stage has Comprehensive libraries for picture preparing, SQLite for encouraging information stockpiling and great equipment highlights for video or picture top true. Likewise it is accessible on cell phones from different producers, from Sony Ericsson, Motorola, and HTC to Samsung. There are 3 fundamental modules into which the application has been part up as update, recognizing the medication by name perusing and voice yield.

II RELATED WORK

Chucai Yi, Student Member, IEEE,2013[1] in the work proposed a camera-based assistive content perusing structure to enable visually impaired people to peruse content names and item bundling from hand-held questions in their day by day lives. This paper proposes a Gaussian based approach in which at first the question of intrigue is distinguished, trailed by locale of intrigue ID and performing different picture preparing operations on the recognized picture to recover the coveted content. Here the question from which the content is to be extricated is isolated [3] [4] from the foundation by shaking the question utilizing movement based protest identification. The caught arrangement of edges is examined to discover the frontal area question took after by applying mean of the assessed closer view veils. At that point the district of intrigue is discovered where the content is confined in light of edge or textural properties lastly the coveted content is extracted [5]. Be that as it may, the above paper has few an impersonations since it utilizes a different framework for preparing, a wearable camera and a Bluetooth earpiece which expands the equipment usage K. Matusiak, Lodz University of Technology, IEEE 2013[2], in hello there s work he portrays fundamental highlights of programming

modules created for Android advanced mobile phones that are committed for the outwardly weakened clients. The fundamental module can perceive and coordinate examined articles to a database of items, e.g. sustenance or pharmaceutical holders. The two different modules are fit for distinguishing real hues and find course of the most extreme shine locales in the caught scenes however it simply helps in protest acknowledgment by coordinating articles with database objects, other openness or correspondence issues are not tended to. There are many applications accessible in the market starting at now. Recognizer created by LookTel [16] is a business application committed for iPhones, that should perceive a protest inside the camera field of view that was beforehand put away in a nearby database of question's pictures. Here and Now [20], an iPhone application that uses the camera of the iPhone to recover item data.

III SYSTEM ARCHITECTURE

Outwardly tested individuals and uneducated individuals confront a great deal of antagonistic difficulties in their everyday life. More often than not they are bewildered in another condition or encompassing because of issues identified with openness. Along these lines, this keeps them from encountering the world similarly as others do. Distinguishing and getting to things is something a significant number of us may underestimate it. However, the outwardly tested individuals are checked by their handicap. Particularly in a drug taking situation, it is troublesome for them to discover whether they have distinguished the pharmaceutical effectively or not. They should look for others help for it. Additionally a portable application will be anything but difficult to utilize and the equipment required is extremely constrained.

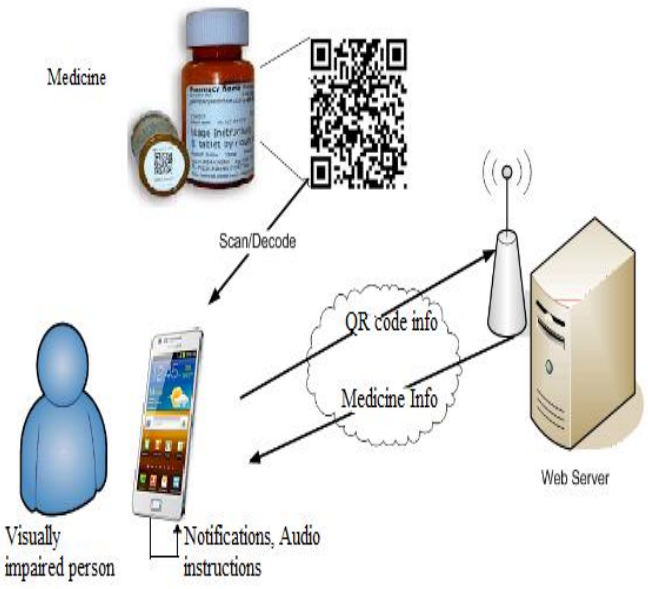


Figure1: System Architecture

IV METHODOLOGY

Following are the modules used by the projected system

1. **Patient** - Patient is an object who needs medicine (visual impaired patient or normal patient). The mobile application users can only use the application to scan QR code. This means that the user have to back to the replay, this application get audio instruction. Receive notification, which type of medicine takes patient.
2. **Medical** - Is an object who does store patient details and medicine info store in QR code. The medical store owner interacts with application. He gives patient details and prescription to doctor. He can generate the QR code.
3. **Doctor-** Is an object checks the patient and writes prescription for patient. The doctor will not use the mobile application but the he write down patient to the prescription. And one prescription sends to medical store.

V MATHEMATICAL MODEL

Let S be the System,

- **S = {I, P, R, O}**

S = System
I = Input
P = Process
R = Rule
O = Output

- **I = {I1, I2}**

I1=Patient details
I2=Capture medicine image

- **P = {P1, P2, P3, P4, P5}**

P1 = Grayscale conversion
P2 = Edge detection
P3 = Text detection
P4 = Segmentation
P5 = text to speech conversion

- **O = {O1}**

O1 = Notification for voice format.

- **R = {R1}**

R1 = Patient must capture the medicine image.

VI ALGORITHM STEPS

The process (and high-level algorithm) for generating a QR Code symbol is as follows:

1. Choose the text (Unicode string) or binary data (byte string) to encode.
2. Choose one of the 4 error correction levels (ECL). A higher ECC level will yield a barcode that tolerates more damaged parts while preserving the payload data, but will tend to increase the version number (i.e. more modules in width and height).
3. Encode the text into a sequence of zero or more segments. A segment in byte mode can encode any data, but using alphanumeric or numeric mode is more compact if the text falls into these subsets.

4. Based on the segments to be encoded and the ECL, choose a suitable QR Code version to contain the data, preferably the smallest one.
5. Concatenate the segments (which have headers and payload) and add a terminator. The result is a sequence of bits.
6. Add padding bits and bytes to fill the remaining data space (based on the version and ECL).
7. Reinterpret the bitstream as a sequence of bytes, then divide it into blocks. Compute and append error correction bytes to each block. Interleave bytes from each block to form the final sequence of 8-bit codewords to be drawn.
8. Initialize a blank square grid based on the version number.
9. Draw the function patterns (finders, alignment, timing, version info, etc.) onto the appropriate modules. This is formatting overhead to support the QR Code standard, and does not encode any user data.
10. Draw the sequence of (data + error correction) code words onto the QR Code symbol, starting from the bottom right. Two columns at a time are used, and the scanning process zigzags going upward and downward. Any module that was drawn for a function pattern is skipped over in this step.
11. Either manually or automatically choose a mask pattern to apply to the data modules. If masking automatically, then all 8 possibilities are tested and the one with the lowest penalty score is accepted. Note that the format information is redrawn to reflect the mask chosen.
12. We are now finished the algorithmic parts of QR Code generation. The remaining work is to render the newly generated barcode symbol as a picture on screen, or save it as an image file on disk.

VII APPLICATIONS

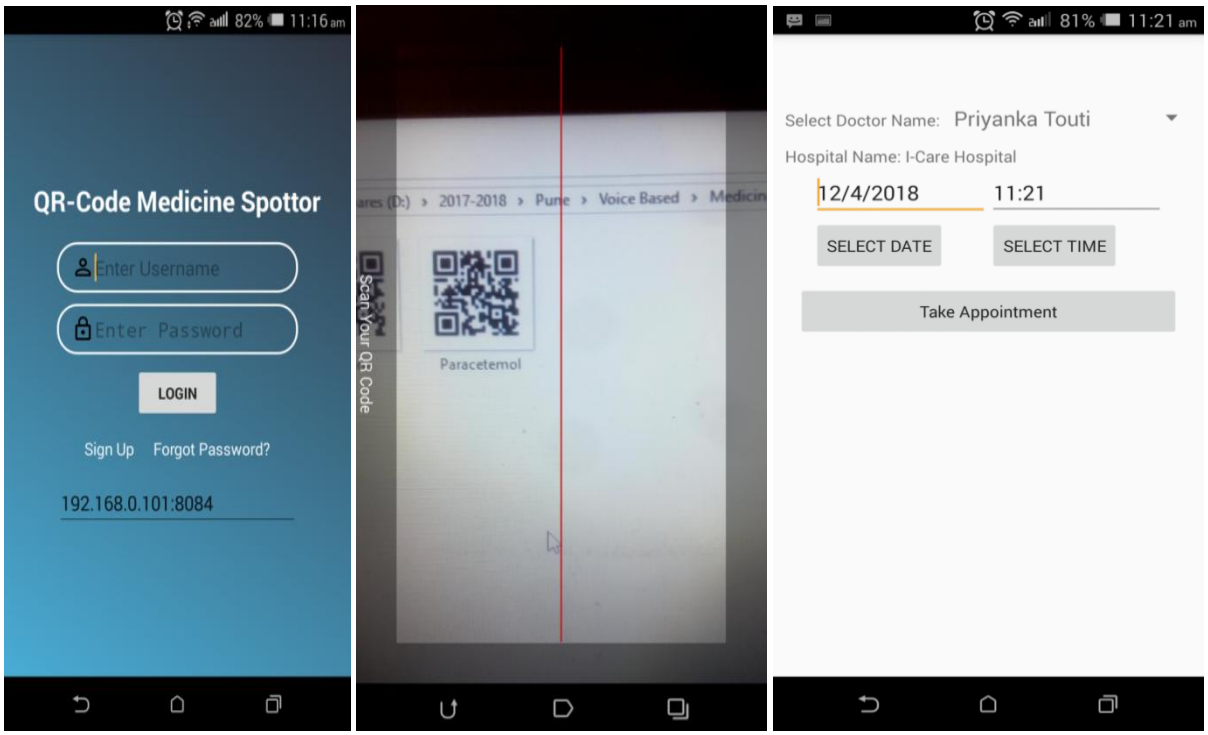
- This paper proffers an application in order to expedite easy and innate way to find the medicine for the visually impaired people and to take it according to their Doctor's prescription. Visually impaired people need not be dependent and seek others help to find the medicine to be taken. This android application is used to overcome the difficulties they face in this scenario.
- User intakes their medicines according to their prescription. It can also be useful for uneducated people who suffer to find which medicine must be taken. Especially elder people who are not educated usually suffer to read their medicine names on their own.

VIII ADVANTAGES

- QR code is versatile.
- Extremely fast scanning.
- Beneficial for visually impaired people.

IX RESULTS

1. User Login 2. Scan QR Code 3. Take Appoinment



X CONCLUSION AND FUTURE WORK

In this paper we have proposed an application for the outwardly impeded and the un-instructed individuals to give finish help with the prescription taking situation through mark perusing. Keeping in mind the end goal to do this we have exhibited a way to deal with distinguish, limit, and concentrate writings showing up in greyscale or shading pictures. This depends on utilizing a shading lessening system, a technique for edge identification and locale division and choosing content districts in light of their even projection and geometrical properties. This application is actualized on the android stage inferable from its convenience. All the information and yield are given by methods for discourse with a specific end goal to address the openness issues of the outwardly disabled. Future work incorporates empowering a various login choice in a same gadget with the goal that more than one outwardly impeded individual can utilize a similar gadget. To refresh the remedies into database all alone without specialists help by utilizing a printed medicine.

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