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INVESTIGATION OF ECOMMERCE WEBSITE USING QR CODE FOR SECURITY

[1]Babita Devi, M.tech (ECE), Department - Electronics & Communication Department, IIET Kinana
[2]Amit Mahal , Professor, Department - Electronics & Communication Department, IIET Kinana

ABSTRACT: QR code via any QR generator, many of which are available on lie for free. User's simply enter data converted in to secrete code electrically form. That contains authentication information like some people personal information & company's logo etc. A QR code or quick response code is a kind of barcode that could be read using a bar code scouldner. These shoulders are mainly referred to as QR code scolders. Scolders are in form of apps for smart devices. QR Code is able of 360 degree high speed reading. QR Code accomplishes this task through position detection patterns placed at three corners of symbol. These position detection patterns guarantee stable high-speed reading, circumventing negative effects of background interference.

KEYWORD: BARECODE, DETECTION, MODERATE DATA, MOBILE OPTIMIZED.

[1] Introduction

A barcode is an optical machine-understandable exemplification of data relating to object to which it is committed. Later they changed into rectangles, dots, hexagons & other geometric patterns in two dimensions. Albeit 2D systems utilize a variety of sign, they are in commonly referred to as barcodes as well. These codes initiate from Japan where they were used by Toyota to track car parts. Today, all smart phones come with a QR code scolder to verify that everyone using a smart phone could benefit from this technology. Today, QR codes are used by businesses & companies to reach out to their client base.

HOW TO CREATE A QR CODE

Creating QR codes is easy, thanks to existence of QR code generators that could be found on internet. It is important to choose a QR code generator that will suite & meet requirements of QR code type that you want to create. Also, ensure that QR code generator that you choose to use is compatible within computers operating system.

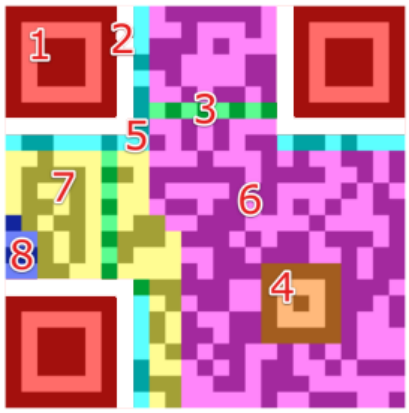

Fig 2 Placement of Information Pattern

[2] Literature Review

In 2015 Teng Lin-lin, Tong Chun-ya, Shao Shi-wei, Zhong Qiu-bo, Shi Jing-jing, He Ke-jia & Zhang Hong-mei expressed their vies in a research titled "**The generation & recognition system of QR code basing on android"** & they said that Insional bar code utilizes specific geometrical figures, according to encoding rules point, empty & white graphics in small area to mark data symbol information. It could express a large amount of information in a very small

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area. 2D barcode also could express information in horizontal & vertical so that its storage density is very high. Dipesh Rawat, Ravindra Sahu & Yashila Puthran in their research titled "**Optimizing Capacity of QR Code To Store Encrypted Image**"tell us about requirements for securing data storage using encryptionhas increased over decade. This had been resulted increased use of various modes for storing data like Barcode, RFID, QR Code. From all mentioned storage techniques QR code is derived to be more efficient. QR code (Quick Response code) is a machine-readable code consisting of an array black white pixels used for storage of data that could be read by scouldners. Another research conducted by Weibing Chen, Gaobo Yang & Ganglin Zhang on topic "**A Simple & Efficient Image Pre-processing for QR Decoder" sheds light on** topic that in order to lower consumed threshold, a practical image preprocessing method was proposed for Quick Response (QR) barcode recognition. It could increase speed of recognition by this decoder so as to embed this algorithm into mobile terminals. Instead of using traditional methods such as edge detection & line detection, encoding characteristic of QR had been used, thus influence by background noise & geometric distortion was minimized. Moreover, it used alignment patterns to adaptively sample barcode in terms of regions, which greatly improved recognition rate. Experimental results demonstrate that proposed approach could overcome influence in noise, inhomogeneous light & geometric distortion, what is more, it meets requirement of decoding in real time.

[3] Objectives

The opportunity to put ones business & clients into action had been increased manifolds using QR codes. 2D barcodes are giving smart-phone users direct access to products, services & information. This might be looking to re-order, to engage you or just want more information. By simplifying process for a mobile user, person could hard link his/her business clients.

Fig 4 moderate data

Easy way to send mobile users to online content

The QR code offers, as name suggests, a quick response mechanism which saves users effort of typing in a URL or an SMS short code. Used well, & in conjunction with a mobile optimized landing page, it could grab consumers at exact point where they have shown interest in an ad or video, & get them signed up for an email, tempt them into making a purchase etc. user don't have to type URL mentioned on product or advertisement neither user had been to search online regarding product company & then filter through search results that pop up.

Fig 5 How It would be better than classical bar coding mechanisms

Process of Virtual Shopping

The journey of virtual shopping begins with downloading company's app from smart-phone application store. After download is completed customer is asked to create an account for private use & provide his/her contact information. contact information includes name of

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customer, mobile number, address, & email. next step for customers is to search for their preferred item or product from nearest billboard. To purchase requested product, customer must scould QR code attached within product using company's app.

[4] Problem Formulation

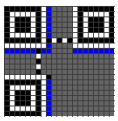
Dark Module

As mentioned earlier on this page, all QR codes have a dark module beside bottom left finder pattern. More specifically, dark module is always located at coordinate ([(4 * V) + 9], 8) where V is version of QR code.

Reserve Format Information Area

A strip of modules beside separators must be reserved for format information area as follows: Near top-left finder pattern, a one-module strip must be reserved below & to right of separator. Near top-right finder pattern, a one-module strip must be reserved below separator. Near bottom-left finder pattern, a one-module strip must be reserved to right of separator.

The following images show reserved areas in blue. They are always placed along separators, no matter what version QR code is.



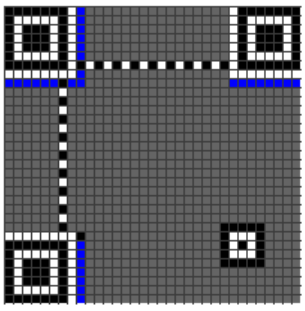
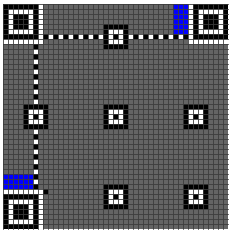


Fig 6 Reserve Version Information Area

QR codes versions 7 & larger must contain two areas where version information bits are placed. areas are a 6x3 block above bottom-left finder pattern & a 3x6 block to left of top-right finder pattern. following images show locations of reserved areas in blue.



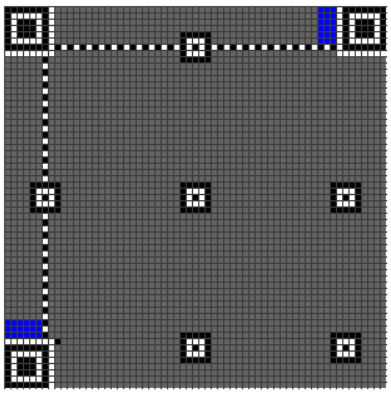


Fig 7 QR codes versions 7

Place Data Bits

It is now time to add data bits to QR matrix. bits are placed in a particular pattern.

Pattern of Placement

The data bits are placed starting at bottom-right of matrix & proceeding upward in a column that is 2 modules wide. When column reaches top, next 2-module column starts immediately to left of previous column & continues downward. Whenever current column reaches edge of matrix, move on to next 2-module column & change direction. If a function pattern or reserved area is encountered, data bit is placed in next unused module.

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The following image shows pattern of placing data bits in QR code. **Notice that when vertical timing pattern is reached, next column starts to left of it.**

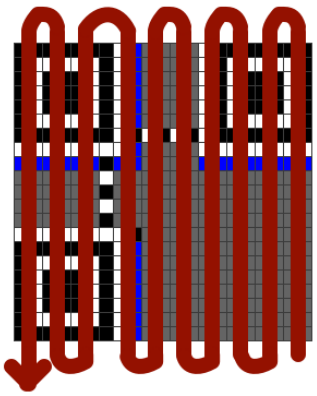

Fig 8 Upward Placement

[5] Implementation

Decryption process:

To decrypt incrypted image encfinal.jpg we again run guide command for further process:

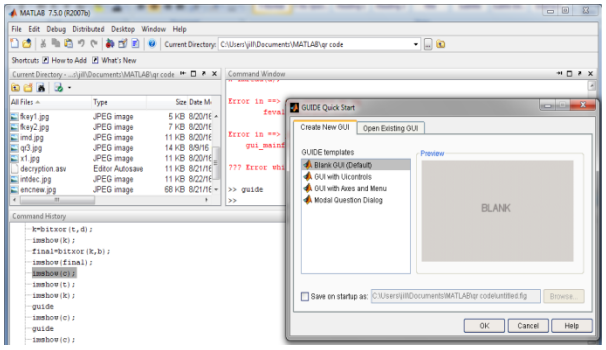

Fig 9 **Decryption process**

In order to decrypt qr code we will open Decryption.fig in matlab using guide command

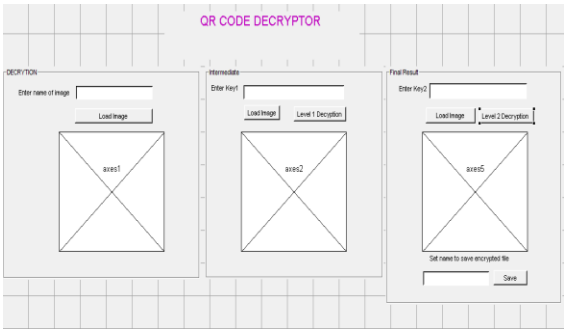

Fig 10 QR Code Decryptor

Select decryption.fig to load fig file

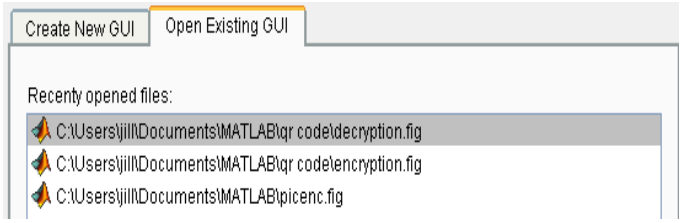

Fig 11 Select decryption.fig to load fig file

Encfinal.jpg image is loaded for decryption.

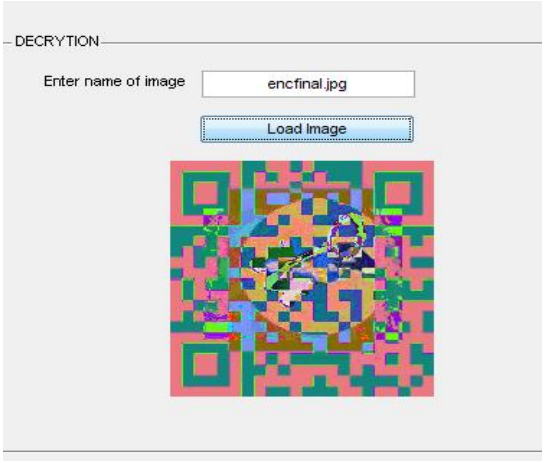

Fig 12 Encfinal.jpg image is loaded for decryption

Fkey2.jpg image is loaded for level 1 Decryption.

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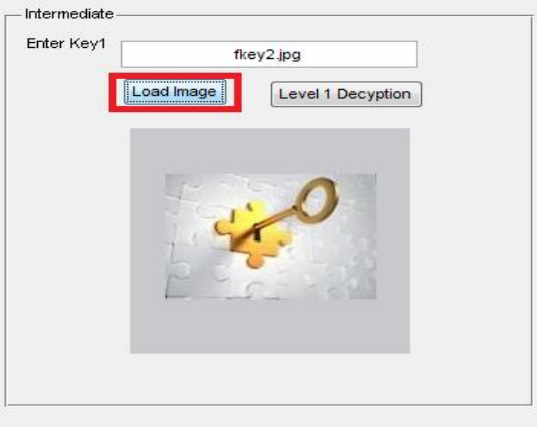

Fig 13 Fkey2.jpg image is loaded

Level 1 Decryption image is shown here.

Fig 14 Level 1 Decryption image is shown

[6] Conclusion

The company issuing QR code could also develop a data base of users that scould on to QR codes as QR scouldners are linked to profile info provided by user in its OS of mobile handset. Hence it had been a big statistical advantage over other technologies. Then we have also studied amount of data that could be stored in a QR code & methodology to store data in QR code. We have also seen that QR codes could be customised in any color scheme & therefore had been an artistic value to it too. QR codes have numerous advantages & a few disadvantages. Most terrifying among them is that of Data Phishing. In this paper, we offered a comprehensive overview of state of art research regarding QR code security & usability. We identified most significant utilize cases & attack vectors associated with them. To do so, we conducted an extensive literature survey. In media, most commonly reported fraud conducted with QR codes as attack vector is social engineering & phishing in particular. QR codes have found their way from automotive manufacturing plants into our everyday smartphone usage.

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