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IMPLEMENTATION ON ECOMMERCE SYSTEM SECURITY USING QR CODE TO SECURE ITEM DETAILS

Tarun Dalal[1] , Ms. Shefali Arora[2]
[1]Assistant Professor, Department of CSE Jhajjar CBS group of institutions, Jhajjar (Haryana)
[2]M.Tech student, Department of CSE Jhajjar CBS group of institutions, Jhajjar (Haryana)

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 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. These codes could contain encoded info such as website URLs, data, & text as well as pre-formatted SMSs among other things. 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.

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.

[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 area. 2D barcode also could express information in horizontal & vertical so that its storage density is very high.

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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.

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.

[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.

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.

Pattern of Placement

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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.

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.**

[5]RESULT AND DISCUSSION

Encryption process of QR code:

In order to decrypt QR code we would open encryption.fig in matlab using guide command:

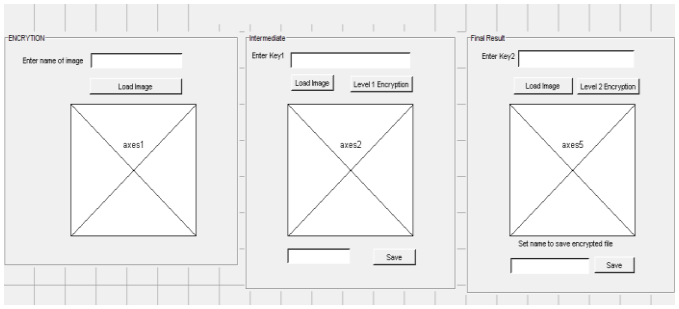

Fig 2. QR code encrypt

When we load qr3.jpg image for encryption this window is generated:

Fig 3 Load qr3.jpg image for encryption this window is generated

When we click on load image button after typing fkey1.jpg in text box then Fkey 1.jpg image is displayed for level 1 encryption.

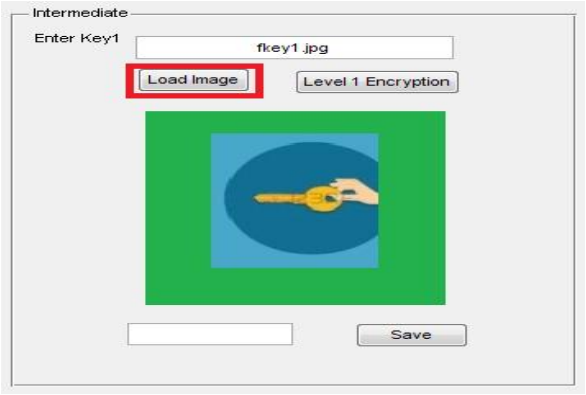

Fig 4 Fkey 1.jpg image is displayed for level 1 encryption.

When we click on level1 encryption button then Intermediate Level 1 Encrypted image is generated.

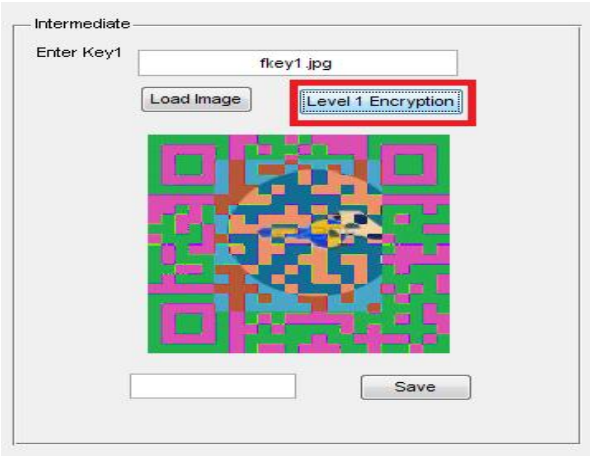

Fig 5 Intermediate Level 1 Encrypted Image generated fkey2.jpg is loaded for level 2 encryption.

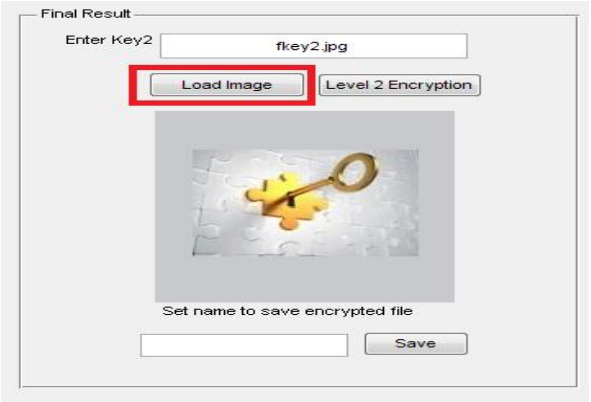

Fig 6 Fkey2.jpg is loaded for level 2 encryption

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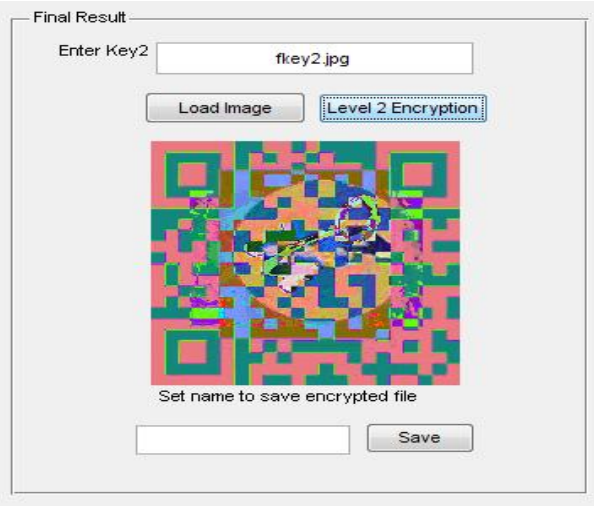

Fig 7 Level 2 Encrypted image

Decryption process

Encfinal.jpg image is loaded for decryption

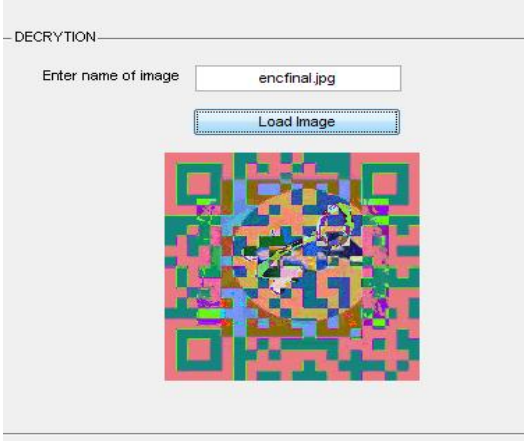

Fig 8 Encrypted Image

Fkey2.jpg image is loaded for level 1 Decryption.

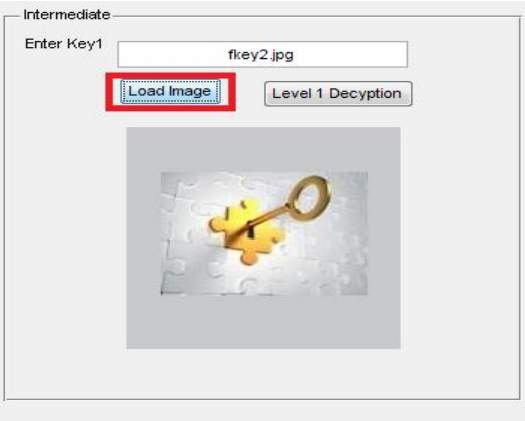

Fig 9 Fkey2.jpg image is loaded

Level 1 Decryption image is shown here.

Fig 10 Level 1 Decryption image is shown

Fkey1.jpg image is loaded for level 2 Decryption.

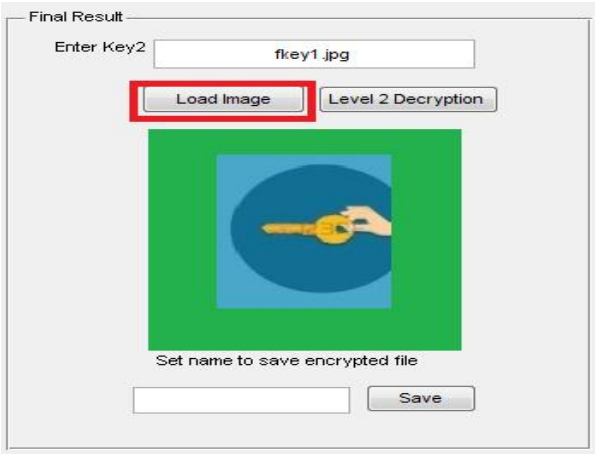

Fig 11 Fkey1.jpg image is loaded for level 2 Decryption

Final level 2 Decrypted image.

Fig 12 Final level 2 Decrypted image

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[6] CONCLUSION

We have studied in detail what QR codes are & what are its fields of application. We have understood that QR codes have a very bright scope of work for future as it had been a very wide area of application. QR code had been an appealing factor to it what marketers worldwide are catching up to. It just started as a identification tool o assembly line of vehicles & today it finds its application in almost every aspect of life from branding to medical science, to education to promotion, from visiting cards to application forms etc. Since it could be encoded & could be password protected so developer could restrict type of users who could navigate to 'link' provided in QR code.

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.

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