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Q-Array Dimension for Private Message Sharing and Document Authentication

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ABSTRACT: In QR code authentication two level storage is used, which help to verify original content in QR code. In work uses public and private storage level of document storage. In the public level same standard QR code storage level is explored; which can be readable to any QR code readable device. It consists of information encoded using q -ary code with an error correction capacity. Q-array code will increase the storage capacity of the QR code, but also to verify the original document from a copy. The pattern recognition method that we use to read the second-level information can be used both in a private message sharing and in an authentication scenario.

KEYWORDS: QR code, two storage levels, private message, document authentication, pattern recognition, print-and-scan process

I. INTRODUCTION

Growing online media usage with one time password which is send to user mobile so any one can hack the information in between transaction. Therefore to overcome this drawback these algorithm use a QR code. Because in QR code all communication is encrypted, soman-in-middle attack is not possible. Double levels QR code motivate for private message sharing and document security authorization. QR codes is featured because they are strong to the copying data and easy for reading with any device and any user, they have a high encoding capacity enhanced by error correction facilities, they have a small size and are robust to geometrical distortions. Although it has some advantages and some disadvantage.

1. Information encoded in a QR code is always accessible to everyone, even if it is ciphered and therefore is only easily readable to authorized users just like see and understand.
2. The standard QR code is unable to distinguish original document content over duplicate copy of encoded document. To overcome above drawback this project report is motivate to standard QR code encoding capacity. This enrichment is obtained by replacing its black modules by specific textured patches form cover image. Besides the gain of storage capacity, these patches can be designed to be sensitive to distortions due to the P&S process. These patches that do not introduce disruption in the standard reading process are always perceived as black modules by any QR code reader. Therefore, even when the private information is degraded or lost in the copy, the public information is always accessible for reading.

II. LITERATURE SURVEY

Susan P Kurianet. al. [1] " 2L Color QR code-A Novel Approach For Enhancing Capacity and Ensuring Authentication of QR code" Two level shading QR code is a novel approach for enhancing the capacity limit of the QR code and give report confirmation guaranteeing general security. QR code which wound up plainly well known amid the current years because of the wide multiplication of cell phones is a data framework with extensive encoding limit and simplicity of information recuperation. Two levels QR code with two stockpiling levels, both private and open was intended for private message sharing and archive validation. The best test of 2LQR code is that every cell in a 2LQR code could hold just 1 bit information which is nearly littler information stockpiling. These days QR codes have turned out to be



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omnipresent in numerous applications and thus it's of enormous significance to manage upgrading the capacity limit and guaranteeing security to a similar this paper advanced a novel approach for enhancing the capacity limit of the QR code and guarantees security. In this framework, every cell holds information of 1 byte, which is more than 8 times more stockpiling limit than the current framework.

Yang-Wai Chow et. al. [2] "Misusing the Error Correction Mechanism in QR Codes for Secret Sharing" It introduces a novel way to deal with mystery sharing utilizing QR codes. In QR code mystery sharing, a QR code containing a mystery message is circulated and encoded into an arrangement of important QR code shares. This approach utilizes the mistake redress include, which is an inborn piece of the QR code structure, to appropriated and conceals data about the mystery. Each offer is a legitimate QR code which contains important data when checked independently. Subsequently, this diminishes the probability of pulling in the consideration of potential aggressors when disseminated by means of open channels. At the point when all offers are made accessible, the mystery message can be recuperated. Not at all like various other mystery sharing plans where the offers are computerized pictures, which must be put away and transmitted electronically, the QR code partakes in this approach can be conveyed utilizing printed media.

CleoBaraset. al. [3] "2D scanner tags for confirmation: a security approach", a decent verification framework utilizing 2D-BCs from the perspective of the rival. An estimator that he can use to item a fake was proposed and its execution was inferred through hypothetical outcomes and reproductions on genuine printed and checked 2D-BCs. While both the model and the tests directed on genuine information concede to the general conclusion that Eve's estimation execution increments when gathering 2D-BCs, the slant of the bends, notwithstanding, contrasts enormously. We trust this is because of the way that our printing and examining channel model is somewhat poor.

III. PROPOSED SYSTEM

Fig. 1 of Proposed system based on double levels (public and private level) QR for data hiding. The public level QR code can read text or document easily with reader, but the private level needs a specific device with encoded information. This 2LQR code can be used for private message sharing or for authentication mechanism. The standard QR code has white and black modules and 2LQR code has white modules and textured modules instead of black modules. This replacement of black modules by textured modules does not disrupt the standard QR code reading process. But it allows a second storage level, which is invisible to the standard QR code reader. This second level contains the private message, encoded with q-ary ($q \geq 2$) code with error correction capacity. These textured modules have specific features and are used for private message M_{priv} storage in the proposed 2LQR code.

2LQR code use for two scenarios: for private message sharing and for document authentication. The structure of the code in both scenarios is the same with slight differences on position tags. In private message sharing scenario, the private level is created by replacing black modules with textured patches from cover image. These textured patches are considered as black modules by standard QR code reader. So that private level is hidden to QR code readers, this system for private level does not affect in anyway the scanning public data of the public level. However, in document authentication scenario, the position tags are not changed (i.e. they remain black modules). In document authentication, it is necessary to verify the authenticity of the textured modules used. Therefore, the textured modules used in 2LQR code have to be compared with the original modules. That is why, the black modules in the position tags do not changed. The 2LQR code increases the storage capacity of the classical QR code due to its supplementary reading level. The storage capacity of the 2LQR code can be improved by decreasing the textured patches size.

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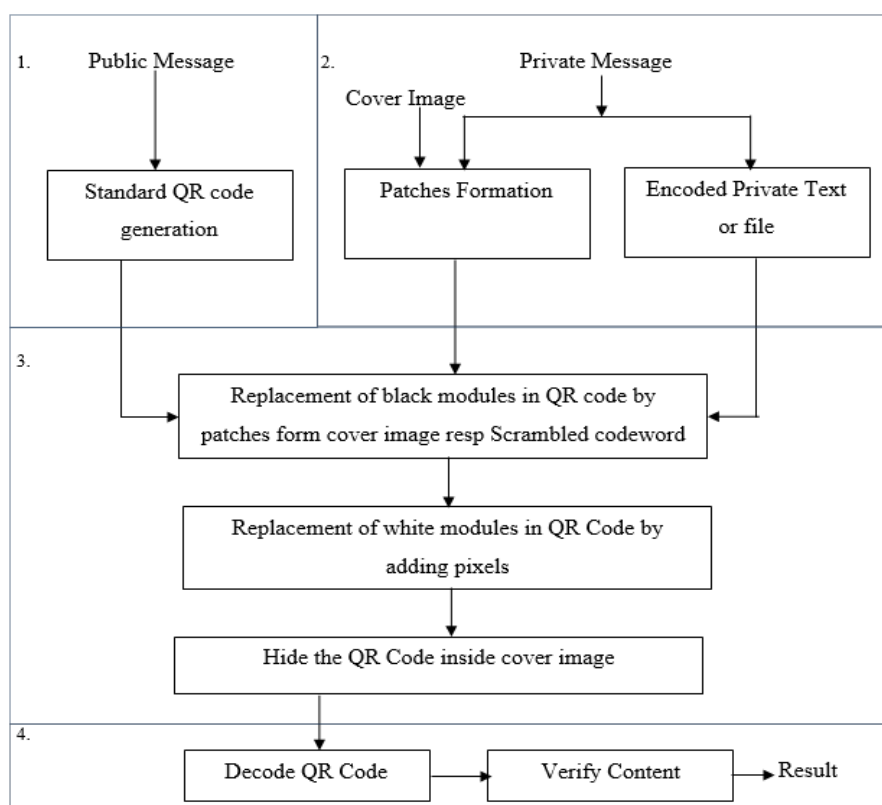


Fig 1: proposed system

IV.ALGORITHM

Encoding

Steps:

- 1 Representation of each letter in secret message by its equivalent ASCII code.
- 2 Conversion of ASCII code to equivalent 8 bit binary number.
- 3 Division of 8 bit binary number into two 4 bit parts to the 4 bit parts.
- 4 Meaningful sentence construction by using letters obtained as the first letters of suitable words.
- 5 Omission of articles, pronoun, preposition, adverb, was/were, is/am/are, has/have/had, will/shall, and would/should in coding process to give flexibility in sentence construction.
- 6 Encoding is not case sensitive.

Decoding

Steps:

- 1 First letter in each word of cover message is taken and represented by corresponding 4 bit number.
- 2 4 bit binary numbers of combined to obtain 8 bit number.
- 3 ASCII codes are obtained from 8 bit numbers.
- 4 Finally secret message is recovered from ASCII codes

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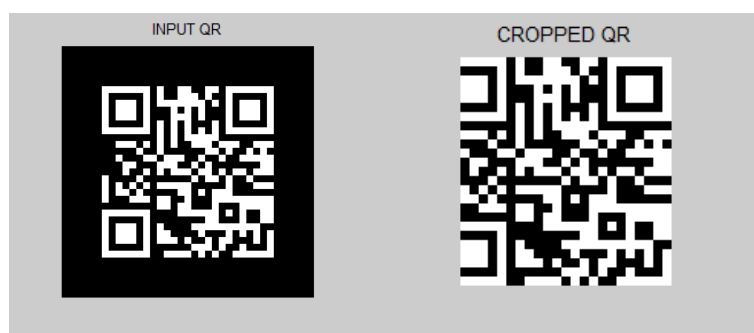
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V. EXPERIMENTAL RESULT

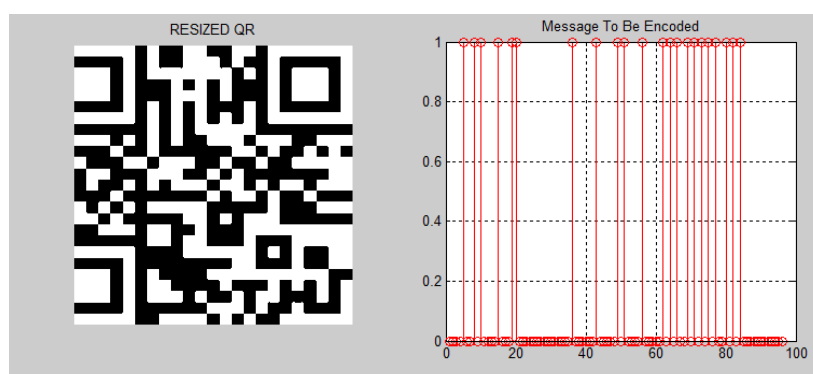
It illustrates both the generation steps of the 2LQR code in input QR and the message extraction steps in Cropped QR. Then, the storage capacities of the 2LQR code are discussed in resized. After, the reading capacities of public and private levels are presented in message to be encoded.

Application scenario. For example, the public level can store the Surname, First name, Date of Birth and Place of Birth of a person. Then, the secret information, which is the number of their bank account, encoded in the private level. Setup. In these experiments, the version V2 of the QR code in Low error correction level is used. This version has 25_25 module size and can store 272 bits of a message.



INPUT QR

CROPPED QR



RESIZED QR

MESSEGE TO BE ENCODED

V. CONCLUSION

This 2LQR code can be utilized for secure private information sharing for confirmation component. The private level is made by replacing black modules with specific textured patterns. Image texture patterns are considered as black modules by QR code reader. So that the private level is covered up to QR code perusers, we include the private level which does not influence in at any rate the perusing procedure of general society level. The proposed 2LQR code builds the capacity limit of the traditional QR code because of its supplementary perusing level. The storage capacity of the 2LQR code can be enhanced by expanding the quantity of finished examples utilized or by diminishing the textured pattern size. All investigations demonstrate that even with an example size of 6×6 pixels and with a letter set



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measurement $q = 8$, it is conceivable to acquire great example acknowledgment comes about, and in this way an effective private message extraction. In any case, we are confronting an exchange off between the example estimate, the letters in order measurements and the amount of put away data amid the 2LQR code era.

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