Video Playing Using QR Code

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Abstract — this system aims at giving authorized knowledge to the user at ease via visual sensing i.e. videos. Especially this android application made for the persons for whom understanding via visual medium is easier than theory. Here, in this system a demo book will be provided in that book, in Index topic wise name and QR code will be given. So even if the user doesn't have a single idea about the book he still can just scan the QR code via app from his mobile phone and the video will just simultaneously start playing in inbuilt video player. Specially meant for user to provide ease and authorized knowledge. In this system, as soon as the QR is scanned from the android device, the video will start playing instantly. A QR (quick response) code is a two-dimensional barcode readable by QR scanners, smart mobile phones with a camera. QR codes can be used to link to any URL. They can also be used to automatically add information into a user's Smartphone such as a calendar event, map or personal contact information. A QR code is capable of storing several hundred times more information than conventional barcode and is readable from any direction. A QR Code system is used in combination with a QR Code printer (or QR Code creation software) and QR Code scanner. QR Code is generated with QR Code creation software and a special printer. A QR Code is a matrix code (or two-dimensional bar code) created by Japanese corporation Denso-Wave in 1994. The "QR" is derived from "Quick Response" as the creator intended the code to allow its contents to be decoded at high speed. QR i.e. "Quick Response" code is a 2D matrix code that is designed by keeping two points under consideration, i.e. it must store large amount of data as compared to 1D barcodes and it must be decoded at high speed using any handheld device like phones.

Index Terms— QR code, 3D barcode, android, scanner, camera, barcode, video player.

I. INTRODUCTION

Image processing is a method to perform some operation on an image in order to get an enhanced image or to extract some useful information from it.

Image processing is a method to perform some operations on an image, in order to get an enhanced image or to extract some useful information from it. It is a type of signal processing in which input is an image and output may be image or characteristics / features associated with that image. Nowadays, image processing is among rapidly growing technologies. It forms core research area within engineering and computer science disciplines too.

Image processing basically includes the following three steps:

1. Importing the image via image acquisition tools.
2. Analyzing and manipulating the image.
3. Output in which result can be altered image or report that is based on image analysis.

There are two types of methods used for image processing namely, analogue and digital image processing. Analogue image processing can be used for the hard copies like printouts and photographs. Image analysts use various fundamentals of interpretation while using these visual techniques. Digital image processing techniques help in manipulation of the digital images by using computers. The three general phases that all types of data have to undergo while using digital technique are pre-processing, enhancement, and display, information extraction.

An image is an array, or a matrix, of square pixels (picture elements) arranged in columns and rows. In a (8-bit) greyscale image each picture element has an assigned intensity that ranges from 0 to 255. A grey scale image is what people normally call a black and white image, but the name emphasizes that such an image will also include many shades of grey.

Each pixel has a value from 0 (black) to 255 (white). The possible range of the pixel values depend on the colour depth of the image, here 8 bit = 256 greyscales. A normal greyscale image has 8 bit colour depth = 256 greyscales.

There are two general groups of 'images': vector graphics (or line art) and bitmaps (pixel-based or 'images'). GIF an 8 bit (256 colour), non-destructively compressed bitmap format.

Quick Response Code or better known as QR Code is a two dimensional barcode that allow high speed data encoding and decoding capabilities. It was invented by Denso-Wave a Toyota subsidiary in 1994 in order to track the various parts during the vehicle manufacturing. Generally QR Codes are used for distributing small information like URL, a phone number or even small text. The Government of Canada uses QR Codes for efficient and faster processing of the Passport application forms. A QR Code is embedded on the first page of their application form and the code gets updated as the form is being filled.

There are many freeware decoding applications that are available on the Internet one of which is zxing. If users don't have access to smart phones they can access websites such as Xzing in order to decode the QR Codes, all they need to do is upload the QR Code image to the website and they website decode the information and display it to the user. There has been increase in the use of QR Codes and the reason for this increase is due to the various features offered by the QR Codes. One of the most

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desirable features is its readability from any direction, also other features provided by QR Codes are high capacity encoding of data, small printout size, Dirt and Damage Resistant and so on. This system aims at giving authorized knowledge to the user at ease via visual sensing (videos).Specially made for the persons for whom understanding via visual medium is easier than theory. Here, in this system a demo-book will be provided in that book Index topic wise name and QR code will be given. So even if the user doesn't have a single idea about the book he still can just scan the QR i.e. Quick Response Code via app from his mobile phone and the video will just simultaneously start playing.

With the continuous development of science and technology, mobile phone is no longer just communication, but a multimedia platform that provides multimedia capabilities. Playing a video on media player becomes basic function, but the media player has many limitations since there're limited format supported by media player. Present scenario for media players provide support for some media format and recently facilities for providing the subtitles is included in the existing system. This paper demonstrates about proposed system which will provide the rich features with the help of existing features with QR scanning application. Media player is one of the important features of the mobile. Currently for maximum number of the available media players it does not support all media format while audio effects are not available to some of the best current media players. While playing any video file if we want to perform some work like checking the emails or sending some messages we cannot minimize it we have to pause/stop the playing file and perform the work. Also current media players have limitations in subtitle support and dual audio. In current media player all subtitle formats are not supported. In current player one of the major drawbacks is that it has some limitations related to video quality compatibility as well as format support. High quality HD videos face some problem during video streaming. Performance of the media player is enhanced in this case by using software encoding facility. Currently VLC player's beta version is released while MX player is a player with only video streaming feature. Using this application user can scan the QR code by the scanner of the app after successful detection of code the video will start playing on the application itself. User doesn't need to search for a playing which will play the video.

II. LITERATURE SURVEY

2.1 Image steganography with using QR code and cryptography.

In this there is image steganographic methodology that's able to embed the encoded secret message using Quick Response Code (QR) code into the image information. Discrete Wavelet Transformation (DWT) domain is employed for the embedding of the QR code, whereas embedding method is in addition secured by Advanced Encryption Standard (AES) cipher algorithmic rule.

In additionally, typical characteristics of QR code was broken using the encryption, therefore it makes the method more secure. The relation between security and capability of the strategy was improved by special compression of QR code before the embedding method.
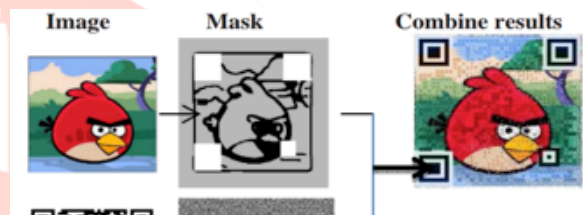

Figure 1: Basic QR Embedding Procedure

2.2 Information Hiding using Image Embedding in QR Codes for Color Images.

They say that embedding strategies are designed to be compatible with standard decoding applications and might be applied to any color or gray scale image with full space coverage. The embedding technique consists of 2 elements. Initial is that the use of half toning techniques for the choice of changed pixels to interrupt and reduce the coarse square structure of the QR code and second is that the brightness level to that the pixels square measure to be remodeled in such some way that it mustn't visible to naked eye on the color image. Later decode the QR code from the color image with minimum errors.
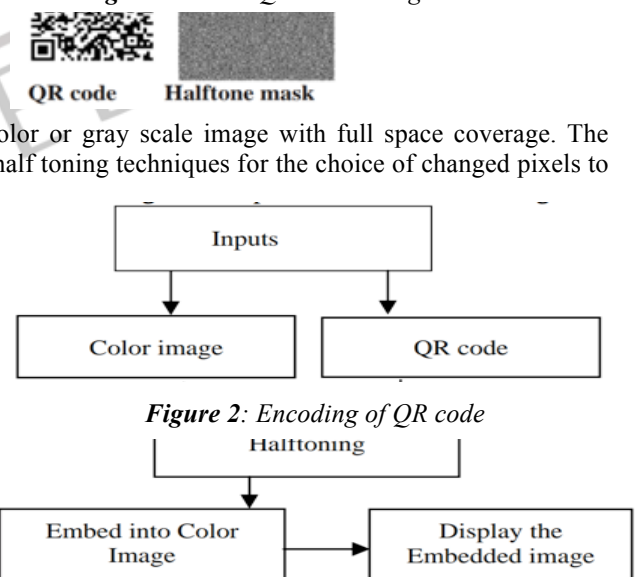

Figure 2: Encoding of QR code

2.3 Confidential Encrypted Data Hiding and Retrieval Using QR Authentication System.

In this paper, there's totally different methodology, where the marks obtained by a candidate will be encoded in QR Code in encrypted type, so that if an intruder tries to change this. Marks within the mark sheet then he cannot do this.

As a result of the encryption key is unknown to him. In this method encryption of the mark sheet data is done using TTJSA encryption algorithm. The encrypted marks are entered inside QR code and that QR code is also printed with the original data of the mark sheet.

2.4 Nested image steganography scheme using QR barcode technique.

There are two types of secret data lossless and lossy embedded into a cover image. The lossless data is text that is initially encoded by the QR barcode and its data doesn't have any distortion when comparing with the extracted data and original data. The lossy data is a kind of image in that case the face image is appropriate as a result of the extracted text is lossless, the error correction rate of QR encoding should be carefully designed. In image embedding, as a result of it will sustain minor perceptible distortion so they adopted the lower nibble byte discard of the face image to reduce the secret data. Once the image is extracted, a median filter is used to separate out the noise and procure a smoother image quality. After simulation, it's tried that scheme is powerful to JPEG attacks. Compared to different steganography schemes, the proposed technique has 3 advantages: the nested theme is an increased security system never previously developed, our scheme will conceal lossless and loss secret data into a cover image simultaneously and the QR barcode used as secret data can widely extend this method's application fields.

2.5 Reversible Data Hiding with Histogram-Based Difference Expansion for QR Code Applications.

As the QR code looks like random noise and it occupies a corner of the original image, its existence will greatly cut back the worth of the first content. Thus, how to retain the value of original image, whereas keeping the capability for the moment access for WebPages, is that the major concern of this paper. With the help of reversible data concealment technique, the QR codes are often hidden into the original image, and there's hefty increase in embedding capability.

They propose a scheme such that when the image containing the QR code is browsed, the hyperlink like the QR code is accessed first. Then, the QR code may get nonexistent and also the original image would be recovered to retain the information sent in that.

Figure 3: Architecture of Information

III. PROPOSED SYSTEM

We proposes an application which scans the Quick Response i.e. QR code and playing the video in inbuilt video player itself.

A QR code is made up of four main parts:

1] Finder patterns:
These are the big black/white/black squares on the three corners on the QR code. These help identify the presence of a QR code in an image and its orientation. These are made such that they can be detected really fast.

2] Alignment patterns:
These are smaller than finder patterns and help straighten out a QR codes drawn on a curved surface. The larger a code, the more alignment patterns it'll have.

3] Timing pattern:
These are alternating black/white modules on the QR code. The idea is to help figure out the data grid accurately.

4] The actual data:
The blacks/whites form bits. Groups of 8 such modules make one byte. You could combine 16 modules to get Unicode data.

How to detect a QR code

Detecting a QR code revolves around identifying finder patterns. The key idea is that there's a ratio in the number of black/white/black/white/black. And this ratio remains the same no matter what angle you look at it following figure you'll see that each of the red lines has roughly the same ratio. It does not depend on the angle. Once you've 'identified' such a ratio, you need to confirm what you see is a finder pattern or not. You do this by checking along the horizontal and vertical axes. If it's the same ratio, you know you've found a finder pattern.
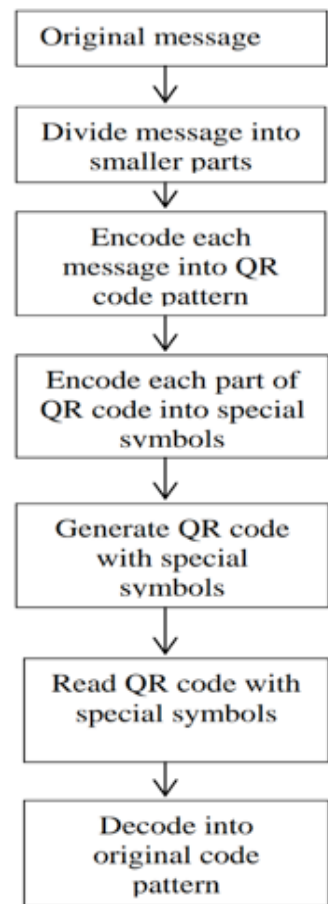

Figure 4: Detection of QR
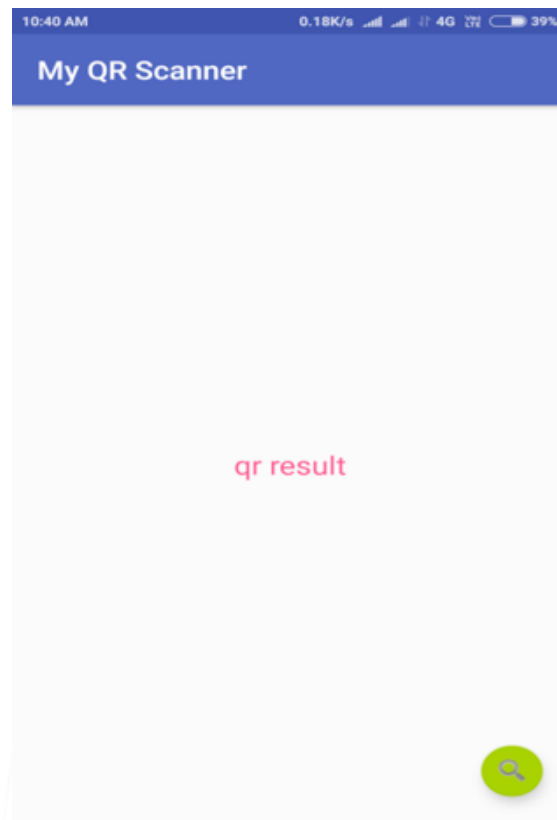
IV. RESULT

Figure 5: Main Screen

Figure 6: Scanning Window

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