

WIFI AUTHENTICATION QR CODE SCANNING USING PYTHON

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ABSTRACT:

Now-a-days wifi (Wireless Fidelity) is now very popular, whether it is at home, in public places such as books, bookstores, restaurants, cafes, etc., as long as the phone opens wifi, select the corresponding wifi hotspot, manually enter the password, you can access the internet through wifi. How to make it easier for users to connect to wifi? In addition to posting account number, password and instructions for use, you can also directly generate a QR code containing wifi connection information. Users can use the phone to scan and connect to wifi, which is more convenient to use.

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. QR code provides high data storage capacity, fast scanning, unidirectional readability, and many other advantages including, error-correction and different type of versions. Different varieties of QR code symbols like logo QR code, encrypted QR code, IQR code are also available so that user can choose among them according to their need.

Password protected QR codes allow you to share your private data with only authorized people. When end-users scan it, they are prompted to enter the required password to be able to access the data. Here is how a password protected QR code works: (i) You head on to a QR code generator that allows you to password protect your QR code (ii) You create the QR code and add password protection to it (iii) Next you add the QR code on required documents or print media creative (iv) You share the password with people you want to access the data (v) They scan the QR code and get a prompt to enter a password (vi) They enter the password and see the encoded content. Depending on how the data is stored, QR codes can be divided into two categories-static and dynamic.

The data is encoded directly into static QR codes. Hence, they are permanent in nature. That means once created, they cannot be edited. To do that, you will have to create a new QR code altogether. In addition, you can also not track the scanning activity of static QR codes.

On the other hand, the target data is not encoded directly into a dynamic QR code. It stores a short URL (usually provided by QR code service provider) that redirects to the actual data. Hence, a dynamic QR code can be edited anytime you want. Yet it will remain the same. No need to reprint it. In fact, it even helps you monitor its scanning activity.

PROPOSED SYSTEM

The development of QR based new system will allow technology savvy users to just scan QR codes to complete end to end business process flow execution to complete task at hand. Now QR code is seen and used every day and everywhere. Most mobile phones is equipped with cameras that enable reading of QR codes can access internet addresses automatically by simply reading a URL encoded in the QR code. The another usage of QR code is for finding the way by scanning the QR-code tag through the user PDA that will be sent over wifi, followed by the navigation server uses that location information to decide which photos to send. The user follows the direction or prompt displayed on device. The navigation server records the positions, time, and user ID for the tracking purpose.

High Capacity Encoding of data.

Small Printout Size.

Kanji and Kana Capability.

Dirt and Damage Resistant.

Readable from any direction in 360°.

EXISTING SYSTEM:**Encoding:**

Encoding is the process of assembling the message, information, ideas and thoughts.

Here the product of the QR code is an Encoder ensuring that the receiver can comprehend it.

The number of characters that can be encoded as QR code varies according to the type of information that is to be encoded.

Decoding:

Decoding process is just the reverse of the encoding procedure applied.

As discussed in Encoding communication is only successful when it results in both the source and the receiver understanding the same information.

We need to identify the quiet zone in order to decode the correct data.

FUNCTIONAL REQUIREMENTS:

Uneven light, shadow and printing issues can be completely recoverable as bits compared with its nearby bits.

Consist of black (the most frequently used colour) squares arranged in a square grid on a white background.

NON-FUNCTIONAL REQUIREMENTS:

Users must be equipped with a camera phone and the correct reader software that scan the image of the QR code. Currently only Smartphone's are technically equipped to do this.

Many users that have mobile phones that have cameras are unable to get QR reading software for their phones.

PROJECT MODULES:

Wifi Module

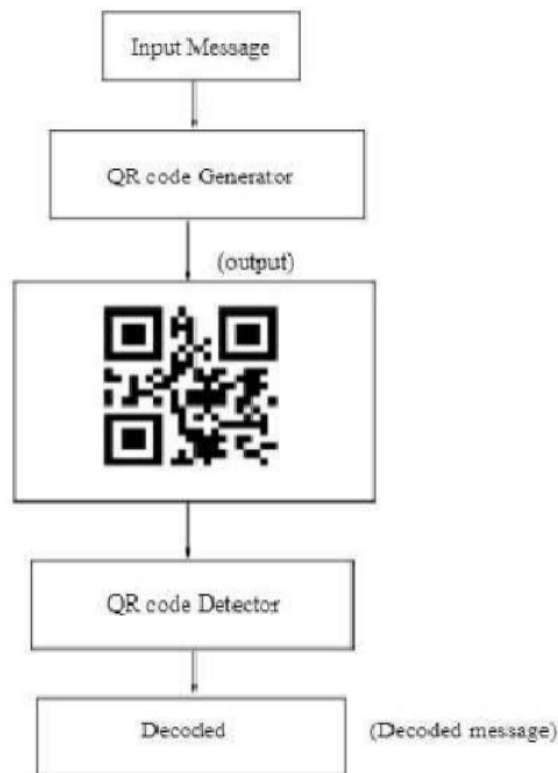
QR Module

Scanning Module

Authentication Module

Proposed System architecture

To overcome the problems faced in the existing system, we proposed a new system ie advance QR code which can create a QR code for larger data. This system can create QR of different versions. The amount of data that can be stored in the QR code symbol depends on the datatype (mode, or input character set), version (1, ..., 40, indicating the overall dimensions of the symbol, i.e. $4 \times \text{version number} + 17$ dots on each side), and error correction level. The maximum storage capacities occur for version 40 and error correction level L (low), denoted by 40-L. Python Flask Framework: Flask is a micro web framework written in Python. It is classified as a micro framework because it does not require particular tools or libraries. It has no database abstraction layer, form validation, or any other components where pre-existing third-party libraries provide common functions. However, Flask supports extensions that can add application features as if they were implemented in Flask itself. It provides



Two-dimensional (2D) matrix codes are a way how to efficiently store data that are machine readable. Thanks to the great spread of smartphones, 2D matrix codes have found application in many areas of life and industry. QR (quick response) Code was invented in 1994 by Denso Wave for the automotive industry in Japan, but nowadays has much wider usage. They are widely used in segments such as manufacturing, logistics, sales, media, advertising, tourism, e-commerce, identification, and authentication [1,2]. The QR Code often contains additional information about the product, the object or the place where it is located. However, they can also be a URL to a web page, Global Positioning System (GPS) coordinates, contact details, delivery address, payment instructions, etc. QR codes belong to a group of 2D matrix codes (similarly the data matrix codes). Traditional QR code (QR code Model 1 and Model 2) has a square shape and on its three corners are typical square-shaped patterns—finder patterns (FP), which are used to locate the code and to determine its dimensions and rotation

METHODOLOGY

Scientific research has been playing an important role in the progress and enrichment of new age technology. Research is invention or scientific investigation or scientific enquiry to extract truth or invent new concepts by scientific way. Descriptive research consists of fact-finding enquiries and surveys of various kinds. The main motive of descriptive analysis is explanation of the state of affairs as it currently exists. Research can be either applied to study or to fundamental studies. The objective of applied analysis is to find a solution to an instant issue facing a community or an industrial/business organization, whereas basic study is primarily worried with generalizations and the formulation of a theory. Quantitative research is based on quantity or quantity measurements. It applies to events that can be stated in quantity terms. On the other side, qualitative research is concerned with the phenomenon of quality. Conceptual study involves some theory or abstract ideas. Theorist and thinkers typically use it to develop fresh thoughts or reinterpret current ones. However, inquiry relies on knowledge or examination alone, often without proper scheme and theory consideration. It is data-based study,

resulting in judgments that can be checked through observation or experimentation. We did QR Code analysis with the assistance of all these techniques.

CONCLUSIONS

In this paper, we have discussed about the analysis of QR codes as well as their applications. The capacity of these codes to store data is very high plus they are damage resistance which makes them overcome one of the key concerns of security. In the past decade or so, the application of QR codes in public domains like supermarkets and in educational purposes like book scanning or stationary scanning has been increased rapidly and it will continue to thrive in more fields as the awareness will increase. The QR code technique is getting popular day by day and at the same time it is becoming increasingly secure as the technology is enhancing. Once, the awareness about these codes increases, it will get a wide spectrum to evaluate its significance. In near future, this technology will be used in wide public domains. Firstly, QR codes were used to store the information about inventory products but nowadays it is being used in the huge industries like marketing, secure payment systems, advertising, education systems etc.

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