DATA SECURITY USING TEXT BASED GRAPHICAL PASSWORD AND QR CODE

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ABSTRACT:*Conventional password schemes are vulnerable to shoulder surfing attack and many other attacks like brute force attack and dictionary based attack. Traditional alphabetical and numeric passwords have disadvantages from a usability standpoint, and these usability problems translate into security problems. The system combines the applications effectively in a way to transfer data securely. System provides data security with the help of ColourCombination authentication, and cryptography using QR Code Techniques. The universal technique for providing confidentiality of transmitted data is cryptography. The system provides a method to encoding the data using QR Code. The information is mainly present in the Colour Strip of 8 bits colour combination. In this system data is securely transmitted with the help of 8 bit colours acting as security element thereby providing authentication using The QR Code.*

KEYWORDS:*Text Based Graphical Password, Encryption of QR Code, Decryption of OR Code.*

I. INTRODUCTION

Data Security using the Text based Graphical Password Scheme using colour Combination for E-mail system. It secures user data. Since conventional password schemes are vulnerable, many resistant graphical password schemes have been proposed. Howevermost of the users are more familiar with textual passwords instead of pure graphical passwords. Unfortunately, none of the existing text based shoulder surfing resistant graphical password scheme is both secure and efficient enough to be implemented and used widely. So, in this paper, we propose an improved text based graphical password scheme by using colours for E-mail system. Access to the computer systems is more based on the use of alphabetical and numerical passwords. We have proposed a text based graphical password scheme for E-mail. In this project, encryption and decryption is also done to transfer data through E-mail securely. To make the Authentication between two intended users along with the security, server is used. With the help of server, both sender and receiver will get validated. Nowadays, to make secure data transmission, different methods are used. One of the techniques used is Cryptography. In this paper we propose the colour combination and QR code for encryption and decryption process. Encryption and decryption process is used to hide simple data from unauthorizedusers or hackers by converting it into unreadable form and again retrieving it in original form.

II. RELATED WORK

We are proposing text based Graphical Password Schemes by using colour Combination for E-mail system.Traditional alphabetical and numerical passwords have drawbacks from a usability standpoint, and these usability problems manage to translate directly into security problems. That is, users who fail to handle passwords securely create opportunities to the attackers that attackers can exploit. In this system we controlleakage of valuable data with the help of Colour Combination used for Graphical Password Schemas in Authentication purpose.The characters used in the propose graphical password scheme contain 64 characters,including 26 upper case letters, 26 lower case letters, 10 decimal digits, and symbols "." and "/".

In this system there will be one server.Server processes all information related to user. System also contain database to store all type of information including password pattern. There are two types of users in this system architecture, i.e., User1and User2. One is sender and another is receiver. Every sender should login into the system using password pattern. Password is nothing but combination of colour and text. Password is stored in the database. After registration and login into the system successfully user can send normal mail to the receiver. If sender wants to send a confidential or very important message to receiver, then user will have to switch from normal mode to private mode.Server plays vital role in the system. When user sends message by using private mode, then system sends that encrypted message using QR Code. The information gets hidden behind the QR Code. It is very difficult to acquire that message by hacker or unauthorized user. Both messages, that is normal message or encrypted message is sent to the receiver by server. Till the message is received by receiver, the message is in encrypted format. To decrypt the message, the receiver has to follow the exact opposite algorithm to obtain the original message or the information.
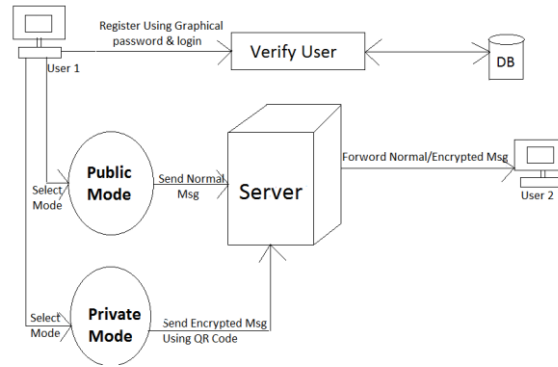
Figure 1.System Architecture

This process is known as decryption. For that purpose, the receiver also has to login into the system using the login id and password.

III. ENCRYPTION PROCESS

The format information records 2 things: First: the error correction level and Second: the masking pattern used for the symbol. Masking is used to separate patterns in the data area where data repetition might occur, such as large blank areas or perplexing features which look like the locator marks. The masking patterns are defined on a grid that is repeated as important to conceal the whole symbol. Modules corresponding to the dark areas of the mask are inverted. The format info is kept safe from errors, and 2 complete copies are included in each QR symbol.

The message set is placed from right to left, top to bottom in zigzag pattern. The presence of the alignment patterns and the use of multiple interleaved error-correction blocks complicate the larger symbols.

IV. DECRYPTION PROCESS

Every QR Code containsthe pattern called finder pattern, the arrangement of squares which helps the scanner to detect the size of the QR Code, the direction its facing & even the angle at which the code is being scanned. Further, every QR Code contains an alignment pattern, other pattern of squares created to help scanners to determine if the 2-D bar code is deformed or not. QR Codes also have margin for errors, which means that even if a part of the code is distorted or concealed, the code can often still be scanned.But, even a perfectly designed bar code would be nothing without complicated software which is capable of identifying its alignment patterns and decoding the data. For example, the scanning software used to read QR Codes has some pretty impressive capabilities, like it can be decoded by using a third party applications in android.

Once the smart phone's camera processes the QR code image, the software begins examining the image by computing the ratio between the white and black areas of the code. It can quickly identify which square patterns are parts of the alignment patterns and which square patterns contain the actual data. Using the QR Code's built-in patterns and error correction, the software can also remunerate for any distorted or concealed areas of the bar code. After the software has digitally reconstructed the QR Code, it examines the pattern of black and white squares in the QR Code's data section and outputs the data contained within it.

V. ADVANTAGES

1. Data is encrypted by QR Code Technique. So it is more secure.
2. It is very difficult to hack the QR Code.
3. The system prevents identity theft.
4. The system provides security to users' confidential data.

VI. CONCLUSION

In this paper, we are proposing a simple text-based graphical password, in which the user can efficiently and easily perform the login process. The operation of the proposed scheme is simple to learn for users familiar with textual passwords.

The user can easily and efficiently to login the system without using any physical keyboard or on-screen keyboard. Finally, we have studied the resistances of the proposed accidental login.

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