SECURE BANKING SYSTEM USING ANDROID APPLICATION

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Abstract— **In this paper, we explain the implementation of online banking authentication system for which the online service is very very important. In this paper we are design QRP. QRP, that is Quick Response Protocol is very highly secure and is easy to use encrypted data. It provide the information details in developing security in online banking authentication system using mobile OTP with a QR code. The security is an very important issue for online banking authentication application that can be implemented by various internet technologies and gap between real world and virtual world can be filled up. QR code is store a password. Android cell phone can use the scan QR code. The user goes to online banking transaction in a bank website. Then register code is displayed ,then user scan the image of QR code in the application of QR code scanner. The result will generate one string which is the combination of IMEI number. The IMEI number can be registered by user. The weakness is the password based security which can be improved by OTP which can be a calculated information by user transaction. If the network is available on your smart phone then the string is generated automatically and entered into login page and homepage when bank login is open , otherwise six digit pin code is generated and then we have to enter it manually on the login page and homepage for transaction**

Index Terms— One Time Password (OTP) , Quick ResponseCode(QR Code),IMEI,2D Bar Code.

I. INTRODUCTION

Online banking is one of the most important task performed by internet user. Online banking is most critical system in which the online user uses daily life. The user list of the online banking system has been increased in first quarter of 2009, the mostly user who used the service per day was 26,410,000.The amount of dealings went beyond 20 trillion 950 million. The system has been witnessing increase in the number of users on a steep percentage .The most banks online banking procedures are provided by 100% security. Most of the traditional banks are providing new offer in online banking system with 'peace of mind'.

The first hacking which happened in Korea in 2005 spurred the FSS (The Korean Financial Superviory Service)to announce a comprehensive counter measure. In order to protect from the illegal access of users information, remote

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authentication of users is essential service in this system. One of the important aspect that draws high attention of the financial agencies is OTP (One Time Password), the user confirmation methods was introduces, and Joint Confirmation Centre of OTP was established.(OTP) One-Time Password is a password where passwords can be used only one time and the user has authenticated with a new password key each time. This type of OTP can be generated on a device using smart card, USB, fingerprint recognition and so on. We are using this Online Banking Authentication System using android Mobile OTP, as one of the OTP is generate device which has same security in the existing OTP and with the convenience of mobile feature, and then used to semi permanent. The use of online banking services can be increased gradually in daily life and currently online banking required for the use of security card of each and every banks.
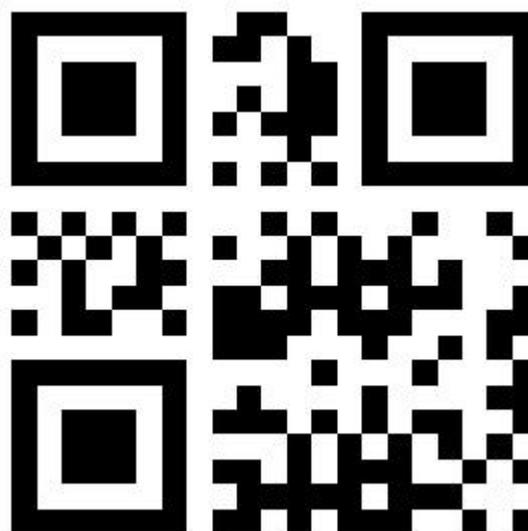

Fig.1 QR code

II. RELATED WORK

A. ONE TIME PASSWORD

The one time password(OTP) is a password that is valid for only one time. One time password avoid a short coming that are associated with traditional or static password, the most important shortcoming being addressed by one time password (OTP). The weakness of One time password system is to generate new password for every transaction and is based on two important factors: (1) a PIN to unlock the OTP generator, (2) the OTP smart card itself. In the server side, an

authentication server can check the validity of password by sharing the same algorithm and keys. There are many software or devices can be used to generate the OTP, for example mobile phones. The authentication procedure starts by the users entering his user name. The one time password is send to user by SMS. Then receiving SMS by user and type one time password in browser.The AS cross check whether OTP is correct or not and redirects the browser back to server provider and user log in. one time password has carried greater advantages as for PKI which is not required by deployment drivers, smart card reader,PC s/w. One time password is only provided for identification and authentication, whereas PKI provides addition of encryption and signature. The one time password is being a password based on authentication is vulnerable to man in the middle attack in phishing scams.
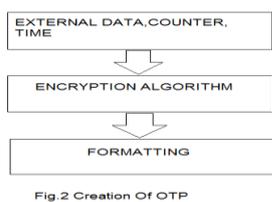
Fig.2 Creation of OTP

B. QR code (QUICK RESPONSES

The QR code is a two dimensional barcode. The QR stands for "Quick Response" because its contents are decoded at high speed. The QR code indicates the information of black and white cross stripes.

A. Advantages of QR code

(1)The QR code is two dimensional and readable at any direction.
(2) It is readable if they are partially damage.
(3) It is very easy scan the camera based device.
(4) The QR code is not readable by person.
(5) The QR code can stores the data is stored one dimensional bar code in one tenth the space.
(6) The QR code is providing information accurately then it is damage up to thirty percent.
(7) The QR code can handle many types of data link numeric and alphabetic.

B. Disadvantages of QR code
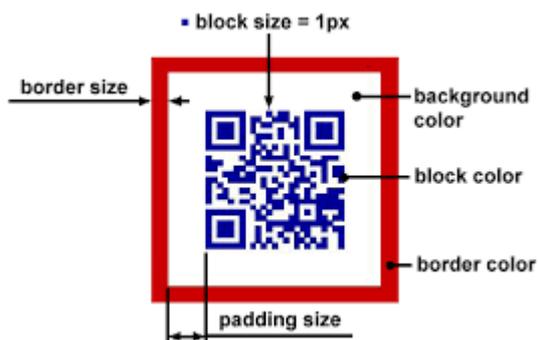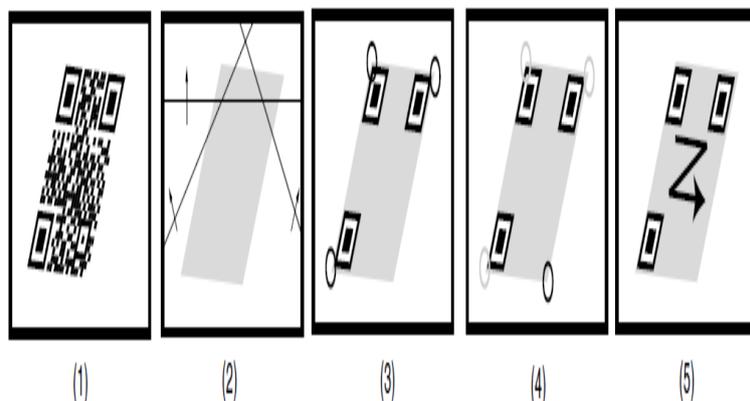1) It is only readable by the machine.

Fig.3 Structure of QR code

This is the process of QR-code scanning consisting of five step starting from image captured from camera to data extraction.
(I)Pre-processing
(II)Corner marks detection
(III)Fourth corner estimation
(IV) Inverse perspective transformation
(V) Scanning the code

III. EXITING SYSTEM

Online banking (or Internet banking or E-banking) allows customer of a financial institution to conduct economic transactions performed by the bank sector. It may include of any transactions related to online usage.
The password for online banking is normally not the same as for telephone banking. Financial institution now routinely allocate customer number, whether or not customers intend to access their online banking facility. Customer number are normally not same as account numbers. Because the number of accounts can be link to the one user number. The customer will link to the user number any of those account which the customer controls, customer number will also not be the same as debit or credit card issued by the financial institution to the customer .
In our application we are providing banking facilities like:
• Secure Authentication
• View bank balance
• Fund transfer
• View mini statements
• Pay bill facility

Drawbacks of Existing System
1) When you are entering online banking institution there is always a chance that the information may be leaked or your

account can be hacked and all your confidential information is leaked.

2) You can access your online banking account by entering your personal identification and your password. This password can be used by anyone to access your account and transfer funds or cause financial problems. Whereas when you are visit the bank personally your account is handled by the bank staff and therefore your confidential information cannot be viewed by anyone.

3) When you are using online banking the internet security is a critical problem faced by many bank. So the customer must be aware of the security issues and protect their identity and other personal details from hacker.

Fig.4 proposed authentication system

IV. PROPOSED SYSTEM

The use of electronic banking services is important issue in daily life and currently online banking's crucial requirement. Hence security is provided by every bank . However the current service is based on card system ,but this system is not user suitable in a modern age so online banking is so much popular scenario in current time . If there is emergency situation to do online banking, the online banking cannot be done public it must secuer . In order to overcome such a weaknesses and inconvenience of security card, our propose authentication system use two-dimensional barcodes (2D Barcode) instead of security card. Two dimensional Barcode is easy, accurate for requested system and automatic data collection method. In barcode system the data will be send faster and secured, that will increase the speed of internet means increasing the user friendness. In this paper, we propose authentication system for online banking which can provide greater security and convenience by mobile OTP with the QR-code, one of the 2D barcode adopted by current international and national standard. The bank generates the QR-code using the user's entered transfer informations, the custmer then use mobile phone to read the code. After that use to a mobile phone generates the OTP code with the input of transfer information and hashed user mobile serial number. Then user enters the generated OTP code, to complete the transfer process. This paper is organized as follows: We introduce OTP (One- Time Password) and QR-code (two-dimensional barcode) . We describe our new scheme and analysis of proposed authentication system.

In proposed system registered user have authority for requesting the OTP ,the register user will deliver the appropriate OTP with the help of QR-Code ,the OTP will be encrypted into the QR-Code by AES encryption algorithm .The user had to register his /her mobile IMEI no to Bank. The bank server will send the encrypted OTP to the register IMEI number. The register IMEI number mobile should be a smart phone and phone OS should be Android based. When QR-Code send from server is decrypted by using the QR-Code reader on user phone. The QR code has time interval of one minute for decryption of QR Code and fetching appropriate OTP to the user.

V. SECURITY ANALYSIS

Figures In this survey it has been observed that the most of the users prefer to use net-banking system. as shown in Fig. the use of net-banking which gives the clear idea that how important is the security in net banking system . The OTP are transmitted in the form of an image which makes it complex for intruder to detect the presence of secured information. The unauthorised users cannot observe the content of communications as our propose system use the camera of mobile device to recognize QR code. User and Certification Authority (CA)share the hashed serial number (SN) of user's mobile device through a secure process in the initial registration phase. If altered the PIN, there is a change in the OTP value.

VI. CONCLUSION

Now a days, the use of online banking application are increased. So security is an important issue for handling such services.So each and every one use to smart phone and laptops, because the online banking service are also increased. For the security is important factor. We can implement secure authentication based on QR code.

In this paper we are proposed to Novel authentication scheme for net-banking through QR code based OTPs.

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