PHISHING ATTACK BASED ON VISUAL CRYPTOGRAPHY

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Abstract - With the advent of internet, various online attacks has been increased and among them the most popular attack is phishing. Phishing is an attempt by an individual or a group to get personal confidential information such as passwords, credit card information from unsuspecting victims for identity theft, financial gain and other fraudulent activities. Fake websites which appear very similar to the original ones are being hosted to achieve this. In this paper we have proposed a new approach named as "A Novel Anti-phishing framework based on visual cryptography "to solve the problem of phishing. Here an image based authentication using Visual Cryptography is implemented. The use of visual cryptography is explored to preserve the privacy of an image captcha by decomposing the original image captcha into two shares (known as sheets) that are stored in separate database servers(one with user and one with server) such that the original image captcha can be revealed only when both are simultaneously available; the individual sheet images do not reveal the identity of the original image captcha. Once the original image captcha is revealed to the user it can be used as the password. Using this website cross verifies its identity and proves that it is a genuine website before the end users.

Key Words: visual cryptography, Anti-phishing, captcha

1. INTRODUCTION

Phishing

Online transactions are nowadays become very common and there are various attacks present behind this. In these types of various attacks, phishing is identified as a major security threat and new innovative ideas are arising with this in each second so preventive mechanisms should also be so effective. Thus the security in these cases be very high and should not be easily tractable with implementation easiness.Today, most applications are only as secure as their underlying system. Since the design and technology of middleware has improved steadily, their detection is a difficult problem. As a result, it is nearly impossible to be sure whether a computer that is connected to the internet can be considered trustworthy and secure or not. Phishing scams are also becoming a problem for online banking and e-commerce users. The question is how to handle applications that require a high level of security.

Phishing is a form of online identity theft that aims to steal sensitive information such as online applications passwords and sensitive information from users.

Visual cryptography

One of the best known techniques to protect data is cryptography. It is the art of sending and receiving encrypted messages that can be decrypted only by the sender or the receiver. Encryption and decryption are accomplished by using mathematical algorithms in such a way that no one but the intended recipient can decrypt and read the message. Naor and Shamir introduced the visual cryptography scheme (VCS) as a simple and secure way to allow the secret sharing
of images without any cryptographic computations.

Visual Cryptography Example

2. OBJECTIVE

Phishing is an attempt by an individual or a group to get personal confidential information such as passwords, credit card information from unsuspecting victims for identity theft, financial gain and other fraudulent activities. Fake websites which appear very similar to the original ones are being hosted to achieve this. In this paper we have proposed a new approach named as "A Novel Anti-phishing framework based on visual cryptography "to solve the problem of phishing in Corporate Online Election Process.

3. PROBLEM STATEMENT

The present technique requires an aggressor connect specifically with the casting a ballot procedure to disturb it. On the other end, Internet is harder to control and deal with the security as Network and web related assaults are harder to follow.Internet voting is vulnerable to cyber-attack and fraud vulnerabilities inherent in current software, as well as the basic manner in which the Internet is organized.

4. LITERATURE SURVEY

The related approaches for phishing detection system are email based approach, blacklist approach, visual clue based approach information flow based approach, layout similarity based approach and website feature based approach. In the existing system of phishing detection there is also an approach where the visual cryptography is used. In this approach when the user first registers at the bank server, then at the time of registration itself an image is selected which is divided into two shares. One share of image is stored at the bank server and user gets another share which he keeps with him. When the user wants to initiate the transaction with merchant server he sends his UID code to the merchant server. Merchant server then sends his sys Id & password along with user's UID to the bank server.

5. EXISTING SYSTEM

Today, most applications are only as secure as their underlying system. Since the design and technology of middleware has improved steadily, their detection is a difficult problem. As a result, it is nearly impossible to be sure whether a computer that is connected to the internet can be considered trustworthy and secure or not. Phishing scams are also becoming a problem for online banking and e-commerce users. The question is how to handle applications that require a high level of security.

Online transactions are nowadays become very common and there are various attacks present behind this. In these types of various attacks, phishing is identified as a major security threat and new innovative ideas are arising with this in each second so preventive mechanism should also be so effective. Thus the security in these cases be very high and should not be easily tractable with implementation easiness.

Consider an online polling system for corporate companies, polling is happening once in a year to elect the president or secretary or key directors of the company. At present system all the votes are has to assemble at one place on polling day and put their vote.

6. PROPOSED SYSTEM

In corporate companies elections are conduction to elect President, Secretary and other board members every interval of times, since the candidates are working various part of the world it is difficult for them to vote and they need a web based polling system with security measures.

This system provides them good solutions to protect the login from phishing attacks using Visual Cryptography.

This system is very useful and safe for online remote voting. This system is web based application so that it can be accessed by any authorized person anywhere in the world through internet.

7. SYSTEM ARCHITECTURE

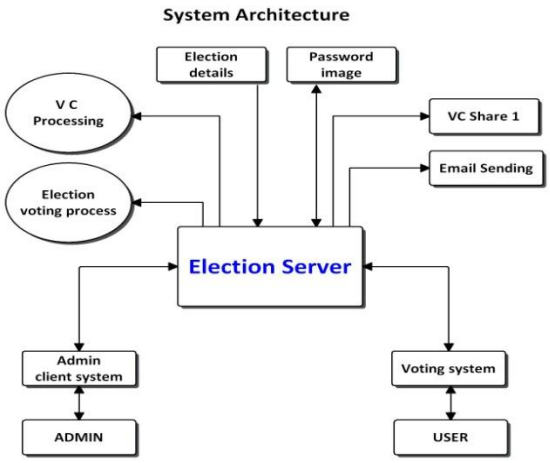

Fig.4.1 Flow Chart

8. IMPLEMENTATION

This system has two types of users one is Admin user who act as a Election Officer and another user is Voter, there are many voters in this system each has there won user id and password.

There are many modules in this system they are mentioned below

8.1 Admin Session

1. Login module

2. Voters Details
3. Election Details
4. Image Details (Text Images)
5. Nominees Details
6. Setting Voters Password

- Random Number Generator to pick the Image, Divide the Image into two shares using Visual Cryptography
- Sending the First Share through Email, Storing the second share in database
    - Election Counting Details , Change Password

8.2 Voter Session

- Login Module with Phishing Protection
- Providing User ID and getting Share from Server
- Producing Captcha Image
- Home Page
    - Selecting Election - Nominees Display - Voting Process

At present polling are happening by manual voting system. Our proposed system is online voting system with security measures. So that user can able poll at any place in this world through Internet.

9. CONCLUSION

Voting plays an important role for any democratic country. If this proposal is implemented, then the voting percent can be
improved further since few percent of our citizens are working in worldwide and they cannot able to come to native country at the time of voting. For those people as well as for the people who are physically disabled and very old also can make use of the online voting system. Since Visual Cryptography Technique is used, user can able to find out whether he is in phishing site or original site easily. Proposed online voting system is very effective and it will useful for voters and organization in many ways and it will reduce the cost and time.

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