

# A System Of Filtering Phishing Website Using Visual Cryptography

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## ABSTRACT

In today's changing world, we are having number of networks and some personal accounts, for this some sort of easy authentication method is needed. Every application which we are using for security purposes includes authentication. In user authentication the process which we have to pass through is username and password. Phishing is an attempt by an individual or a group to thief personal credentials of any user such as passwords, credit card information etc. to have financial gain or to perform other fraudulent activities. In this paper we have proposed a new approach named as "A Novel Anti- phishing framework based on visual cryptography" to give solution to phishing problems. Here, an image based authentication, using Visual Cryptography (VC) is used. According to this approach, user registration contains the captcha image as password and the image is splits into two parts using K-N sharing algorithm. For the purpose of user authentication user is sent one share (part of image) and it contains the watermark text for matching purpose and other part of image is on server side. There are many existing approaches based on cryptographic techniques but do not provide website authentication. However the proposed approach provides website authentication through sending OTP on mobile number. If OTP is matched, then bank system starts. Bank system contains the functionality of Account Creation, Transaction and Report.

**Keywords**— K-N Sharing Algorithm, Digital Watermarking Algorithm, Phishing, Visual Cryptography

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## ARTICLE INFO

### I. INTRODUCTION

Nowadays bank transaction e-commerce, online booking system, etc are very common. So various attacks can hazards the information used while performing above mentioned activities. Phishing is one of them in which illegal activities are performs using different social engineering techniques. Attackers try to acquire important information such as password, credit card details and confidential data. Definition of phishing state that "Phishing is the fraud method in which sensitive information is acquired by masquerading as a trustworthy for his/her economic or individual gain"[1][4]. Communication channels such as websites, e-mails and instant messaging services are very popular so in these cases, phisher can easily thief information of authorized users. For security purposes every application provides user authentication. From ancient day's secret data or code is used for hiding and living security to information. In user authentication the process which we have to pass through is username and password. Authentication process divided into Token based authentication, Biometric based authentication and

Knowledge based authentication [3][5]. Most of the web application provides knowledge based authentication which include alphanumeric password as well as graphical password. In today's changing world when we are having number of networks and personal account some sort of easy authentication method is needed.

Phishing is an attempt by an individual or a group to thief personal confidential information such as passwords, credit card information etc from unsuspecting victims for identity theft, financial gain and other fraudulent activities. 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 (vc) is used[2][6]. The use of visual cryptography is explored to preserve the privacy of image captcha by decomposing the original image captcha into two shares that are stored in separate database servers 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. In this approach, we provide image based authentication, password image is generated for every login attempt and it will be downloaded from the email which has been used for registration. Every time the image generated is unique.

## II. EXISTING SYSTEM

Existing system include the techniques such as installation of key logger, screen capture, man in the middle attacks, tricking customers through e-mails and spam messages. To avoid this attacks existing technique like One Time Passwords, Personal Identification Number, text captcha can be used. But by using these existing techniques we are not able to analyze the phishing site and 100% accuracy is not reserved.

## III. LITERATURE SURVEY

1. **A Novel Anti Phishing Framework Based on Visual Cryptography,** Author: **Divya James, Mintu Philip;** Year of publish: **2012** Conference: **IEEE**

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 (vc) is used. The use of visual cryptography is explored to preserve the privacy of image CAPTCHA by decomposing the original image CAPTCHA into two shares that are stored in separate database servers such that the original image CAPTCHA can be revealed only when both are simultaneously available.

2. **Detection of Phishing Attack Using Visual Cryptography in Ad hoc Network.** Author: **Vimal Kumar and Rakesh Kumar** Year of publish: **2015** Conference: **IEEE ICCSP**

This paper provides a novel anti-phishing approach based on visual cryptography. According to this approach a user generates two shares of an image using (2, 2) visual cryptography scheme. Client stores the first share of this image and second share is uploaded to the website at the time of user registration. After this, website asks for some other information like second share of the image, user name, and password. These credentials of a particular user can change once per login. During each login phase, a user verifies the legitimacy of a website by getting secret information with the help of stacking both shares. There are many existing approaches based on cryptographic technique but they all suffer from False Positive notification. However, proposed approach does not suffer from False Positive (FP) notification and outperforms all existing approaches. In the future work, proposed scheme is based on centralized approach, centralized server can be problematic when attacker will attack on the server to get the user information. So, this problem can be reduced with the help of distributed sever approach

3. **Secret Sharing using 3 level DWT method of Image Steganography based on Lorenz Chaotic Encryption and Visual Cryptography:**

Author: **Barnali Gupta Banik, Samir Kumar Bandyopadhyay.**

Year of Publish: **2015**

Conference : **IEEE**

In this paper, a new technique of Image Steganography has been proposed which is using Lorenz Chaotic Encryption to encrypt the secret message, 3 level Discrete Wavelet Transform to hide encrypted data and visual cryptography to share stego image in secret communication. In this paper, a new method of steganography has been proposed which is using chaotic encryption to encrypt secret image and visual cryptography for secret sharing of stego image. In this paper author concluded that that this is an efficient way of secret sharing in Image Steganography. This method is effective where privacy and security of secret message is much important rather than the quality of retrieved secret message.

4. **Random Grid based Visual Cryptography using a common share:**

Author: **Sruthy K Joseph, Ramesh R**

Year of Publish: **2015**

Conference : **IEEE**

This paper discusses a visual cryptography scheme using random grids, where it uses a common share to transmit n binary secrets. The binary secret image is divided into two shareMimages (random grids) as in (2, 2) visual cryptography scheme. Here we use n+1 share images to transmit n secrets and the extra share is common to all n secrets. Since RG is used it creates shares without pixel expansion. This scheme can be viewed as a modified scheme of (2, 2) random grid based visual cryptography. One share is considered as a common share to all n secrets, so it makes efficient network bandwidth utilization. visual cryptography schemes that can generate non-expanded share images.

## IV. OBJECTIVE

Main objective of the proposed system is to avoid phishing attacks on websites. In this proposed system, a user can identify whether the site is a genuine website or phishing website. This is achieved by verifying the image captcha generated at the time of login. Only a genuine website can reconstruct the image captcha because it holds the other share.

The proposed method also helps to authenticate user and this is achieved through image based authentication. In this approach, we provide image based authentication, password image is generated for every login attempt and it will be downloaded from the email which has been used for registration. The system checks whether the user is an authorized user or not. Use of image captcha will help to

distinguish among human users and machine users in that fact that image captcha is readable by human users. The proposed system is very useful to prevent from phishing attacks.

## V. WORKING

### • USER REGISTRATION PHASE

Bank which provide online banking. In this phase user registration is done with the help of Visual Cryptography Algorithm. While registration of user with visual cryptography user is provided by the random images that server have. Among these images user selects one image for visual cryptography. The selected image need to remember by the user which is needed in future. After the selection of image Visual Cryptography algorithm is applied on that image. Output of this phase will give two shares. Out of which first share goes under the process of phase two. And second share will be recorded to server side with user id and original image Second the OTP will generate on user mob. For authentication on the user credential which will also help for strong security.

### • DETECTION OF PHISHING SITE

When user goes for a transaction, user need to upload the share one[1][2][4]. After uploading, server will request for private key. User need to provide private key assigned during registration (in phase two). Now server is with share one and private key. Then server identify the user from that key. Now server stacks its share two with users share one by Visual Cryptography. A new image is formed from these two images. Server will check that image with the original one while user also checks formed image with original image selected in phase one. If formed image is same as original image then proceed further transaction and if it is not phishing is detected and user can terminate the transaction without any loss of confidential data.

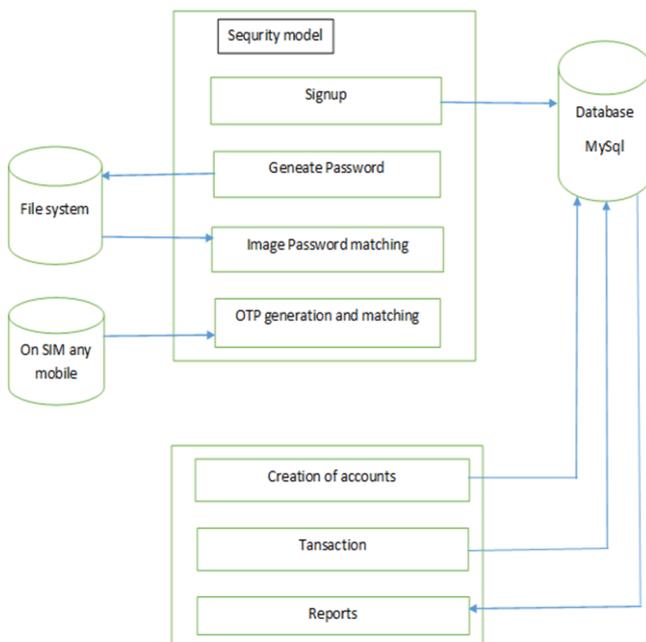


Fig.1 Proposed System Architecture

## VI. ALGORITHM

Step 1: Accept a Query (Q).

Step 2: Get Data from from.

Step 3: call to CR Function

Step 3.1 : Get CP as Input .

Step 3.2 : Call Function Submit

Step 3.3:Call Visual Cryptography for image steganography.

Step 3.4: process submit function for storing the data onto the server.

Step 3.5 : Output as Messages

Step 4: Display Result.

Step 5: Stop.

## VII. ADVANTAGES & DISADVANTAGES

Advantages :

1. Highly Secured
2. Anti-Phishing scheme is very effective
3. Image captchas are related with high degree correlation.
4. Useful to prevent the attacks of phishing websites on Financial Web Portal, Banking Portal, Online Shopping Market.

Disadvantages:

1. Internet connection is must for OTP generation.

## VIII. FUTURE SCOPE

In proposed system to complete the transaction user should have the encrypted part of image that is share one, means at the time of each transaction user is going to upload an image. To overcome such a problem, we can provide alternating system to user by storing user share to server database only. And at the time of any transaction user will select one image given by the application server to user.

## IX. CONCLUSION

From this it is conclude that Phishing websites can be easily identified using our proposed "Anti-phishing websites using Visual Cryptography". The proposed methodology preserves confidential information of users using image based authentication. Currently phishing attacks are so common because it can attack globally and capture and store the users' confidential information. This information is used by the attackers which are indirectly involved in the phishing process. The proposed system is very useful to prevent from phishing attacks.

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