STEGANOGRAPHIC AUTHENTICATION IN CONJUNCTION WITH FACE RECOGNITION FOR MOBILE SYSTEM

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Abstract

In today world Securing data is a big issue. Most of data travel through internet and it becomes difficult to secure data. Today mobile-commerce is a new branch of e-commerce, mobile-banking is main part of m-commerce. But the problem in mobile banking is security how to secure the user information such as username, password etc. The aim is to provide a secure environment in terms of security for transaction. In this paper we have focus on authentication in conjunction with face recognition for mobile system. For this we use m-banking. We make use of steganography to improve the communication channel. Steganography is defined as the invisible communication. There are several types of steganography techniques each have their own strengths and weaknesses.

Keywords— *Mobile banking, Mobile commerce, Encryption, Decryption, Network Security.*

1.INTRODUCTION

As we know that internet has become integral part of everyone life many peoples wants to manage their bank account anywhere, anytime over internet. The user wants to keep their important data secret and safe. Steganography and cryptography are the two basic method which we can use to share data in safe way. In Cryptography we convert message from readable form to unreadable form or in simple way we can say that we encrypt the message at sender side and decrypt the message at receiver side. In cryptography encryption key is generated which is known to sender and receiver. In cryptography we can't read a message without encryption key or message is not accessible. And in cryptography it's always known to the hacker or intermediate person that the message in encrypted form. The steganography is a word taken form Greek which means, "Covered". In Steganography technique we used to transmit a secret message from a sender to a receiver in such a way that only receiver can read the existence message no intermediate person can read the message. In steganography we can hide the information in the form of image, text, audio and video. In old time, we protected data by hiding it on the back of wax and writing tables. Stenganography is a security technique for long transmission. To hide secret information or data in images, there are number of steganography techniques in which some are easy while other are complex all of them have their strong and weak points. Image steganography Provides security when we are sending file over internet. The network security is becoming more important because the number of user exchange the data over internet. We need to protect the data so that unauthorized user can't access it. Mobile banking generally offered account information, transfer, cards and payments etc. In this paper we are going present how we can save the secret information from hackers when user is accessing its account over internet.

2.LITERATURE SURVEY

Authentication Systems are used everywhere. They give means to identifying people and ensuring only the authorized user is using the systems. Authentication systems involve various techniques which ensure that only the legitimate user is using the system. However, these systems are not without their laws . These systems can eventually be compromised by hackers and can be misused by them. Authentication system should be in a way that it will hide users fingerprints from attackers and will provide a way by which information can transmit in a secure manner. From old times after every secure systems is created, hackers have found a way to bypass those systems. That is why there is a need of authentication systems which will be easy to operate for a user and will also be robust from attackers. Mobile users are increasing on a drastic rates and their security is a very important concern when it comes to authentications. The development of the new systems involves techniques which should ensure that the mobile authentications will be secured and protected from attackers

3.PROPOSED SYSTEM

For implementation of proposed system we must require Mobile device with GPRS camera should enabled in it. User should know the basic knowledge of internet and mobile. Client server application is require for successful communication between the customer and bank. Bank should provide software to client for authentication and transaction purpose. There could be difference in Speed of data transfer which may depend on mobile server. On client side there should not be mobile network problem.

4.RELATED WORK

M-commerce as one of the new branches of E-commerce, M-banking is one of the main part of M-commerce. There are many advantages of m-banking but now day's M-banking is facing security challenges as well. In this paper we are going to presents a method in which how to secure the security of the information requested by users with the use of Steganography method. In this way, instead of directly sending the information it is encrypted first and then hidden in a picture using random bit Steganography method. Then the picture is sent to the server. After receiving the picture the server download the image, decrypts it and decodes to receiver. Then the message is processed on the server to verify user information such as user name and password. Once information is entered, camera is switched ON than the client side and image is captured. Then This image is compared with the database images on successful match user is taken to the menu screen.

5.ALGORITHM USED

5.1 Advanced Encryptions Standard Algorithm(AES):

In this paper, we are using Advanced Encryptions Standard Algorithm(AES) and Least Significant Bits(LSB) to hide the information. Advanced Encryptions Standard Algorithm(AES) is a symmetric key algorithm that uses the key size 128, 192 or 256-bits depending upon the number of rounds. In AES each round contain byte substitution, row shift, column mixing and round key addition Advanced Encryptions Standard Algorithm(AES)is a non-feistel cipher that encrypts and decrypts data block. In the least significant bits (LSB) we hides each byte of information in two pixels. In LSB the image is broken into p number of blocks of q number of pixels and a password is given. According to the password, a block is chosen and the important data is hidden in the pixel.

(a) Encryption   (b) Decryption
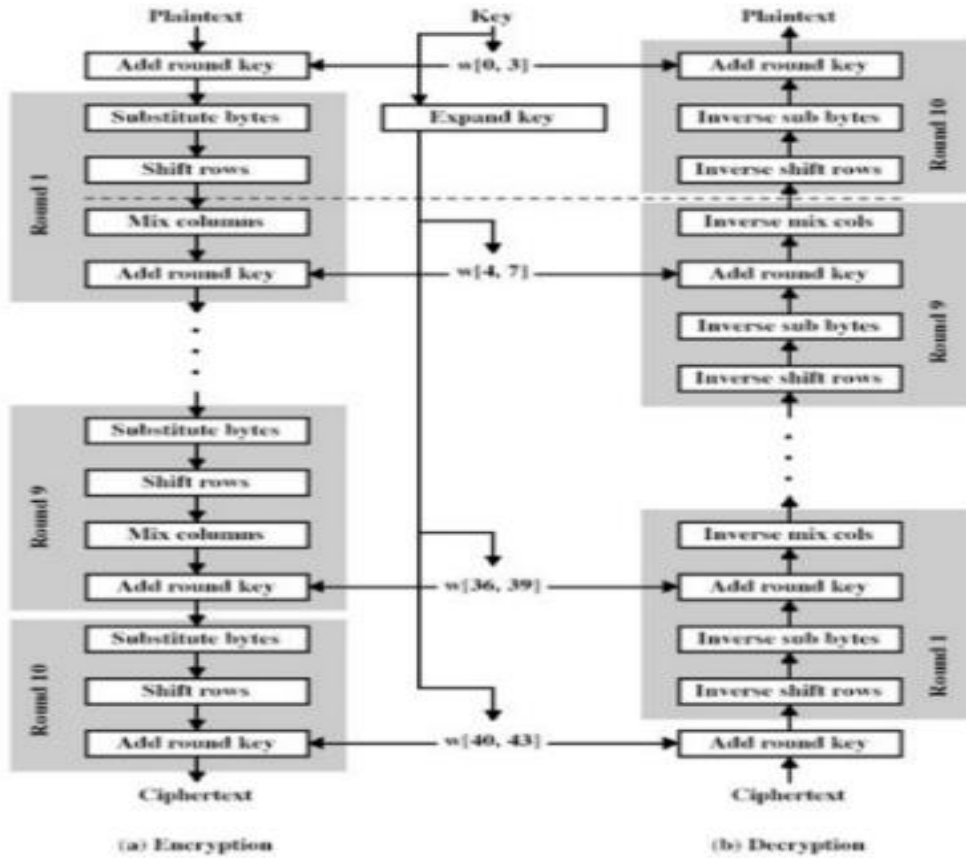
5.2 Least Significant Bit:

This method is probably the easiest way of hiding information in an image and yet it is surprisingly effective. It works by using the least significant bits of each pixel in one image to hide the most significant bits of another. So in a JPEG image for example. The following steps would need to be taken:

a).First load up both the host image and the image you need to hide.

b). Next chose the number of bits you wish to hide the secret image in. The more bits used in the host image, the more it deteriorates. Increasing the number of bits used though obviously has a beneficial reaction on the secret image.

c). Now you have to create a new image by combining the pixels from both images. If you decide for example, to use 4 bits to hide the secret image, there will be four bits left for the host image.(PGM , one byte per pixel, JPEG one byte each for red, green, blue and one byte for alpha channel in some image types).

d). To get the original image back you just need to know how many bits were used to store the secret image. You then scan through the host image, pick out the least significant bits according the number used and then use them to create a new image with one change - the bits extracted now become the most significant bits. Hiding depends on the settings you choose - but as an example if we hide in the 2 least significant bits then, we can hide:

$$MaxBytes = (image.height() * image.width() * 3 * 2) / 8$$

i.e. the number of pixels, times the number of colours (3), times the number of bits to hide in, all divided by 8 to get the number of bytes. It helps to hide a bit less than this because the algorithms may take a while to find places that have not had anything hidden in it when we are close to the threshold.

6.**SYSTEM ARCHITECTURE**
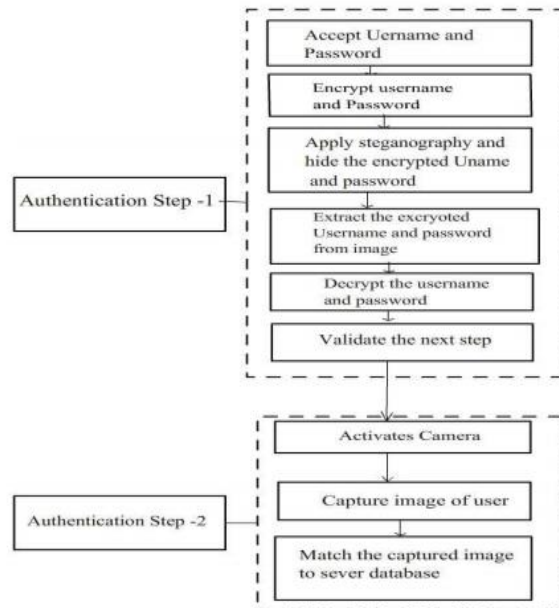
7.IMPLEMENTATION DETAIL

a) Setup
b) User Registration
c) Key Generation
d) Encryption
e) Decryption
f) Face Recognition

8.ADVANTAGE

a) It is difficult to detect password by unauthorized because password is stored in an Image.
b) It increases the response time of bank server.
c) It provides high security.
d) This application is used to secure the sensitive information of the user.

9.CONCLUSION

In this paper we have shown drawbacks of existing authentication system. In future, it will provide high security for user to share the important information over internet. Steganographic will improves the drawbacks and provides the high security for the user. The proposed system is very secure and at same time mutual authentication can takes place between the user and bank. The future enhancement we can do is speech recognition, thump impression, iris scan, keystroke.

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10.ACKNOWLEDGEMENT

We sincerely express our deep gratitude to our Prof. **Sandip A. Kahate** (Assistant Professor , Computer Engineering Department, Sharadchandra Pawar College of Engineering(Pune), India), for their constant encouragement, motivation and supervision throughout my project work. His endless support helped us in channeling our effort and ideas in proper direction.

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