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ONLINE PAYMENT SECURITY SYSTEM (OPSS)

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Abstract — *Online shopping is the most modern way for purchasing items and is a trendy business mode to. For online shopping credit and debit cards are recently used. Improving the security in online shopping payment we propose a new method steganography and visual cryptography. It will improve the customer confidence. In this paper a new method is used for providing limited information that is necessary for fund transfer during online shopping . This method protects the customer private data and preventing the misuse of personal information of the customer. In this we use image based steganography.*

Keywords- *Information security; Steganography; Visual Cryptography; Online shopping.*

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I. INTRODUCTION

Online shopping is the retrieval of product information via the Internet and issue of purchase order through electronic purchase request, filling of credit or debit card information and shipping of product by mail order or home delivery by courier. Identity theft and phishing are the common dangers of online shopping. In this paper, a new method is proposed, that uses text based steganography and visual cryptography, which minimizes information sharing between consumer and online merchant but enable successful fund transfer from consumer's account to merchant's account thereby safeguarding consumer information and preventing misuse of information at merchant side. The method proposed is specifically for online payment system but can easily be extended for online banking as well as physical banking.

This organized as follows: Section II gives brief description of image based steganography and visual cryptography. Section III contains related works. Section IV presents the proposed steganography method. Section V provides method of transaction in online shopping. Section VI presents proposed payment method. Section VII concludes.

II. STEGANOGRAPHY AND VISUAL CRYPTOGRAPHY

Steganography is the widely used method of concealing a file, message, image, or video within another file, message, image, or video. The word steganography combines the Greek words steganos meaning "covered, concealed, or protected", and graphein meaning "writing". This technique is used to hide secret message to improve the information security also improve the confidence of user. In this the message is hiding by using an image.

Visual Cryptography (VC), is a cryptographic technique based on visual secret sharing used for image encryption proposed by Naor,. Using k out of n (k, n) visual secret sharing scheme a secret image is encrypted in shares which are meaningless images that can be transmitted or distributed over an untrusted communication groove.

III. RELATED WORKS

A brief related work in the area of banking security based on online shopping by combine use of Steganography and visual cryptography proposes this methods to eradicate the frauds through text based steganography hiding data. In novel authentication system, it provides a comparative study of pixel expansion, quality and the size of the image reconstructed. It provides a prototype of consumer image generation. The security of shopping online comes the comparison between the online and traditional shopping. The next one discusses a scheme for secure banking application. This uses a MBNS that is multiple base national system method. For E-banking security a message authentication image algorithm used.

IV. PROPOSED STEGANOGRAPHY METHOD

4.1 Encoding

In this process initially the secret message converted in to ASCII code that again converted in to 8 bit binary number. Then each 8 bit binary number grouped in to two 4 bit parts. The 4 bit parts converted in to numeric number then choosing of suitable letters from the given table corresponding to the numeric number. It produces a wording sequence. Encoding is not case sensitive.

4.2 Decoding

In this process the first letter in each word of cover message is taken and represented by suitable 4 bit number. Get the 8 bit binary number from the two parts of 4 bit binary number. From that 8 bit binary number get the corresponding ASCII codes. The secret message recovered from that ASCII code.

Letter	*Number assigned*	*Letter*	*Number assigned*
E	15	M	7
A	14	H	7
R	13	G	6
I	13	B	5
O	12	F	4
T	11	Y	4
N	11	W	3
S	10	K	3
L	10	V	3
C	9	X	2
U	8	Z	2
D	8	J	1
P	7	Q	0

TABLE1: NUMBER ASSIGNMENT

V. TRANSACTION IN ONLINE SHOPPING

In this transaction customer purchase an item then submit the personal information and debit or credit card details to the merchant's secure server. Information checking in payment gateway then verifies the account in bank. If the verification is true then transfer the fund. This is the structure of transaction in online shopping.

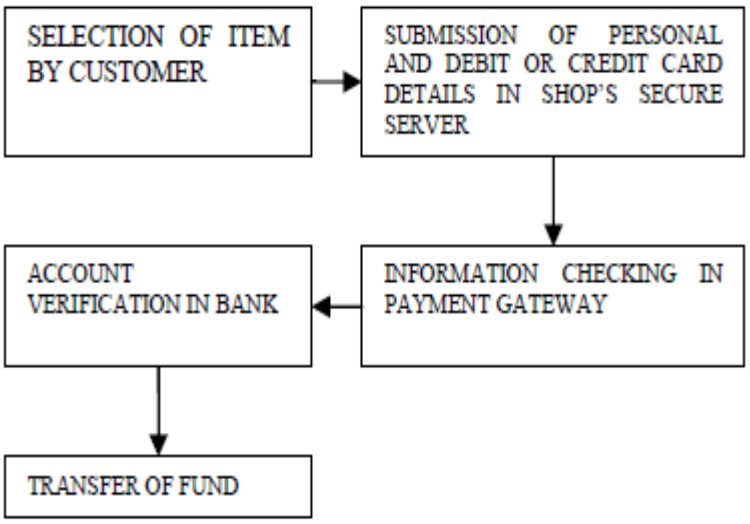


FIG 1: TRANSACTION IN ONLIN SHOPPING

VI. PROPOSED PAYMENT METHOD

In the proposed method for data privacy the information submitted by the customer to the online shopper's secure server is minimized. That is only minimum details of customer. So it will only verify the payment made by the customer from its bank account. The information received by the shopper's secure server can be in the form of account number related to the card used for shopping. The information will only validate receipt of payment from authentic customer.

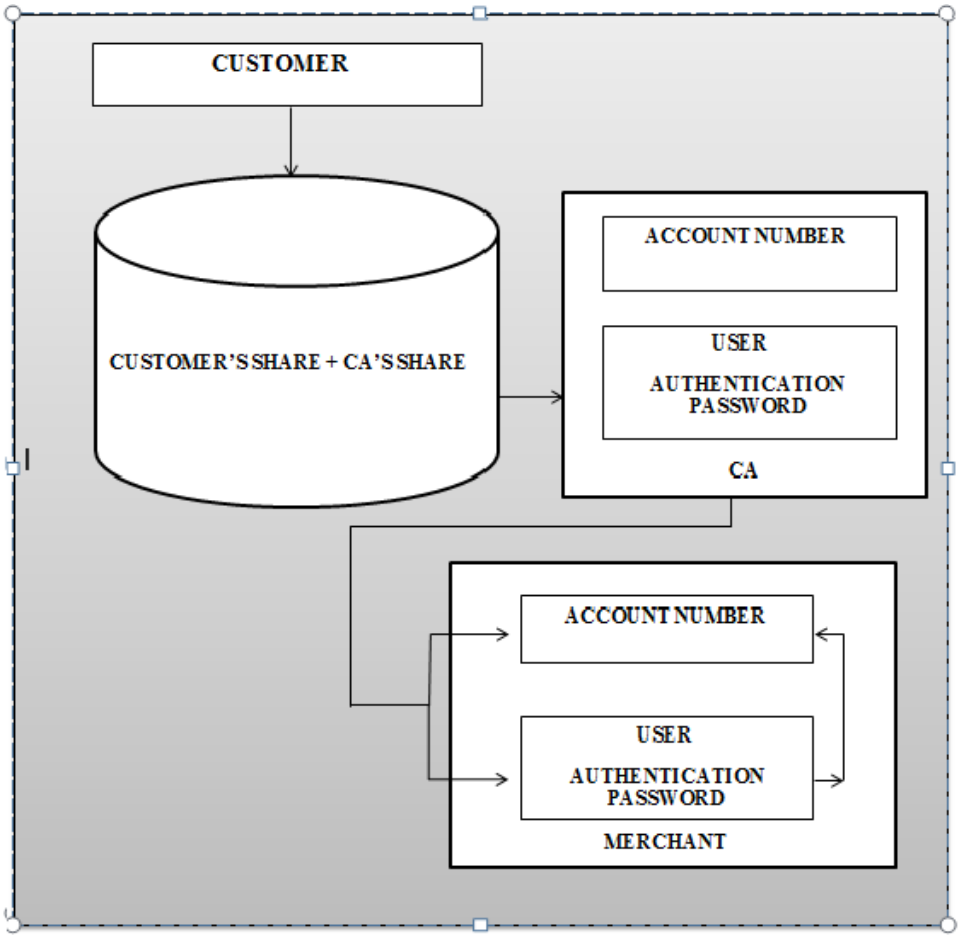


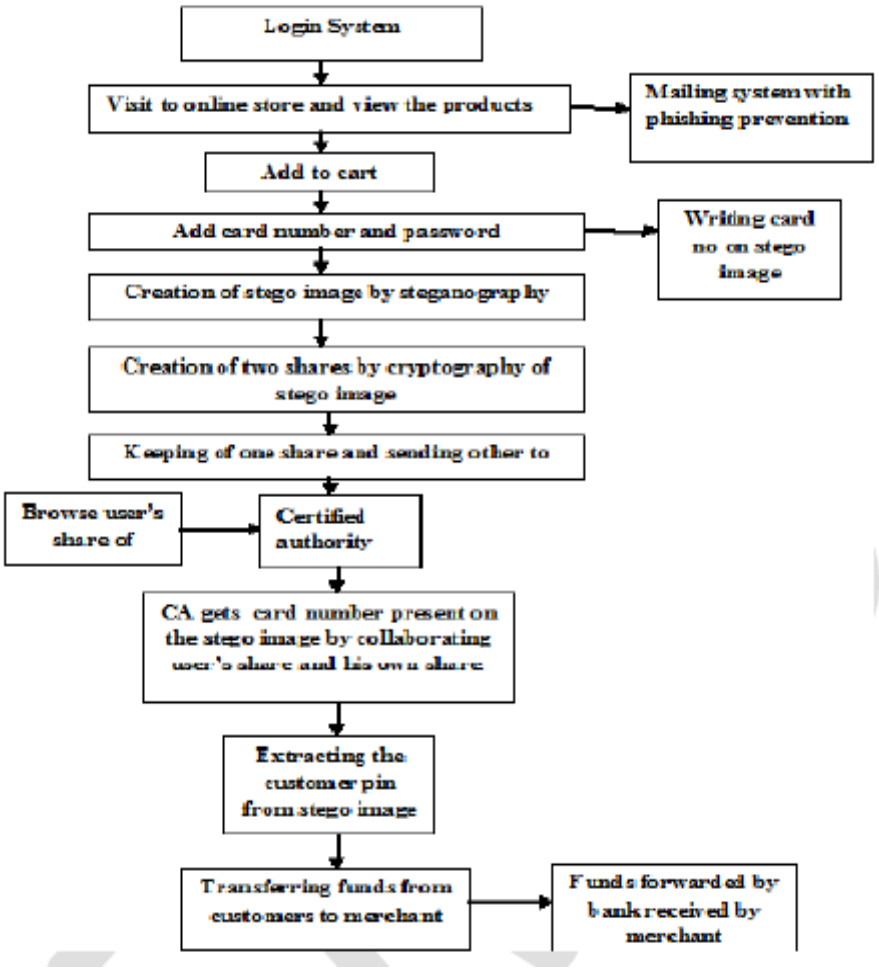
FIG 2: PROPOSED PAYMENT METHOD

6.1 Advantages

- This method minimizes the information shared to the merchant server.
- It provides high level security for customers.
- This improves the customer confidence also it prevents the misuse of data.

VII. WORK FLOW DIAGRAM

In online shopping through internet the user logs in and enters into the online store to view and purchase the products. The customer adds the item to the cart, then enter the card no and password that is created a stegno image using the pin number. Two shares are created one kept by the customer and the other kept by the bank. Then bank verify the image by the customer and their own share, if it matches fund will be transferred from the bank to the shopper's secure server.



VIII. CONCLUSION

Online shopping is the modern way of shopping as well as a new business mode by filling credit/debit card details. So we propose a new method to improve the confidence for online payment mode is the combination of image based steganography and visual cryptography. Using the proposed method it will improve the data privacy for customers, this minimizes the personal information given to the merchant server because of this it prevent he misuse of data. So the customer's having high level security.

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