



departments in the hospitals. So the problem formulates, by which a system is to be made using steganography approaches on a single platform. This process will secure the patient's information and doctors diagnose which results in the right treatment of the patients. With all the information of the patient on one digital image reduces, the treatment time and it fasten the process of the treatment. This paper primarily concentrated on the data security issues when sending the data over the network using steganography techniques. Secondly, to hide the patient profile and diagnosis in the medical scanned images and also proposed and analyzed the application of combined approach to the steganography in medical field.

## II. LITERATURE REVIEW

G.Prashantiet al. [4] provides a review of current accomplishments of LSB centered spatial domain steganography that have an enhanced steganography's vital purposes, which are unnoticeable, forcefulness and bulk of unseen data. This paper also discussed two new steganography techniques.

S.Goel et al.[5] proposed a new technique that use LSB method with changed progression. Experimental outcome shows that proposed technique is fast and vastly efficient as compared to traditional LSB technique.

Della Baby et al. [6]proposed a new technique in which numerous RGB images are embedded into single RGB image using DWT. This system has high embedding capacity and security with minimal changes in stego image

Amitava Nag et al. [7] provides a new steganography technique based on Huffman coding and the least significant bit substitution in order to provide high embedding capacity, a strong security and imperceptible visual quality to secret message. This works on high security and embedding capacity and acceptable level of visual quality of stego image.

E.Dagar et al. [8] presented the steganography technique for color RGB images to improve the security level of data transfer through the internet. 24 bit RGB image is utilized as cover image to embed secret data in red, green and blue pixels. X-Box mapping is used and several boxes contain 16 different values. Here "X" represent any integer number from 0 to 9. After this values saved in X-Boxes are mapped with LSBs of carrier image. It is very difficult for the attacker to extract the secret information because they make use of mapping. Thus this mapping provides high level of security to hidden information. PSNR value is also calculated and it has high PSNR value which leads to greater stego image quality.

M. R. Modi et al. [9] proposed a novel steganography technique to embed secret information of LSBs of cover image. In their method least two significant bits of edges are utilized to store secret message as edge regions are very good areas to embed the secret information than other smooth regions of cover image. In this method edge region are detected on basis of amount of secret information, which means it does adaptive edge detection. Experimental results analysis shows that their method performs better than traditional LSB image steganographic methods and has greater security against visual attacks.

S. Sachdeva at al. [10] uses the vector quantization table to embed the secret information. They present new method of steganography named as JMQT based on modified Quantization Table. They also compare their proposed approach with JPEG-JSteg steganography method. Embedding capacity and stego image size are used as performance analysis parameters and experimental results are also compared with JPEG-JSteg method. Experimental results show that the hidden capacity and stego size has been increased.

## III. METHODOLOGY

Methodology is divided into four major parts namely User login, Encode, Decode and Database Connectivity.

### A. User Login

In this, user can login to the system using his Username and Password which would be already allocated. While login it will validate whether the username and password matched or not, if it has been matched then user will be able to use the service otherwise user have to check the username and password is correct or not.

### B. Encode

In this, Sender encode the text in an image. Creating an array of integers which will hold the entire message in the form of bit format. A message is made up of characters, each character is of the size of one byte that is 8 bits. Each byte here is divided into 4 parts of 2 bits, and stored in the two Bit Message array. Thus, the size of two Bit Message is 4 times the length of the actual message. While doing this, it encodes 2 bits of message in 1 pixel. Basically, 4 pixels carrying 8 bits of encoded bits. In total carry one character.

**C. Decode**

In this, Receiver decode the text from an image. Grab a RGB value at specific position and then extract 2 least significant bits (LSB) from encoded data and add the data in a queue for later processing. As soon, it gets 8 bit of data combines it and makes a byte and stores it as a character.

**D. Database Connectivity**

In this, connecting to Mysql database. It stored Usernames and password in Mysql server. During login, the user enters the given username and password and then database will check whether it has any match in database. If it matched, then has it will access otherwise it won't.

**IV. PROPOSED ALGORITHM**

**Step 1:** Ask User for either Encryption or Decryption.

**Step 2:** If user have to decrypt, go to step 7.

**Step 3:** If user wants to Encryption then go to step 4, Otherwise go to step 10.

**Step 4:** Ask the user for image and text.

**Step 5:** In encryption, message would be divided in 4 parts of 2 bits and store it.

**Step 6:** Image pixels would be add(OR) with the 2 bits of every char in a message. Go to step 10.

**Step 7:** In decoding, select image.

**Step 8:** Image selected, then choose RGB and extract 2 LSB from encoded data.

**Step 9:** Combine them, and create a character.

**Step 10:** End

**V. CONCLUSION AND FUTURE WORK**

Successfully created a medical application on steganography, in which doctor can send an encoded image to another doctor, so that another doctor would be able to decode and read the text file. Hence, this application is providing data security to doctors, so that data can't be leaked. Encoded image here are the medical records or reports of a patient. In future more effective techniques can be implemented to secure medical images from the third user.

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