

**LZW-DRIVEN
IMAGE
COMPRESSION
User Guide**

System Overview

LZW-Driven Image Compression for telemedical applications is a image compression software that makes use of the LZW algorithm for compression. The advantage of lzw algorithm compared to other techniques is that it is lossless algorithm. The user uploads the image and the system returns the user a encrypted file. The user then sends the encrypted file to receiver who then decrypts and downloads the original image using openssl.

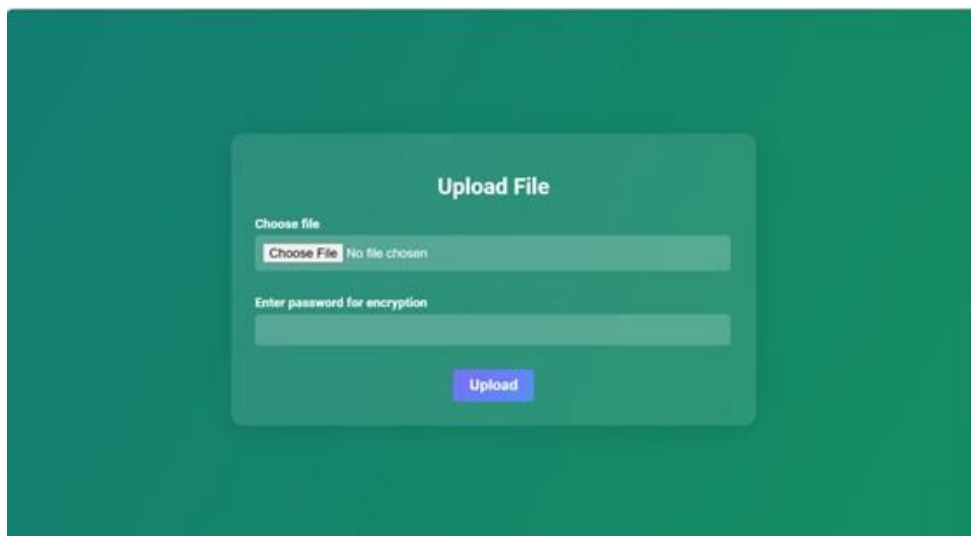
Getting Started

Accessing the System: Open your web browser and navigate to the LZW Driven Image Compression upload page.

Get Started: The user can get started just by uploading the image that he/she wants to compress.

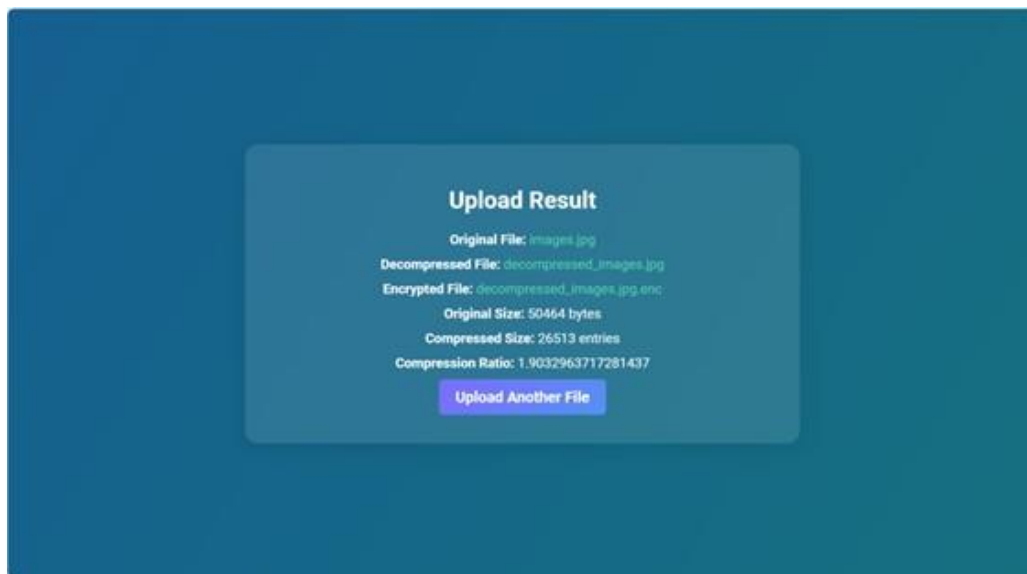
UPLOAD PAGE:

The Upload page is the primary screen users see when they start the application. It provides an interface for the user to upload the image they want to compress along with the password required for encrypting the compressed image. The software then checks if the uploaded image is grayscale or not. If the image is not grayscale the software prompts the message to the user to upload grayscale image.

The image shows a web interface for uploading a file. It has a dark teal background. In the center, there is a lighter teal rounded rectangle. At the top of this rectangle is the title "Upload File". Below the title, there is a section labeled "Choose file" which contains a button labeled "Choose File" and the text "No file chosen". Below this is a section labeled "Enter password for encryption" with a text input field. At the bottom of the rectangle is a blue button labeled "Upload".

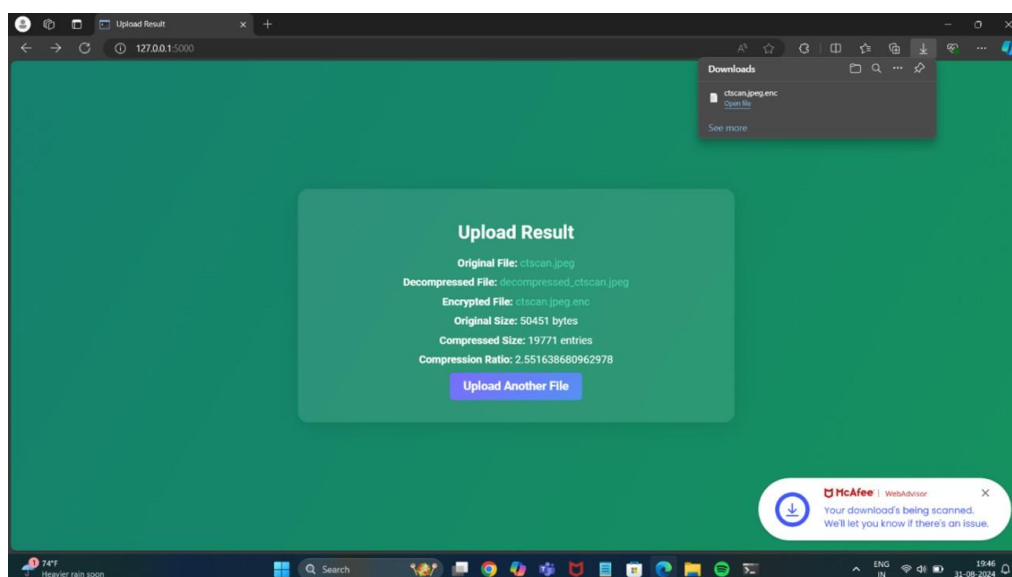
RESULT PAGE:

The result page then shows all the information regarding the compressed image which includes original file, decompressed file, encrypted file, size of original file and size of the compressed file along with the compression ratio. It also comes with a upload another file button if the user wants to compress any other image.



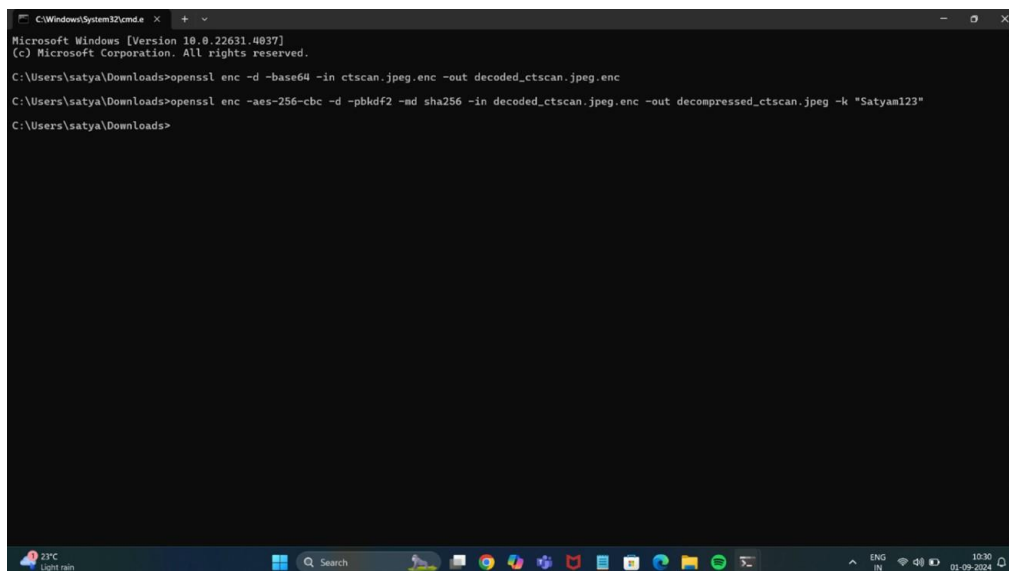
DOWNLOAD PAGE:

As seen on the top right in the image, the user is provided with the option to download the encrypted image file to his directory.



DECRYPTION COMMANDS PAGE:

The page consists of decryption commands that are used to decrypt the file that was encrypted using openssl by providing the password given during uploading the image. The image is encrypted in base64 and decrypted using sha256. The user can provide anyname by which he wants to save the image.



```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.22631.4037]
(c) Microsoft Corporation. All rights reserved.

C:\Users\satya\Downloads>openssl enc -d -base64 -in ctscan.jpeg.enc -out decoded_ctscan.jpeg.enc
C:\Users\satya\Downloads>openssl enc -aes-256-cbc -d -pbkdf2 -md sha256 -in decoded_ctscan.jpeg.enc -out decompressed_ctscan.jpeg -k "Satyam123"
C:\Users\satya\Downloads>
```

FINAL IMAGE:

The page shows the final compressed and decrypted image in the receivers directory. The size of the image is less compared to the original image and the quality of the image is enhanced compared to the original image. The objective of using LZW algorithm for image compression was achieved successfully.

