CAPSTONE PROJECT

SECURE DATA HIDING IN IMAGE USING STEGANOGRAPHY

Presented By
Student Name : KAVYA V
College Name & Department : M .Kumarasamy College Of Engineering & Electronics And Communication Engineering

edunet
foundation

OUTLINE

- Problem Statement

- Technology used

- Wow factor

- End users

- Result

- Conclusion

- Git-hub Link

edunet
foundation

PROBLEM STATEMENT

The problem of this project is to develop a secure and efficient steganographic technique for hiding sensitive data within digital images. The goal is to ensure that the hidden data remains undetectable by unauthorized parties while maintaining the quality of the image. The challenge involves embedding data without noticeable distortion, preserving data integrity, and preventing detection through image analysis or manipulation techniques, thereby offering a robust solution for secure data hiding in digital images.

TECHNOLOGY USED

- Language: Python

- Platform: Windows

- Libraries used

- Image Processing:

- OpenCV – Used for image manipulation and pre processing

- Steganography Techniques:

- Stegno – To perform LSB (Least Significant Bit) steganography

WOW FACTORS

- Invisible Data Embedding: Hides data in images without visible changes, making it undetectable.
- Enhanced Security: Uses encryption (e.g., AES) to protect hidden data.
- High Image Quality: Maintains the original image quality with no visible distortion.
- Data Integrity: Ensures data remains intact and secure using hashing techniques.

END USERS

- Government Agencies: For securely transmitting sensitive or classified information.
- Military and Defense: To ensure confidential communication and data storage.
- Corporations: For protecting intellectual property and confidential business information.
- Journalists and Activists: To safely exchange sensitive data in regions with restricted freedom of speech.
- Private Individuals: For securely sharing personal and sensitive information over digital platforms.

RESULTS

```
Python 3.12.9 (tags/v3.12.9:fdb8142, Feb  4 2025, 15:27:58) [MSC v.1942 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

============================ RESTART: C:/Stego NEW/wnn.py ============================
Encrypted Message: Wigvix Qiwweki
Encrypted Password: QcTewwasvh123

Decrypted Message: Secret Message
Decrypted Password: MyPassword123
>>>
```
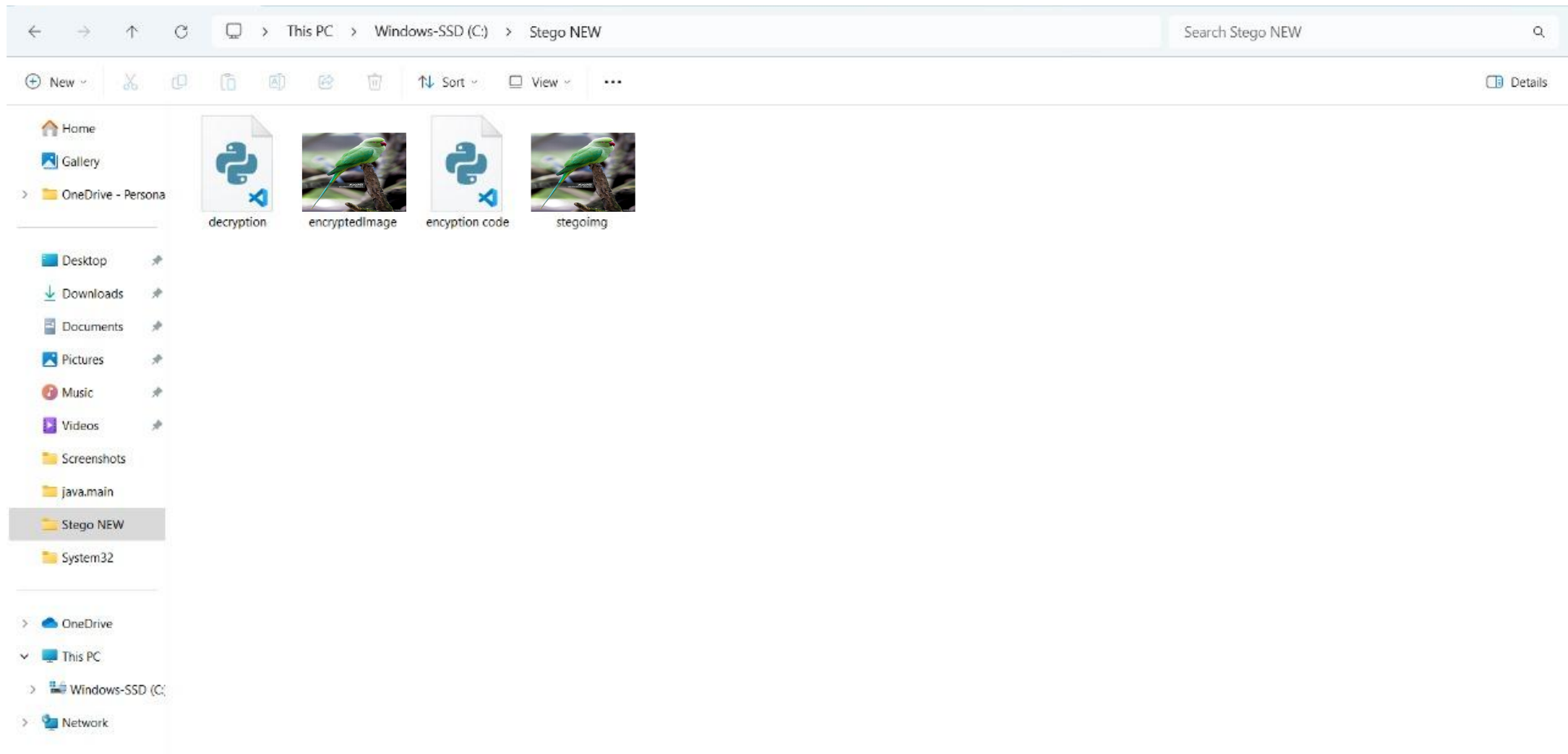
CONCLUSION

Secure data hiding through steganography in images offers a robust solution for protecting sensitive information in the digital realm. By embedding data seamlessly within images, the technique ensures that the hidden information remains undetectable while preserving the image quality. Advanced encryption and hashing methods further strengthen the security, ensuring data integrity and preventing unauthorized access. This approach proves valuable in a range of fields, including government, corporate, and personal use, providing a reliable and secure means for transmitting and storing confidential data in an increasingly digital world.

edu**net**
foundation

GITHUB LINK

- https://github.com/kavyavadivel

THANK YOU

edunet
foundation