File Encryption and Decryption using AES

Elevate Laps — Cyber Security Internship

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Domain: Cyber Security

Abstract:

This project implements secure file encryption and decryption using the Advanced Encryption Standa
It provides a practical demonstration of how symmetric key cryptography works, helping users unders
The AES algorithm is widely used in modern security systems due to its strength and efficiency
This project uses a simple Python interface to encrypt and decrypt files, ensuring data confidentiality.

Tools Used:

- Python 3
- PyCryptodome library
- AES (Advanced Encryption Standard) algorithm

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Working Steps:

1. The user selects whether to encrypt or decrypt a file.
2. The program reads the input file in binary mode.
3. AES encryption is applied using a predefined secret key.
4. Encrypted data is stored in a new file with a .enc extension.
5. For decryption, the program uses the same key to retrieve the original file.
6. The AES algorithm ensures that only users with the correct key can decrypt the data.

Conclusion:

The File Encryption and Decryption using AES project successfully demonstrates the application of sy
It highlights how encryption transforms readable data into an unreadable format, and decryption resto
This project provides a practical understanding of how secure file handling can prevent unauthorized