AxCrypt

Report

Team Members-

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Introduction: - AxCrypt is an image encryption security tool programme written in Java. The application's graphical user interface (GUI) is built using Swing and allows you to encrypt PNG pictures with a bitwise XOR operation and a user-defined key. The study assesses the features, approach, and outcomes before making recommendations for future improvements.

Features: -

- GUI Interface: The application offers a simple GUI interface using Swing components such as ‘JFrame’, ‘JButton’ and ‘JTextField’.
- File Selection: Users can select PNG image files through a file chooser dialog.
- Encryption: The selected image file is encrypted using a bitwise XOR operation with a user-provided key.
- Error Handling: Basic error handling is implemented to handle exceptions during file I/O operations.
- User Feedback: A message dialog provides feedback to the user upon successful encryption or in case of errors.

Methodology: -

- File Selection: Users utilize the file chooser dialog to select a PNG image file for encryption.

- Encryption Logic: The selected image file is read into a byte array, and each byte is XOR-ed with the encryption key provided by the user.
- File Writing: The encrypted data is written back to the same file, overwriting the original contents.
- User Interaction: The GUI components allow users to input the encryption key and trigger the encryption process.

Results: -

- Functional GUI: The application provides a functional GUI interface for selecting image files and inputting encryption keys.
- Basic Encryption: The encryption process successfully XORs the image data with the provided key.
- User Feedback: Users receive feedback through message dialogs upon completion of the encryption process.

Conclusion: The image encryption security tool demonstrates basic functionality for encrypting PNG images using XOR encryption. Through the encryption process, images are transformed into unreadable formats, safeguarding them from unauthorized access or tampering. Decryption, on the other hand, restores the images to their original form, allowing authorized users to access and utilize them appropriately.