Image enCypher

outline

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Introduction

- The Image Cypher application allows users to encrypt images using a simple
- Caesar cipher algorithm. This tool can be used for basic image encryption and
- serves as an example of image manipulation with Streamlit.

Features

- Upload an image in JPG, JPEG, PNG, or GIF format.
- Enter a key to encrypt the image using a Caesar cipher.
- View both the original and encrypted images side by side.
- Download the original and encrypted images for further analysis.

Usage

- Upload Image: Click on the "Choose an image..." button and select an image file from your local device.
- Enter Key: Input a numeric key value to apply the Caesar cipher for encryption.
- View Results: Observe the original and encrypted images along with their pixel values.
- Download Images: Download the original and encrypted images for offline use or analysis.

How It Works

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- The application uses the Streamlit library for the user interface.
- Uploaded images are encrypted using a Caesar cipher algorithm, where each RGB channel of every pixel is shifted by the specified key value.
- Encrypted images are displayed alongside the original images for comparison.
- Users can download the original and encrypted images in PNG format for further examination.

Future Enhancements

- Implement additional encryption algorithms for increased security.
- Add decryption functionality to reverse the encryption process.
- Enhance the user interface with more customization options and visualizations.

- **Dependencies**
- Streamlit: pip install streamlit
- PIL (Python Imaging Library): Included in most Python distributions

Running the Application

- Clone the repository or download the source code.
- Install the necessary dependencies.
- Run the script.
- Access the application via the provided URL in your web browser.