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IT 360

Code Documentation

The following is a write up to explain all the code that was used in our program.

A screen shot of a computer program

AI-generated content may be incorrect.

Imports

Tkinter –

tkinter is a library that we needed to import to set up frames, message boxes, and dialogue. Essentially tkinter provides all functionality for the GUI.

PIL –

PIL or pillow is a library that we needed to import for the use of process and bitmapping image files. Essentially PIL provides all the functionality for the imagery used in the program.

Stegano –

Stegano is a library that we needed to import for the use of our encryption and decryption algorithms with LSB. Essentially stegano provides all the functionality for the cryptographic functions.

OS –

OS is a library we needed to import for the use of acquiring directories to pull for the downloading and uploading. Essentially OS provides all the functionalities for pathing used in the program.

Root

Root is the main frame of the application. It is titled, sized, and colored according to the code provided.

Globals

The two variables were declared globally, secret and filename, for the use of pathing the image files.

A black screen with colorful text

AI-generated content may be incorrect.

Show Image

Show image is a function that displays the image selected from the file system prompted when clicking the button that it corresponds to. It requests the file name using the os.getcwd command and saves that to the global variable filename. The function then uses the PIL library to display the image in the corresponding frame. Lbl is a function that labels different aspects of the program here. The last piece of code is the inclusion of a sudo try, catch that propagates an error message if an error occurs during the selection process.

A computer screen shot of a program

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Hide

Hide is a function that is used to incorporate and encrypt the message inside of the selected image file. It uses the global secret variable to save the new filename in the future. It strips the message using text1.get command. It includes another sudo try, catch in the case that no message is detected. It then calls the lsb.hide function, a function that uses the least significant bit algorithm to detect the least significant bits in the image file and attribute the message accordingly to those bits. It then propagates a message box that completes at the succession of the function.

A computer screen shot of text

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Show

The show command provides functionality for displaying a secret message in an image file. Again, it includes a sudo try, catch for an error in detecting an image or message. It then uses lsb.reveal to find any encrypted message using least bit cryptography. The final aspect is that it propagates any found image into the corresponding frame.

A screen shot of a computer code

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Save

The save command provides the functionality for saving the newly encrypted image file to the same directory gathered by the OS command using save\_path. Again, sudo try, catch is present for any errors. Filedialog is used to save the image, and the important part is the default extension png for lossless compression.

A computer screen shot of text

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The rest of the code is the set up of the GUI itself outside of the root frame. The new code seen in this image is a scrollbar, which establishes scroll capabilities for all the unique frames. Additionally, buttons are places using the command parameter which calls the corresponding commands. Finally, root.mainloop is written to make the program loop and continuously run.