Plugins Required: Pillow (or PIL) and bitarray

Python Version Used: 2.7

Usage:

1. Run ‘StendographyWithGrayscaleImages.py’
2. If no you only have colour images available, type ‘g’ to convert colour images to grayscale. Then provide the name of the image. The image will then be copied into grayscale with ‘-Grayscale.png’ appended to the end
3. Once a grayscale image is available, enter ‘c’ to make a pixel by pixel copy of the image. The copied image will then be saved with ‘Copy.png’ appended to the end.
4. Then type ‘e’ to begin stenography process.
5. You will be prompted for the name of a grayscale image. E.g. ‘puppy.png’
6. You will then be prompted for the message you wish to encode in the image. E.g. “I’m hungry ☹”.
7. The program will then split the message into a bit array and append an individual bit from this bit array onto the least significant bit of a read in pixel until the whole message has been encoded. An id consisting of 15 zeros and 1 one will then be encoded to the least significant bits of the following pixels so that the end of a message can be identified when decoding. The message encoded image will then be saved as the name of the original image + “EncodedMessageVersion.png” appended to the end.
8. You can the type ‘d’ to begin message decoding process.
9. You will then be prompted for the name of the stenographic picture. E.g. puppyEncodedMessageVersion
10. The program will then iterate through the pixels in the image, each time appending the least significant bit of each pixel to a bit array. When the program encounters the id sequence of 15 ones followed by a zero, it knows it has reached the end of the message. It will then strip off the 15 ones and zero and convert the bit array into the original string message