Secure and Dependable Systems
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Homework 6

Problem 6.1

Solution:

a) Please check 'hide.c' to see the code for the implementation of *'im_encode()'* and *'im_decode()'*.

b) To detect the presence of hidden text I have implemented two functions which can be found in 'hide.c', one called *'tag()'* for tagging the image that a message is written into, and another called *'checkTag()'* for checking if there is a tag on the image. What I mean by saying "tag" is that I am putting the last three pixels of the image to contain 1s on their least significant bits of the red, green and blue values.

c) According to me, the visual impact in my algorithm is minimized to the maximum. How I am storing the text inside the image is that I am splitting the entire message into characters, and each of those characters I convert to binary, and then bit by bit I am writing those bits to the least significant bit of the red, green and blue values of a pixel. To denote the end of the end of the text I am writing eight 0s which being converted denote the '\0' character. Using the script provided in the directory test we can see the following outputs, which if we compare really carefully we would not notice any changes.