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Lab 10

Question 1: Write a program to read in a grayscale image file, iterate across each pixel, and write out the image file.

Code:

```
from PIL import Image

image = Image.open('image.jpg')
im = image.convert('L')
imgWidth, imgHeight = im.size

# loop and print through each pixel
for x in range(0, imgHeight):
    for y in range(0, imgWidth):
        print 'x:' + str(x) + ' y:' + str(y) + ' value:' + str(im.getpixel((y,x)))

# save greyscale picture
im.save('greyscale.png', 'PNG')
```

The code above opens an image located in the lab folder and converts it into a greyscale. It then loops through each pixel and printing out the value of each. Lastly, the python script then saves a new image in the lab folder called 'grescale.png' in a PNG format.

Output:

```
x:332 y:474 value:118
x:332 y:475 value:116
x:332 y:476 value:122
x:332 y:477 value:127
x:332 y:478 value:123
x:332 y:479 value:121
x:332 y:480 value:123
x:332 y:481 value:101
x:332 y:482 value:86
x:332 y:483 value:129
x:332 y:484 value:162
x:332 y:485 value:145
x:332 y:486 value:130
x:332 y:487 value:113
x:332 y:488 value:97
x:332 y:489 value:103
x:332 y:490 value:99
```

Question:

WIP - I managed to loop through each pixel and inject each bit of the message into the LSB of each pixel.