

Python Basic- Assignment- 14

1. What does RGBA stand for?

Answer:

RGBA stands for Red, Green, Blue, Alpha. It is a color model used in computer graphics to define the transparency of an image or object. And Alpha Represents the Opacity

2. From the Pillow module, how do you get the RGBA value of any images?

Answer:

We can get the RGBA value of an image using the `getpixel()` method of the Image module from Pillow. Here is an example:

```
from PIL import Image
# open the image
img = Image.open('image.png')
# get the RGBA values
rgba = img.convert('RGBA')
# get the pixel values
pix = rgba.load()
# print the RGBA value of the pixel at (0, 0)
print(pix[0, 0])
```

Output: (253, 215, 254, 255)

3. What is a box tuple, and how does it work?

Answer:

A box tuple is a sequence of four elements representing the red, green, blue, and alpha values of a color, in that order. It is most commonly used when specifying colors in Python with the RGBA color model, where each value is an integer between 0 and 255. The syntax for a box tuple is (red, green, blue, alpha). For example, the color red in RGBA would be represented as (255, 0, 0, 1).

4. Use your image and load in notebook then, How can you find out the width and height of an Image object?

Answer:

We can find out the width and height of an Image object in Python by using the following code:

```
from PIL import Image
img = Image.open('image.png')
width, height = img.size
print(f"Width of the image is {width} and the Height of the image is {height}")
```

#Output :

Width of the image is 4000 and the Height of the image is 5000

5. What method would you call to get an Image object for a 100×100 image, excluding the lower-left quarter of it?

Answer:

You would use the crop() method from the PIL (Python Imaging Library) to get an Image object for a 100×100 image, excluding the lower-left quarter of it.

Example code:

```
from PIL import Image
img = Image.open('image.jpg')
new_img = img.crop((0,50,50,50))
```

6. After making changes to an Image object, how could you save it as an image file?

Answer:

We can use the save() method on an Image object to save it as an image file. For example, to save an image as a JPEG file, you can use the following code:

```
#Example Program
from PIL import Image
pic = Image.open('img1.jpg')
pic.save('img2.jpg')
```

7. What module contains Pillow's shape-drawing code?

Answer:

```
from PIL import Image, ImageDraw
# Create an image with a white background
img = Image.new('RGB', (100, 100), 'white')
# Create a draw object
draw = ImageDraw.Draw(img)
# Draw a rectangle
draw.rectangle((20, 20, 60, 60), fill='blue', outline='black')
# Draw an ellipse
draw.ellipse((20, 20, 80, 80), fill='red', outline='black')
# Save the image
img.save('shapes.png')
```

8. Image objects do not have drawing methods. What kind of object does it have? How do you get this kind of object?

Answer:

The object that has drawing methods is a PIL (Python Imaging Library) ImageDraw object. To get a PIL ImageDraw object, you must first create a PIL Image object, then use the ImageDraw.Draw() method to create an ImageDraw object from the Image object. Also ImageDraw objects have shape-drawing methods such as point(), line(), or rectangle().