PYTHON ASSIGNMENT – 14

1. What does RGBA stand for?

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

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

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

Image object?

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

quarter of it?

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

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

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

of object?

SOLUTIONS

1. RGBA Definition:

- RGBA stands for Red, Green, Blue, and Alpha. It is a color model used to represent colors in digital images. In addition

to the red, green, and blue color channels, the alpha channel represents the level of transparency or opacity.

2. **Getting RGBA Value with Pillow Module:**

- You can use the **getpixel()** method to get the RGBA value of a specific pixel in an image.

```
from PIL import Image

image = Image.open("example.jpg")
rgba_value = image.getpixel((x, y))  # Replace (x, y) with the coordinates of the pixel
```

3. **Box Tuple in Pillow:**

- A box tuple is a tuple representing a rectangular region in an image. It is defined as **(left, top, right, bottom)**. The region includes pixels from **(left, top)** to **(right - 1, bottom - 1)**.

4. **Finding Width and Height of an Image Object:**

You can use the **size** attribute of the Image object to get the width and height.

```
width, height = image.size
```

5. **Method to Get Image Object for a 100x100 Image (excluding lower-left quarter):**

- You can use the **crop()** method to obtain a new Image object representing a specified rectangular region.

```
new_image = image.crop((0, 0, 50, 50))  # Excludes the lower-left quarter (0-49, 0-49)
```

6. **Saving Changes to an Image Object:**

- After making changes, you can use the **save()** method to save the modified Image object to a file.

```
image.save("modified_image.jpg")
```

7. **Module Containing Pillow's Shape-Drawing Code:**

The **ImageDraw** module in Pillow contains shape-drawing code.

8. **Objects with Drawing Methods in Pillow:**

ImageDraw objects have drawing methods. To get an **ImageDraw** object, you need to create one using the **ImageDraw.Draw()** method.

```
from PIL import ImageDraw

draw = ImageDraw.Draw(image)
```

Now, **draw** is an **ImageDraw** object associated with the original image, and you can use its methods to draw on the image.