

Name: **Trisha Ganesh**

Date: **6/30/2021**

### **08.06 Picture Lab Worksheet**

**Directions:** Make note of your responses to the following questions as you work through the activities and exercise in the lesson.

#### **Activity 1 Questions**

- 1. How many bits does it take to represent the values from 0 to 255?**

It takes 8 bits to represent the values from 0 to 255. (essentially, it takes 1 byte as 8 bits are 1 byte).

- 1. How many bytes does it take to represent a color in the RGB color model?**

In the RGB color mode. It takes 3 bytes to represent a color.

- 1. How many pixels are in a picture that is 640 pixels wide and 480 pixels high?**

There are approximately 307,200 pixels in a picture that is 640 pixels wide and 480 pixels high, as  $640 \times 480$  is 307,200.

#### **Activity 2 Questions**

- 1. How can you make pink?**

You can make pink by using RGB and setting values:  $r = 255$ ,  $g = 117$ , and  $b = 255$

- 1. How can you make yellow?**

You can make yellow by also using RGB and setting values:  $r = 255$ ,  $g = 225$ , and  $b = 0$

- 1. How can you make purple?**

You can make purple by also using RGB and setting values:  $r = 255$ ,  $g = 0$ , and  $b = 255$

- 1. How can you make white?**

You can make white by also using RGB and setting values:  $r = 255$ ,  $g = 255$ , and  $b = 255$

- 1. How can you make dark gray?**

You can make dark grey by also using RGB and setting values:  $r = 70$ ,  $g = 70$ , and  $b = 70$

#### **Activity 3 Questions**

- 1. What is the row index for the top left corner of the picture?**

The row index for the top left corner of the picture is zero.

1. **What is the column index for the top left corner of the picture?**

The column index for the top left corner of the picture is zero.

1. **The width of this picture is 640. What is the right-most column index?**

If the width of the pictures is 640, the right-most column index for this picture will be 639.

1. **The height of this picture is 480. What is the bottom-most row index?**

If the height of this picture is 480, the bottom-most row index will be 479.

1. **Does the row index increase from left to right or top to bottom?**

The row will increase from top to bottom.

1. **Does the column index increase from left to right or top to bottom?**

The column index will increase from left to right.

1. **Set the zoom to 500%. Describe what you see.**

Because I've zoomed greatly into the picture, I am able to see pixels: square boxes of color within the image I'm viewing.

### Activity 3 Exercise Results

1. **After modifying the `main` method in the `PictureExplorer` class to create and explore a different picture from the `images` folder, paste the code below.**

```
public static void main( String args[])
{
    Picture pix = new Picture("robot.jpg");
    pix.explore();
}
```

2. After scaling your image, paste the new `main` method code below.

```
public static void main(String args[])
{
    Picture pix = new Picture("robot.jpg");
    Picture smallP = pix.scale(0.5, 0.5);
    smallP.write("smallRobot.jpg");
    smallP.explore();
}
```

#### Activity 4 Exercise Results

1. What was the output result after running the `getCount` method?  
Paste your `getCount` method below.

*The output result would be: Count should be 6 and count is 6*

`getCount` method Code the `IntArrayWorker` Class file:

```
/* public int: getCount method to return the count of the number of times
an integer has been passed in the matrix */
public int getCount(int numbers) {
    //get number of columns
    int numCols = matrix[0].length;
    int numCount = 0;
    //for loop for rows
    for (int row = 0; row < matrix.length; row++)
    {
        //for loop for columns
        for (int col = 0; col < numCols; col++)
        {
            if(matrix[row][col] == numbers)
            {
                numCount++;
            }
        }
    }
    return numCount;
}
```

2. **What is the output result after running the `getLargest` method?**  
**Paste your `getLargest` method below.**

*The output result after running the code would be:* Largest should be 6 and is 6

Largest should be 6 and is 6

Largest should be 6 and is 6

Largest should be 6 and is 6

`getLargest` method code in the `IntArrayWorker` Class file:

```
//public int: getLargest returns the largest value in the matrix
public int getLargest() {
    int numCols = matrix[0].length;
    int maxValue = Integer.MIN_VALUE;
    //for loop for rows
    for (int row = 0; row < matrix.length; row++) {
        //for loop for columns
        for (int col = 0; col < numCols; col++) {
            if(matrix[row][col] > maxValue) {
                maxValue = matrix[row][col];
            }
        }
    }
    return maxValue;
}
```

3. **What is the output result after running the `getColTotal` method?**  
**Paste your `getColTotal` method below.**

*The output result after running the code would be:* Total for column 0 should be 5 and is 5

Total for column 1 should be 7 and is 7

Total for column 2 should be 9 and is 9

`getColTotal` method code in the `IntArrayWorker` Class file:

```
public int getColTotal(int numbers) {  
    int total = 0;  
    for (int row = 0; row < matrix.length; row++) {  
        total = total + matrix[row][numbers];  
    }  
    return total;  
}
```