



Required to pass: 65% or higher

Back to Week 4

Retake



1. Consider writing code to list out files in one of your folders using **DirectoryResource**. The following attempt at writing such code has an error.

1 / 1 points

```
DirectoryExample - directoryExample
Class Edit Tools Options
Compile Undo Cut Copy Paste Find... Close

import edu.duke.*;
import java.io.*;

public class DirectoryExample
{
    public void listFiles() {
        DirectoryResource dir = new DirectoryResource();
        for (File someFile : dr.selectedFiles()) {
            System.out.println(someFile);
        }
    }
}
```

Which one of the following best explains what the error is?



2. Shown below is the code that was developed in one of the videos to convert many images to grayscale and to display those grayscale images.

1 / 1 points

```
import edu.duke.*;
import java.io.*;
public class GrayScaleConverterBatch
{
    public ImageResource makeGray(ImageResource inImage) {
        ImageResource outImage = new ImageResource(inImage.getWidth(), inImage.getHeight());
        for (Pixel pixel: outImage.pixels()) {
            Pixel inPixel = inImage.getPixel(pixel.getX(), pixel.getY());
            int average = (inPixel.getRed() + inPixel.getGreen() + inPixel.getBlue())/3;
            pixel.setRed(average);
            pixel.setGreen(average);
            pixel.setBlue(average);
        }
        return outImage;
    }

    public void selectAndConvert() {
        DirectoryResource dr = new DirectoryResource();
        for (File f: dr.selectedFiles()){
            ImageResource inImage = new ImageResource(f);
            ImageResource gray = makeGray(inImage);
            gray.draw();
        }
    }
}
```

Consider adding additional code to this program to save each of the new grayscale images created as a file.

Which one of the following is the best method to modify to make this change?



3. Suppose one wants to convert a given image to grayscale and then display and save the resulting grayscale image as a file.

The code below has been started for you. The variable **f** is a file of an image and the method **makeGray** returns an image that is the grayscale image of the original image.

```
1 ImageResource original = new ImageResource(f);
2 ImageResource grayscale = makeGray(original);
3 [MISSING CODE]
```

Which one of the following is the missing code that will convert the original image into a new file that is a grayscale version of the original image?



4. Consider writing a program to create new images that are photographic negatives (or inverted images) of selected images.

1 / 1 points

In inverting an image, a pixel's red, blue and green components are modified to be the exact opposite within the 0 to 255 range. That is, if a pixel's red, blue, and green values are (34, 198, 240) then that same pixel in the inverted image would have the red, blue, and green values of (221, 57, 15). Note that 255 - 34 is 221, 255 - 198 is 57, and 255 - 240 is 15.

For example, these images show the original and inverse images of Robert.



Suppose a pixel has RGB values of (100, 30, 250).

Which one of the following shows the correct RGB values for the inverted pixel?



5. Consider writing a program to create new images that are photographic negatives (or inverted images) of selected images.

Suppose we have a Pixel named **pxInvert** and a Pixel named **pxOriginal**.

What is the line of code to change **pxInvert**'s red color to the inverted red color of **pxOriginal**?

Hints: Start with **pxInvert.setRed**

Remember the semi colon at the end.



6. Consider writing a program to create new images that are photographic negatives (or inverted images) of selected images.

Suppose we have an ImageResource variable named **picture** whose current value is for an image file named **dragon.png**. See the following code segment below.

```
1 ImageResource invertImage = makeInverted(picture);
2 String fname = picture.getFileName();
3 invertImage.setFileName("inv-" + fname);
4 invertImage.draw();
5 invertImage.save();
```

What is the name of the resulting file?