Day 8:

Exercise 1: Fruit Loops: Color

a. Download and unzip ColorIntro project (please be careful about where you put this!)

b. Finish the loop information to print a diagonal line of red rectangles.

c. Change fill to draw and create a diagonal line of 25 boxes.

d. Create a nested loop to create a grid like this one

e. Change the parameters for the constructor to create 25 boxes with 10 pixels

of padding like this

f. Change draw back to fill to create solid boxes.

g. In the inner body of the loop, add the line:

box.setColor(new Color(i\*60, 0,0));

h. Change the line so that the red varies with j. (Hint: red is the first Color parameter. For both (g) and (h) answer the following questions with “top,” “bottom,” “right,” “left”

Where are the darkest boxes? (g) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(h) \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Where are the reddest boxes? (g) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(h) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

i. Change the second Color parameter to i\*60 and the first to 0.

Describe the change: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

j. Change the third Color parameter to i\*60 and the others to 0.

Describe the change: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

k. Now change the third Color parameter to 255 -i\*60.

How is this different than what happened in (j)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

l. More changes: box.setColor(new Color(0, i\*60, i\*60));

Then: box.setColor(new Color(0, i\*60, 255-i\*60));

Describe the effect:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Optional: Create variation for all three parameters using i\*60, 255 – i\*60, j\*60, 255 – j\*60

Exercise 2: Negativity Loops

a. Download the negative.zip project.

b. Use BlueJ to instantiate a Picture object. Use right button clicks to practice methods. Write in the return type and value:

 pick() an image (“queen-mary.png”) \_\_\_\_\_ \_\_\_\_\_\_ draw() \_\_\_\_\_\_ \_\_\_\_\_\_\_

 getHeight() \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ getWidth() \_\_\_\_\_\_ \_\_\_\_\_\_

 getPixels() \_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ getColorAt(100) \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(need to inspect)

c. ‘Get’ the result of getColorAt(100) and then use getRed(), getBlue() and getGreen() note the types and values: \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_

d. Open the class Negative. Follow the instructions 7 hints in the comments to complete (1)the for-loop statement, (2) creation of the Color named negative and (3) setColorAt

e. Run the main. Explain the effect:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

e. Change for (int i = 0; i < pic.pixels(); i++) to for (int i = 0; i < pic.pixels()/2; i++).

 Run main.

Explain the change:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

f. Change new Color(255-c.getRed(), 255-c.getGreen()/2, 255-c.getBlue()/2);

 to new Color(c.getRed()/2, c.getGreen()/2, c.getBlue()/2);

Explain the effect:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

g. Only divide c.getGreen() and c.getBlue() by 2.

Explain the effect:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

h. Change the creation of the new Color again: multiply each by 2. What happened?

Explain the error:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

i. Create 3 new variables to store the int values for each 2\*getRed(), 2\*getGreen(), 2\*getBlue() or 255—whichever is smaller. Math.max(255,\_\_\_\_\_\_\_).

Explain the effect:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Optional Exercise:** Create a new project and class. Create a main method which instantiate a string variable, bestWishes: “Happy Wednesday!”. Create a for loop which loops through the string (use the length() method to stop the loop). The body of the loop should print bestWishes.substring(i).

Optional Exercise: Quiz!!!