
More Methods

Multiple For Loops

Keep The Balance:

I have a factory that runs with 100 people. Some people get paid 500 units/month, some 100 units/month, and some 5 units/month.
I pay 10000 units/month to my workers.

How many of the 100 receive 5 units/month?

Modulus Operator

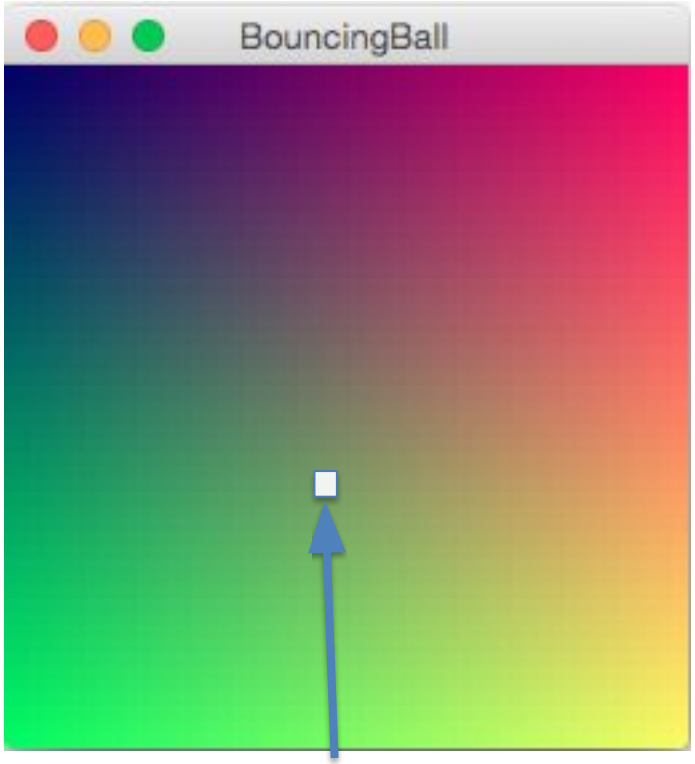
The modulus operator gives whatever the remainder would be.

```
7 % 4 -> 3
9 % 1 -> 0
3 % 3 -> 0
4 % 3 -> 1
```

```
private boolean isEven(int value) {
   return (value % 2 == 0);
}
```

Color Spectrum

Color Spectrum




```
private GRect getColoredSquare(int red,int green, int blue) {
        GRect square=new GRect(STEP,STEP);
        Color newColor=new Color(red%256,green%256,blue%256);
        square.setColor(newColor);
        square.setFilled(true);
        return square;
}
```

The output is a colored rectangle

Color Spectrum

```
public class Spectrum extends GraphicsProgram {

    public static final int APPLICATION_WIDTH = 256;
    public static final int APPLICATION_HEIGHT = 256;
    private static final int STEP = 5;

    public void run() {
        for(int x=0;x<getWidth();x=x+STEP) {
            for(int y=0;y<getWidth();y=y+STEP) {
                GRect point=getColoredSquare(x,y, 100);
                add(point,x,y);
            }
        }
    }

    private GRect getColoredSquare(int red,int green, int blue) {
        GRect square=new GRect(STEP,STEP);
        Color newColor=new Color(red%256,green%256,blue%256);
        square.setColor(newColor);
        square.setFilled(true);
        return square;
    }
}
```

Methods Returning Objects

```
public void run() {
      GRect rect = new GRect(SIZE,SIZE);
      rect.setFilled(true);
      rect.setColor(Color.RED);
      changeRect(rect);
      add(rect,0,0);
}


private void changeRect(GRect rect) {
   rect.setColor(Color.BLUE);
}
```

Primitives and Objects

Primitives:

`int`

`boolean`

`char`

`double`

…

Objects:

GRect

GOval

GLine

…

And String?

Methods Returning Objects

When objects are passed to methods, the changes persist in the caller method.

The rectangle is blue.

This is different than with primitives like `int, double, boolean.`

Final Projects

Make Your Own - Written by You

Before you get started you must have your idea approved by one of the teachers! Think of a few, incase one is too hard or too easy. We plan to start them Wednesday afternoon.