Ch. 2

Processing

Processing

- On your personal computer, download the latest version of Processing

- https://processing.org/download/

- Choose a useful location for your Sketchbook location – ideally, make a folder on your desktop called CMPS5J-Processing, make a folder in there called sketches, and when Processing prompts you, specify the path to your sketches to this folder you just created.

The Processing Environment

- Lets open up Processing
- The coordinate system – units are in pixels.

RGB Color

- primary paint colors are red, blue, and yellow
- primary light colors are red, green, and blue
  - red + green = yellow
  - red + blue = purple
  - green + blue = cyan
  - red + green + blue = white
  - nothing (no light) = black

Some Common Function Calls

- size()
  - ex: size(200,200); //the window's size will be 200x200
- background()
  - ex: background(255); //the background will be white
- rect()
  - ex: rect(100,70,60,60); //draws a square @ (100, 70)
- stroke()
  - ex: stroke(0); //outlines of shapes will be black
- fill()
  - ex: fill(0); //the color of the shape will be black
- ellipse()
  - ex: ellipse(25,50,10,10); //draws a circle @ (25,50) w/ radius of 5
- line()
  - ex: line(10,15,12,16); //draws a line from (10,15) to (12,16)

Comments

```
/*
This program was written by
Dustin Adams.
*/
//draw some grass
fill(0,255,0);
stroke(0,255,0);
rect(-250,0,500,250);
```

Errors and Debugging

- Errors are common throughout the life of a programmer
- Types of errors:
  - Syntax errors – Processing tells you where these are
    - Typos & misspelled variables and functions
    - Missing semicolons
    - Improperly matched parentheses, braces
  - Runtime errors – Causes the program to crash
  - Logic errors – Design flaw in the program
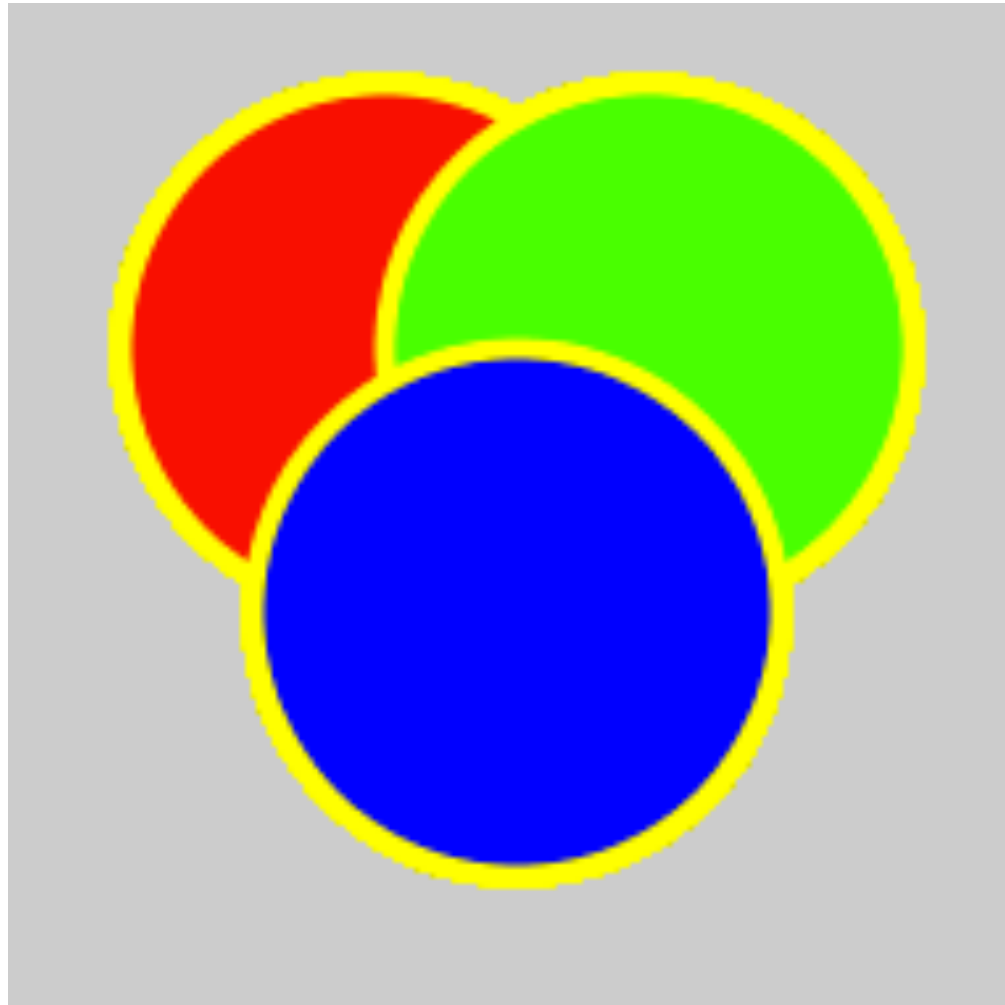
Processing Reference Manual

```
fill(255,0,0);
ellipse(100,100,100,100);

fill(0,255,0);
ellipse(150,100,100,100);

fill(0,0,255);
ellipse(125,150,100,100);
```
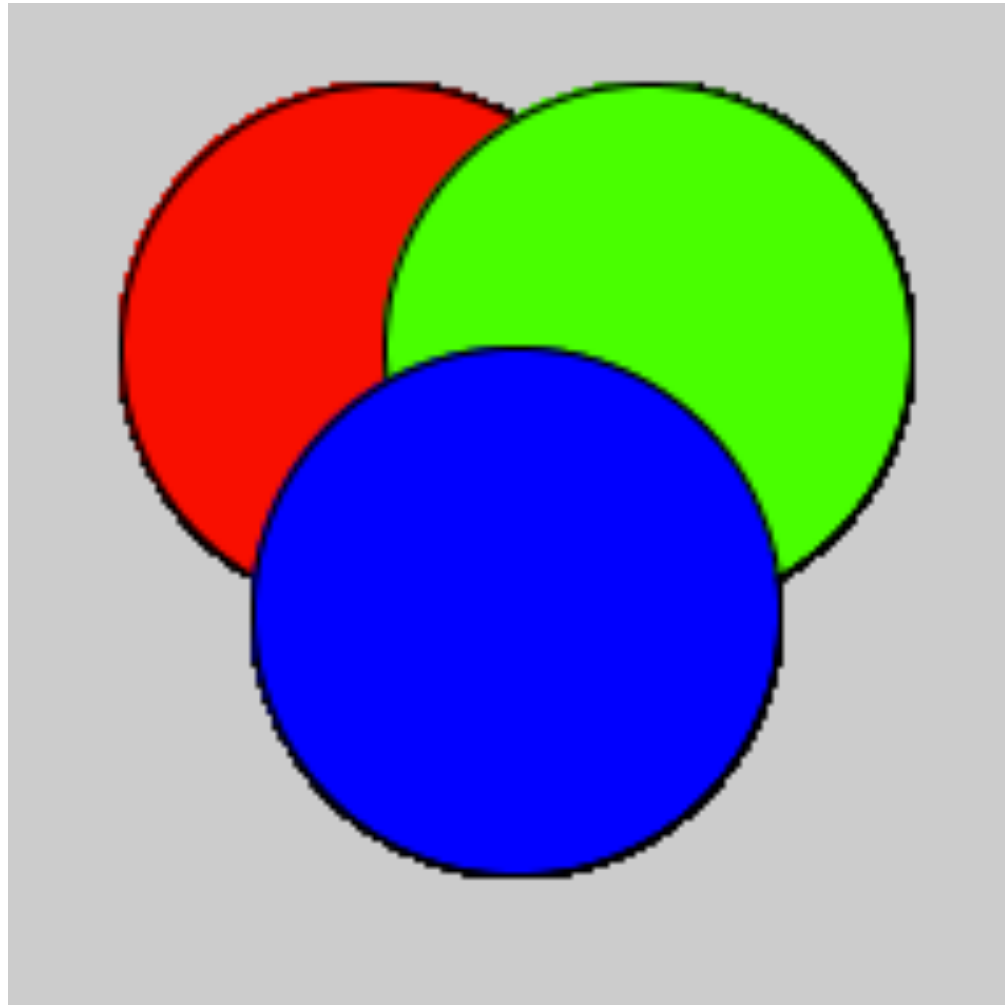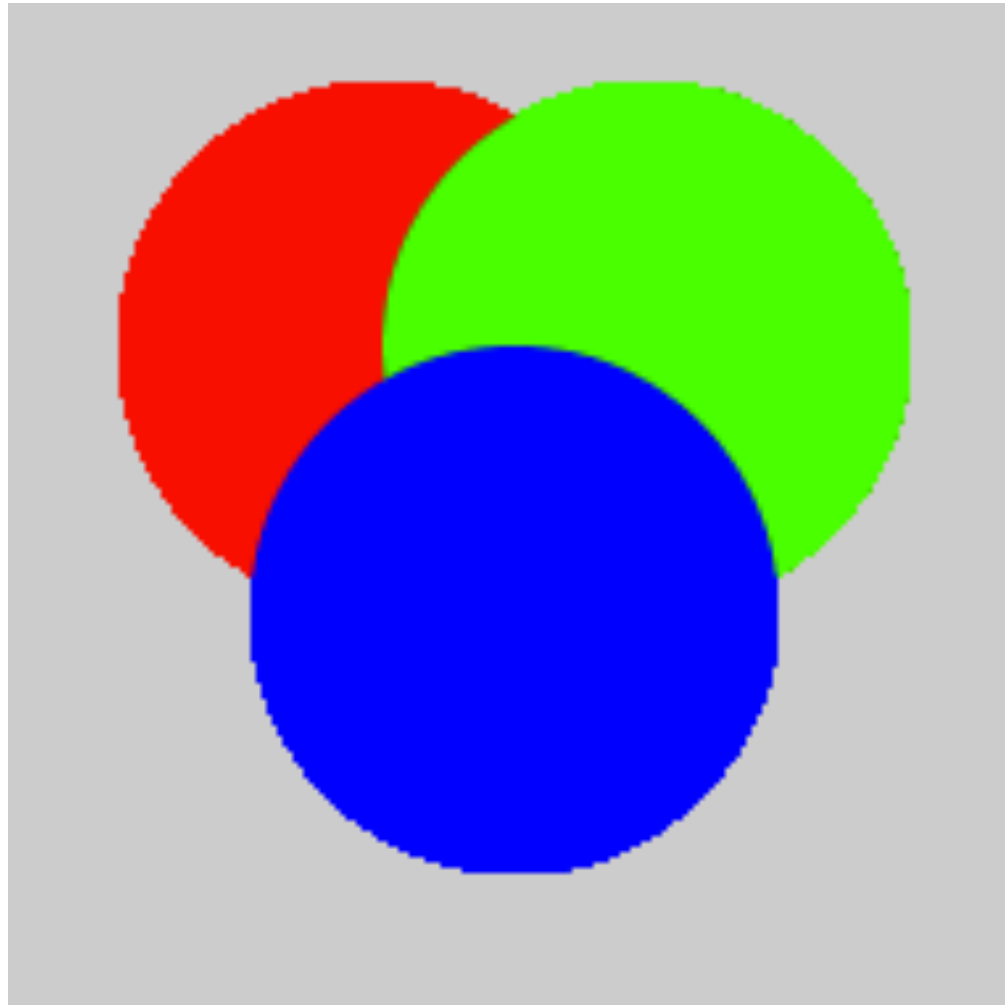
```
// outline in yellow
stroke(255,255,0); // R+G = yellow
strokeWeight(4); // make it a bit wider
fill(255,0,0);
ellipse(100,100,100,100);

fill(0,255,0);
ellipse(150,100,100,100);

fill(0,0,255);
ellipse(125,150,100,100);
```

```
// NO outline
noStroke();
fill(255,0,0);
ellipse(100,100,100,100);
fill(0,255,0);
ellipse(150,100,100,100);
fill(0,0,255);
ellipse(125,150,100,100);
```

```
noStroke();
// make them transparent
fill(255,0,0,100);
ellipse(100,100,100,100);
fill(0,255,0,100);
ellipse(150,100,100,100);
fill(0,0,255,100);
ellipse(125,150,100,100);
```

Opacity ranges between 0 and 255 with 0 being completely transparent and 255 being completely opaque.

```
// Draw a VERY simple house.
/ / Author: Dustin Adams
size(200,200);
rectMode(CENTER)
rect(100,100,100,50);
triangle(100,50,40,75 160,75);
```

How many mistakes can you find in this program?
A. 1-2
B. 3
C. 4
D. 5
E. More than 5

```
// Which of these brief programs would produce the image
shown?
// Program A
background(255);
rect(10, 50, 30, 40);


// Program B
background(255);
rect(50, 30, 40, 10);


// Program C
background(255);
rect(30, 40, 10, 50);


// Program D
background(255);
rect(40, 10, 50, 30);
```
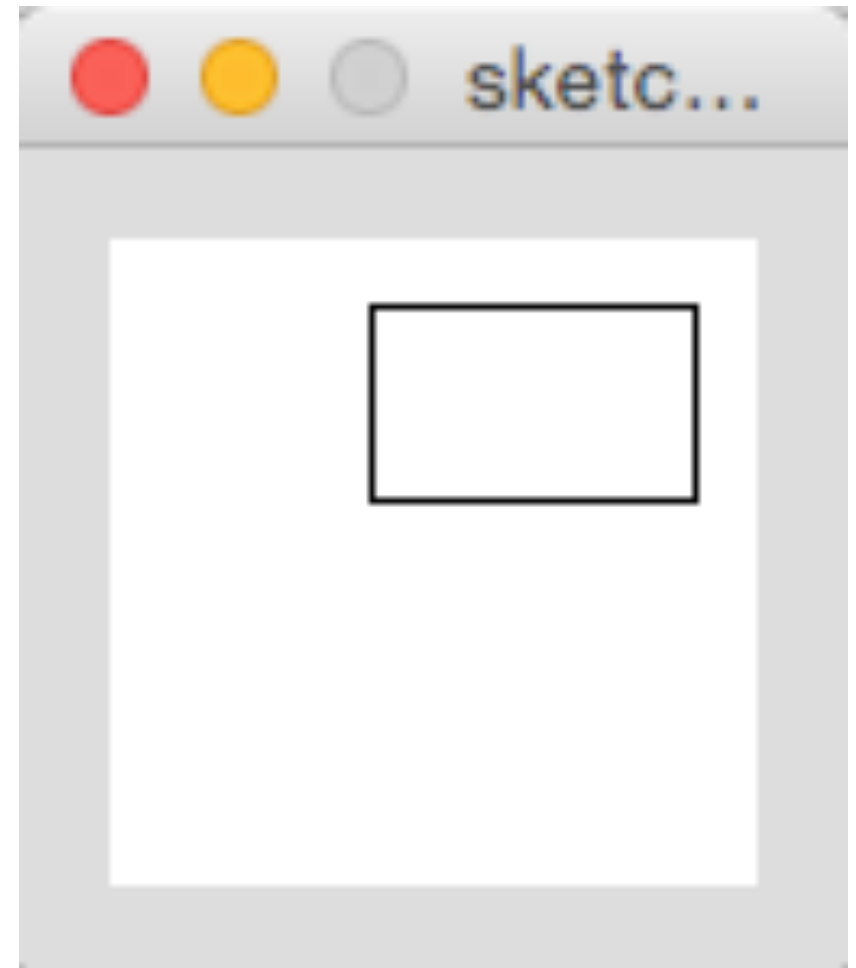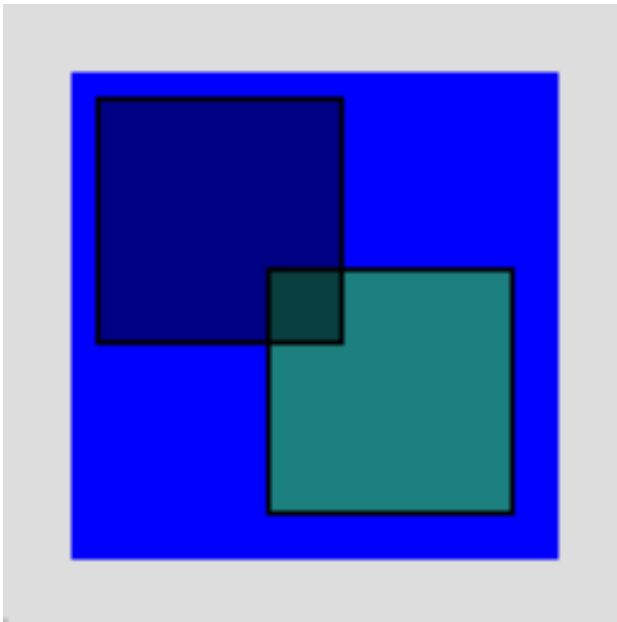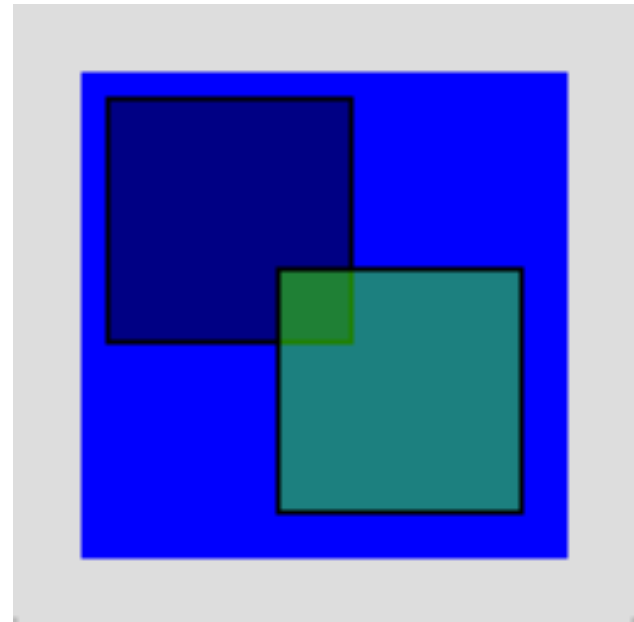

sketc...

```
size(100,100);
background(0,0,255); // blue
fill(0,128); // transparent black
rect(5, 5, 50, 50);
fill(0, 255, 0, 128); // transparent green
rect(40, 40, 50, 50);
```
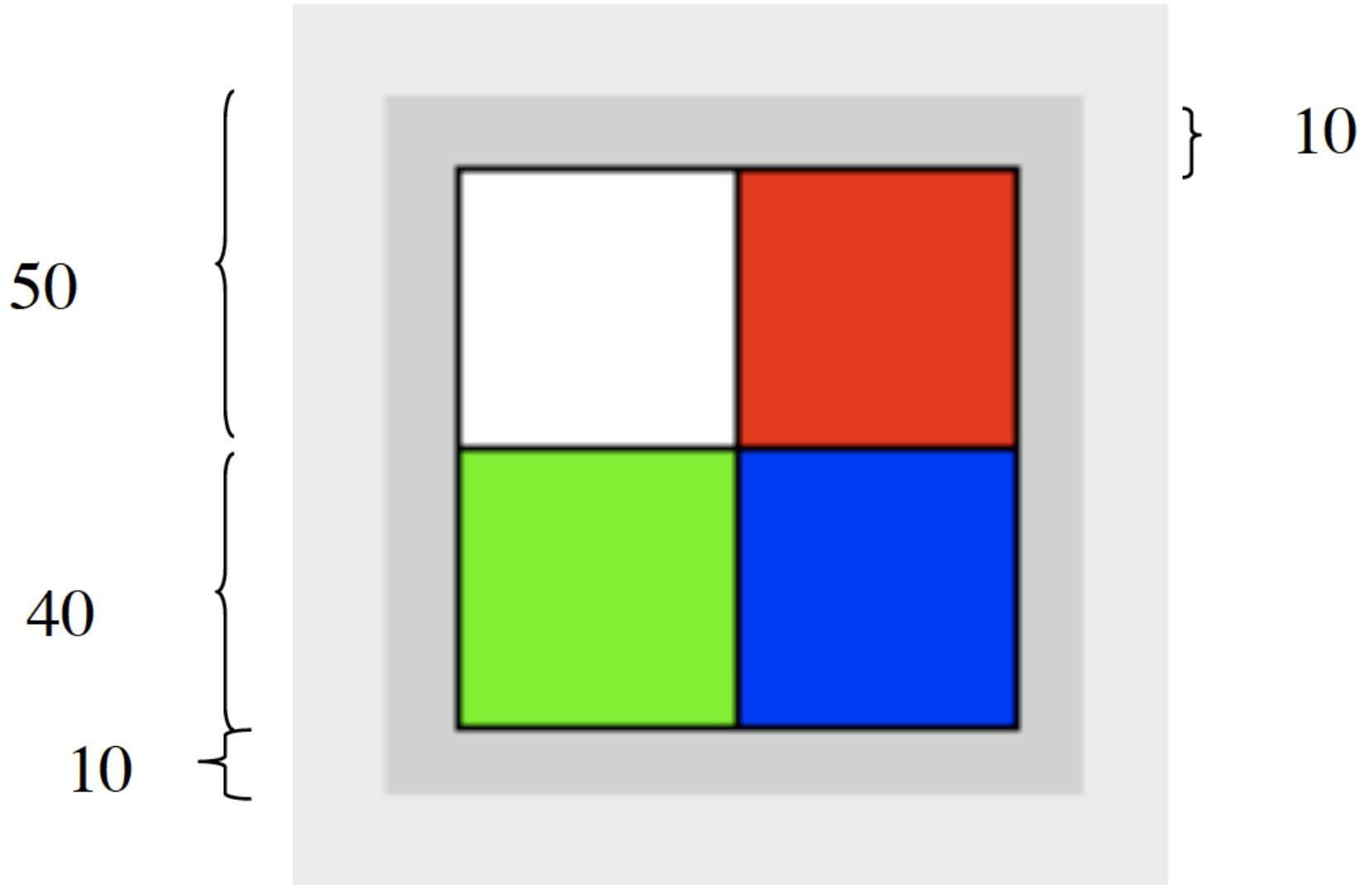

A   **B**

Extra Practice: Draw this in processing

To Do:

- Read chapters 1 & 2
- Lab 1 & Program 1