

Welcome to CMPS 5J

Instructor: Dustin Adams, PhD

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Office Hours

- Wednesday 1-5pm, Monday and Friday by appointment (appointment must be made at least 48 hours in advance)
- Engineering 2 room 249B



Lab Sections

All lab sections in Baskin 109

A: Mo 03:00PM-04:00PM

B: Mo 04:00PM-05:00PM

C: Th 03:00PM-04:00PM

D: Th 04:00PM-05:00PM

E: Th 05:00PM-06:00PM

F: Fr 10:00AM-11:00AM

G: Fr 11:00AM-12:00PM

H: Fr 03:00PM-04:00PM

You are allowed to attend whichever lab section you wish – it doesn't necessarily need to be the one you enrolled in.



Lecture and Lab

- Attendance in class and lab is not required – although it is your responsibility to learn the material.

Your TAs

Veronica Rivera (veariver@ucsc.edu)

Brian Schwarzmann (brschwar@ucsc.edu)

Devashish Purandare (dpuranda@ucsc.edu)

Amita Misra (amisra2@ucsc.edu)

TA Office Hours

Veronica: Tuesday 9-11am (E2 room 309)

Amita: Thursday 10am-12pm (E2 room 387)

Brian: Monday 11am-1pm (Baskin 312 C/D)

Devashish: times and location coming soon

LSS Tutoring

Yasunori Iwayanagi (yiwayana@ucsc.edu) -
Learning Assistant

Dane Cross (dncross@ucsc.edu) - Tutor

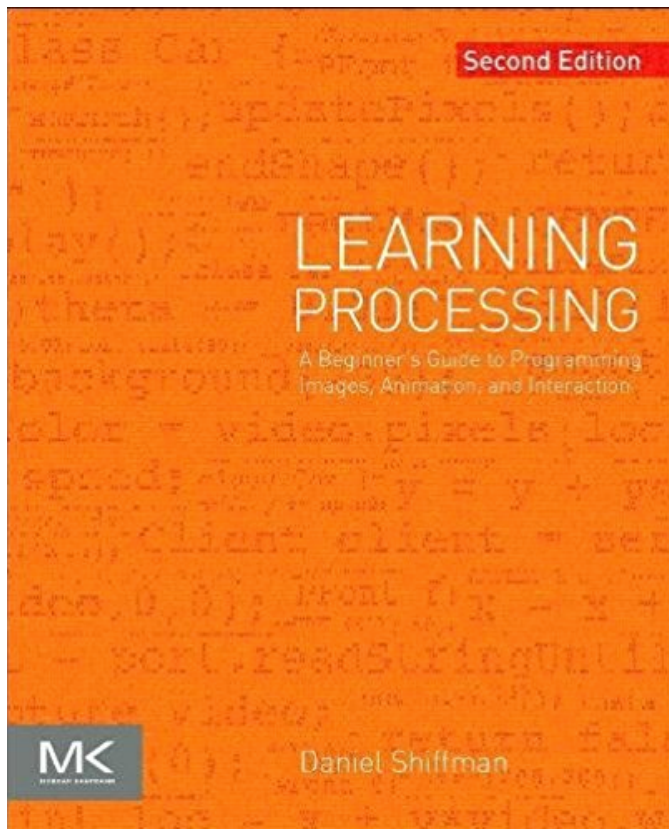
Times and location coming soon.

Online Resources

- Course webpage
- Canvas
- Piazza
 - If your question can't be answered through Piazza, email a TA – emailing the instructor is your last resort.

Textbook

- Learning Processing (any edition) by Daniel Shiffman.



Assignments

- Lab Assignments (20%)
 - Roughly one per week – these will take less time than programming assignments and will focus on specific concepts. 7 total.
- Programming Assignments (40%)
 - In-depth assignments that will require implementing several concepts. 5 total.
- Quizzes (20%)
 - One every two weeks - lowest quiz is dropped. 5 total.
- Final Exam (20%)
 - Tuesday March 20 @ 8am-11am

Opting out of final

- If you have an 80% average or above on all five of your quizzes (not your four highest), then you can opt out to not take the final exam – your final exam grade will be the average of all five of your quizzes. You must let the instructor know (and receive confirmation) at least 48 hours before the final exam that you will be opting out, otherwise you must take the final.

Quizzes/Exam dates

Quizzes take place during 2nd half of class time – you get 50 minutes for quiz.

Quiz 1: January 18

Quiz 2: February 1

Quiz 3: February 15

Quiz 4: March 1

Quiz 5: March 13

Final: Tuesday, March 20 8:00–11:00 a.m.
(regular classroom)

Latework Policy

- Late assignments (even by 1 minute) will be accepted up to 2 days after the assignment due date for 80% credit; assignments will not be accepted after 2 day grace period.
- **MAKE SURE** you submit the correct assignment. If you submit the wrong assignment, and realize this after the assignment due date, the assignment will not be regraded.

Academic Dishonesty

- In short, this means copying someone else's code for assignments, copying someone's answers on a quiz/exam, in general copying someone else's work and presenting as your own – see course webpage for more details, although you should know what cheating is.
- Consequences for academic dishonesty are receiving an automatic zero for assignment, and being reported to your college provost – this could result in expulsion. **DON'T DO IT.**

DRC Accommodations

If you qualify for classroom accommodations because of a disability, please get an Accommodation Authorization from the Disability Resource Center (DRC) and submit it to me in person outside of class (i.e. during office hours) within the first two weeks of the quarter. Contact DRC at 459-2089 (voice), 459-4806 (TTY), or <http://drc.ucsc.edu> for more information.

Accessing lab software

- Open the "Class Folders" folder on the Desktop
- Open "Computer Science" folder
- Open "CMPS 5J" folder

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

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);
```

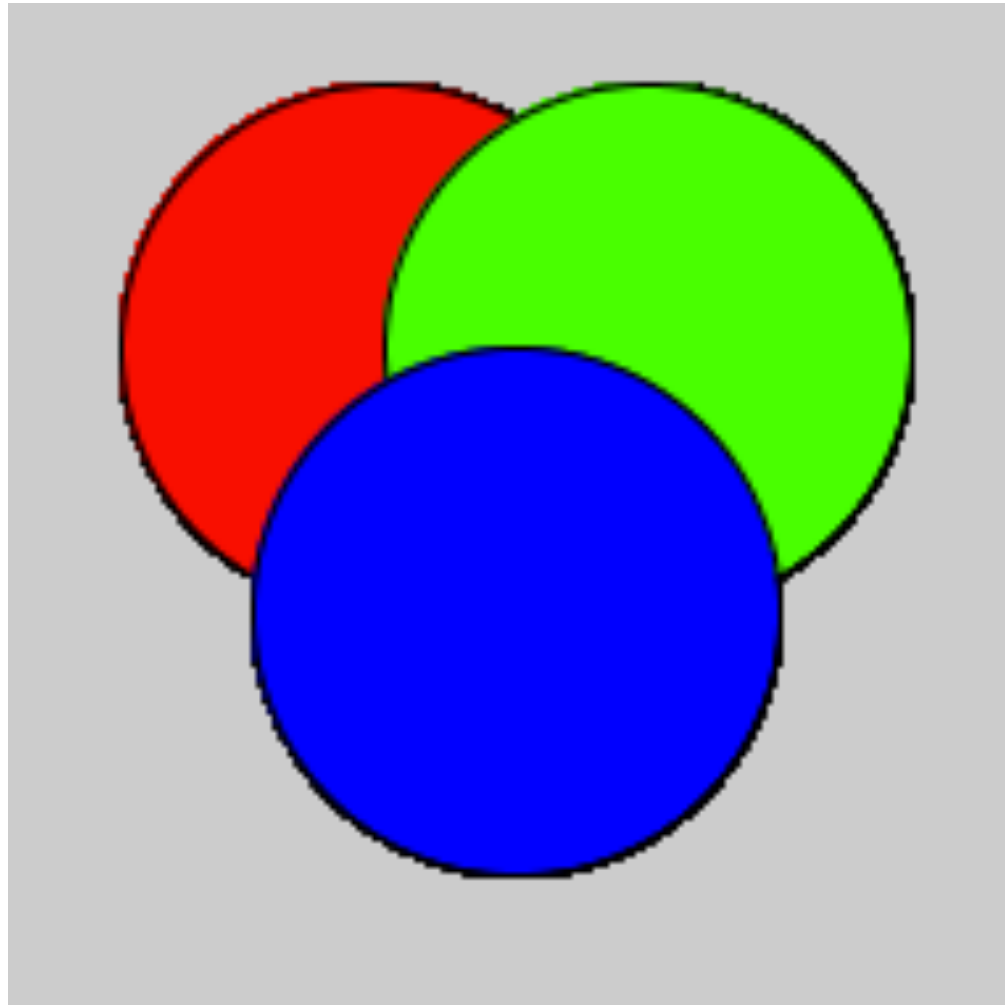
```
rect(-250,0,500,250);
```

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

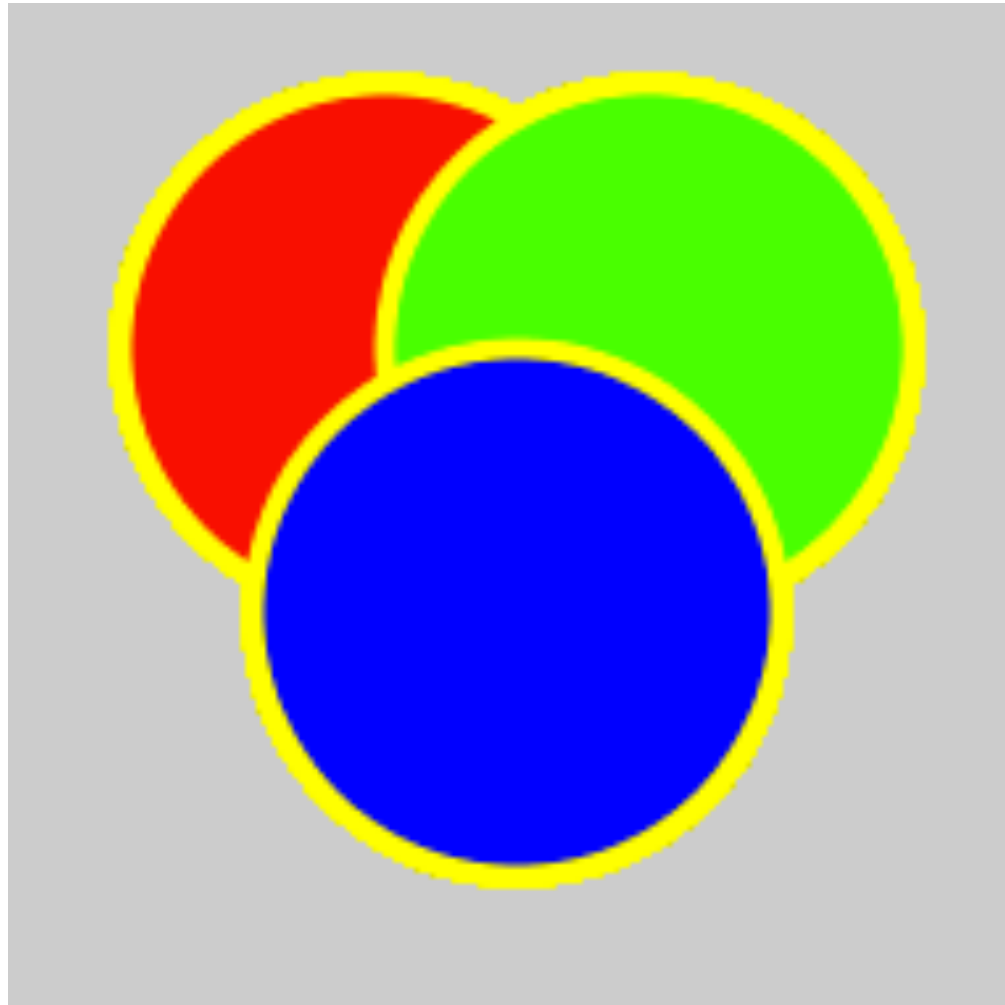
```
fill(255,0,0);  
ellipse(100,100,100,100);  
  
fill(0,255,0);  
ellipse(150,100,100,100);  
  
fill(0,0,255);  
ellipse(125,150,100,100);
```



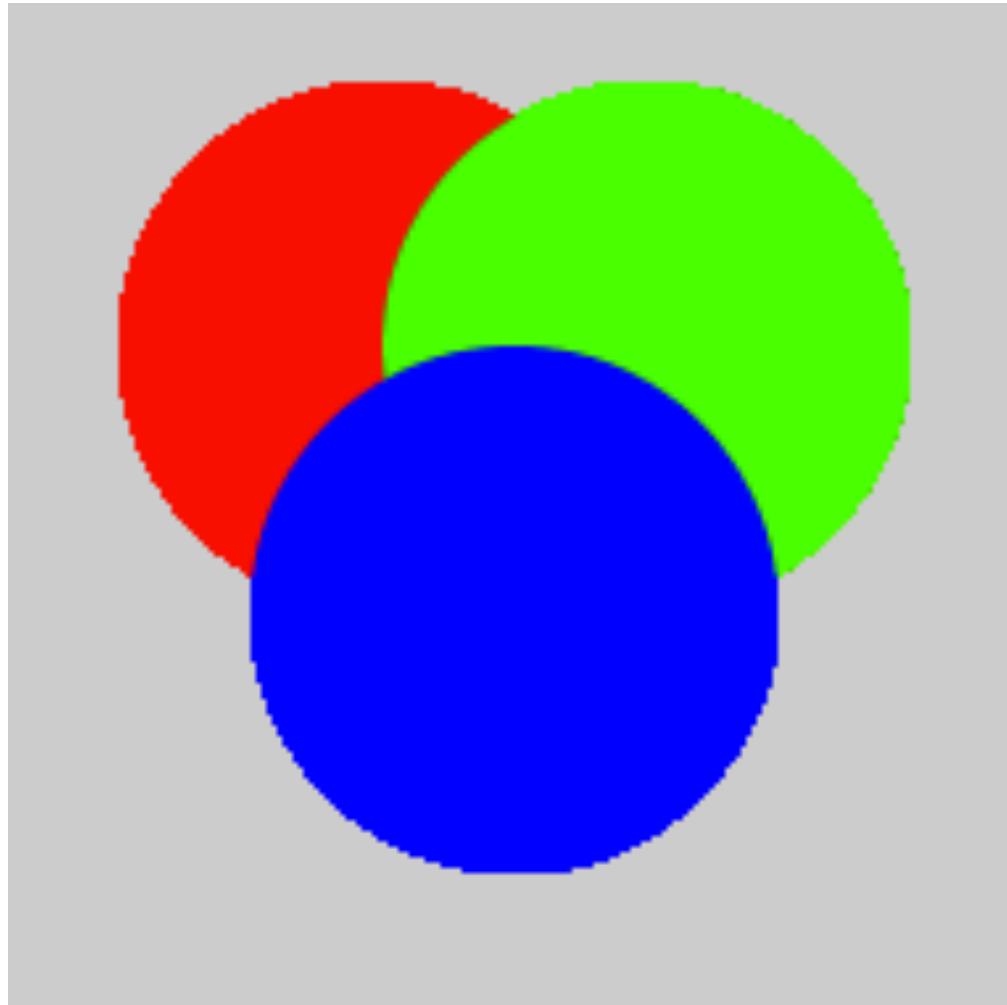

```
// outline in yellow
stroke(255,255,0); // R+G = yellow
strokeWeight(4); // make it a bit wider
fill(255,0,0);
ellipse(100,100,100,100);

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);
```



```
// 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

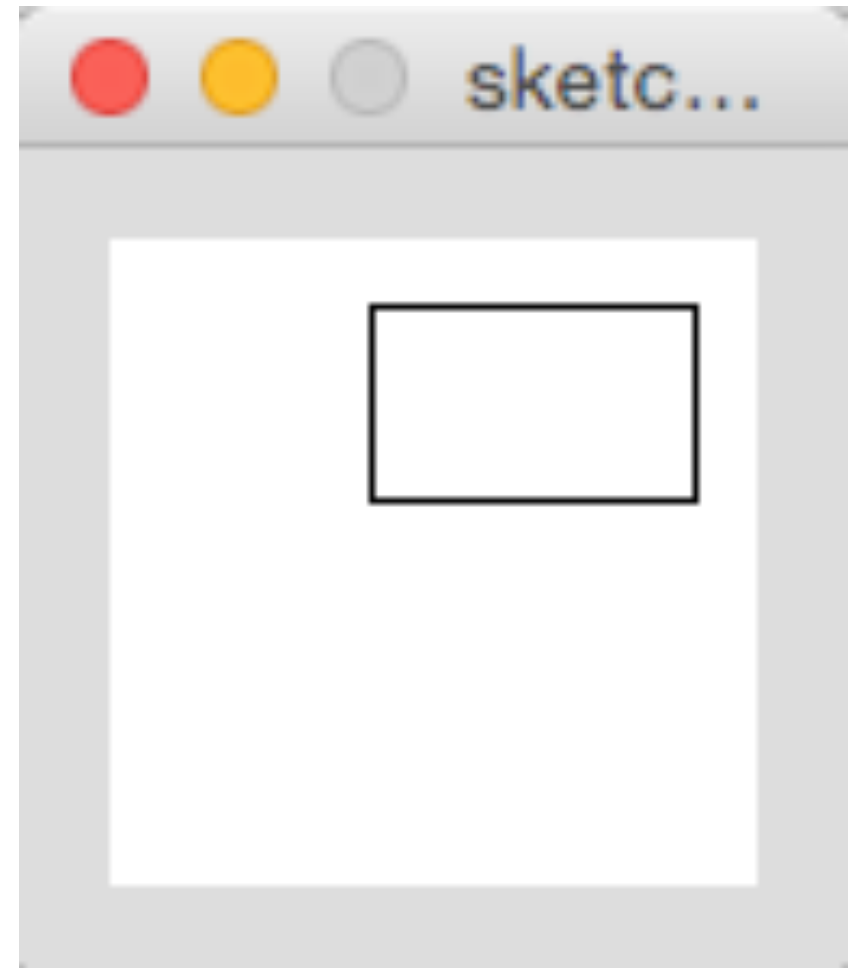
```
background(255);  
rect(50, 30, 40, 10);
```

// Program C

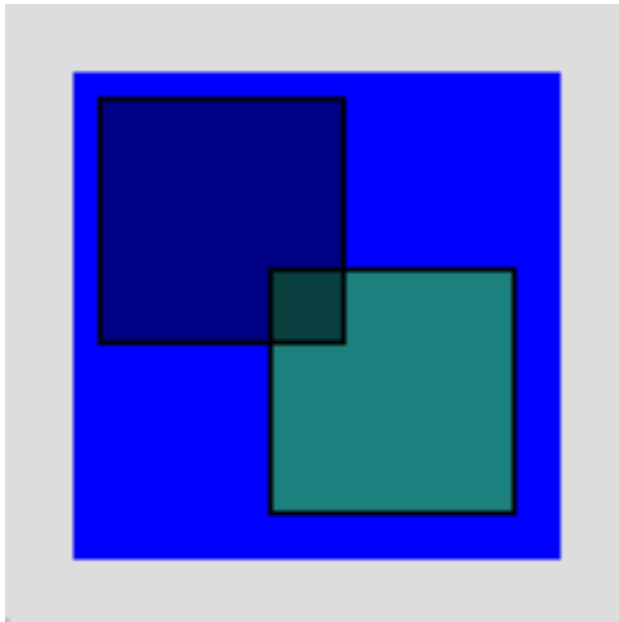
```
background(255);  
rect(30, 40, 10, 50);
```

// Program D

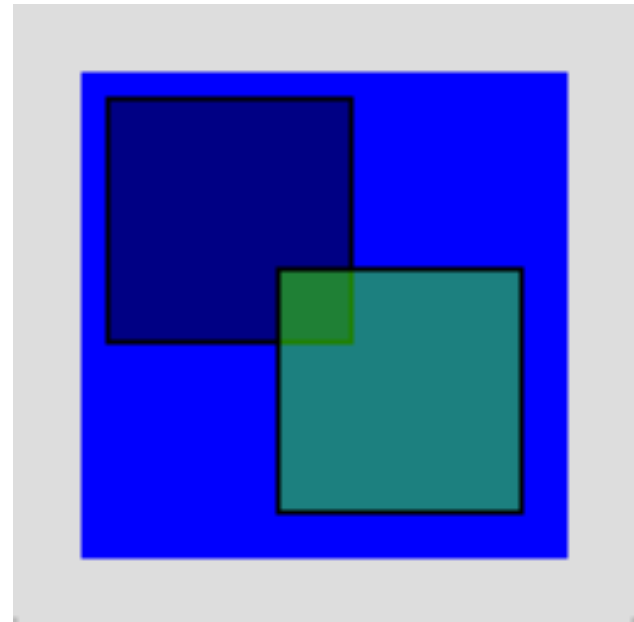
```
background(255);  
rect(40, 10, 50, 30);
```



```
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);
```

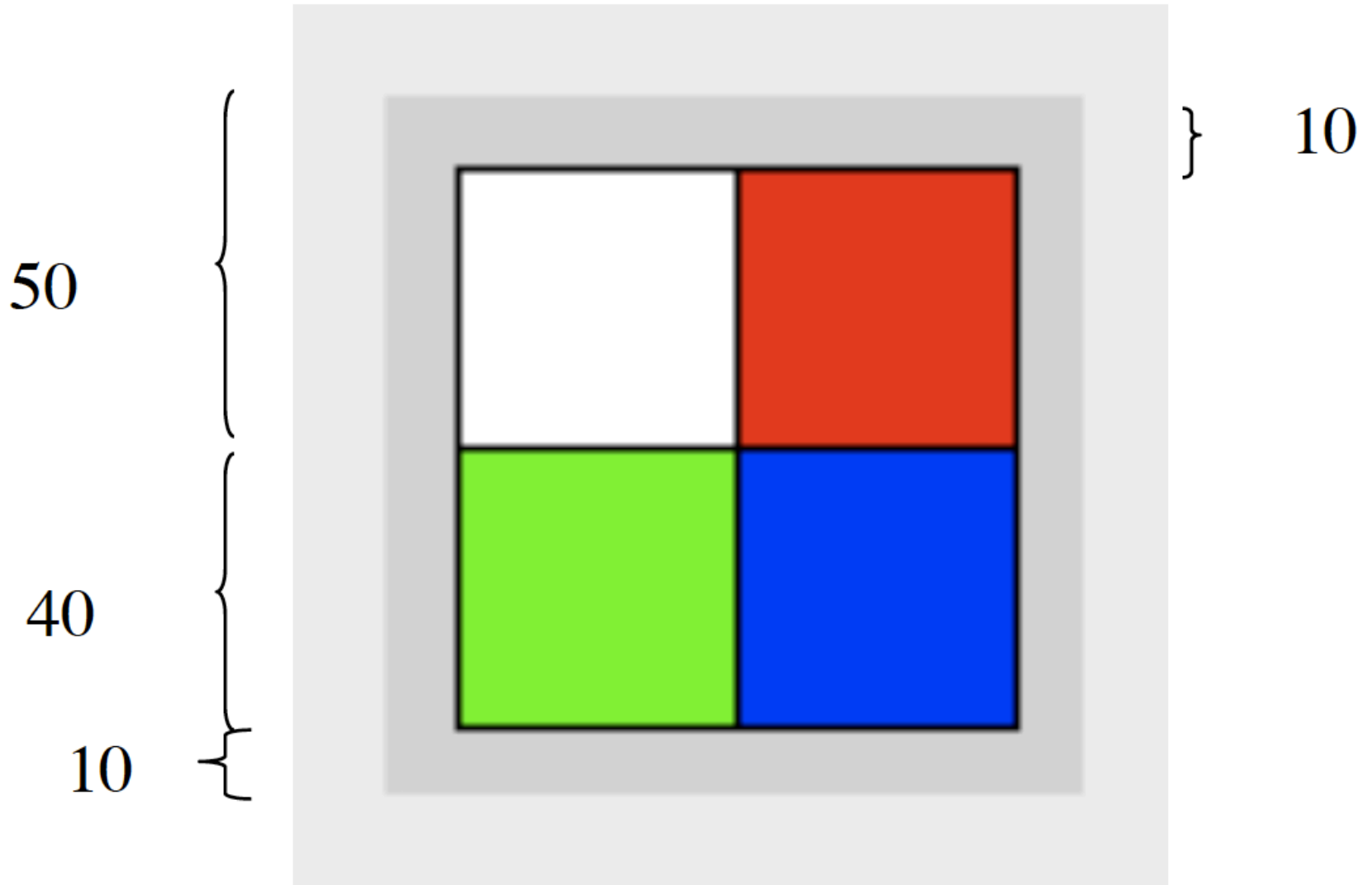


A



B

Extra Practice: Draw this in processing



To Do:

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