

CS 104 MSG Activity 2:
Variables & Scoping
Jackson Eshbaugh
February 17, 2025

Exercise 1.

Describe the difference between local and global variables.

Exercise 2.

What is the lifetime of a variable?

Exercise 3.

Given the following code, what will print?

```
1  int x = 10;
2
3  void setup() {
4      int x = 5;
5      println(x);
6  }
7
8  void draw() {
9      println(x);
10 }
11
```

Exercise 4.

What is the scope of each variable?

```
1  int a = 20;
2
3  void setup() {
4      int b = 15;
5      println(b);
6  }
7
8  void draw() {
9      println(a);
10 }
11
```

Exercise 5.

What will happen when you run this code? If there is an error, explain why and fix it.

```
1  void setup() {  
2      println(num);  
3  }  
4  
5  void draw() {  
6      int num = 100;  
7      println(num);  
8  }  
9
```

Exercise 6.

What will be printed in the console when you run this code?

```
1  int counter = 0;  
2  
3  void setup() {  
4      counter = counter + 5;  
5      println(counter);  
6  }  
7  
8  void draw() {  
9      int counter = 10;  
10     counter = counter + 1;  
11     println(counter);  
12 }  
13
```

Challenge: Modify the code so that `counter` always increases globally and does not reset inside `draw()`.