

Your Name:

Lab#6: Week of October 12,2020

Due by midnight on your lab day.

Question 1. Consider the following code

```
color mysteryColor(float x, float y) {
  float red = x / width;
  float green = y / height;
  float blue = (x+y) / (width + height);
  // draw function stack here
  return color(red * 255, green * 255, blue * 255);
}

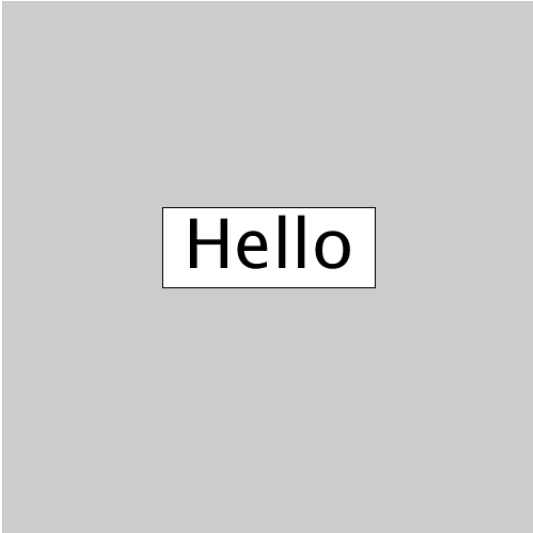
void setup() {
  size(500,500);
  rectMode(CENTER);
}

void draw() {
  background(255);
  color c = mysteryColor(mouseX, mouseY);
  fill(c);
  rect(mouseX, mouseY, 200, 200);
}
```

- (a). What functions are defined in this program?
- (b). What is the return type of `setup()`?
- (c). What is the return type of `mysteryColor()`?
- (d). What are the parameters of `setup()`?
- (e). What are the parameters of `mysteryColor()`?
- (f). What color is the rectangle when `mouseX` is 100 and `mouseY` is 300?
- (g). Draw the function stack triggered from `draw()` above at the comment.

Question 2. Write a program that draws text with a box around it.

- The box should fit tightly around the text.
- Use `textWidth` to get the width of the text given a `String`: `float tw = textWidth(message);`
- Use `textAscent` and `textDescent` to get the height of the text: `float th = textAscent() + textDescent();`



```
// Starter code

// define function drawTextBox
// Input: message (type: String)
// Input: x (type: float), the center X of the text
// Input: y (type: float), the center Y of the text
// Output: None
// Side effects: draws text with box around to screen

void setup() {
  size(500,500);
  fill(0);
  textSize(64);
  textAlign(CENTER);
  rectMode(CENTER);
}

void draw() {
  String message = " Hello "; // spaces before and after -> add padding
  float x = width * 0.5;
  float y = height * 0.5;

  // call your function here
}
```