

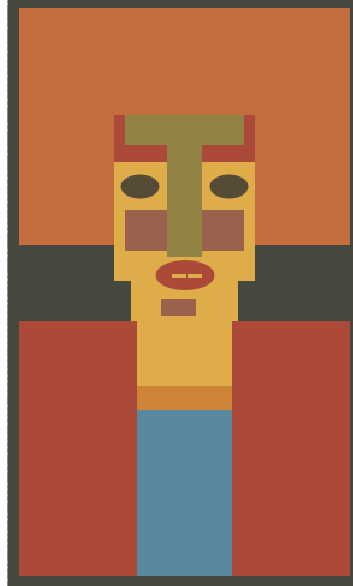


Extra Credit with HW06: How Logical Can You Be?

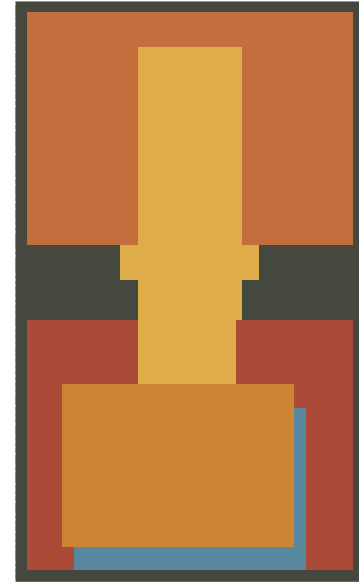
Goal: To understand and apply “order of execution” thinking to a broken program.



(a)



(b)



(c)

Part 1: Images

Figure (a) shows a painting by Emil Nolde on display at the Art Institute of Chicago called “Red Haired Girl”. Figure (b) shows a “box version” of the Nolde painting, which isn’t very beautiful, but is easy to understand: It is just a lot of colored boxes or ellipses. Figure (c) is a broken version of Figure (b). The problem is that the boxes are drawn in the wrong order. To understand, see the program below:

```

void setup() {
  size(300,500);
  background(53, 56, 49);
  noStroke();
}

void draw() {
  beezer();
  cheeks();
  chompers();
  eyes();
  face();
  forehead();
  hair();
  leftSideJacket();
  lips();
  neck();
  rightSideJacket();
  shirt();
  tee();
  teeth();
}

void beezer() {
  fill(128, 112, 53); //nose
  rect(135,100,30,120);
  rect(100, 100, 100,25);
}

void cheeks(){
  fill(135, 78, 61); //cheeks
  rect(100,180,100,35);
  rect(130, 255, 30, 15);
}

void chompers() {
  fill(212, 157, 57); //teeth
  rect(139,234,12,4);
  rect(153,234,12,4);
}

void eyes() {
  fill(68, 59, 42); //eyes
  ellipse(112, 160, 32, 20);
  ellipse(187, 160, 32, 20);
}

void face() {
  fill(212, 157, 57); //face
  rect(90,100,120,140);
}

void forehead(){
  fill(154, 56, 45); //jforehead
  rect(90,100,120,40);
}

void hair(){
  fill(181, 88, 47); //hair
  rect(10,10, 280,200);
}

void eyes() {
  fill(68, 59, 42); //eyes
  ellipse(112, 160, 32, 20);
  ellipse(187, 160, 32, 20);
}

void eyes() {
  fill(68, 59, 42); //eyes
  ellipse(112, 160, 32, 20);
  ellipse(187, 160, 32, 20);
}

void leftSideJacket() {
  fill(154, 56, 45); //jacket left
  rect(10,275,100,215);
}

void lips() {
  fill(154, 56, 45); //lips
  ellipse(150,235,50,25);
}

void neck() {
  fill(212, 157, 57); //neck
  rect(105,40,90,400);
}

void rightSideJacket() {
  fill(154, 56, 45); //jacket right
  rect(190,275,100,215);
}

void shirt() {
  fill(71, 117, 140); //shirt
  rect(50,350,200,140);
}

void tee(){
  fill(192, 112, 41); //tee
  rect(40,330,200,140);
}

void teeth() {
  fill(212, 157, 57); //teeth
  rect(139,234,12,4);
  rect(153,234,12,4);
}

```

Part 2: The Task

Your task is to grab a copy of the code from the Calendar page, paste it into a new Processing window, and rewrite the `draw()` function, so that it displays like Figure (b). You can only change `draw()`; **you cannot change anything inside of the box**. There are several solutions that will result in displaying Figure (b).

Suggestion

Perhaps the easiest way to solve this problem is to delete the code in the `draw()`, and draw each function separately to see what it looks like. For example,

```
draw( ){  
  face( );  
}
```

will show you what the face shape looks like.

Then, add function calls for parts of the picture so that they produce they right result.

Part 3: Your Version

Add one or more colored boxes to your program by defining a function to draw the boxes, and then calling the function at the right place in the program. You can make it more like the Nolde painting, or less like it. It's your choice, but it should be obvious what the change is, and it should be unlike anyone else's idea.

Wrap Up.

You have seen the importance of considering the order of evaluation of computer instructions. If the commands are given in the wrong order, the result is wrong.

Rename a copy of the `.pde` file with your name, and submit it into the class drop box.