

Syntax Recap

- function declaration

```
// ...comments describing the function's job and parameters...
void functionName ( type paramName, type paramName, ... ) {
    // ...statements in function body...
}
```
- function call

```
functionName(value1, value2, ...);
```

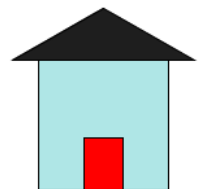
Drawing Function Questions

- Am I drawing something complex (more than a few shapes), or that appears more than once in the scene? → if so, create a drawing function
- drawing function definition
 - What is being drawn? → function name (and comments)
 - What differs from one copy to the next? → function parameters
 - What is it for? → parameter name (and comments)
 - What kinds of value is it? → parameter type
 - How is it drawn? → function body
- drawing function calls
 - When should the task be performed? → where to put the function call
 - What are the specific values for the things that can vary? → arguments

If You Have Time

(come back to this if you've finished the exercises on the other side)

Create a new sketch called **sketch_240918c** which contains several copies of the house shown – the houses should be in different positions in the drawing window and should have doors with different shades of red. Create a drawing function with appropriate parameters for drawing the houses.



If you still have time, add other kinds of compound things (3+ shapes) to the scene. Include multiple copies of each kind of thing in your scene, and consider different aspects that can be varied. Create a drawing function with appropriate parameters for each kind of thing.

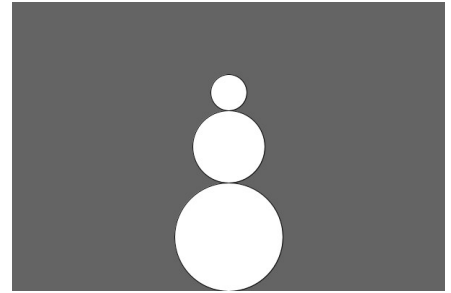
At the End of Class

- Make sure each sketch has a comment with the names of your group, and that you have saved your sketches.
- Use FileZilla to copy the entire folder for each of your sketches into your handin directory (**/classes/cs120/handin/username**). You only need to hand in one copy for the group.

Exercises

1. Create a new sketch called **sketch_240918a** and either copy and paste from the solution for #2 from Monday's in-class exercises (snowman with functions) or type in the following code:

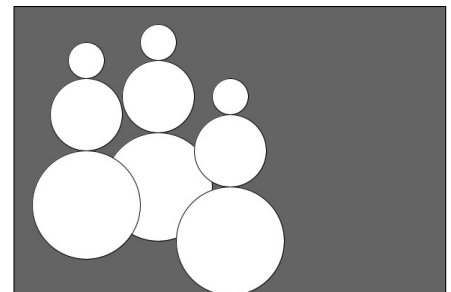
```
void setup () {  
  size(600,400);  
}  
  
void draw () {  
  background(100);  
  drawSnowman();  
}  
  
void drawSnowman () {  
  ellipseMode(CENTER);  
  fill(255);  
  stroke(0);  
  ellipse(300,325,150,150);  
  ellipse(300,200,100,100);  
  ellipse(300,125,50,50);  
}
```



Run it to verify that it draws a white snowman on a gray background as shown.

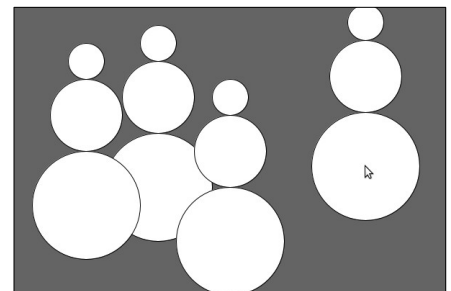
2. Modify the sketch so that there are three snowmen, as shown. Do this by adding parameters for the snowman's position to your drawSnowman function, then calling the function three times.

(You don't need to match the positions shown exactly, but aim for something close.)



3. Modify the sketch so that there is a fourth snowman which follows the mouse. The mouse pointer should be in the center of the bottom circle, as shown.

(Hint: doing this should only require adding one line to your sketch!)



4. Save a copy of your sketch as **sketch_240918b**, then modify the copy to produce the picture shown – add a parameter to the drawSnowman function for the width of the snowman, and update the function calls to make the snowmen in the scene different sizes. Maintain the relative sizing of the circles within each snowman – the middle circle should still be 2/3 the size of the bottom circle and the top should be 1/3 the size of the bottom.

