Tiles at the bottom of the Alice window.
Format of instructions:

Chicken properties and methods:
Given below are the chicken functions.

```
create new function

proximity
- Chicken is within threshold of object
- Chicken is at least threshold away from object
- Chicken distance to
- Chicken distance to the left of
- Chicken distance to the right of
- Chicken distance above
- Chicken distance below
- Chicken distance in front of
- Chicken distance behind

size
- Chicken's width
- Chicken's height
- Chicken's depth
- Chicken is smaller than
- Chicken is larger than
- Chicken is narrower than
- Chicken is wider than
```

Array Visualization special methods and functions

```
create new function

ArrayVisualization's details
- array
  - the value at ArrayVisualization[index]
  - ArrayVisualization's size
```
1. (8 pts) Consider the following snapshot of an Alice world in which there are three objects which are (from left to right) dewdropWillowwind, toadStool, and wheeley. There is also a small book you cannot see which is located about 1.7 meters (the height of the toadStool) below the ground and directly below the toadStool.

A) List the events in this world.

B) List the event handlers in this world.

C) What happens in the world when the Play button is selected.
2. (4 pts) Consider the following code and array of animals shown below as a picture and as a property. Also shown are an ArrayVisualization and an ObjectVisualization.

```
let ObjectVisualization = the value at ArrayVisualization [ 1 ] more...
let ArrayVisualization [ 1 ] = the value at ArrayVisualization [ 2 ] more...
let ArrayVisualization [ 2 ] = the value of ObjectVisualization more...
```

Remember that when an object is printed, its name is printed. What output is printed when this code is executed?
3. (6 pts) Consider the following code that does not work as intended. This code should resize the penguin a random size of 2, 3 or 4 times its original size. Then the code should resize the penguin back to its original size.

List and explain any errors and how to fix them so the code works as intended.

4. (6 pts) Consider executing the following Alice code.

A. How many times does bigFish say “Hi!”?

B. After the code executes, is bigFish above, below or in the same position as he was before the code executed?

C. What is the distance of between bigFish’s original position and his position after the code completes?
5. (8 pts) Consider the following Alice world in which the zombie (with his arms up) is chasing Zeus.

Give the Alice code that does the following. Repeatedly move Zeus 0.5 meters and the zombie 0.7 meters (make sure that the zombie is headed towards Zeus), until the zombie is closer than 0.3 meters from Zeus (that is the distance from Zeus’ center to the zombie’s center). At that point the zombie should say “Gotcha!”
Write a method called `decrementAndReset` that has one integer parameter called `startValue`. This method should subtract one from the timer that is displayed, and if the timer's resulting value is 0, then the coach should say “Reset Timer” and the timer should be reset to `startValue`. For example, using the picture above, the call `decrementAndReset startValue = 14` should now display the timer to be 9. As another example, if the picture above displayed the number 1 then the call `decrementAndReset startValue=14` should have the timer turn to 0, the coach say “Reset Timer” and the timer now display 14.
7. (20 pts) Assume there is a list of objects called `animals` containing six animals of different sizes as shown in the figure below.

A. Write the function `firstAnimalOfColor` that has a parameter named `someColor` of type `color` and returns the first object in the list whose color is equal to `someColor`. If there is no animal of that color, then return the T-Rex. For example, in the figure above the penguin is the only blue animal. A call to `firstAnimalOfColor someColor=Blue` returns the penguin.
B. Write the method `equalizer` that has a parameter named `someAnimal` of type `object`. This method resizes all animals smaller than `someAnimal` to be the same height as `someAnimal`. For example, if the list `animals` is initialized as shown on the previous page, then the result of the call “equalizer someAnimal=flamingo” is the figure below, with the turtle, monkey and penguin all being resized to the height of the flamingo. The horse and T-Rex are taller than the flamingo, so they are not resized.

Complete the code below.

```javascript
world.equalizer
world.equalizer (Obj) someAnimal
No variables
```
8. (20 pts) Consider the array of sport balls called *elements* shown below.

A) Write the function `World.indexOfTallest` that does the following. It returns the index of the tallest object in the array `elements`. For example, a call to `indexOfTallest` returns 4, because the `beachBall` is the tallest and it is in slot 4. Don’t forget a return statement.
B) Write the function `World.NumberVisible` that does the following. It returns the number of objects in the array elements that are visible. For example, if the array looked like the figure below, then the call `NumberVisible` would return 4 since only four of the six objects in elements are visible. (Assume an invisible object means the `isShowing` property of that object has been set to false).