Alice Lab 4

The purpose of this lab is to begin to understand the use of lists in programming.

1. Add a Cheshire Cat and ten hamsters to an empty world. You may want to make the hamsters bigger so that they can be seen more easily.
2. At the world level, create a list that contains all of the hamsters.
3. Create a world method called moveHamsters that uses "for all together" to make every hamster turn left a random amount between 0 and 1, and then move forward 1 meter. Include a loop that makes this go on forever. Test this to see that it looks reasonable, but then disable it so that it doesn't confuse the rest of these steps.
4. Create a method of the Cheshire Cat called "kill" that takes an object argument and sets that object's color to red, plays the "pop" sound, and makes the object invisible. Test this. It will not look quite right, since the cat will "kill" any hamster no matter how far away it is.
5. Write a method of the Cheshire Cat called "chaseDown" that takes an object argument. This method should consist of a loop that continues as long as the distance between the cat and the object is at least one meter. The actions in the loop are to have the cat turn to face the object and then move one meter forward. Test this method to make sure it works, and then combine it with "kill" on a particular hamster. You may need to change the one meter threshold, depending on how big the hamsters are relative to the cat.
6. Write another method of the Cheshire Cat called "chaseAndKill" that takes an object argument and passes it to the "chaseDown" and "killmethods.
7. Add a "for all in order" to myFirstMethod that will loop though the entire list of hamsters. Inside that loop, it should tell the cat to chaseAndKill the first item from the list of hamsters, and then remove the item that is at the beginning of the list of hamsters. To remove an item from a list, drag the entire list into the method, and you will see a menu that allows you to insert, remove, or set list values.
8. Finally add a "do together" to myFirstMethod that includes the "for all in order" of step 7 and calls the moveHamsters method (which you may have to enable). When you test this, the cat may go off the screen. So it might help to allow the mouse to move the camera so you can continue to watch the action.
9. You do not have to turn your program in, but you must show it to me when you finish.