Alice Lab 2

For this lab, work with someone different from last time. Switch roles several times during the period. At the end, make sure both partners have a copy of the program in their space.

1. From the Amusement Park gallery, create an object from the BumperCars class and place it in a new world. Position the camera high enough and tilted down enough so that you can see the entire area where the cars can run around. Also turn things so that the Bumper Cars sign is visible. Notice that there are already two car objects that are really part of the bumperCars object. However, you cannot create new methods for them (although you can for the parent object).

2. Add two numeric variables to the bumperCars object called “c1assicBumps” and “pirateBumps”, and set their initial values to zero (not one). These variables will be used to keep track of how many times each car bumps into something.

3. Make both cars move forward smoothly at a rate of one meter per second. Test this to see if it's working. If you let it run long enough, both cars should pass through the walls eventually. We will have to keep that from happening in one of the next steps.

4. Create two new methods for the bumperCars object: bumpPirateship and bumpClassicCar. Each method is to make the appropriate car move backwards two meters, turn by a small amount, and increment (increase by one) the corresponding variable (pirateBumps or classicBumps).

5. Prevent each car from leaving the area by using events to check whether the cars are too far from the center of the bumperCars object. (With this object, it’s awkward to test for running into the walls, so instead you should test if a car is more than 10 meters from the middle). If a car is too far from the middle, it “bumps into a wall” and should move backwards, turn, and have its counter incremented. Allow the mouse to move objects, and test this to see if it works.

6. Create another method for the bumperCars object called “bump” that will cause both cars to move backwards two meters, turn by a small amount, and have both variables incremented. Then create another event that will be triggered when the cars are too close together (within **3** meters).

7. Allow two players to control their cars only by allowing left and right turns of 1/8 revolutions. Use the letter keys “A” and “S” for one car, and “K” and “L” for the other.

8. Change the loop that makes the cars run forever by making it run only as long as both cars have been bumped 10 times or less (including bumps into the walls or the other car). As soon as either car has bumped more than 10 times, both cars should stop.

9. Add “if” statements so that when the cars have stopped, the car with the fewer bumps says “I win!”. If both cars have more than 10 bumps, they should both say “We both lost!”.

10. If you have time, figure out something else to do that would make this more interesting or realistic. Save the program in your space on the network drive. Do NOT turn it in on the shared drive.