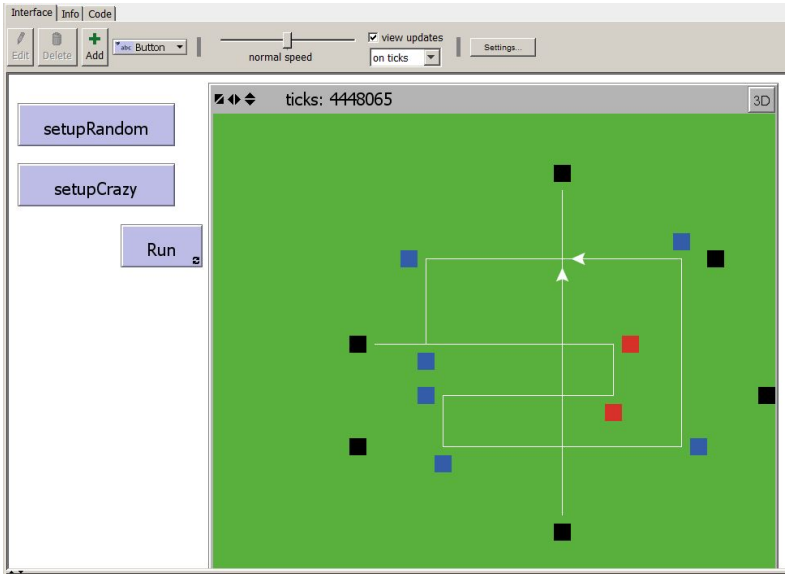
CS108L Computer Science for All
Module 4 Intro
Bumper Turtles



The Bumper Turtles model created in this lab requires the use of **Boolean logic** and **conditional control flow**. The basic rules are:

1. Each turtle starts in the middle of a random patch.
2. At each tick, every turtle looks ahead one patch in its current heading.
    a. If the patch ahead is black then the turtle makes a U-Turn.
    b. If the patch ahead is blue, then the turtle makes a 90° left turn.
    c. If the patch ahead is red, then the turtle makes a 90° right turn.
    d. If the patch ahead is green, there are two options available: if there is another turtle in that patch then the turtle makes a U-Turn; otherwise, the turtle runs one step forward on the turf.

Module 5: Bumper Turtles Grading Rubric (20 Points Total)		
Done	Points	Task
	1	A: • Submit one document to your instructor: NetLogo source code named: M4.*firstname.lastname*.nlogo. • The first few lines of your code tab are comments including your name, the date, your school, and the assignment name.

	3	B: • The code in the code tab of your program is appropriately documented with "inline comments".
	2	C: • Complete all sections in the Info tab.
	1	D: • Your Setup button creates at least 2 turtles. Each turtle must have unique coordinates. • Every time the setup button is pressed, the turtles you create are always created in the same set of unique locations.
	4	E: • The Go button moves turtles along a path that loops.
	3	F: • There are at least a total of 10 black, red and/or blue patches that affect the path of the turtles. And 1 of these is a group of 3x3 patches made using the **AND** keyword.
	3	G: • Whenever one of your turtles turns from its path to avoid another turtle, it later returns to its path. Hint: add a black patch to cause the turtle to turn back around.
	3	H: • There is at least one patch where two different turtle paths cross.
	2	I: (Extra Credit) • All of your turtle movement works as required. • You have at least 5 turtles • Your turtle paths cross each other in at least 5 places • There are at least 25 black, red and/or blue patches that affect the path of the turtles.
	2	J: (Extra Credit) • Make the program in 3D (see "Bumper Turtles" video for details). You will need a separate netlogo file. Please name it M4.*firstname.lastname.3D*.nlogo.