HW2: Graphs and Grids

Due Monday Feb 2nd
(As a homework assignment, this will be graded on completion, but use it as a license to explore these tools in an open-ended way! Also, add the usual readme with any assistance you received, but you don't need to do further writeup)

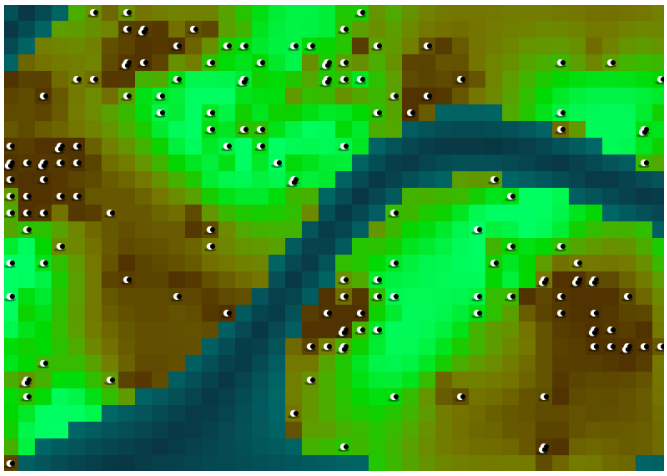
Clone the Github HW2 folder
In this assignment, you will get a chance to practice creating several different kinds of cellular automata, and make some art with Voronoi diagrams.

There is a new file called "customGrids.js" that you will be editing. This file contains several subclasses of the Grid and Voronoi classes, which create grids, and voronoi diagrams, respectively. Hitting "1", "2", and "3" will cycle between them, resetting the grid each time.

Reimplement (or implement correctly) the following 3 classes:

Game of Life

Replace the "GameOfLife" functions in "customGrids.js" with the rules to create the Game of Life.

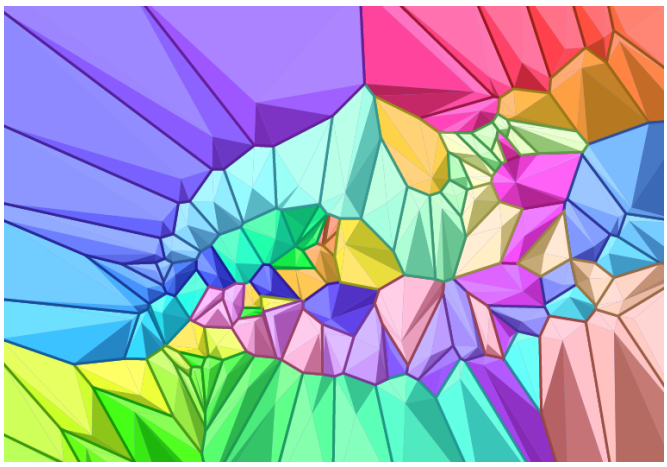


Some Custom Cellular Automata

Replace the "CustomAutomata" functions in "customGrids.js" with the rules for a new, different automata. You can look at "ExampleAutomata" for a very complex example, which uses a "postUpdate" function to do calculations after the initial "sheep AI" rules run.

Drawing with Voronoi

Replace the "CustomVoronoi" functions in "customGrids.js". Use the Voronoi library to create some interesting generative art! You may wish to animate it with the "update" function, or not. Different ways of creating and coloring the region centers will have a big impact on how it looks! So will the way that the regions are drawn (the implementation shows only one possibility out of many. Can you use dots, lines, other shapes?)



I've wrapped the rhill-voronoi library so that it automatically generates the voronoi diagram, and

splits up all the regions, and assigns them edges, then sorts the edges. This allows for easily using the processing “beginShape” polygon maker to make polygons for each region. You can look in the voronoi.js file to see what I’m doing.

Inspiration for Voronoi artworks

http://polygenapp.tumblr.com/
http://www.cgl.uwaterloo.ca/~csk/projects/voronoi/
http://www.jfernquist.com/projects/voronoiArt.html