Open Frameworks Midterm Concept

My midterm project is a component of my thesis project. The core idea is a version of the game Pipe Dreams. In Pipe Dreams, the player sees a grid of tiles that contain different configurations of pipe segments in line, el, t, and cross shapes. Players can click a grid square to rotate it, and linking grid squares so that the pipes line up allows power to flow through them. This piece is used in my immersive theater project as a digital interface to allow players to activate different terminals in the space by routing power to representations of those terminals on the screen.

The project is built such that the grid is dynamically generated and can change size, and the checking for connection is handled algorithmically. The code generates a random grid of different pieces and displays the images in the grid. A power sources sits next to one tile, and power generates from that tile into the grid. Each update, the game checks to see which tiles are powered that are adjacent and connected, and it changes the color of the pipe from white to yellow when the tiles are connected. This is done using a set of arrays that represent the state of openness of different sides of each tile and compares those tiles to the tiles of its neighbors, which are determined using a formula, so the grid size can be changed without breaking the connection logic. Depending on how difficult this is, I may also attempt to animate the movement of the power through the pipes, although I do not yet know how I will accomplish that.

Inspiration

Rocket Mania