COMP 4959: Lab 3

For this lab, you are asked to implement an animation of a cellular automaton similar to the Game of Life.

Just like the Game of Life, the "universe" consists of a 2-dimensional grid of cells, with each cell having 8 neighbors. But now, each cell can be in one of 3 states: alive, dying, or dead.

In the next iteration,

- a cell that is alive becomes dying;
- a dying cell becomes dead; and
- a dead cell becomes alive if it has exactly 2 live neighbors; otherwise, it remains dead.

Each time the application is loaded, a different grid of 64 by 64 cells, with each cell randomly chosen to be either alive or dead, is used. (You may want to use the `random` crate for this.) In the animation, use black for live cells, red for dying cells and white for dead cells. Similar to an example in class, there should be a start/stop button. Furthermore, add an additional "step" button that allows the user to step through the animation, one iteration at a time.

Name your project `lab3`. Submit a zip file named `lab3.zip` containing everything in your project except for the `pkg` directory. Make sure your submission builds correctly with the command `wasm-pack build --target web` and can be served by a web server. Additional details may be announced. You will also need to set up your application and do a demo in class. Maximum score: 15