**GAME OF LIFE PLAN**

**MODEL:** Keeps a list (the grid) of Cells and updates every step. Stores two, one to perform updates on based on the current one, which doesn’t change until whole step is completed. This way, when you change the first cell in the sequence of cells to change, it doesn’t affect the neighbors of the cells around it.

Alternatively, only update cell neighbors before we start updating cells.

| **Method Name** | **Return type** | **Functionality** |
| --- | --- | --- |
| updateCell(Cell) | void | Changes to active or inactive based on amount of neighbors |
| updateAllCells(ArrayList<ArrayList<Cell>>) (uses 2D arrayList) | void | Updates entire map based on the boolean values of another map. |

CELL ABSTRACT SUPERCLASS

FIELDS

| **Field Name** | **Field Type** | **Functionality** |
| --- | --- | --- |
| isActive | boolean | Determines whether a cell is holds bacteria |

EdgeCell

Subclass of Cell, Constructor sets isActive to false and never changes.

Easier if its a subclass of cell to check class type.

Cell

*DATA FIELDS*

| **Field Name** | **Field Type** | **Functionality** |
| --- | --- | --- |
| neighborsActive | int | How many active cells neighbor this cell |

*METHODS*

| **Method Name** | **Return Type** | **Functionality** |
| --- | --- | --- |
| setActivityOnLaunch() | boolean | 40% chance on initialization |
| step() | void | Determine what happens when user steps |
| updateActiveNeighbors() | int | Finds number of active neighbors when called and updates neighbors |

**VIEW**

| **UI Button Name** | **Return Type** | **Functionality** |
| --- | --- | --- |
| Step: calls controller step() | void | Steps through each cell |
| Play: calls controller play() | void | Plays the whole animation without stopping |
| Pause: calls controller pause() | void | Stops the whole animation |
| playOneStep() | void | Calls controller to play only a single step of animation |

**CONTROLLER**

| **Method Name** | **Return Type** | **Functionality** |
| --- | --- | --- |
| play() | void | Plays the whole animation without stopping |
| step() | void | Steps through each cell |
| pause() | void | Stops the whole animation |
| playOneStep() | void | play only a single step of animation, calls model update methods. |