**Progress Report**

**- Increment 2 -**

**Group # Germ Theory**

# Team Members

Adam Pelah – ap17h – adampelah. Hector Rizo – hmr17c – tripplerizz.

**Project Title and Description**

Game of Life – A semi-realistic automata / simulator of the effect of a virus on a population over time. People are represented by a ‘cell’, and cells are placed in a grid, with each grid space allowing one cell. Basic rules govern whether each cell will survive onto the next generation (each iteration). These rules revolve around a cell’s interaction with its neighbors, such as number of neighbors, proximity to an virus-infected cell, as well as non-neighbor factors such as age and time infected.

1. **Accomplishments and overall project status during this increment**

In this increment, we really started to fill the classes with the necessary functions. We implemented a basic version for almost every high priority requirement, such as the move function and the death rate function. In addition to this, we made the gameboard class what is needed to be and configured the interactions between it and the cell class. We also implemented a cleaner, more complex visualization using pyplot. Although all these functions need refinement, they are in a very solid place in comparison to the previous iteration, where some were not even defined.

1. **Challenges, changes in the plan and scope of the project and things that went wrong during this increment**

Fine tuning and getting the right structure for accessing cells was the main challenge for this iteration. In the end we decided for a dictionary filled with cells and a grid filled with the infected status values for those cells (1=healthy, 2=infected). In terms of the fine tuning, we were not facing any technical difficulties, but rather were having trouble setting the right rules for things like death. For example, our death rate function was sometimes killing too many cells too fast, while our move function was not intelligent enough. Additionally, our scope has changed slightly, as we realize it is a heavy stress on the computer to visualize even a 10,000\*10,000 grid, and so we will have to rethink our ideas for implementing ‘realism’. Getting used to matplotlib was finnicky at times, but it is a much healthier visualization compared to a small 3\*3 square on console.

1. **Team Member Contribution for this increment**

*Please list each individual member and their contributions to* ***each of the deliverables in this increment*** *(be as detailed as possible). In other words, describe the contribution of each team member to:*

* 1. Hector and Adam contributed to the progress report, with Hector contributing most to this section and the title section, and Adam contributing most to the accomplishments and challenges sections.
  2. Hector did the two diagram sections for the RD report, while Adam wrote the rest of the sections.
  3. Adam wrote the first two sections of the IT report, whereas Hector wrote the last three.
  4. Adam created the algorithm for filling, updating, and visualizing the grid, while Hector completed various cell functions, such as movement and interactions with other cells.
  5. Hector and Adam jointly worked on the video presentation.

1. **Plans for the next increment**

Main priority is to make the cell movement and interaction more complex and intelligent as of now it is still quite primitive. Ideally, there would be a means to choose a location and provide a simulation based on the current statistics of that area. We would like to add web scraped data and a graphical user interface.

1. **Link to video**

[**https://youtu.be/YeiUnWqqUj8**](https://youtu.be/YeiUnWqqUj8)