**Project Documentation UTC504**

The Game of Life is a cellular automaton based on the principle of the evolution of the grid over time. At each stage, called generation, cells evolve according to their neighborhood.

**Development :**

**Board.py** :

* **init**: In the init, we pass the number of rows and columns desired to create the grid, then we initialize a new Cell object each time we pass a row in a column. I used tkinter library for UI visualization, created and positioned the window then called **draw\_board** function.
* **draw\_board**: In this function, we set the buttons, create rectangles for the cells, check the state of each Cell and set the default color
* **set\_neighbours**: First we check for valid neighbors, an invalid neighbor is the Cell itself and a Cell out of bounds, then we tell the cell of its valid neighbors.
* **update\_board:** Here we get each cell in the grid, get its neighbors and mark the living ones, then depending on the number of the living neighbors, we change the state and the color of the cell.
* **animate\_board:** This function is responsible of initializing the visual update of the board.
* **stop\_animation:** This function is responsible of stopping the visual update of the board.

**Cell.py :**

* **init:** In the init, we choose and set a random default state for the Cell.
* **set\_dead:** Sets the Cell as dead
* **set\_alive:** Sets the Cell as alive
* **is\_dead:** Returns dead state
* **is\_alive:** Returns alive state