**The Game of Life**

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**Written on 24/04/2022**

**Summary**

This project is a game about “Conway’s game of life” using C language and the SDL2 library. Based on the original rules, the project displays the animations of each evolution step in a window, white blocks replacing alive cells and black blocks replacing dead cells. Each game needs a file to initialize the initial world and to record the result of the world.

There are a list of key modules to run this game:

1. **Initialize the world state.** To begin with the game, the gamer needs to give a text file (1 replacing alive and 0 replacing dead) to initialize the initial world.
2. **Decide the number of steps to evolve.** The gamer can specify the number of steps to evolve. If not, the world will evolve until the end, unless he/she pauses it.
3. **Display the number of alive cells.** When the game is on, there will be a place in the window replacing the number of alive cells in real time.
4. **Speed up or slow down the evolving speed.** The game begins at a default speed to evolve, but you can speed up or slow down it.
5. **Pause and continue.** The gamer can pause the game or continue the game.
6. **Go to the next generation by clicking.** The gamer can click the fixed button to go to the next generation when the game is paused.
7. **Save the end state to a file.** When the generation is paused, or stable and not to evolve, the gamer can close the window to finish the game, and the end state will be saved to a file automictically.

**Test plan**