**Planning Report**

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**Title**

Cell Division

**Summary**

I choose the third project----The game of Life. And the game is similar to cell division. Under certain rules, cells are divided into certain steps, and the user can use it in a beautiful way. For every cell, it will survive or die depending on the number of living cells around it. And according to the user's pre-defined boundaries and the number of steps, the cells continue to divide. In the initial plan, there will be seven different key modules. Each module has a different function, and the combination will realize this cell division game.

Read and write module: The purpose of this module is to read data from a local file at the beginning of the program, and store the data that needs to be saved into the file at the end of the program.

Initialization module:This module will create and initialize the entire cell world, and expand the world based on the data entered by the user.

Number of steps module:This module will collect the number of cell division steps that need to be performed. I plan to have two methods, one is to allow the user to directly enter the data, and the other is to allow the program to develop freely.

Logic module:The purpose of this module is to complete the logic of the entire cell division process, allowing cells to divide normally under the required rules.

SDL module:This module will present the game graphically through SDL graphics rendering, and display the animation of each split step.

Main function module:The purpose of this module is to combine all modules and ensure their normal operation.

Testing module:This module will test the overall operation of the program.

**Test plan**

For different modules, there are different test methods. For the logic module, I will test and evaluate whether the cell division is carried out correctly according to the rules, that is, the life or death of a cell is determined based on the number of living cells around it. And the margins of the world will be regarded as dead. For the read-write module, I will check whether the program saves it to a local file after inputting the size of the world or the number of steps. And after opening the program again, check if you can read the last saved data or not. For the module of initialization and the number of steps, I will test whether the program is set up and run according to the corresponding number. In addition, when the wrong thing is entered, the program will process the text for different errors and prompt to re-enter it. For SDL and main function modules, the testing method is very simple, that is, to check whether the game is performed in a visual manner during running time.

**Schedule**

Table 1

On a day-to-day basis, the logic, SDL, and test modules are planned to be completed in two days each. The remaining four modules each took half a day to complete.

|  |  |  |  |
| --- | --- | --- | --- |
| Week Number | Week8 | Week9 | Week10 |
| Work Content(Module) | Logic,  Read and write, Initialization,  Number of steps | SDL  Testing | Testing |
| Time Cost(day) | 2+0.5+0.5+0.5 | 2+2 | 2 |

Table 2

The rest of the week will be classes, exams and holidays

**List of all the tests**