User Manual

Main features

This Java program is used to solve Game Of Life[1].

Users can specify a txt file as a seed data file and let the program know how many generations need to run. Finally, users will see the results of each run in the command line window and get the data file in the program folder.

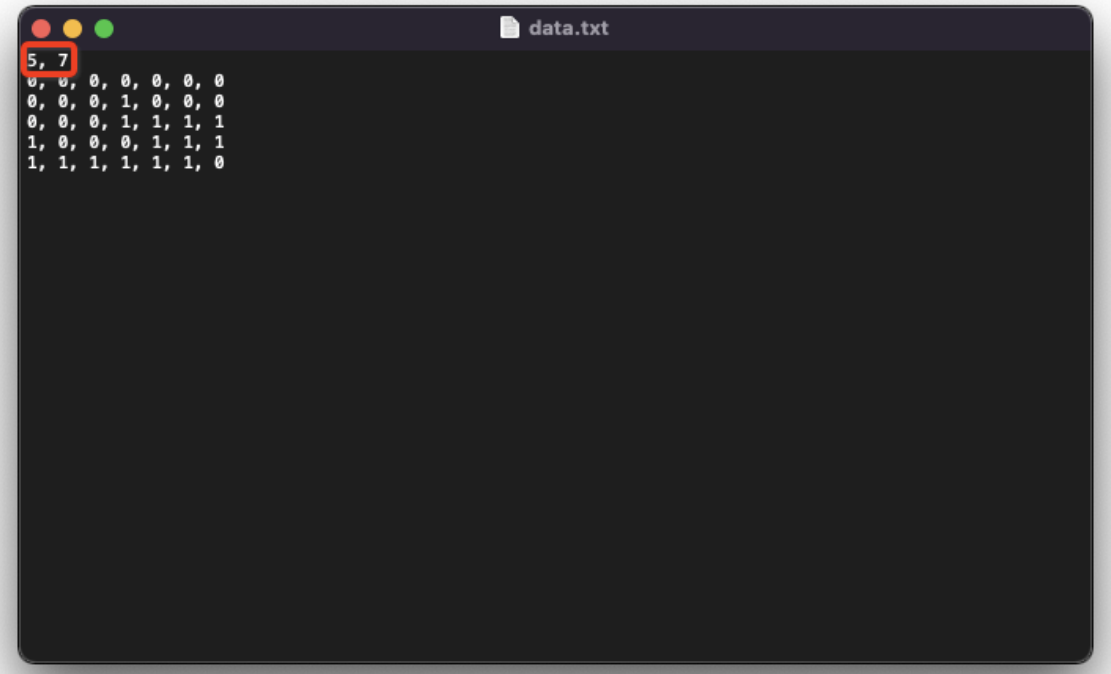
How to use this program

Seed File

Before running the program, the user should create a txt file in ./src/main directory to specify the shape of the grid and the living condition of each cell.

Specify the shape of the grid of square cells

In the first line of the seed data file, the user should write down the number of rows and number of columns. These two numbers should be separated by a comma and a space.



Specify the living conditions of cells

From the second line, the living condition of each cell is shown by 0 and 1. In this file, 0 means die and 1 means living. All the numbers in the seed data file should be separated by a comma and a space together.

Run the program

This program is a command line Java program. The user needs to use the command line tool to run it. You need to access the scripts folder of this program first. When you are in the scripts directory with the run.sh file, you can go on to run this program.

Running this in your command line tool will evoke the program to run the cell machine with the seed cells and specific generations:

Mac or Linux device:

```
sh run.sh data.txt 5
```

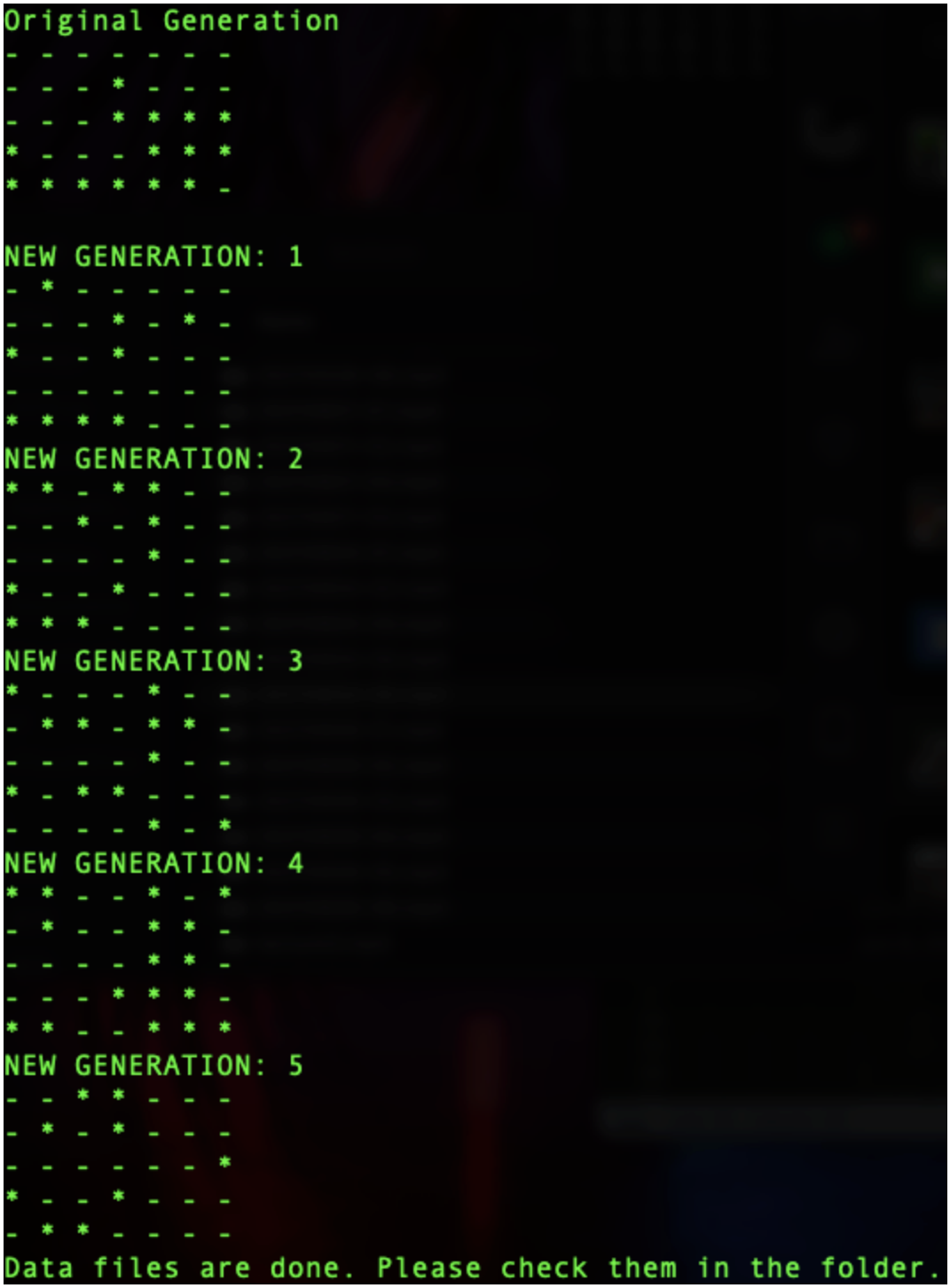
Windows device:

```
run.cmd data.txt 5
```

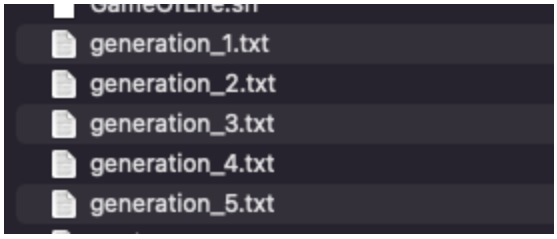
The above command line, data.txt is the name of your seed file and 5 is the number of generations you will run.

When the program is running, the original population (the generation in your seed data file) will be shown like this:

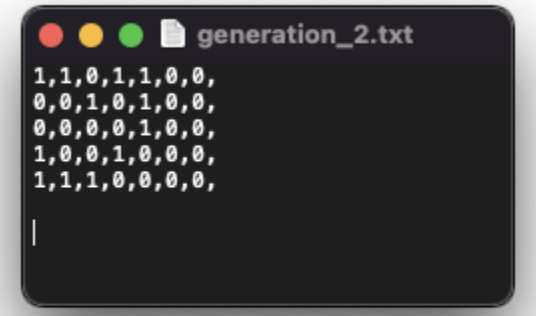
Where - is a dead cell and * is a living cell. In the following generations, each generation will also be shown in the same format in your command line tool.



After all generations are generated, you can also see the corresponding data files in the src/main folder.

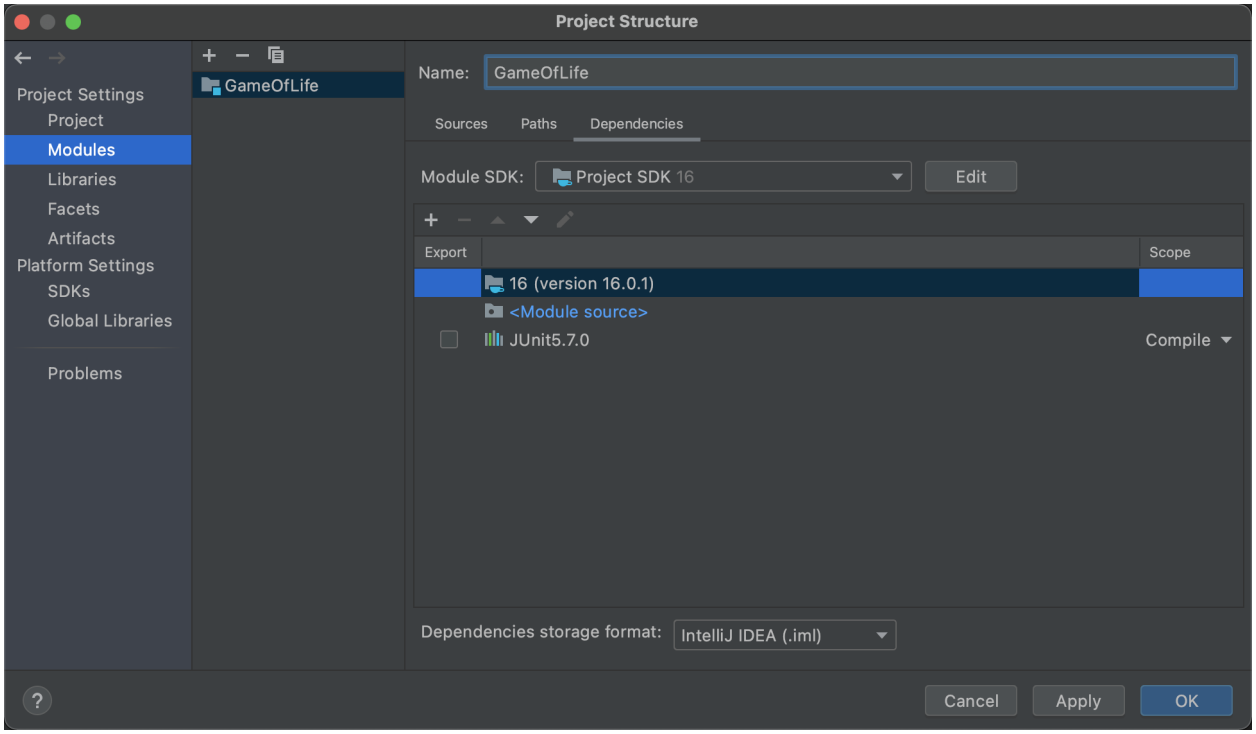


For generation 2 as an example, the living condition will be shown with 0, 1 format, where 0 means a dead cell and 1 means a living cell.



Unit test

The configuration of unittest.java is shown as follow:



If you want to run the unit test, you need to run this Java file in your IDEA and set the configuration as it is shown above.

Reference

[1] “Conway’s game of life,” 2021, Accessed on: May 26, 2021. [Online]. Available: https://en.wikipedia.org/wiki/Conway%27s_Game_of_Life

[2] “How to run .sh or Shell Script file in Windows 10:”, 2019, Accessed on: June 1, 2021.[Online]. Available: https://www.thewindowsclub.com/how-to-run-sh-or-shell-script-file-in-windows-10