

Conways Game Of Live (Java)

Conways Game Of Life

I first came across Conway's [Game Of Life](#) at a [coderetreat day](#).

We used Pair Programming and TDD to develop partial solutions over 60 min sessions, adding more constraints to develop thinking and collaboration.

This implementation is based on the goals of:

- Using no conditional or loop statements
- Functions no more than 5 lines in length

Implementation

This implementation was based on some ideas discussed on the coderetreat day (**using Lambda and Functional Programming techniques to satisfy the additional constraints**) but is all my own work. I used the exercise to understand aspects of these Java language features. The spirit of TDD was applied (i.e. develop tests before functional code). I wasn't able to satisfy the no loops and conditional statement everywhere :-). There is 100% code coverage for core classes (but not the controller).

Key components are:

- **Cell**: abstract class that is aware of its coordinates
- **LivingCell/DeadCell**: subclasses of Cell and implements their rules for living and dying, and implement equals() and hashCode()
- **Universe**: responsible for creating cells and triggering their regeneration
- **GameOfLife**: controller; interacts with user.

Game runs as a console application.. Follow the instructions (see next)

Github repo: <https://github.com/elendil-src/GameOfLife-Java>

```
C:\Users\work_ivor>java -jar C:\Users\work_ivor\IdeaProjects\GameOfLife\target\GameOfLife-1.0-SNAPSHOT.jar
Game of life: dimension=8; seeded=50 percent.
Enter 'Enter' to view next generation, or anything else to quit.
Generation:0
  **
  *
*  ***
  *****
  *** *
  * **
**  * *
  ** **

Generation:1
  *
  *
*  *
*  ***
*  *
*** **

Generation:2
  **
*** *
*****
*
*****

Generation:3
  * **
*  *
  **
*****

Generation:4
  **
  *
  **
**
***

Generation:5
  **
  *
  *
****
*  *
*  *
```

Generation:6

```
  **
  ** *
  * *
  * **
  *
```

Generation:7

```
  **
  ***
**  **
*****
```

Generation:8

```
  ****
  ****
  *
*  ****
  ***
```

Generation:9

```
  **
  *
  *
*  *
*  *
  *
```

Generation:10

```
  **
  ***
  **
  **
```

Generation:11

```
  *
  *

  **
```