

Gebze Institute of Technology
Department of Computer Engineering
CSE 241/501
Object Oriented Programming
Fall 2014
Homework # 9
Due date Dec 26th 2014

In this homework, you will write your game of life program in Java using object oriented techniques.

First, write a class named **Cell** to represent a game of life cell. The class **Cell** will hold the X and Y positions of the cell (both int values). This class will also include all necessary setters/getters, constructors etc.

Next, write a class named **GameOfLife** to represent and play the game. The class **GameOfLife** will hold an array of **Cell** objects to represent the living cells. In other words, this class will have **Cell[] livingCells;** in its private section.

The class **GameOfLife** will also have the following features and methods

- There is no limit for the board. Your game will dynamically expand and shrink as needed.
- The class will have methods to return the current width and height of the board
- The class will have a method that displays the current board on the screen
- The class will have a method named play that plays the game for a single time step
- The class will have a static method that returns the number of living cells in all the games. Be careful here because there could be more than one game active at the same time.
- The class will have a method that takes another object **GameOfLife** as parameter and joins the living cells of the other game into this game.
- Any other methods (public or private) needed.

Write your main method to test both classes. Make at least 5 objects of class **GameOfLife** and play the games at the same time. Choose game configurations to show how your game board expands.

Use javadoc to document your classes and submit javadoc results with your java files and sample run results.