

Software Design

Java Review Program

Due Date: Tuesday, August 30

Points: 20 points

As a way to get back into Java and to start using Netbeans, your first assignment is to write an initial program to build a game board for a simple guessing game that has players trying to find “hot” spots on a board. We will be working on this game in a few assignments for the first part of the semester. Your initial program for this assignment will have 2 classes that you will write (and some of Java’s that you will use). You will write a Board class that represents the game board and a Driver class that has the main method. NOTE: If you see an additional class that you want to write yourself for this project go ahead!

Instance Variables of the class Board

- game board – a 2-dimensional array of int that will store 0’s and 1’s
- x dim – the number of spots on the board in the x dimension
- y dim – the number of spots on the board in the y dimension
- hot spots – the number of positions on the board that are “hot”

Methods of the class Board

- default constructor that initializes x dim, y dim, and hot spots all to 10 and then initializes the game board to be a 10 x 10 array with 10 hot spots. The method should first set all positions of the board to be 0 and should then use Java’s Random class to generate 10 random positions on the board and set those positions to 1. Don’t worry about duplicating the same position as a hot position for now (unless you want to)
- a constructor that takes an x, y and hot spots as parameters to initialize those instance variables, and creates the board with those x and y dimensions and number of hot spots
- appropriate accessor (get) methods that simply return the value of the x dimension, y dimension and the number of hot spots
- reset method that takes no parameters and resets the game board using the already defined dimensions and number of hot spots
- a guess method that takes an x and y position on the board and returns a value that indicates whether or not that position is a hot spot

Driver class description

The driver class will have a main method that will be used to create a game board and accept some guesses from the user. The main method will use the Scanner class to get input from the user. The method should first prompt the user for the dimensions of the board and the number of hot spots. It should then create a board object by calling the appropriate constructor. Then the

method should prompt the user for guesses and tell the user if that guess is a hot spot until the user says that they don't want to guess any more.

First Steps – 5 points (of the 20)

Install Java and Netbeans on your computer and then create a project in Netbeans. Create the 2 classes and attempt to write the constructor methods **by Friday**. For full credit you just have to have some code in the constructor methods that shows that you tried – the code does not have to work. We will spend some class time on Friday looking at this assignment. Be prepared – I may ask someone to share their code!