Assignment #3 – Minesweeper in Android

**Date assigned:** Monday, November 21, 2011
Date due: Wednesday, November 30, 2011 (by 4:15pm)
**Points:** 50

The purpose of this assignment is to write a complete Android version of minesweeper. The previous assignment required you to write the game logic in Java. Now you can incorporate that game logic into a graphical version of minesweeper on Android devices.

Minimal Requirements:

1. The opening screen must look like (I used Teal as the background color):
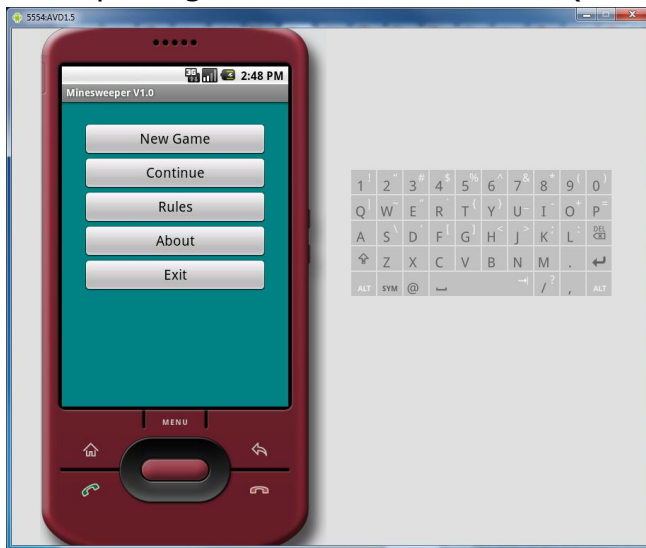
2. The **New Game** button is to create a new game of minesweeper after getting an Easy, Medium, or Hard game setting. Use the rules from assignment #2 in creating the initial minesweeper board.
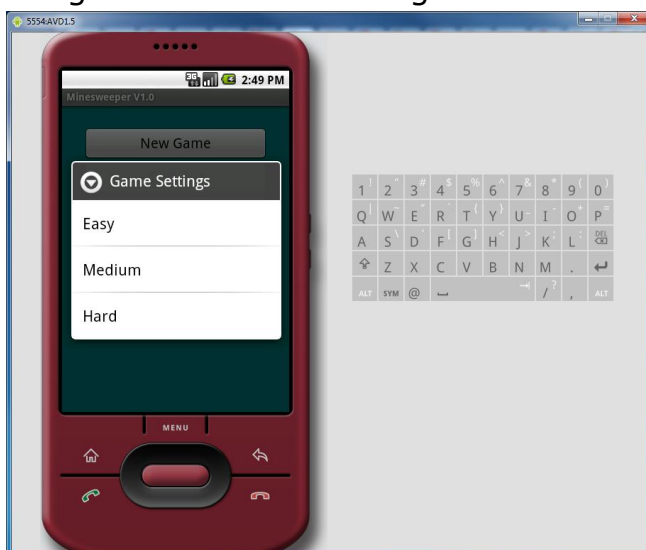
3. The **Continue** button does not need to be implemented. At some point in time, we will discuss how to resume a game of minesweeper. We have

discussed this in theory but have not discussed how to implement this feature.
4. The **Rules** button is to display the basic rules of minesweeper. In your version of minesweeper, you can either populate the board with bombs before the user selects a tile or after the user selects the first tile. Tell me in this section which method you are using.
5. The **About** button is to contain information you deem relevant regarding this application but you must be listed as the author with an email address.
6. The **Exit** button simply exits the game.
7. Assume that you have started a game and select in the upper-left corner of the screen, you must display what happened that turn. Here is an example of what your screen might look like. My highlight color is LightGreen. Include colorsw3c.xml and colorsx11.xml in the values folder.
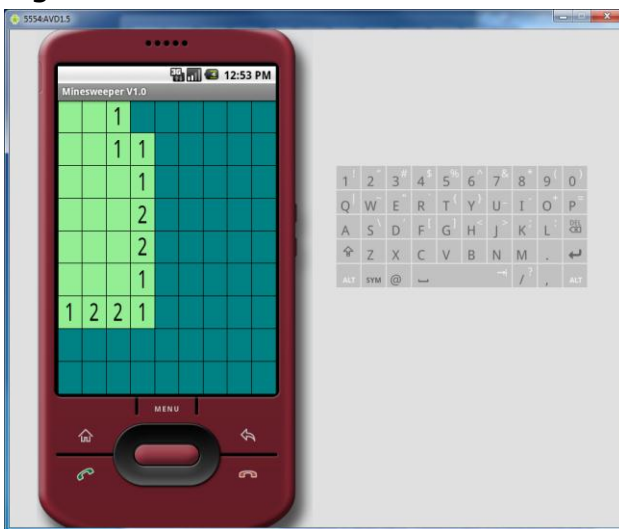
There are a couple of ways to make this happen.
a) You can draw text over a highlighted tile. I will give you some code in class for centering text in a region of the screen.
b) You can draw a bitmap into a selected region. In this case, you will need to find/create bitmaps for all of the possible numbers with appropriate highlights. If someone wants to make/find these and share them with the class that is OK by me.
8. Visiting Tiles,
   a. If the player visits all cells without selecting a mine, then the user wins. In this case, display something (professional looking) signifying that the user won.
   b. If the player visits a mine, then the player loses. In this case, display the board showing all visited tiles and show where all mines were at.
9. Create (or grab) some graphic for your minesweeper game which is to be displayed with all of the other applications. That is, don't use the default icon. Note in the About where the icon came from.

Goals for Assignment #3:

1.   Write an Android application using multiple classes
2.   Use packages to better organize all classes
3.   Use good OOP techniques in designing your solution
4.   Use the Android API which has a rich library of routines
5.   Use the techniques learned in Game to implement an Android game
6.   Include other projects in an existing project
7.   Debug with Log.d

Specifics:

1.   Save your Android project in a project folder called
PUNetIDMinesweeperAndroid. On the day this assignment is due, you are to
drop both PUNetIDMinesweeperJava and PUNetIDMinesweeperAndroid into
the **CS260-01 Drop** folder by 4:15pm on the day in which the assignment
is due.

2.   Your code is to be written using the development tools specified in the
syllabus.

3.   If you come to me with a question regarding your solution, I will have
you load your project onto a machine in the CS lab. I will not look at your
code on your computer or on paper as it just takes me too long to get at the
problem. Further, I want you to bring in your lecture notes in case I want
you to look up something. Remember, I'm not just a tell you the answer
guy. Make sure you understand how to use the developer tools and that you
can run your program in Eclipse.

4.   If you want help with a compiler error, you must be able to tell me
exactly what statement you put in your code that caused the error and be
able to isolate the error. If you have typed in a bunch of code and have not
tested your code as you've gone along, I'm not going to help you sort out
the mess. You've been warned!!

5.   You are to print out each .java file fully documented using the Java
Coding Standards V1.0. Your printout is due to me by 4:15pm on the day in
which the assignment is due.

6.   Test your application on the Nexus One and make sure the application
works in Portrait and Landscape mode. I want to see your running
application before 4:15pm on the day in which the assignment is due.