Program #1 - Scrabbler

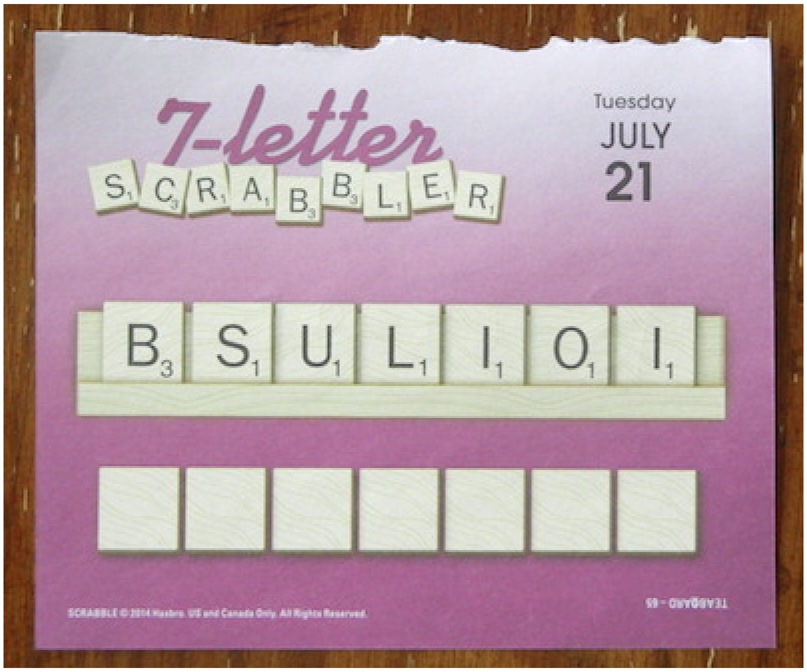
Daily fun with Scrabbler challenges

Logistics:

- Due: **Fri Jan 23, 2015**
- Worth: **10 points** (10% of your class grade)

1. Description

For a few years now, my kids get me a Scrabble Calendar for Christmas. Inside the calendar, one of the puzzles is called the 7-Letter Scrabbler. Like this one:


7-letter
SCRABBLER
Tuesday
JULY
21
B S U L I O I
SCRABBLE © 2014 Hasbro. US and Canada Only. All Rights Reserved.

OK, so what you have to do is rearrange the 7 letters into a valid word from the Scrabble dictionary… to win. I know. How great is that!

Can you figure out the July 21 puzzle above?

So, your assignment in Program #1 is to build a Scrabbler in Java. This program emphasizes the concepts from Chapter 11 Inheritance and Chapters 13, 14 GUI.

In Program #1, we'll learn about:

- Inheritance, classes and interfaces
- Java GUI programming
- Java GUI event-handling
- Menus in Java
- And the ever-handy ArrayList class

2. Implementation

Please use this Scrabble dictionary: www.scrabblejunction.org/wordlists.htm. I have a copy of that dictionary text file (in alpha order) in my common_area on the k: drive.

Let's do two distinct Scrabblers… in this order:

- **Console Scrabbler** - create a text-only version to exercise your code before moving onto the graphical end of things

- **GUI Scrabbler** - use Java GUI objects to play Scrabbler graphically and with the mouse

2.1. Console Scrabbler

Since this is mostly just a tester, the console version should be quick-and-dirty. We'll use this version to validate our basic Scrabble classes **before** moving on to the GUI. A session might look something like this (user typing in **bold**):

```
Scrabbler Challenge is:
BSULIOI

Enter your guess or "?" for help: ?
The first letter is B.

Enter your guess or "?" for help: ?
The 2nd letter is I.

Enter your guess or "?" for help: BILIOUS

Congrats! You are correct!
```

Pseudo-code for the console Scrabbler might look something like this:

```
Load a dictionary of Scrabble words
Choose the 7-letter words out of that dictionary
Randomly pick a word and print it
For a while
    If the user guesses, check it in the dictionary
    If the user wants help, show a letter in the puzzle
```

What classes will we need to make all this happen?

2.2. GUI Scrabbler

The GUI Scrabbler will share the code you wrote for the console. It will be nice and fancy. It should:

- Show the 7 Scrabble tiles for the current puzzle
- Allow the user to select tiles to move them into position for his/her guess
- Provide menus or buttons for the user to:
  - Give his/her final answer
  - Ask for help
  - Exit
  - Try a new word or give up (optional?)

One of your first tasks: Draw what you want your GUI solution to look like.

2.4. Design

You need to define classes for your console solution. You need to draw a screenshot of your GUI solution.

So it begins… Start early. Write it down now. Fix it later. Slice and dice and code in the smallest bites you can.

We will take questions and work together in class as well.
More coming soon…

3. Grading

Create a `program1` folder in your k: drive.
Place these files in that folder:

- A `README` file describing the state of your program.
- All the Java files that comprise your Program #1 solution

All your code must follow our 161 Coding Guidelines. Ugly code will be penalized with a 0-100% reduction in points. A program that doesn't even compile is worth 0 points.

Good luck.
yow, bill

PS - Late additions:

- Please use my `Dictionary161` interface for all your dictionary needs. It's on the k: drive!