Program #3 - Pee three

World's Largest Word Search Puzzle?

Logistics:
- Due: **Wed May 21, 2014**
- Worth: 10 points, or 10% of your grade

This is a design heavy program with lists and GUI and more!

1. Description

Let's team up to a word search puzzle program with the following parts:
1. **creator** - create a word search puzzle
2. **writer** - save the puzzle to a file: data and printable formats
3. **player** - GUI lets user play/complete a word search puzzle

2. Teamwork

Program 3 (P3) is a little different:
- Design - we'll design P3 as a class (group of students, not Java keyword)
- Code - it'll be 2 people per coding team

3. Design Decisions

Here are my ideas, issues and notes. Go!

The puzzle class:
- What is the `WordSearchPuzzle` interface?
- Data structure: array of `String` objects or 2D array of `char`? Remember that String is immutable.

The data file:
- The user works in creator, and then saves his/her puzzle to a file. What is the format of that file?
- I think we may be able to "borrow" the Java `Properties` class and file format. Simple and easy to use. A couple links: [Oracle blurb on Properties file format](#) and [Java Notes on the Properties class](#) and [The official Javadoc for Properties](#).
- Each puzzle needs: a) a name/ID, b) a title, c) a subtitle or description, d) a size (char per side of the square), e) fancy options like allCAPS, diagonalOK, backwardOK, etc, f) the list of words, g) the puzzle itself. Missing anything?

The printable file:
- Not perfect, but HTML seems like the easiest choice.
- I'll provide a class so that everyone doesn't have to learn HTML.

Creating a puzzle:
- Word placement should be random. Should we force some word intersections? Should this be an option?
- Place the puzzle words first, then fill in random letters.
- It's OK to fail and say… "I can't build a puzzle with these words"... after a number of tries

The creator GUI:
- To create a puzzle, you need this info from the user: puzzle size, title, subtitle, weird options (allCaps? diagonalsOK? backwardsOK? etc)... and, of course, a list of words.
- Get the list of words from `JTextArea`? One line per word or comma-separated?
- Separate program or fire up the player after the user is done?
- Save on exit?

The player GUI:
- Mark off words as the user circles them?
- Keep time?
- Is each letter a `JLabel`?
- main() parameter is a puzzle data file?
- Applet? It's such a pain these days that it hardly seems worth it.

Would anything prohibit us from setting a Guinness World record in P3? Maybe the world's largest *online* word search puzzle?
www.guinnessworldrecords.com/world-records/5000/largest-word-search-puzzle

4. Grading
Please place the following in your k: drive folder for P3:
- A `README` file describing the state of your program
- Your beautiful Java code that follows our Java Coding Guidelines
- At least three of your favorite puzzle files, data and HTML

Start early. Enjoy. And good luck!