CSC 220 – Project #2: Word Unscrambler Game

Due: Monday, April 14, before midnight

Objective:
Design and implement a word unscrambler game in Java.

Due Date:
11:59pm, April 14, 2014

Project Details:
Your program should read in a random word from a file called *words.txt* (note the lack of capitalization) that you provide. The file should contain one word per line, and contain at least 10 different words. To read a random word you can generate a random number between 1 and the number of lines, and skip *n-1* lines before reading the word. Scramble the word by swapping random pairs of letters a random number of times (mandatory use of a loop). Display the scrambled word with character indices on top. Offer the user a menu with the following choices:

- Enter 1 to swap a pair of letters

If this option is selected prompt the user to enter two indices and swap the letters. A space should separate the two indices. Print an error message if the indices are invalid. If the word is unscrambled successfully print a congratulatory message containing the word and the number of steps it took to unscramble. Otherwise display the new word, and offer the menu again.

- Enter 2 to solve

If this option is selected print the unscrambled word and quit.

- Enter 3 to quit

If this option is selected quit.

Example run:

```
---------
 0123456
 rpocjet
---------

Enter 1 to swap letters.
Enter 2 to solve.
Enter 3 to quit.

1
Enter the indices separated by spaces
0 1
---------
 0123456
 procjet
---------

Enter 1 to swap letters.
Enter 2 to solve.
```

```
Enter 3 to quit.

1
Enter the indices separated by spaces
3 4
---------
 0123456
 projcet
---------

Enter 1 to swap letters.
Enter 2 to solve.
Enter 3 to quit.

1
Enter the indices separated by spaces
4 5

Congratulations! You unscrambled the word project in 3 steps.
```

Formatting Requirements

- Follow indentation rules as discussed in class (**3 points**)
- Use descriptive variable names
- Comment your code: your name, name of the class and assignment at the beginning of program (**2 points**), description of program functionality at beginning of program (**2 points**), explanations of blocks of code throughout your program (**3 points**).

What to turn in

- Jar your java file **and the words.txt file** and in a file called YourName_project2.jar (substitute YourName with your name, last name first) and upload it to canvas in the Project 3 category by the deadline. (**10 points**)

Grading

- Read in random word from input file named words.txt – **10 points**
- Scramble word – **10 points**
- Handle output as listed in requirements – **10 points**
- Handle user input as listed in requirements – **10 points**
- Swap two letters as requested by user – **10 points**
- Check if word was unscrambled correctly and proceed accordingly – **10 points**
- Print solution and quit if requested by user – **5 points**
- Quit program if requested by user – **5 points**
- Handle errors appropriately – **10 points**
- Late penalty: 20% per day