AP Computer Science Name ________________________

Cabbages Lab

Objective: use String objects, and sorting

1. You will submit pseudo-code for this assignment before writing any actual code into the compiler. There should be a minimum of 3 methods for the three different required components below, probably more to be more efficient.

2. See the attached documents for information on Strings, Characters and File reading.

3. In this lab, you will read in a text file, echoing each word to the screen, one word per line, remembering the longest word. Print the current word count and a space before each word. After all the words have been read in, display the longest word with a message.

   For example, if the above paragraph were the entered text, the output would be:

```
Words found in text --
    1 In
    2 this
    3 lab,
        :
    50 message.
    The longest word in the text is <remembering>.
```

   For your text file, use the example attached, "cabbages.txt".

2. Read in the words a second time and store all the words found in the text file, excluding punctuation, into a built-in array of Strings, eliminating duplicates and converting all to lowercase. Sort this array alphabetically. Finally display this sorted array of words, preceded by the index of each word.

```
Words sorted alphabetically with duplicates removed --
    0 a
    1 after
    2 all
    3 been
         :
```

3. Finally **grep** (**g**lobally search for the **r**egular **e**xpression and **p**rint the lines) is an utility program from UNIX that scans a file for a given string and prints all lines containing the string. Modify your program to "grep" a phrase and display the line number and each line containing it, highlighting the phrase. Do not worry about wrapped phrases, unless you seek perfection. For example, using the opening paragraph, the call

```
grep("longest word");
```

would display

```
Line 2: <longest word>.  Print the current word count and a space before each word.  After all the
    words have been read
Line 3: in, display the <longest word> with a message.
```

If the phrase does not appear in any line, state that.