UNBC Laboratory Assignment
Computer Science 100—Fall 2012

Words and Files

Purpose:

Practise manipulating `Strings`, `Files` and logic.

Due Date:

The completed lab assignment is due Friday 2011-11-09 *at the beginning of lecture*.

Dictionaries

Most computers contain one or more plain text dictionaries with one word per line. The details vary between operating systems, but most Unix-like (BSD, Linux, Mac OS) operating systems have a file in `/usr/share/dict/words`.

String functions

Most of the following progamming tasks can be accomplished using the two `String` methods `.length()` and `.charAt(`*i*`)`. Look at the documentation for `java.lang.String` and `java.lang.Char` for other possible functions.

Programming Tasks

Complete each of the following programming tasks.

Five-letter words and big words

⇒ Write a program that searches the dictionary file

- `/usr/share/dict/words` (or appropriate equivalent)

to count the number of five-letter words and the number of words with thirteen or more letters.

Sorted Words

In a word like "`art`" the letters occur in alphabetical order. Call this a *sorted word*.

⇒ Write a program that searches your dictionary file to find all of the sorted words that it contains, and that reports the longest sorted word found.

Note: The problem specification is vague. In your documentation state whether or not you allow words like "`abbot`".

Palindromes

A *palindrome* is a word or phrase that reads the same when reversed. Some famous examples are:

- Madam, I'm Adam.
- Eve.
- A man, a plan, a canal, Panama.

⇒ Write a JAVA program that ask the user for a word, and then states whether or not the word is a palindrome. You may assume that the user only supplies lower-case words. That is, you don't need to worry about changing the case of letters or removing spaces and punctuation.

⇒ Write a program that searches the the file `/usr/share/dict/words` to find all of the lower-case palindromes that it contains.