1E3 Practical 10
30th March 2016

Objectives: Practice on Arrays, Functions, and Loops

Task: 1
Marks: 3
Summary: Write a program that counts terms in an input text and identifies the most common one.

Details:
Count the occurrences of the terms "array", "compute", "declare", "define", "for", “function”, "if", "loop", "variable" and "while” in a text file. The file contains multiple partial sentences and is located on the course website. The input text is terminated with “XXX”.

- First read the text (sequence of words) into an array of words (using a **readToSentinel** function) and allow for up to 1000 words.
- Write and use a **count** function to count occurrences of each term in the terms array. Store each count in the corresponding slot of a counter array.
- Write and use a **maxpos** function to identify the position in your array of counters of the largest counter.
- Print out the terms, their count, and finally identify the most common term.
- You must write and use readToSentinel, count, and maxpos functions as described above.

Sample data: See text.txt on the web page.

Advanced Task:
Marks: 2
Summary: Count every word that appears in the input text. Output those occurring more than 5 times.

Details:
Extend your solution from Task 1. Instead of a fixed set of words to count, extract and count every word in the input – each time you read in a word, **search** for it in the terms array - if it does not exist, add the new term to the end of the terms array. Allow for up to 500 terms; your programme should terminate gracefully if more terms are encountered.

I recommend solving this task by extending the first programme, think of it as a series of operations, each handled in turn:

- Read text
- Identify all terms in text
- Count each term
- Find largest counter
- Print results

Your programme should use two additional functions, **extractAllTerms()** and **search()**.

Sample data: See text.txt on the web page.