## Lab work #2

**Topics**

* Decision and loops
* Arrays
* Strings

**Exercises**

1. Implement a program that repeatedly asks for a number and calculates its factorial, until the user enters 0, at which point it terminates. The factorial is calculated by multiplying the original number by all the positive integers smaller than itself. Thus the factorial of 5 is 5\*4\*3\*2\*1, or 120.

1. Implement a program to count words and count the occurrence of a specific keyword. You should only consider exact matches, i.e. if the keyword is "contained" inside another word should not be counted. The program should start getting from the user a keyword and then gets paragraphs (a paragraph finishes with the symbol '$') in an iterative way (the user has to write a paragraph with the word "End" to finish the program).

For each introduced paragraph, the program should count the number of words in the paragraph (consider the most common symbols as separators) and count the number of occurrences of the keyword.

1. Create a four-function calculator for fractions. The program should ask the user to enter a fraction, an operator, and another fraction. It should then carry out the specified arithmetical operation: adding, subtracting, multiplying, or dividing the two fractions. Use a switch statement to select the operation. Finally, display the result. When it finishes the calculation, the program should ask whether the user wants to do another calculation. The response can be 'y' or 'n'.

Here are the formulas for the four arithmetic operations applied to fractions:

Addition: a/b + c/d = (a\*d + b\*c) / (b\*d)

Subtraction: a/b - c/d = (a\*d - b\*c) / (b\*d)

Multiplication: a/b \* c/d = (a\*c) / (b\*d)

Division: a/b / c/d = (a\*d) / (b\*c)