

National Research University Higher School of Economics  
Faculty of Computer Science  
Bachelor's Program "HSE University and University of London Double Degree  
Program in Data Science and Business Analytics"

# Introduction to Programming

## Workshop #7

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# **This week's outline**

- **Workshop 7 03.02.2021**
  - Practice: reading/writing files + functions
  - Introduction to vectors and iterators
- **Workshop 8 05.01.2021**
  - Streams: additional notions.
  - More on vectors
  - ...

## Practice: reading/writing files + functions (Part 1)

Let us create a program in C++ that reads a text file, and uses several functions that analyze the file.

The program takes as console arguments:

- the path of the input file to read.
- a number indicating the function to execute (for example: **1,2**).

### Functions to implement:

**0 – write the file content in another file.** If the option is 1 the user also passes as argument the name of the output file.

program.exe 0 output.txt

**1 – search for occurrence of a word.** If the option is 2 the user inserts the word. The result must be printed in the console.

program.exe 1 Napoleon

Output example: We found 8 times the word Napoleon

## Practice: reading/writing files + functions (Part 2)

Let us extend our program, and let us implement the following functions.

### Functions to implement:

**2 – check for all distinct words in the input text.** Write all distinct words in a file, one per line.

program.exe 2 output.txt

**3 – check the occurrence of all distinct words.** Write in each line of a file, the word and its occurrence. For example, “Napoleon 8”.

program.exe 3 output.txt