

PROGRAMMING EXERCISE 5 (Numbers calculation)

A series of whole numbers in the range 1 to 1000 can be found in the file `NUMBERS.txt`. These numbers are separated by whitespaces. The task is to read the numbers from the file and perform some calculations.

Task 1

Write program code for 3 functions that follows these specifications:

- **FUNCTION findMax (ARRAY numberList) : INTEGER**
Takes an array of numbers as argument, calculates and returns the largest number
- **FUNCTION findMin (ARRAY numberList) : INTEGER**
Takes an array of numbers as argument, calculates and returns the smallest number
- **FUNCTION findAverage (ARRAY numberList) : FLOAT**
Takes an array of numbers as argument, calculates and returns the average number

You are to write the code from first principles, i.e **not** to use the built-in function `max`, `min` or `sort`.

Evidence 1: Your program code for the 3 functions.

Task 2

Write a **main** program to

- read from the file `NUMBERS.txt` a series of numbers, which are separated by whitespaces,
- store these numbers in an appropriate data structure,
- calculate the largest, smallest, and average number using the functions `findMax`, `findMin`, `findAverage`,
- output these 3 numbers (with appropriate messages) to both the screen and a file `NEWFILE.txt`

Evidence 2: Your program code for main program.