Laboratory Work #2

Due Date: Friday, September 29, 2023
Handover Date: Thursday, September 13, 2023

1 Introduction

An unidimensional list, also commonly known as an array, is a fundamental data structure used to store and manipulate collections of elements of the same data type. These elements are organized sequentially, and each element can be accessed by its position or index within the list. One-dimensional arrays are particularly useful when you need to work with a fixed number of homogeneous elements, such as integers, floating-point numbers, characters, or user-defined objects.

2 Task

You will have to read from console 2 arrays of numbers(must be int) of length n(also from console), and after that perform the task of your choice from the list below to get your desired mark.

2.1 Easy - each of them is worth 1 point

- Bubble Sort one array
- Selection Sort one array
- Insertion Sort one array
- Calculate the sum of the arrays(a[1] + b[1], a[2] + b[2] and so on till n)
- Calculate the sum of even numbers from one array
- Calculate the sum of odd numbers from one array

2.2 Medium - each of them is worth 2 points

- Quick Sort one array
- Determine the number of prime numbers in one array(you cant choose this one and the next one, just one of them)
- Calculate the sum of prime numbers in one array
- After sorting the arrays descending, split both of them in half and concatenate them

2.3 Hard - worth 10 points

- Implement these sorting algorithms: Bubble, Selection, Insertion, Quick Sort and explain them

3 Grading

In order to get a mark for the rest of difficulties, you will have first of all to implement the task from Kulev_PC_SDA.pdf matching your variant(your number in the list). The base task is worth 5 points, so if you for only it, you will be marked only with 5.
You have the freedom of choice to build up your mark
If you choose the hardest difficulty, you will have 10 by default(no need for base task).

PS: No codeforces bonus for this one
PS2: For any questions, dont be shy to reach out