# Exercises:

Problems for exercises and homework for the [“C++ Fundamentals” course @ SoftUni](https://softuni.bg/opencourses/cplusplus-fundamentals). Submit your solutions in the SoftUni judge system at <https://judge.softuni.bg/Contests/1384/STL-Linear-Containers>

Write C++ code for solving the tasks on the following pages.

Please follow the exact instructions on uploading the solutions for each task.

**STL Linear Containers**

Task 1 – Find EVENS in dual array

Write a program that reads a dual array ( for given sizes ) and counts the EVEN numbers in the matrix

Examples

FIRST is the SIZE OF MATRIX matrix[2][3]

|  |  |
| --- | --- |
| **Input** | **Output** |
| 2  3  2  3  4  2  3  4 | 4 |

|  |  |
| --- | --- |
| **Input** | **Output** |
| 2  1  1  2 | 1 |

|  |  |
| --- | --- |
| **Input** | **Output** |
| 4  2  1  2  3  4  1  2  3  4 | 4 |

Task 2 – Find INDEX in dual array

Write a program that reads a NUMBER, dual array SIZE and gives the position of the NUMBER

Examples

FIRST is the NUMBER that we have to find – 5

2,3 are the size of matrix[2][3]

02,12 are the INDEXES of the NUMBER that we are looking for.

|  |  |
| --- | --- |
| **Input** | **Output** |
| 5  2  3  1  2  5  1  2  5 | 02  12 |

|  |  |
| --- | --- |
| **Input** | **Output** |
| 4  2  1  1  5 | Number not found |

|  |  |
| --- | --- |
| **Input** | **Output** |
| 1  1  1  1 | 00 |

Task 3 – Find EVEN numbers in vector

Write a program that reads a vector size, insert numbers in vector and erase the even numbers.

Examples

FIRST, 4 is the SIZE of vector

1,2,3,4 are the insert numbers in vector

1,3 are the numbers after the filter ( we filtered 2 and 4, they are EVENS )

|  |  |
| --- | --- |
| **Input** | **Output** |
| 4  1  2  3  4 | 13 |

|  |  |
| --- | --- |
| **Input** | **Output** |
| 2  1  3 | EVEN not found |

|  |  |
| --- | --- |
| **Input** | **Output** |
| 5  1  1  1  2  1 | 1111 |

Task 4 – Sort numbers in GREATER order

Write a program, use a LIST that for a given numbers sorts them in greater order

Examples

FIRST, 5 is the SIZE of LIST

1,2,2,3,4 are the insert numbers in LIST

43221 are the filtered numbers in GREATER order

|  |  |
| --- | --- |
| **Input** | **Output** |
| 5  1  2  2  3  4 | 43221 |

|  |  |
| --- | --- |
| **Input** | **Output** |
| 2  1  9 | 91 |

|  |  |
| --- | --- |
| **Input** | **Output** |
| 5  -2  3  4  -1  0 | 430-1-2 |

Task 5 – Find the sum of all numbers in vector

Write a program, use a vector and find the sum of all numbers in vector

Examples

FIRST, 3 is the size of vector

5,5,5 are the given numbers in vector

15 is the sum of the numbers in vector

|  |  |
| --- | --- |
| **Input** | **Output** |
| 3  5  5  5 | 15 |

|  |  |
| --- | --- |
| **Input** | **Output** |
| 4  1  2  3  4 | 10 |

|  |  |
| --- | --- |
| **Input** | **Output** |
| 10  1  2  3  4  5  6  7  8  9  10 | 55 |