

CS 150 Lab 11

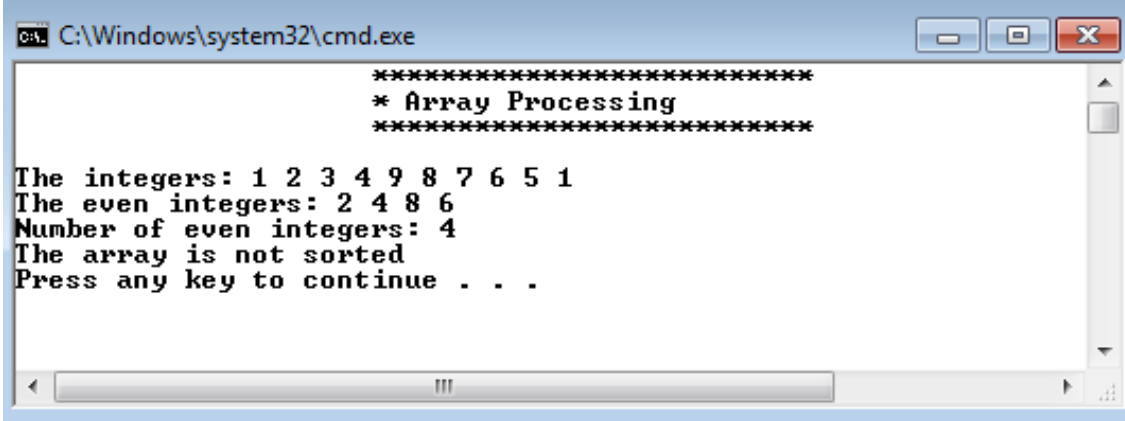
Arrays, Files, and Functions

The objective of today's lab is to combine functions with files and nested loops.

- Be sure your output looks exactly like the specified output.
- Be sure to submit the completed project to CS150-01 Lab by Friday at 5pm.
- Be sure to follow the coding standards and add comments to your code!

Lab 11.1 Basic Arrays

Write a complete C++ program in a project **11_1_Arrays** that will process integers in a file called **integers.txt**. This file will contain up to **50** integers with values between 1 and 35 inclusive. The first value in the file will be the number of integers that follow. Do not include the first value as an element in the array. You need to read the integers into an array and produce the following output.



```
*****  
* Array Processing  
*****  
The integers: 1 2 3 4 9 8 7 6 5 1  
The even integers: 2 4 8 6  
Number of even integers: 4  
The array is not sorted  
Press any key to continue . . .
```

You will need to create the file **integers.txt** in your Resources folder with the values
10 1 2 3 4 9 8 7 6 5 1

You will find the solution to this program partly completed in the CS150-01 Public folder in a file called **11lab.cpp**. You are to copy this code into your project and complete the program by writing all of the function definitions as described in the function header comments.

- 1) Your program is to compile without any errors or warnings.
- 2) The entire program is to be documented/commented.

Once your project is complete, place your solution **PUNetIDLabs** into the CS150-01 Drop folder on Turing. Your solution is to have **ALL** previous projects completely working and correct.

Optional Challenges:

1. Add a function `isSorted` that will return `true` if the integers in the array are sorted and `false` otherwise.

2. Add a function to compute the mode (the number occurring most frequently) of the integers and print out the message below. Assume the integer values will still be between 1 and 35.

The integer's mode is: 3