CS 150 Lab 11
Arrays and Files

The purpose of today's lab is for you to get some hands-on experience with how to read data from a file and store data into arrays.

- Be sure your output looks exactly like the specified output
- Be sure to submit your solution to **CS150-02 Drop** when you are done by Friday at 5pm
- Show the instructor or TA your solution to each part a) through d) below

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 last value in the file will be 99 (the sentinel value which is a special terminating value). Do not include the sentinel value in the count of the number of values in the array. Also, the sentinel value is not included in any of the array processing. You need to read the integers into an array and produce the following output.

a) **The integers**: All of the integers in the same order in which they appear in the data file. Each integer is to be separated by a single space.
b) **The odd integers**: Only the odd integers in the same order in which they appear in the data file.
c) **The sum of the odd integers**: The sum of the previous line.
d) **The new even integers**: The even integers in the array after adding some user-given value to each integer in the array. These integers are to be separated by a single comma but no comma follows the last integer value.

You will need to create the file **integers.txt** in your Resources folder with the values
1 2 3 4 9 8 7 6 5 1 99

Sample Output

```
***** Array Processing *****
The integers: 1 2 3 4 9 8 7 6 5 1
The odd integers: 1 3 9 7 5 1
The sum of the odd integers: 26
Give me a number to add to each integer: 2
The new even integers: 4,6,10,8
```

1) Your program is to compile without any errors or warnings.

2) The entire program is to be documented.

Once your project is complete, place your solution PUNetIDLabs into the CS150-02 Drop folder on Turing. Your solution is to have ALL previous projects completely working and correct.

Optional Challenge: You are 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. This is a very cool problem with a very elegant solution!!!!! ☺

```
The integer's mode is: 3
```