CS 150 Lab 10
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 in arrays.

- **Be sure to answer the given questions before you start**
- 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, Nov 5, 5pm)
- Show the instructor or TA your solution before submitting it

Lab 10.1 Basic Arrays

For this lab, you will need to create a new Visual Studio project that will contain your source code. Name this project "10Lab_1_XXXXXXXX", replacing the XXXXXXXX with your PUNetID. Write a program that will open a file called **integers.txt**. This file will contain **10** integers. You need to read the integers into an array and produce the following output.

The integers: All the integers, in the same order they appear in the file.
The odd integers: The odd integers, in the same order they appear in the file.
The sum of the odd integers: The sum of the previous line.
The new even integers: The even integers in the array after adding some user-given value to each integer in the array.

You will need to copy the file **integers.txt** from the **Public** folder on **Turing** and place the file into your project.

Sample Output

```
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. List each variable declaration necessary to store the data and information in your program. The variable name and type must be enough information to describe the information the variable holds.

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2. For each loop used in your program, discuss what will happen in the loop and what data and conditions will be used by the program to stop the loop.

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Challenge Parallel Arrays, 2D Arrays!

You do not need to submit this project! This is a great problem to use to study for the next Exam!

The file Blazers_v_Suns.txt in the Public folder on Turing contains the names of Portland Trail Blazers players, how many minutes each player played against the Phoenix Suns (on Oct 26, 2010), and how many points each Blazer scored.

You should read the data into parallel arrays, possibly using multi-dimensional arrays. Write code to build the table below. Write code to determine which player played the most minutes, scored the most points, and score the most points per minute. Display the players who played more than 10 minutes, and the players who played more than 10 minutes and scored more than 10 points.

/Blazer Analyzer/

```
-------------------------------------------------
|Player             | Min| Points| Points Per Minute|
-------------------------------------------------
|LaMarcus Aldridge | 38 |      8|              0.21 |
|Nicolas Batum     | 27 |     19|              0.70 |
|Marcus Camby      | 30 |     13|              0.43 |
|Andre Miller      | 27 |     10|              0.37 |
|Brandon Roy       | 40 |     24|              0.60 |
|Wesley Matthews   | 30 |     13|              0.43 |
|Dante Cunningham  | 14 |      6|              0.43 |
|Rudy Fernandez    | 22 |      7|              0.32 |
|Armon Johnson     |  9 |      6|              0.67 |
|Fabricio Oberto   |  3 |      0|              0.00 |
|Patrick Mills     |  0 |      0|              0.00 |
|Luke Babbit       |  0 |      0|              0.00 |
-------------------------------------------------
|Total             |240 |    106|              0.44 |

Brandon Roy played the most minutes.
Brandon Roy scored the most points.
Nicolas Batum scored the most points per minute.

The following players played more than 10 minutes:
Aldridge, Batum, Camby, Miller, Roy, Matthews, Cunningham, Fernandez

The following players played more than 10 minutes and scored more
than 10 points: Batum, Camby, Roy, Matthews
```