

Name: _____

ISTE-120

Lab 10: 2-Dimensional Arrays

Note: All Exercises must be completed during the lab period.

Exercise 1 - Grid sums (5 points)

1. Download the file `GridPractice.zip` from myCourses that unzips to a file named `GridPractice.java`. There are no other classes as all code will be in the main method.
2. After the user enters a size, the program creates a 2-dimensional array (named `grid`) with the size to specify the number of rows and columns. To avoid typing a great deal of input, the program stores random numbers between 0..99 into each position in `grid`.
3. Write the code to print the contents of the `grid` as shown in the Sample Output. To have the columns align, you will need to use the `printf` command.

Submit your .java files to the Lab10 Assignment folder when Exercise 1 is working correctly.

Exercise 2 – Row and Column Sums (3 points)

4. Write the code to calculate and print the sum of each row and each column. (See Example).

Submit your .java files to the Lab10 Assignment folder when Exercise 2 is working correctly.

Exercise 3 – Diagonal Sums (2 points)

5. Write the code to calculate and print the sum of the two diagonals. Assume that the size is 3. One diagonal starts in the upper left corner (`[0][0]`) and ends in the lower right corner (`[2][2]`). The other diagonal starts in the upper right corner (`[0][2]`) and end in the lower left corner (`[2][0]`).

Submit your .java files to the Lab10 Assignment folder when Exercise 3 is working correctly.

Sample Output

```
Command Prompt

dkpvcs> java GridPractice
Enter size of grid: 2

Random values assigned to 2 by 2 grid
 23 30
 26 33

Row    Sum
-----
 0     53
 1     59

Col    Sum
-----
 0     49
 1     63

Diagonal total from upper left to lower right is 56
Diagonal total from upper right to lower left is 56

dkpvcs>
```

```
Command Prompt

dkpvcs> java GridPractice
Enter size of grid: 3

Random values assigned to 3 by 3 grid
 48 80 56
 16 64 43
 10 71 27

Row    Sum
-----
 0    184
 1    123
 2    108

Col    Sum
-----
 0     74
 1    215
 2    126

Diagonal total from upper left to lower right is 139
Diagonal total from upper right to lower left is 130

dkpvcs> █
```