RIT | Golisano College of Computing and Information Sciences
School of Information

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.

When the program works correctly, have the instructor or TA check the code and initialize.

_____ Have instructor or TA sign here when Exercise 1 works 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).

_____ Have instructor or TA sign here when Exercise 2 works 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]`).

_____ Have instructor or TA sign here when Exercise 3 works 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> _
```