**CSCI 2302**

**Multidimensional Array Chapter**

**2D Lab**

Purpose: Multi-dimensional arrays are an extended form of one-dimensional arrays and are frequently used to store data for mathematic computations, image processing, and record management.

Learning Goals: To implement the standard code to read and write a 2D array, and to understand how to access specific rows or specific columns.

Notes:

Please see Multidimensional Arrays Chapter Notes.docx on the Content Page for more detailed information.

An array is a collection of homogeneous data in a linear form. Multi-dimensional arrays are an extended form of one-dimensional arrays and are frequently used to store data for mathematic computations, image processing, and record management.

Multi-dimensional arrays store values in row-major order, meaning that elements of all rows are stored in a consecutive (one row after the another) manner. All the element values are accessed by the index values – the index values that are associated with its own 1D array. When we (as programmers) are setting this up, we have to understand that 1D arrays are still bound – we cannot access values that are out-of-bounds for that 1D array. This concept is still true when we create multidimensional array, it is bound by the 1D array that it holds.

Task: Complete the steps outlined below in a file named mySFAusername\_2DLab.java.

1. Set your Scanner to read the file, twoDlab.txt.
2. Declare and create a 2D array, 11 rows x 4 columns.
3. Read the values, String data type, in from the file.
4. Print the entire 2D array to the screen.
5. Print the 3rd column to the screen.
6. Print the 9th row to the screen.

Sample Run:

Reading in the values

printing out the contents to the screen

x x l x

x x u x

x x m x

x x b x

x x e x

x x r x

x x j x

x x a x

j a c k

x x k x

x x s x

Printing the 3rd column using print:

l u m b e r j a c k s

Printing the 3rd column using println:

l

u

m

b

e

r

j

a

c

k

s

Printing the 9th row:

jack

Submit: Submit your mySFAusername\_2DLab.java file in the Dropbox in Brightspace by D2L.