

## Two Dimensional Array Exercises

### Level 4 –2D Array tasks

Save the following in a program called *Level4a2DArrayExersices.java*

- 1) Write the following methods for an array that has 3 rows and 4 columns:
  - a) Write a method called **populate**, that will fill the array row by row with values that the user enters.
  - b) Write a method called **populate2** that will do the same thing as (a) but rather than read values from the user, it will read values from a text file. The user should enter the filename.
  - c) Write a method called **display** that will print the array to the screen in good format (i.e. rows across and columns down).
  - d) Write a method called **transpose** that will display the array in such a way where the columns appear across the screen and the rows down the screen. This is called the transpose of an array.

e.g.	<b>Original order</b>	<b>Transposed order</b>
	3 4 5 3	3 1 5
	1 2 3 8	4 2 6
	5 6 7 9	5 3 7
		3 8 9

- e) Write a method called **sum** which will calculate and display the sum of each column at the end of each column and the sum of each row at the end of each row.

**Review reading from and writing to files prior to attempting the next two questions.**

- 2) Write a program that will determine class marks based on tests. The marks must be stored in a two dimensional array. The data should be read from a text file where: the first entry is an integer indicating number of students followed by an integer value with number of marks per student. The next lines provide the name of the student followed by the number of test marks. Your procedures should calculate and output in table form: the students' names, their marks, the average on each test and each student's average. Save as *Level4b2DArrayExersices.java*