Assignment Prefix: Lab10

Points: 100

Due Date: Tuesday, April 11 @ 11:59pm

This is an individual assignment.

**Problem:**

You will often be dealing with arrays and it may be helpful to have a set of methods that allows you to manipulate arrays. Some useful methods may include:

* A method that prints out the contents of an array in a nicely formatted ASCII table.
* Methods that read array information into a file.

**Task:**

Create the following methods:

**loadArray**

* This method will load an integer array in from an ASCII text file.
* Each integer value in the file will be delimited by one or more white spaces.
* The integer values may span several lines in the file.
* This method will need to instantiate an array of a size that matches the number of elements in the text file.
* This method will have a single String parameter that is the absolute path of the file to be loaded.
* This method should only load the contents of the file if all of the tokens are valid integer values.
* If the file contains one or more non-integer tokens this method should:
  + Print an appropriate error message to System.err
  + Return a null value.
* If the file is valid (contains only integers) this method should return the loaded array.

**load2DArray**

* This method will load a two-dimensional integer array in from an ASCII text file.
* Each line in the ASCII text file will represent a row in the two dimensional array.
* The columns for a row will be the white space delimited values on a line
* Each row does not have to have the same number of columns.
* A row may have zero columns.
* This method will need to instantiate an array of a size that matches the number of rows in the text file and the number of columns for each row.
* You should NOT create a square or rectangular array by default.
* This method will have a single String parameter that is the path (optional) and filename of the text file to be loaded.
* This method should only load the contents of the file if all of the tokens are valid integer values.
* If the file contains one or more non-integer tokens this method should:
  + Print an appropriate error message to System.err
  + Return an empty two dimensional integer array.
* If the file is valid (contains only integers) this method should return the loaded two-dimensional array.

**prettyPrintArray**

* This method will print out the contents of an array in a nicely formatted ASCII table.
* This method will have two parameters.
  + The first parameter can be a one or two dimensional integer array.
  + The second parameter will be a char that can have a value of ‘R’ or ‘C’.
* This method needs to determine if the integer array parameter is a one-dimensional array or a two-dimensional array.
* The second parameter determines if the table is printed in row major or column major form.
  + Row major form if the second parameter is an ‘R’
  + Column major form if the second parameter is a ‘C’
* An example of row major and column major presentations are in the **prettyPrintArrayExample.txt** file.
* Additional formatting requirements are included in this file.
* If this method is passed an invalid parameter, it should print an appropriate message to System.err and not print any output to System.out.

**Turning in your assignment:**

* **Make sure that all of your code is properly documented.**
* Turn in your assignment using the standard method.
* Copy and paste each of your Java files into the document.
* Copy and paste your data files into the document.
* Paste the screenshots showing the complete output of a complete run of your program after the Java code in your document.
* Export your NetBeans project to a zip archive.
* Turn in the Word document and zipped project as to separate files in a single Blackboard submission.
* You do not need to turn in your data files. We will test your program with a standard set of test files.