Lab 17

**Rules:**

1. You are asked to implement **Library.java** as described below.
2. Do not forget to take your work with you when you leave the lab by either copying your work files to your own USB flash disk, or by e-mailing them to yourself.

You are asked to implement the following **public static** methods and put them inside a class named “**Library**”. Here is the list of methods you need to implement and some description as to how they should work:

|  |  |
| --- | --- |
| double **avgOfNumbersAboveAndEqualAvg** (int [] nums) | This method first computes “avg”, the average of the array elements. Then computes and returns the average of those array elements with value greater than or equal to “avg”.  E.g. avgOfNumbersAboveAndEqualAvg([12, 9, 34, 22, 6, 45, 76, 2, 34, 19])🡪47.25 |
| void **moveZeros**(int [] nums) | Takes in an array of numbers, and moves all 0s to the right of the array preserving the orders of the non-zero numbers.  E.g., moveZeros([4, 0, 0, 3, 2, 1, 0, 0, 0, 7])🡪  [4, 3, 2, 1, 7, 0, 0, 0, 0, 0] |
| int [] **maxRowValues**(int [][] matrix) | Takes in a mxn matrix of values and return an array of “m” values, where each cell of the result contains the maximum value at that row of the matrix.  E.g. maxRowValues([[4, 2, 6, 2], [8, 3, 1], [3, 3, 9, 5, 6]])🡪[6, 8, 9] |
| void **printVerticalChart**(int [] nums) | Takes in an array of “n” numbers where n<=20, and prints a vertical chart where each number in the array is represented by a vertical bar of ‘\*’ chars.  E.g. printVerticalChart([3, 1, 7, 4, 2, 6, 3, 9])🡪 |

To test your class, we are giving you a driver code (**Test.java**) that tests each of the methods in Library.java and prints your score on the screen. You are advised to implement your own test code. When grading, we may use a different Test. Make sure that your code works under all circumstances.

Lab Work Submission:

* You can continue to work on this lab after our lab class, on your own, at home.
* Submit your lab work via Blackboard on or before: **Wednesday, November 1, 2023, 11:59pm**.
* The only accepted submission method!
* Once you submit your assignment you will not be able to resubmit it!
* Make absolutely sure the Java files you want to submit are the Java files you want graded.
* You will not be able to submit your lab work under any circumstances once **Lab17** disappears at **12:00 a.m.** on **Thursday, November 2, 2023**.
* There will be **NO** exceptions to these rules!
* To submit your lab work, upload **Library.java** (**with .java extension**) you did for this lab to the **Lab17** assignment in the **Labs** tab in your Lab section’s presence in Blackboard.
* Then, make sure you click the **Submit** button to submit your lab work.
* This lab is worth **5 points**.