Markbook Arrays Assignment

Complete the Markbook.java class by reading the code, especially the comments. We will be using parallel arrays, which are

> "A group of parallel arrays is a form of implicit data structure that uses multiple arrays to represent a singular array of records. It keeps a separate, homogeneous data array for each field of the record, each having the same number of elements. Then, objects located at the same index in each array are implicitly the fields of a single record." (Libretexts *6.8: Parallel Arrays*)

Read more about parallel arrays at Parallel Array - GeeksforGeeks (Parthendo *Parallel array*)
The main method is already completed for you to test your code. Look at the expected output comments at the end of the class for reference as well.
Methods to be completed:

String scoreToGrade(double score) : method to convert a percentage to a letter grade

85-100 = A
75-84 = B
65-74 = C
50-64 = D
<50 = F

String[] calculate(int[][] scores) : calculate the average grade for each student, then convert it to a letter grade with scoreToGrade method and put result into a 3rd parallel array (averages)

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double classAverage(int[][] scores) : calculate the class average based on the 2D array with students' scores

Reflection questions:

What would happen if new student data was added and the array of student names was sorted to keep it organised?

If our arrays were defined with a length of 25,

```
String[] students = new String[25];
double[][] scores = new double[25][5];
```

can you think about an alternative to adding a "lastIndex" variable to keep track of the end of a partially filled array?

Works Cited List

Endo, Parth. “Parallel Array.” *GeeksforGeeks*, GeeksforGeeks, 7 Sept. 2022, https://www.geeksforgeeks.org/parallel-array/.

Libretexts. “6.8: Parallel Arrays.” *Engineering LibreTexts*, Libretexts, 7 July 2020, https://eng.libretexts.org/Bookshelves/Computer_Science/Programming_and_Computation_Fundamentals/Book%3A_Programming_Fundamentals_(Busbee_and_Braunschweig)/06%3A_Arrays_and_Lists/6.08%3A_Parallel_Arrays#footnote-1651-1.