COSC 1560 – Computer Programming II

Assignment 1
Deadline January 31, 2022

A file named Assignment1Data.txt is available in Connections and contains information about students' test scores for a university course. The data in the file, shown in red, is as follows:

		TEST							
		1	2	3	4	5	6	7	8
STUDENT	1	87	90	65	45	88	89	75	80
	2	89	85	78	56	90	91	99	82

Each line contains eight test scores, as a percentage, for a particular student. The two lines above therefore represent two students. The file contains such information for a total of ten students. *Note that the first student and test are each classified as number "1".*

Program requirements:

1) Create a 2-dimensional array, named 'testScores', that can store all data in the text file.
2) Implement the following functions:
   a. void readTestScores(ifstream& f; int scores[][NUM_TESTS], int numStds);
      Read all test scores from the file and store in the array

   b. void displayTestScores(const int scores[][NUM_TESTS], int numStds);
      Display all test scores stored in the array

   c. int totalOneTest(const int scores[][NUM_TESTS], int numStds, int testNumber);
      Return the total for the test specified in the third argument

   d. int totalOneStudent(const int scores[][NUM_TESTS], int numStds,
      int studentNumber);
      Return the total for the student specified in the third argument

   e. double averageOneTest(const int scores[][NUM_TESTS], int numStds, int testNumber);
      Return the average of the test specified in the third argument

   f. double averageOneStudent(const int scores[][NUM_TESTS], int numStds,
      int studentNumber);
      Return the average for the student specified in the third argument

   g. int highestOneStudent(const int scores[][NUM_TESTS], int numStds,
      int studentNumber);
      Return the highest result for the student specified in the third argument

   h. int topStudent(const int scores[][NUM_TESTS], int numStds);
      Return the Student number with the highest average test score

3) Use the functions defined above to produce the output as specified below.

All Test scores:
87 90 65 45 88 89 75 80
89 85 78 56 90 91 99 82
…

Press Enter to Continue

Total for Test #1 is: XX
Press Enter to Continue

Total for Test #5 is: XX
Press Enter to Continue

Total for Student #3 is: XX
Press Enter to Continue

Total for Student #8 is: XX
Press Enter to Continue

Average for Test #5: XX
Press Enter to Continue

Average for Test #8: XX
Press Enter to Continue

Average for Student #5: XX
Press Enter to Continue

Average for Student #9: XX
Press Enter to Continue

Highest test score for Student #2: XX
Press Enter to Continue

The top Student: XX
Press Enter to Continue

The student and test numbers should be consistent with those shown above. When a result of type ‘double’ is displayed, there should be 2 digits after the decimal point.

THE DEPARTMENT STANDARDS FOR “STYLE GUIDELINES” SHOULD BE FOLLOWED IN ALL CODE.