



COMSATS UNIVERSITY ISLAMABAD, ISLAMABAD
CAMPUS
DEPARTMENT OF COMPUTER SCIENCE
CLASS ASSIGNMENT #4
FALL 2021

Answer to all questions must be submitted in MS Word.

Answer to all questions should begin on new page.

Assignment document must contain a title page showing Assignment-4, your name and registration number.

Assignment document must also contain JAVA source code (For JAVA Programming Questions) along with output.

Solution to JAVA Programming problems must be created in separate .java file (for each question). For example, Question1.java

You must follow proper JAVA naming convention for identifiers and properly document your source code.

Combine all your work in one folder. The folder must contain .JAVA source files (for JAVA Programming Questions) and a pdf file.

Name of the Assignment document file should be your Registration Number. E.g.

FA21BCS01.docx

Submit your work via MS Teams

QUESTION #1 (CLO-3)

Write a Java program to keep accepting 10 integer values from user until valid values are entered. If the user enters invalid integer values then ask the user to enter it again. For example if the given input is as below...

11
2
99
21abc

Then your program should ask the user to enter the fourth value again as it is invalid. **User should not be asked to enter the valid values again.**

Once all the values are entered then sort these values in ascending order.

QUESTION #2 (CLO-3)

Write a method that returns the sum of all the elements in a specified column in a matrix using the following header:

public static double sumColumn(double[][] m, int columnIndex)

Write a test program that reads a 3-by-4 matrix and displays the sum of each column. Here is a sample run:

```
Enter a 3-by-4 matrix row by row:
1.5 2 3 4 Enter
5.5 6 7 8 Enter
9.5 1 3 1 Enter
Sum of the elements at column 0 is 16.5
Sum of the elements at column 1 is 9.0
Sum of the elements at column 2 is 13.0
Sum of the elements at column 3 is 13.0
```

QUESTION #3 (CLO-3)

Write a method that sums all the numbers in the major diagonal in an $n * n$ matrix of double values using the following header:

public static double sumMajorDiagonal(double[][] m)

Write a test program that reads a 4-by-4 matrix and displays the sum of all its elements on the major diagonal. Here is a sample run:

```
Enter a 4-by-4 matrix row by row:
1 2 3 4.0 Enter
5 6.5 7 8 Enter
9 10 11 12 Enter
13 14 15 16 Enter
Sum of the elements in the major diagonal is 34.5
```