COMSATS University Islamabad
Department of Computer Science
Programming Fundamentals (CSC103) – BSCS-2A & 2B
LAB Assignment – 3 (CLO-3)

Due Date: December 17, 2021 (11:59 pm)

Total Marks: 3 x 5 = 15

Instructions

Answer to all questions must be submitted in PDF Format.

Answer to all questions should begin on new page.

Assignment document must contain a title page showing LAB-Assignment-3, your name and registration number.

Assignment document must also contain JAVA source code 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 and a PDF file.

Name of the Assignment document file should be your Registration Number. E.g. FA21BCS01.pdf

Submit your work via MS Teams

Plagiarism: Plagiarism is not allowed. If found plagiarized, zero marks will be awarded in the assignment.

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Question – 1:

Write a Menu Driven JAVA program that creates a string array by taking input from user and perform following tasks by displaying menu to user, the menu operations are implemented using methods:

a) Calculate length of string.
b) Count number of words in string.
c) Check a string is palindrome or not.
d) Find a word within the array. If found display its starting position.
e) Convert a string in lowercase.
f) Convert a string in uppercase.

Question – 2:

Write a Menu Driven JAVA program that creates a two-dimensional array/Matrix of size n X m where n represent the students and m represent the subjects and initialize it with user. The program should do following Tasks using Menu, the menu operations are implemented using methods:

a) **Total_Marks:** Calculates total/sum of the values in the specified row (student).
b) **Avg_Subject:** Calculates Average of the values in the specified column (subject).
c) **Stud_Highest:** Finds highest value in the specified row of the array and return that subject name.
d) **Stud_Lowest:** Finds lowest value in the specified row of the array and return that subject name.

Question – 3:

Consider an integer array, the number of elements in which is determined by the user. The elements are also taken as input from the user. Write a program to find those pairs of elements that have the maximum and minimum difference among all element pairs.