061306T4CPM

COMPUTER PROGRAMMING LEVEL 6

IT/OS/CP/CR/05/6/A

DESIGN ALGORITHMS AND DATA STRUCTURES

NOV/DEC 2023

TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION COUNCIL (TVET CDACC)

PRACTICAL ASSESSMENT

Time: 2 Hours

INSTRUCTIONS TO CANDIDATES:

1. In this practical assessment, you are required to perform the following tasks:
    a) **TASK** 1: Develop a C# application to perform a linear search.
    b) **TASK** 2: Implement the bubble sort algorithm to sort an array of integers using C#.
2. You have **Ten** minutes to read through the instructions and check availability of resources for the practical.
3. Each task has specific instructions.
4. All tasks carry **50** marks.
5. The assessor will record your performance at critical points using audio-visual means.

You will be provided with the following resources:

i. A working computer
ii. C# IDE Installed
iii. Two Plain papers

Task 1

Develop a C# application to perform a linear search. (25 Marks)

i. The program should store the following integers in an array 10, 5, 8, 3, 7, 2, 1, 6, 4, 9
ii. Then ask the user to input the number he wants to search.
iii. If found, the program should output the message "*Element found*" and show its position in the array else output "*Element not found*".
iv. Follow all the Coding Standards & Best Practices.

Task 2

Implement the bubble sort algorithm to sort an array of integers using C# (25 Marks)

i. The program should store the following integers in an array 10, 5, 8, 3, 7, 2, 1, 6, 4, 9
ii. Then perform bubble sort using a function
iii. Output the sorted array
iv. Follow all the Coding Standards & Best Practices.

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