

061306T4CSC

COMPUTER SCIENCE LEVEL 6

ICT/OS/CS/CR/08/6/A

Understand Algorithms and Data Structures

March/April 2025



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

PRACTICAL ASSESSMENT

TIME: 3 HOURS

INSTRUCTIONS TO CANDIDATE:

1. You are required to perform the following tasks
 - i. *Demonstrate Array Operations*
 - ii. *Implement Linear Search*
2. You have been provided with the following resources for the practical tasks:
 - i. *Functional computer installed with appropriate C++ IDE/Compiler*
 - ii. *Plain paper*

Task 1: Demonstrate Array Operations

You are tasked with an activity to come up with an automated class register to be used to store the Adm no, gender and name of current students in a class. The program should utilize the concept of arrays to perform various activities as guided below.

1. Design a user interface to enable a user to add, delete, update and view the student records accordingly.
2. Declare a class to implement your program.
3. Initialize an array to store a maximum of 30 students.
4. Implement a function to store Adm No, gender and name of 6 students at a specified position in the array. The list of students is provided in the table 1 below.
5. Implement a function to delete three students from the array: *Adm No 003, Adm No 005, Adm No 004*.
6. Assuming that two new students have reported, write a function to update the new record of students.
7. Implement a function to display the current record of students in the class from the last one to the first one.
8. Invoke the functions in the main program.

Student Details

Adm No	Name	Gender
001	Grace George	F
002	Phylis Peter	F
003	Evans Naushad	M
004	Philip Phil	M
005	Duncan Dan	M
006	Prisca Sheila	F

Table 1

Task 2: Implement Linear Search.

In this activity, you are required to search for a specific student based on the Adm No or Name.

1. Include a feature to search for a student on the user interface of your automated class register
2. Implement a linear search algorithm to search the following students based on name or Adm No:

Adm No	Name	Gender
002	Phylis Peter	F
001	Grace George	F

3. Display an appropriate message: If the student is in the records, the program displays the details, if not; it returns a message 'Student not Found'.
4. Compile, debug and run your program to ensure it runs successfully.