



## SET213 – Data Structures & Algorithms

### Experiment # 13

#### Experiment Title

Open Ended Lab - I

#### Assessment of CLO(s): IV

Performed on 03-01-2024

Student Name			
Roll No.		Group	
Semester		Session	

Total (Max)	Criteria 1 (2.5)	Criteria 2 (2.5)	Criteria 3 (2.5)	Criteria 4 (2.5)	Total (10)
Marks Obtained					
Remarks (if any)					

#### Experiment evaluated by

Instructor's Name	Engr. Muhammad Asad Husain		
Date		Signature	

**Department of Engineering Technology**  
(UIT University)

**Course Code: SET213      Course Title: Data Structures & Algorithms      Course Credits: 3+1      Session: Fall 2024**

**Rubric for assessment criteria to perform experiment number 13.**

<b>Level Criteria</b>	<b>UNSATISFACTORY 1</b>	<b>COMPETENT 2</b>	<b>PROFICIENT 3</b>	<b>DISTINGUISHED 4</b>
<b>Capability of writing algorithm/ Procedure</b>	None of the steps are implemented of an algorithm.	Few steps are implemented correctly of an algorithm.	Most of the steps are implemented correctly of an algorithm.	All the steps are implemented correctly of an algorithm.
<b>Capability of writing Program</b>	Programs not completed.	Completeness of code, consistent variable naming and unformatted.	Completeness of code, inconsistent variable naming and well formatted.	Completeness of code, consistent variable naming and well formatted.
<b>Completion of target in Lab</b>	25% target has been completed	50% target has been completed	75% target has been completed	100% target has been completed
<b>Output</b>	None of the outputs are correct.	Few outputs have been found correctly.	Some of the outputs are correct and well formatted.	Most of the outputs are correct and well formatted.

**Practical Objective(s):**

- i. To implement concepts, understood in previous labs.

**Task(s)**

1. Create a program in C++ for maintaining hierarchical relationship of data for various citizens. The program should be able to implement the following:
  - Use appropriate data structure to save the data.
  - Use necessary attributes to fulfill the program requirements.
  - Search a citizen by NIC number and display his/her father's information, and also the children's information along the citizen's information.

**Example:**

Enter an NIC number to search: 1111100000001

**\*\*\* Searched Citizen\*\*\***

Name: DEF  
NIC#: 1111100000001  
Gender: Male  
Current Address: ###  
Permanent Address: ###

**\*\*\*Father's Information\*\*\***

Name: ABC  
NIC#: ###  
Gender: Male  
Current Address: ###  
Permanent Address: ###

**\*\*\*Children's Information\*\*\***

Name: GHI  
NIC#: ###  
Gender: Male  
Current Address: ###  
Permanent Address: ###

Name: JKL  
NIC#: ###  
Gender: Female  
Current Address: ###  
Permanent Address: ###