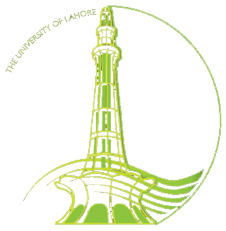

THE UNIVERSITY OF LAHORE
ISLAMABAD CAMPUS

Data Structuers and algorithms (CS09203)

Lab Report

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Experiment # 1
Introduction to Arrays and its operation

Objective
The objectives of this lab session are to understand the basic and various operations on arrays in C++.

Software Tool
1. Code Blocks with GCC compiler.

1 Theory

We have already studied array in our computer programming course. We would be using the knowledge we learned there to implement different operation on arrays.

Traversing Linear Arrays:-

Let A be the collection of data elements stored in the memory of the computer. Suppose we want to print the contents of each element of A or suppose we want to count the number of elements of A with a given property. This can be accomplished by traversing A that is by accessing and Processing each element of A exactly once.

The following algorithm traverses a linear array. The simplicity of the algorithm comes from the fact that LA is a linear structure. Other linear structures such as linked list can also be easily traversed. On the other hand the traversal of non-linear structures such as trees and graphs is considerably more complicated.

2 Task

2.1 Task 1

2.2 Procedure: Task 1

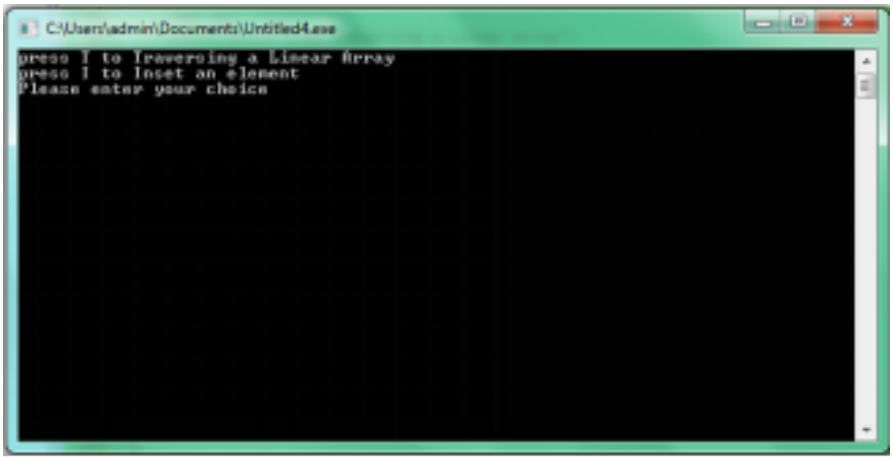

Figure 1: Array

```
#include<iostream>
using namespace std;

int main(){
        int a=-1,y=0;
        int array[100];
        char op;
        cout<<"press T to Traversing a Linear Array";
        cout<<"\npress I to Inset an element ";

        cout<<"\nPlease enter your choice\n";
        line:
        cin>>op;
        switch (op){


case 'i':
                cout<<"enter element to insert\n";
                a++;
                cin>>array[a];
                cout<<"inserted at location "<<a<<"\n";
                break;
        case 't':
```

```
                cout<<"Traversing a Linear Array\n";
                for(int b=0;b<=a;b++){
                        cout<<array[b]<<endl;
                }
                break;
}
goto line;
}
```