Data Structures 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
2.
3.

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 Procedure: Task 1

Write a C++ program to implement all the above described algorithms and display the following menu and ask the user for the desired operation.

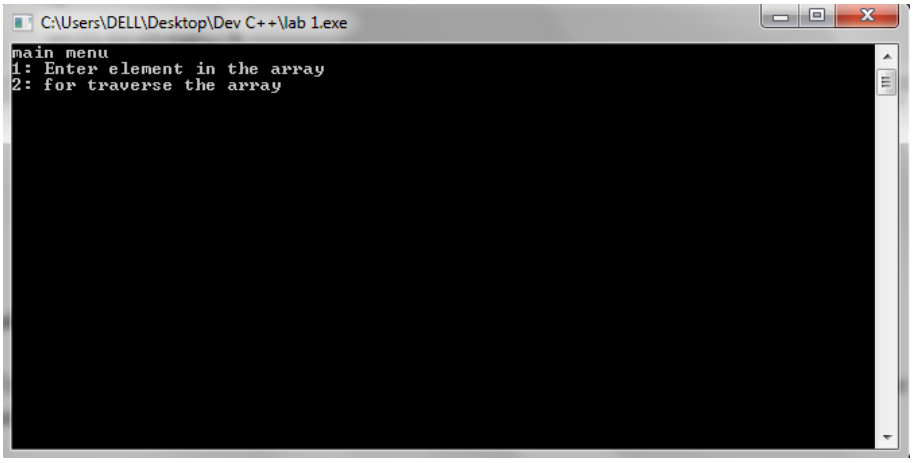

Figure 1: output

2.2

```
#include<iostream>
using namespace std;
int main()
{
        int a[10],b=0,c;
        int d=0,co=0,n;
        loop:
        {
        cout<<"main menu"<<endl;
        cout<<" 1: Enter element in the array \n";
        cout<<" 2: for traverse the array \n";
        cin>>n;
        switch(n)
        {
                case '1':
                        {
                        cout<<"Enter the array less then 10: ";
                        cin>>c;
                        cout<<"Enetr the element in the array: "<<endl;
                        while(b<c)
                        {
```

```
                                        co++;
                                        cin>>a[b];
                                        b++;
                                }
                                }
                        break;
                        case '2':
                                {
                                cout<<"The traverse of array is : "<<endl;
                                b=d;
                                while(b<c)
                                {
                                        cout<<a[b]<<" ";
                                        b++;
                                }
                                }
                                break;
        }
}
                        goto loop;
                        return 0;

}
```

3 Conclusion

In todays lab we have studied to create 1 Dimension and 2 Dimension array and their implementation.