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**ISLAMABAD
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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.

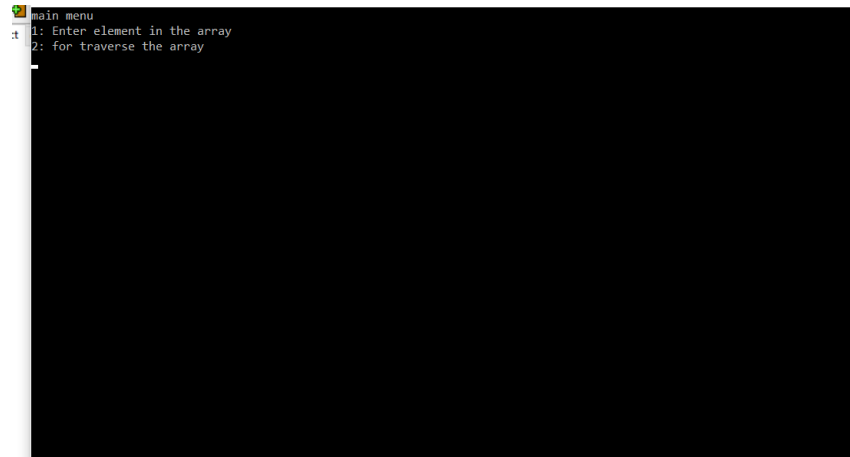


Figure 1: output

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 than 10:";
                cin>>c;
                cout<<"Enter the element in the array:"<<endl;
                while(b<c)
                {
```

```

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

goto loop;
return 0;

}

```

3 Conclusion

In todays lab we have discussed how we can create 1D and 2d array and how can we implement it on computer.