



NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF MECHANICAL AND MANUFACTURING
ENGINEERING

**CS-114 - Fundamental of
Programing**

LAB MANUAL # 7 (Lab tasks)

ME -15 (C)

SUBMITTED BY:
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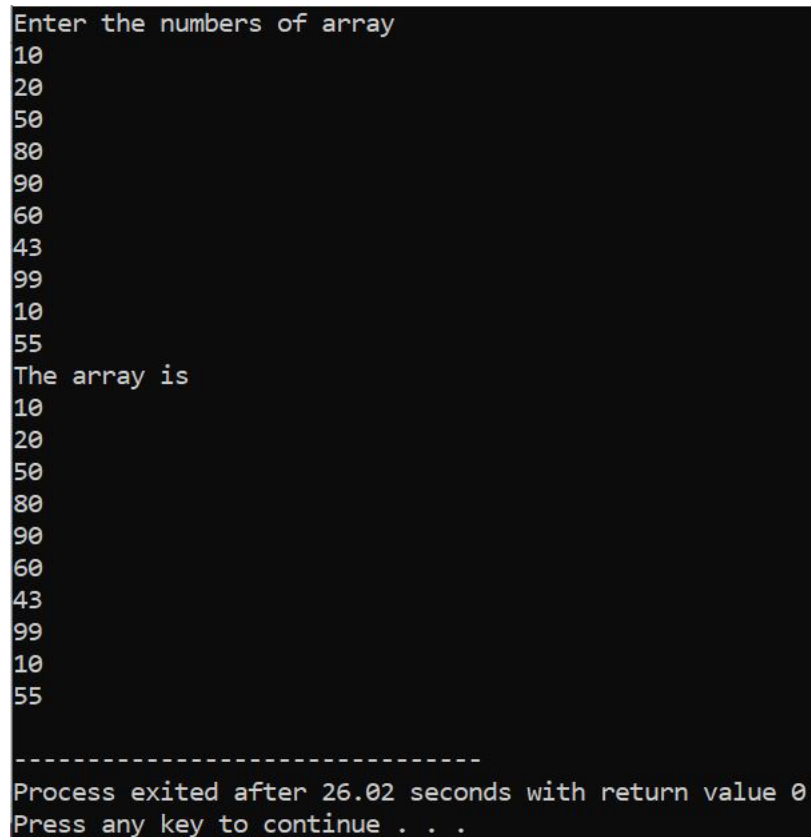
SUBMITTED TO:
SIR M. AFFAN

1. Take 10 integer inputs from user and store them in an array and print them on screen.

Code:

```
#include<iostream>
using namespace std;
int main(){
    int arr [10]={};
    for(int i=0;i<=9;i++){ //to get input from user and store it in arr
        cin>>arr[i];
    }
    cout<<"The array is\n";
    for(int j=0;j<=9;j++){ //to show each number of array
        cout<<arr[j]<<endl;
    }
    return 0;
}
```

Result:



The screenshot shows a terminal window with a black background and white text. It displays the execution of a C++ program that takes 10 integer inputs and prints them. The inputs are 10, 20, 50, 80, 90, 60, 43, 99, 10, and 55. The output shows the array elements in the same order. At the bottom, it indicates the process exited after 26.02 seconds with a return value of 0 and prompts the user to press any key to continue.

```
Enter the numbers of array
10
20
50
80
90
60
43
99
10
55
The array is
10
20
50
80
90
60
43
99
10
55

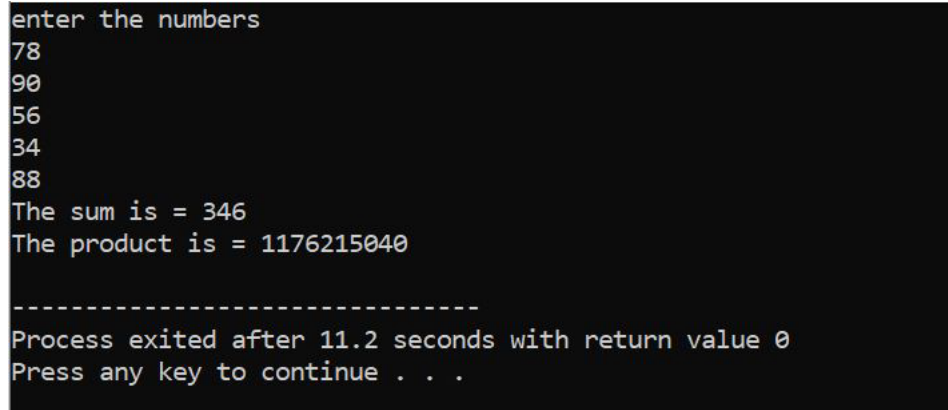
-----
Process exited after 26.02 seconds with return value 0
Press any key to continue . . .
```

2. Write a program to find the sum and product of all elements of an array with 5 integer elements.

Code:

```
#include<iostream>
using namespace std;
int main(){
    int arr[5]={},S=0,P=1;
    cout<<"enter the numbers\n";
    for(int i=0;i<5;i++){ //loop to get input from user and store it in array
        cin>>arr[i];
    }
    for(int j=0;j<5;j++){ //for loop to calculate the sum
        S=S+arr[j];
    }
    cout<<"The sum is = "<<S<<endl;//shows the sum
    for(int k=0;k<5;k++){ //for loop to calculate product
        P=P*arr[k];
    }
    cout<<"The product is = "<<P<<endl; //shows the output of product
    return 0;
}
```

Result:



```
enter the numbers
78
90
56
34
88
The sum is = 346
The product is = 1176215040

-----
Process exited after 11.2 seconds with return value 0
Press any key to continue . . .
```

3. Print diamond pattern using a single array.

Code:

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

int main(){
    int c=9,d=9;
    char sta[c];
    for (int i=0;i<c;i++){
        sta[i] = ' ';
    }
    for (int j=0;j<d/2;j++){ //for loop to print up side of diamond which is for rows
        for (int k=0;k<c;k++){ //for loop to assign '*' according to condition
            if (k >=c/2-j&&k<=c/2+j){ //condition to assign '*' at specified positions
                sta[k]='*';
            } else{
                sta[k] = ' ';
            }
            cout<<sta[k];
        }
        cout<<endl;
    }
    for(int k=0;k<d/2;k++){ //for loop to print lower side of diamond which is for rows
        for (int i=0;i<c;i++){ //for loop to assign '*' according to condition
            if (i>=k+1&&i<=c-(k+2)) { //condition to assign '*' at specified positions
                sta[i]='*';
            } else{
                sta[i]=' ';
            }
            cout<<sta[i];
        }
        cout<<endl;
    }
    return 0;
}
```

Result:

```

  *
 ***
*****
*****
 *****
  *****
   *

-----
Process exited after 0.2816 seconds with return value 0
Press any key to continue . . .
```