

School Of Mechanical & Manufacturing Engineering, NUST

Department of Mechanical Engineering



## CS-114 - Fundamentals of Programming

### Lab Manual # 7

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# LAB TASKS

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

main.cpp	Run	Output
<pre>1 // Online C++ compiler to output an array 2 #include &lt;iostream&gt; 3 using namespace std; 4 5 int main() { 6     int x=0,r=0; 7     int arr [9]={ }; 8     while (x&lt;10) 9     { 10        cout&lt;&lt;"enter number:"; 11        cin&gt;&gt;arr[x]; 12        x++; 13    } 14    cout&lt;&lt;"The Array is:"&lt;&lt;endl; 15    while (r&lt;10) 16    { 17        cout&lt;&lt;arr[r]&lt;&lt;" "; 18        r++; 19    } 20    return 0; 21 }</pre>		<pre>/tmp/ydwZYAorZk.o enter number:1 enter number:2 enter number:3 enter number:4 enter number:5 enter number:6 enter number:7 enter number:8 enter number:9 enter number:10 The Array is: 1 2 3 4 5 6 7 8 9 10  </pre>

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

main.cpp	Run	Output
<pre>1 //Program to find the sum,product of array with 5 elements 2 #include &lt;iostream&gt; 3 using namespace std; 4 5 int main() { 6     int r=0,product,sum; 7     product=1;sum=0; 8     int num[4]; 9     while (r&lt;5) 10    { 11        cout&lt;&lt;"Insert number:"&lt;&lt;endl; 12        cin&gt;&gt;num[r]; 13        r++; 14    } 15    for(int x=0;x&lt;5;x++) 16    { 17        product=product*num[x]; 18    } 19    cout&lt;&lt;"Product of all integers in array = "&lt;&lt;product&lt;&lt;endl; 20    for(int y=0;y&lt;5;y++) 21    { 22        sum=sum+num[y]; 23    } 24    cout&lt;&lt;"Sum of all integers in array = "&lt;&lt;sum&lt;&lt;endl; 25 26    return 0; 27 }</pre>		<pre>/tmp/aysuCYtBvd.o Insert number: 2 Insert number: 4 Insert number: 1 Insert number: 9 Insert number: 4 Product of all integers in array = 288 Sum of all integers in array = 20</pre>

### 3. Print diamond pattern using a single array.

```
1
2 #include <iostream>
3 using namespace std;
4
5 int main () {
6     int c,r;
7     r=7;
8     c=7;
9     if (r%2!=0 && c%2!=0)
10    {
11        char s[r];
12        for (int j=0; j<=r;j++)
13        {
14            s[j]=' ';
15        }
16        for (int i=0;i<=r/2;i++)
17        {
18            s[(c/2)+i]='*'; s[(c/2)-i]='*';
19
20            cout<<s<<endl;
21        }
22        for (int i=(r/2)+1;i<=r;i++)
23        {
24            s[i-1-(c/2)]=' ', s[(c/2)+c-i]=' ';
25
26            cout<<s<<endl;
27        }
28    }
29    return 0;
30 }
31
32
```

```
*
***
*****
*****
*****
***
*

...Program finished with exit code 0
Press ENTER to exit console.
```