

FUNDAMENTALS OF PROGRAMING

(LAB MANUAL 7)

SUBMITTED BY : ABEER ZAHRA JAFARI (476474)
SECTION : ME-15(C)

TASK 1

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

```
1      #include<iostream>
2      using namespace std;
3  int main (){
4      int arr[10];
5
6  for(int i=0;i<=9;i++){
7      cout<<"Enter an integer:";
8      cin>>arr[i];
9  }
10 for(int i=0;i<=9;i++){
11     cout<<arr[i]<<",";
12 }
13 return 0;
14 }
```

Output

Clear

```
/tmp/imCuyHmQSk.o
Enter an integer:1
Enter an integer:2
Enter an integer:3
Enter an integer:4
Enter an integer:5
Enter an integer:6
Enter an integer:7
Enter an integer:8
Enter an integer:9
Enter an integer:10
1,2,3,4,5,6,7,8,9,10,
```

Task 2

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

```
main.cpp
1      #include<iostream>
2      using namespace std;
3  int main (){
4      int arr[5];
5      int sum,product;
6  for(int i=0;i<5;i++){
7      cout<<"Enter an integer:";
8      cin>>arr[i];
9  }
10 sum=0;product=1;
11 for(int i=0;i<5;i++){
12     sum = sum + arr[i];
13 }
14 cout<<"sum: "<<sum<<endl;
15 for(int i=0;i<5;i++){
16     product = product * arr[i];
17 }
18 cout<<"product: "<<product<<endl;
19 return 0;
20 }
21
```

```
/tmp/A5qoopj2ZJ.o
Enter an integer:1
Enter an integer:2
Enter an integer:3
Enter an integer:4
Enter an integer:5
sum: 15
product: 120
```

Task 3

- Print diamond pattern using a single array.

```
8
9     #include <iostream>
10    using namespace std;
11    int main() {
12        int r,c;
13        r=7;c=7;
14        char d[r];
15    for(int i=0;i<=r;i++){
16        d[i]=' ';}
17    for (int j=0;j<=r/2;j++) {
18        d[c/2-j]='*',d[c/2+j]='*';
19        cout<<d<<endl;}
20    for (int i=r/2+1;i<r;i++){
21        d[i-1-c/2]=' ',d[c/2+(c-i)]=' ';
22        cout<<d<<endl;
23    }
24
25    return 0;}
```

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

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

- All the tasks performed above used arrays to obtain the required output. Arrays are a collection of data types used for storing similar elements
- The aim of the first task was to create a array by taking input from users and then displaying the array on the screen. This task was accomplished with help of insertion and extraction operators.
- In the second task, an array was created again through user input and then this array was used to perform different arithmetic operations with the help of the for loop.
- The third task was to create a diamond in which was done with the help of a single array and three for loops.