National University of Sciences and Technology (NUST)

Department of Mechanical Engineering (SMME)

Fundamentals of Programming (FOP)

Lab Tasks

Lab Manual 7

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Lab Task-1

```cpp
#include<iostream>
using namespace std;
int main()
{
    cout<<"Input 10 integers: "<<endl;
    int arr[10];
    for(int i=0; i<=9; i++){
        cin>>arr[i];
    }
    cout<<"The array is as follows: ";
    for(int i=0; i<=9; i++){
        cout<<arr[i]<<" ";
    }
return 0;
}
```

```
Input 10 integers:
1
2
3
4
5
6
7
8
9
10
The array is as follows: 1 2 3 4 5 6 7 8 9 10
--------------------------------
```

Lab Task-2

```cpp
#include<iostream>
using namespace std;
int main()
{

int arr[5];
cout<<"Enter elements of the array: \n";
for(int i=0; i<5; i++){
    cin>> arr[i];
}
int sum=0;
int product=1;
for(int i=0; i<5; i++){
    sum += arr[i];
    product = product * arr[i];
}
cout<<"Sum: "<<sum<<"\t\t"<<"Product is: "<<product;

    return 0;
}
```

```
Enter elements of the array:
3
4
5
6
7
Sum: 25          Product is: 2520
------------------------------------
```

Lab Task-3

```cpp
#include<iostream>
using namespace std;
int main()
{
int num;
cout << "Enter size: ";
cin>>num;
char array[num][num];
    for(int i = 0; i < num; i++) {
            for(int j = 0; j < num; j++) {
            array[i][j] = ' ';
}
}

    for(int i = 0; i < num/2+1; i++) {
            for(int j = num/2-i; j <= num/2+i; j++) {
array[i][j] = '*';
}
}
 for(int i = num/2+1; i < num; i++) {
            for(int j = num/2-(num-i-1); j <= num/2+(num-i-1); j++) {
array[i][j] = '*';
}
}
            for(int i = 0; i < num; i++) {
                for(int j = 0; j < num; j++) {
cout << array[i][j] << " ";
}
cout<<endl;
}

    return 0;
}
```

```
Enter the size : 7
      *
    * * *
  * * * * *
* * * * * * *
  * * * * *
    * * *
      *
```