

ME15

FOP

Manual 4

UZAIR AKBAR MALIK
CMS 467578
ME15
Section C



LAB TASKS

TASK 01

1. Write a program in C++ to find the sum of first 10 natural numbers.

SOLUTION:

```
#include <iostream>

using namespace std;

int main() {

    int sum = 0, number;

    cout << "Enter the 10 natural numbers:" << endl;

    for (int i = 0; i < 10; i++) {

        cin >> number;

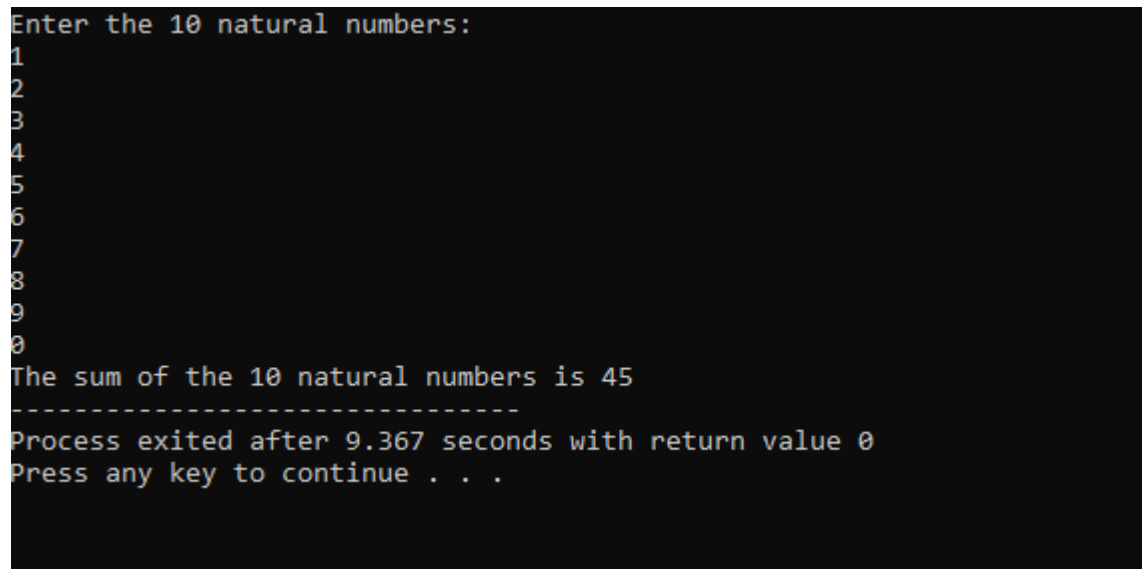
        sum += number;

    }

    cout << "The sum of the 10 natural numbers is " << sum;

    return 0;

}
```

A screenshot of a terminal window showing the execution of the C++ program. The output starts with the prompt "Enter the 10 natural numbers:" followed by ten lines of input, each containing a number from 1 to 10. After the inputs, the program outputs "The sum of the 10 natural numbers is 45". Below this, there is a dashed line separator, followed by the text "Process exited after 9.367 seconds with return value 0" and "Press any key to continue . . .".

```
Enter the 10 natural numbers:
1
2
3
4
5
6
7
8
9
10
The sum of the 10 natural numbers is 45
-----
Process exited after 9.367 seconds with return value 0
Press any key to continue . . .
```

TASK 02

2. Write a C++ program to Print a Table of any Number.

Solution:

```
#include <iostream>

using namespace std;

int main(){
    int n, i;

    cout<<"Enter a number: ";

    cin>>n;

    do{

        cout<< n << "*" << i << "=" << n*i <<" ";

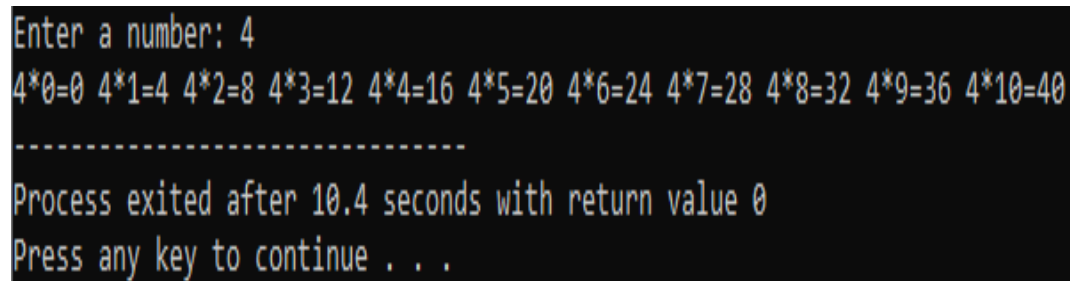
        i++;

    }

    while(i<11);

    return 0;

}
```



```
Enter a number: 4
4*0=0 4*1=4 4*2=8 4*3=12 4*4=16 4*5=20 4*6=24 4*7=28 4*8=32 4*9=36 4*10=40
-----
Process exited after 10.4 seconds with return value 0
Press any key to continue . . .
```

TASK 03

Write a Program to Generate Factorial. A Certain Number Factorial of any number is the product of an integer and all the integers below it for example factorial of 4 is: $4! = 4 * 3 * 2 * 1 = 24$.

Solution:

```
#include <iostream>

using namespace std;

int main()
{
    int i,factorial=1,number;

    cout<<"Enter any Number: ";

    cin>>number;

    if(number<0){

        cout<<"factorial cannot be calculated.";

    }

    else{

        for(i=1;i<=number;i++){

            factorial=factorial*i;

        }

        cout<<number<<"!= "<<factorial;

    }

    return 0;

}
```

```
Enter any Number: 6
6!= 720
-----
Process exited after 3.956 seconds with return value 0
Press any key to continue . . .
```

TASK 04

Write a C++ program to generate a Fibonacci sequence up to a certain number input by the user.

Solution:

```
#include <iostream>

using namespace std;

int main() {
    int num, first = 0, second = 1, next;

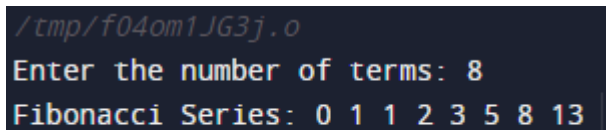
    cout << "Enter the number of terms: ";
    cin >> num;

    cout << "Fibonacci Series: ";

    for (int i = 0; i < num; i++) {
        cout << first << " ";

        next = first + second;
        first = second;
        second = next;
    }

    return 0;
}
```



```
/tmp/f04om1JG3j.o
Enter the number of terms: 8
Fibonacci Series: 0 1 1 2 3 5 8 13
```