Lab Manual 4

Lab Task

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Class: ME-15 C

## Q1. Write a program in C++ to find the sum of first 10 natural numbers.

```cpp
1    #include <iostream>
2    using namespace std;
3
4    int main() {
5        int x=0;
6        for (int i=1; i<=10; i++) {
7        x += i;
8        }
9        cout << "The sum of fist 10 natural numbers is:" << x << endl;
10       return 0;
11   }
12
```

```
The sum of fist 10 natural numbers is:55

Process returned 0 (0x0)    execution time : 0.030 s
Press any key to continue.
```

## Q2. Write a C++ program to Print a Table of any Number.

The output should look like this:
$$2 \times 1 = 2$$
$$2 \times 2 = 4$$

```cpp
1     #include <iostream>
2
3     using namespace std;
4
5     int main() {
6          int x;
7          int y;
8          cout << "Enter the number you want a table for" << endl;
9          cin >> x;
10         for (int i=0;i<=10;i++) {
11                 y=x*i;
12              cout << x << " x " << i << " = " << y << endl;
13         }
14         return 0;
15    }
16
```

```
Enter the number you want a table for
3
3 x 0 = 0
3 x 1 = 3
3 x 2 = 6
3 x 3 = 9
3 x 4 = 12
3 x 5 = 15
3 x 6 = 18
3 x 7 = 21
3 x 8 = 24
3 x 9 = 27
3 x 10 = 30

Process returned 0 (0x0)   execution time : 8.454 s
Press any key to continue.
```

## Q3. Write a program to generate factorial for any number.

```cpp
#include <iostream>

using namespace std;

int main() {
    int x;
    int fact;

    cout << "Enter the number you want factorial of" << endl;
    cin >> x;
    for (int i=x-1;i>0;i--) {
        fact = x*i;
        x=fact;
    }
    cout << "The factorial of your number is " << fact << endl;
    return 0;
}
```

```
Enter the number you want factorial of
7
The factorial of your number is 5040

Process returned 0 (0x0)    execution time : 1.230 s
Press any key to continue.
```

Q4. Write a C++ program to generate a Fibonacci sequence up to a certain number input by the user.

```cpp
#include <iostream>

using namespace std;

int main() {
    int a;
    int b;
    int c;
    int res;
    cout << "Enter the first two numbers of your sequence" << endl;
    cin >> a;
    cin >> b;
    cout << "How many integers you want in your sequence" << endl;
    cin >> c;
    cout << "Your sequence is" << endl;
    for (int i=1; i<=c; i++) {
        res=a+b;
        a=b;
        b=res;
        cout << res << endl;
    }
    return 0;
}
```

```
Enter the first two numbers of your sequence
1
2
How many integers you want in your sequence
9
Your sequence is
3
5
8
13
21
34
55
89
144

Process returned 0 (0x0)    execution time : 2.529 s
Press any key to continue.
```