



Bahria University, Islamabad  
Department of Software Engineering

Computer Programming Lab  
(Fall-2023)

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Lab Journal: 5  
Date: 31/10/23

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Task No:	Task Wise Marks		Documentation Marks		Total Marks (20)
	Assigned	Obtained	Assigned	Obtained	
1	3				
2	3				
3	3				
4	3				
5	3				

Comments:

Signature

## Introduction

*Loops are repetitive structures, and we use them if we want to repeat a particular set of statements in a particular way. There are three variants of loops used:*

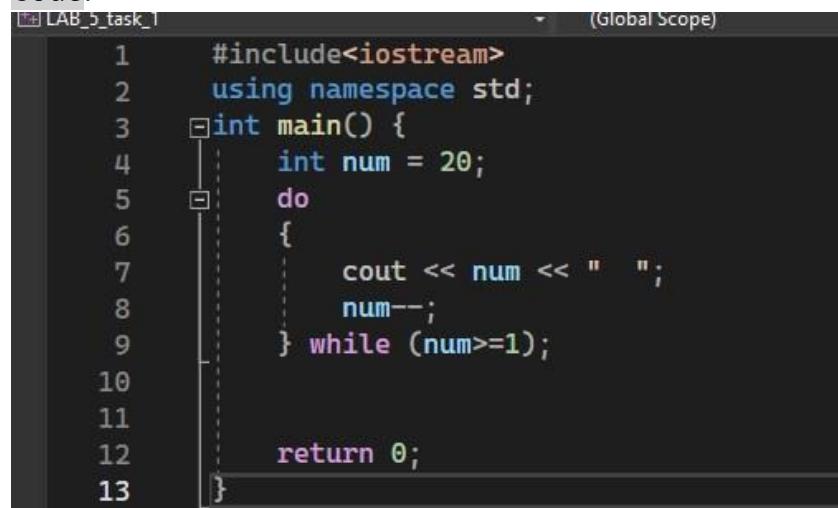
- *For Loop*
- *While Loop*
- *Do-While Loop*

## Tools Used

Microsoft Visual C++ 6.0

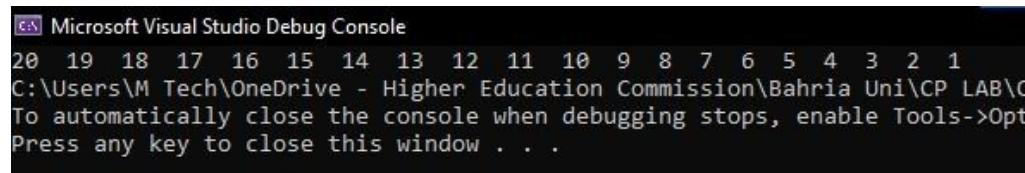
### Task 1: Print numbers in descending order.

Code:



```
LAB_5_task_1 (Global Scope)
1  #include<iostream>
2  using namespace std;
3  int main() {
4      int num = 20;
5      do
6      {
7          cout << num << " ";
8          num--;
9      } while (num>=1);
10
11
12      return 0;
13 }
```

Output:



```
Microsoft Visual Studio Debug Console
20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
C:\Users\M Tech\OneDrive - Higher Education Commission\Bahria Uni\CP LAB\O
To automatically close the console when debugging stops, enable Tools->Opt
Press any key to close this window . . .
```

### Task 2: Program to compute factorial of the given number.

Code:

```
#include<iostream>
using namespace std;
int main() {
    double num;
    cout << "Enter the number: ";
    cin >> num;
    double fact = 1.0, i = 1;
    do
    {
        fact *= i;
        i++;
    } while (i<=num);
    cout << "Factorial of a " << num << " is " << fact;
}
```

Output:

```
Microsoft Visual Studio Debug Console
Enter the number: 5
Factorial of a 5 is 120
C:\Users\M Tech\OneDrive - Higher Education
To automatically close the console . . .
Press any key to close this window
```

### Task 3: Conversion from decimal to octal number.

Code:

```
#include<iostream>
using namespace std;
int main() {
    long num;
    cout << "Enter the decimal value: ";
    cin >> num;
    int rem, octal = 0, i = 1;
    do
    {
        rem = num % 8;
        num = num / 8;
        octal = octal + (rem * i);
        i *= 10;
    }
    while (num != 0);
    cout << "The octal value of given number: " << octal;
}
return 0;
```

Output:

```
Microsoft Visual Studio Debug Console
Enter the decimal value: 12354.2
The octal value of given number: 30102
C:\Users\M Tech\OneDrive - Higher Education
To automatically close the console when debug . . .
Press any key to close this window . . .
```

### Task 4: Four-Function Calculator.

#### Code:

```
LAB_5_TASK#4 (Global Scope) main()
1 #include<iostream>
2 using namespace std;
3 int main() {
4     char option;
5     do
6     {
7         float num_1 = 0, num_2 = 0;
8         char oper = ' ';
9         cout << " Enter the FIRST Number: ";
10        cin >> num_1;
11        cout << " Enter the OPERATOR: ";
12        cin >> oper;
13        cout << " Enter the SECOND Number: ";
14        cin >> num_2;
15
16        switch (oper)
17        {
18            case '+':
19            {
20                cout << "The addition of given Numbers: " << num_1 + num_2 << endl;
21                break;
22            }
23            case '-':
24            {
25                cout << "The Subtraction of given Numbers: " << num_1 - num_2 << endl;
26                break;
27            }
28            case '*':
29            {
30                cout << "The Multiplication of given Numbers: " << num_1 * num_2 << endl;
31                break;
32            }
33            case '/':
34            {
35                cout << "The Division of given Numbers: " << num_1 / num_2 << endl;
36                break;
37            }
38            default:
39                cout << "INVALID operator." << endl;
40                break;
41            }
42            cout << "Do another(y/n): ";
43            cin >> option;
44        } while (option == 'Y'|| option=='y');
45    return 0;
46 }
```

```
LAB_5_TASK#4 (Global Scope) main0
21     break;
22 }
23 case '-':
24 {
25     cout << "The Subtraction of given Numbers: " << num_1 - num_2 << endl;
26     break;
27 }
28 case '*':
29 {
30     cout << "The Multiplication of given Numbers: " << num_1 * num_2 << endl;
31     break;
32 }
33 case '/':
34 {
35     cout << "The Division of given Numbers: " << num_1 / num_2 << endl;
36     break;
37 }
38 default:
39     cout << "INVALID operator." << endl;
40     break;
41 }
42 cout << "Do another(y/n): ";
43 cin >> option;
44 } while (option == 'Y'|| option=='y');
45 return 0;
46 }
```

#### Output

```
Enter the SECOND Number: 5
The addition of given Numbers: 10
Do another(y/n): y
Enter the FIRST Number: 5
Enter the OPERATOR: +
Enter the SECOND Number: 6
The addition of given Numbers: 11
Do another(y/n): n

C:\Users\M Tech\OneDrive - Higher Education
(process 2892) exited with code 0.
To automatically close the console when debu
```

**Task 5:** It is necessary for the program to display the following sequence of numbers:

7 14 21 28 35 42 49 56 63 70 77 84 91 98

**Code**

```
#include<iostream>
using namespace std;
int main() {
    int sum = 0;
    do
    {
        sum += 7;
        cout << sum << " ";
    } while (sum < 98);
    return 0;
}
```

**Output**

```
Microsoft Visual Studio Debug Console
7 14 21 28 35 42 49 56 63 70 77 84 91 98
C:\Users\M Tech\OneDrive - Higher Education Commission\Bahr
To automatically close the console when debugging stops, en
Press any key to close this window . . .
```

**Task 6:** It is necessary to display the following sequence of numbers:

1 2 4 8 16 32 64 128 256 512

**Code**

```
#include<iostream>
using namespace std;
int main() {
    int num = 1;
    do
    {
        cout << num << " ";
        num *= 2;
    } while (num <= 512);
    return 0;
}
```

**Output**

```
Microsoft Visual Studio Debug Console
1 2 4 8 16 32 64 128 256 512
C:\Users\M Tech\OneDrive - Higher Educati
To automatically close the console when d
```

## Conclusion

Understanding of basic concept of do-while loop. In “do-while” loop, the body of loop comes before the test condition. The body of the loop is executed and then the condition is tested.