Bahria University, Islamabad

Department of Software Engineering

Computer Programming Lab

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Lab Journal: 5

Date: 31/10/23

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

Comments:

Signature

LAB

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\C
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:

```
Lab_5_TASK#2                                   (Global Scope)
 1   #include<iostream>
 2   using namespace std;
 3   int main() {
 4       double num;
 5       cout << "Enter the number: ";
 6       cin >> num;
 7       double fact = 1.0, i = 1;
 8       do
 9       {
10           fact *= i;
11           i++;
12       } while (i<=num);
13       cout <<"Factorial of a "<< num <<" is " << fact;
14   }
```

Output:

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

Task 3: Conversion from decimal to octal number.

Code:

```
LAB_5_TASK#3                                   (Global Scope)                    main()
 1   #include<iostream>
 2   using namespace std;
 3   int main() {
 4       long num;
 5       cout << "Enter the deciaml value: ";
 6       cin >> num;
 7       int rem, octal = 0, i = 1;
 8       do
 9       {
10           rem = num % 8;
11           num = num / 8;
12           octal = octal + (rem * i);
13           i *= 10;
14       }
15       while (num != 0);
16       cout << "The octal value of given number: " << octal;
17
18       return 0;
19
20   }
```

Output:

```
Microsoft Visual Studio Debug Console
Enter the deciaml value: 12354.2
The octal value of given number: 30102
C:\Users\M Tech\OneDrive - Higher Education
To automatically close the console when debu
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;
```

```
LAB_5_TASK#4                    (Global Scope)                    main()
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

```cpp
#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

```cpp
#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.