



Bahria University, Islamabad

Department of Software Engineering

Computer Programming Lab

(Fall-2023)

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Lab Journal: 5

Date: 30-10-2023

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				

Lab No: 5 DO-WHILE LOOP

Introduction

Basic concept to use While loop in C++ programming language.

Tools Used

Visual studio.

PROBLEM # 1: Write a program to print in the descending order first twenty natural numbers on the computer screen by using “do-while” loop.

CODE:

```
#include <iostream>
using namespace std;
int main()
{
    int n = 20;

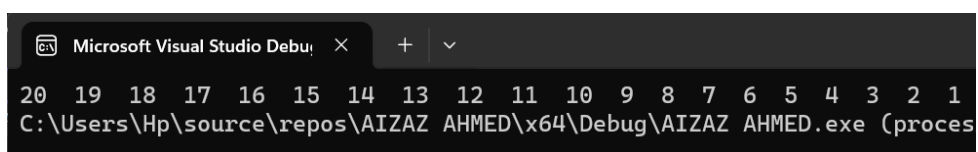
    do {

        cout << n << " ";
        n--;
    }

    while (n >= 1);

    return 0;
}
```

SCREENSHOT:



PROBLEM #2: Write a program to compute and print the factorial of the given number using the “do-while” loop.

CODE:

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

    int number, factorial;
    cout << "Enter the Number to calculate it's Factorial : ";
    cin >> number;

    int temp = number;
    factorial = 1;
    do {

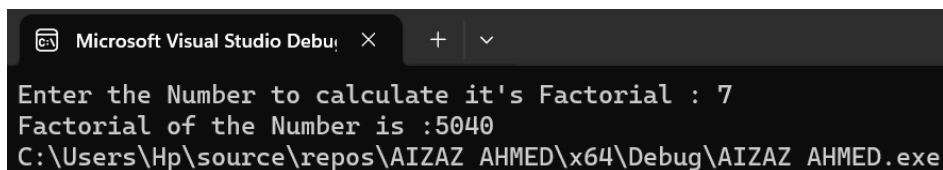
        factorial = factorial * temp;

        temp--;
    }

    while (temp >= 1);
    cout << "Factorial of the Number is :" << factorial;

    return 0;
}
```

SCREENSHOT:

The screenshot shows the Microsoft Visual Studio Debug Console. The title bar at the top reads "Microsoft Visual Studio Debug Console" with a close button. The console output is as follows:
Enter the Number to calculate it's Factorial : 7
Factorial of the Number is :5040
C:\Users\Hp\source\repos\AIZAZ AHMED\x64\Debug\AIZAZ AHMED.exe

PROBLEM # 3: Write a program to convert the given decimal number into octal number using the “do-while” loop.

CODE:

```
#include <iostream>
using namespace std;

int main() {
    int decimalnumber;
    cout << "Enter a Decimal Number: ";
    cin >> decimalnumber;

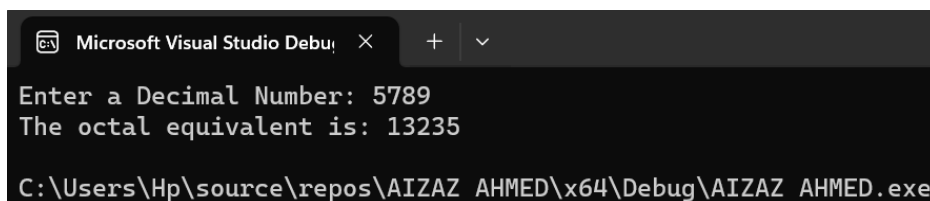
    int octalNumber = 0;
    int placeValue = 1;

    do {
        int remainder = decimalnumber % 8;
        octalNumber += remainder * placeValue;
        placeValue *= 10;
        decimalnumber /= 8;
    } while (decimalnumber > 0);

    cout << "The octal equivalent is: " << octalNumber << endl;

    return 0;
}
```

SCREENSHOT:



```
Microsoft Visual Studio Debug Console
Enter a Decimal Number: 5789
The octal equivalent is: 13235
C:\Users\Hp\source\repos\AIZAZ AHMED\x64\Debug\AIZAZ AHMED.exe
```

PROBLEM # 4: Create the equivalent of a four-function calculator. The program should request the user to enter a number, an operator, and another number. (Use floating point.) It should then carry out the specified arithmetical operation: adding, subtracting, multiplying, or dividing the two numbers. Use a switch statement to select the operation. Finally, display the result. 31 When it finishes the calculation, the program should ask if the user wants to do another calculation. The response can be ‘y’ or ‘n’. Some sample interaction with the program might look like this:

CODE:

```
#include <iostream>
using namespace std;

int main() {
    char operation;
    float num1, num2;
    char doAnother;

    do {
        cout << "Enter first number, operator, and second number: ";
        cin >> num1 >> operation >> num2;

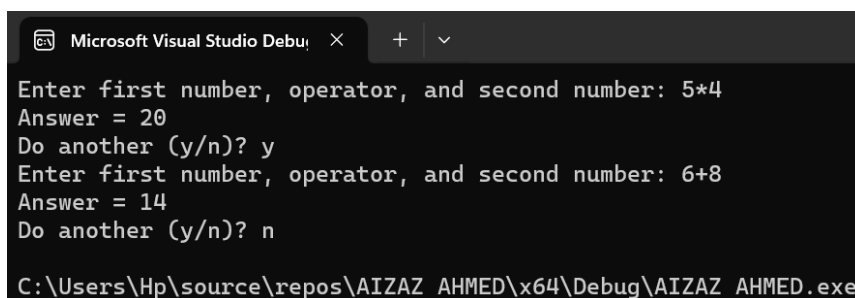
        switch (operation) {
            case '+':
                cout << "Answer = " << num1 + num2 << endl;
                break;
            case '-':
                cout << "Answer = " << num1 - num2 << endl;
                break;
            case '*':
                cout << "Answer = " << num1 * num2 << endl;
                break;
            case '/':
                if (num2 != 0) {
                    cout << "Answer = " << num1 / num2 << endl;
                }
                else {
                    cout << "Error: Division by zero" << endl;
                }
                break;
            default:
                cout << "Invalid operator" << endl;
        }

        cout << "Do another (y/n)? ";
        cin >> doAnother;

    } while (doAnother == 'y' || doAnother == 'Y');

    return 0;
}
```

SCREENSHOT:



```
Microsoft Visual Studio Debu  X + v
Enter first number, operator, and second number: 5*4
Answer = 20
Do another (y/n)? y
Enter first number, operator, and second number: 6+8
Answer = 14
Do another (y/n)? n
C:\Users\Hp\source\repos\AIZAZ AHMED\x64\Debug\AIZAZ AHMED.exe
```

EXTRA TASKS

Task 1: Write a program to display the following sequence of numbers using DO WHILE loop :

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

CODE:

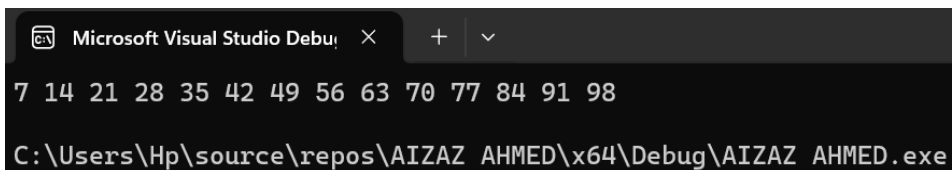
```
#include <iostream>
using namespace std;
int main() {
    int number = 7;

    do {
        cout << number << " ";
        number += 7;
    } while (number <= 98);

    cout << endl;

    return 0;
}
```

SCREENSHOT:



```
Microsoft Visual Studio Debug Console
7 14 21 28 35 42 49 56 63 70 77 84 91 98
C:\Users\Hp\source\repos\AIZAZ AHMED\x64\Debug\AIZAZ AHMED.exe
```

Task 2: Write a program to display the following sequence of numbers using DO WHILE loop :

1 2 4 8 16 32 64 128 256 512

CODE:

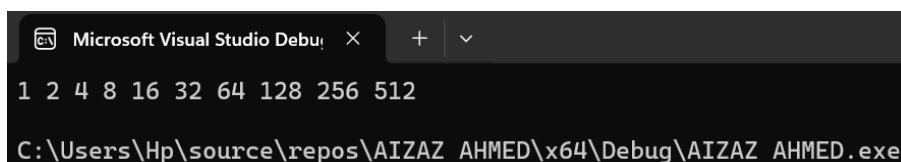
```
#include <iostream>
using namespace std;
int main() {
    int number = 1;

    do {
        cout << number << " ";
        number *= 2;
    } while (number <= 512);

    cout << endl;

    return 0;
}
```

SCREENSHOT:



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

GET HUB LINK:

<https://github.com/aizazahmed01/COMPUTER-PROGRAMMING-LAB.git>