# Bahria University, Islamabad

## Department of Software Engineering

## Computer Programming Lab

(Fall-2023)

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# Lab Journal: 4

Date: 25 October,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 | | | | |

**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

## Objective:

- Do-while loop

## Preparation:

The “do-while” Loop The do-while is like while loop but in this loop the condition is tested after executing the statements of the loop. In do-while loop, the body of the loop is executed at least once before the condition is tested.

# LAB TASKS

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

### Procedure:

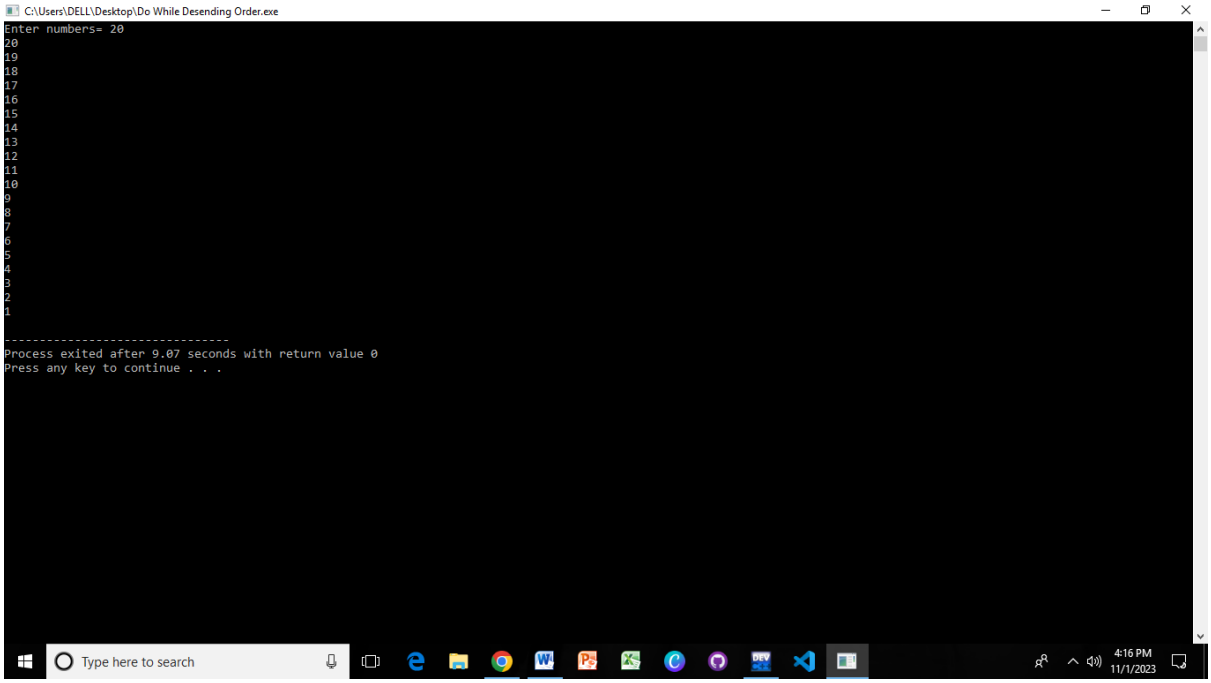
Write a program to print in the descending order first twenty natural numbers on the computer screen by using “do-while” loop.

## CODE:

```
#include<iostream>

using namespace std;

int main()

{

        int n;

        cout<<"Enter numbers= ";

        cin>>n;


        do

        {
```

```
            cout<< n <<endl;
            n--;
        }
            while(n>0);

        return 0;
}
```

## SCREENSHOT:



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

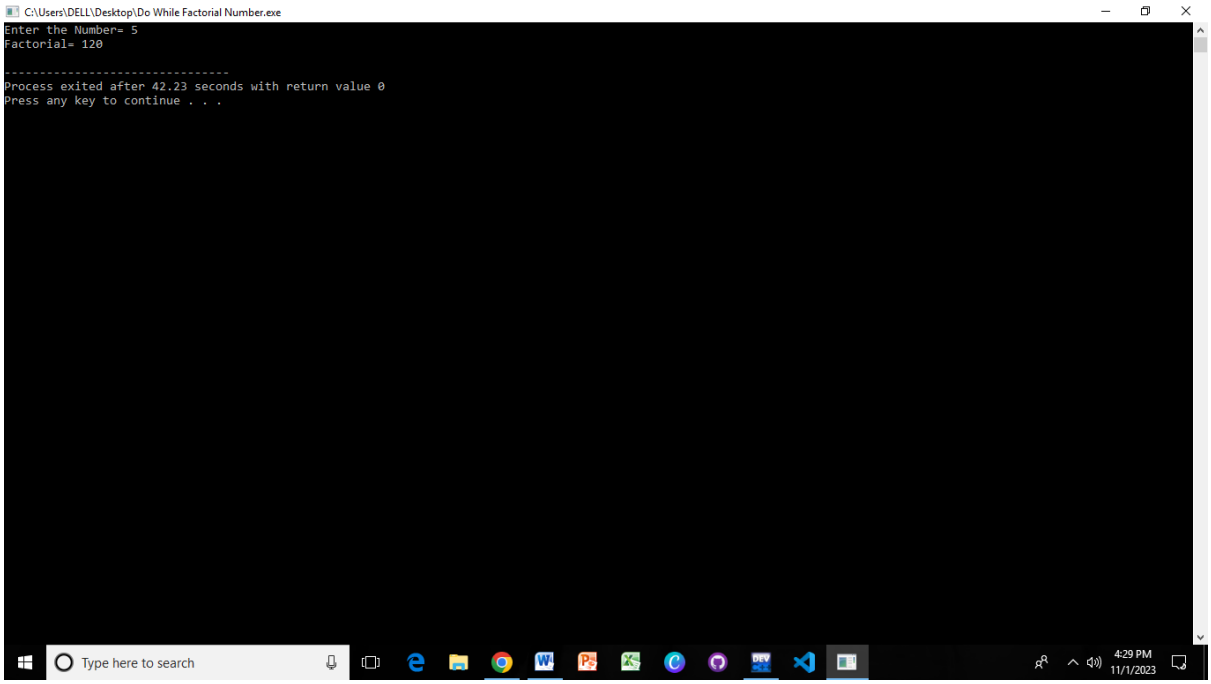
### Procedure:

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 num;

        int fac=1;


                cout<<"Enter the Number= ";

                cin>>num;



        do

        {

                fac = fac*num;

                num = num-1;

        }

                while(1<=num);


                cout<<"Factorial= "<< fac << endl;

                return 0;

}
```

## SCREENSHOT:




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

### Procedure:

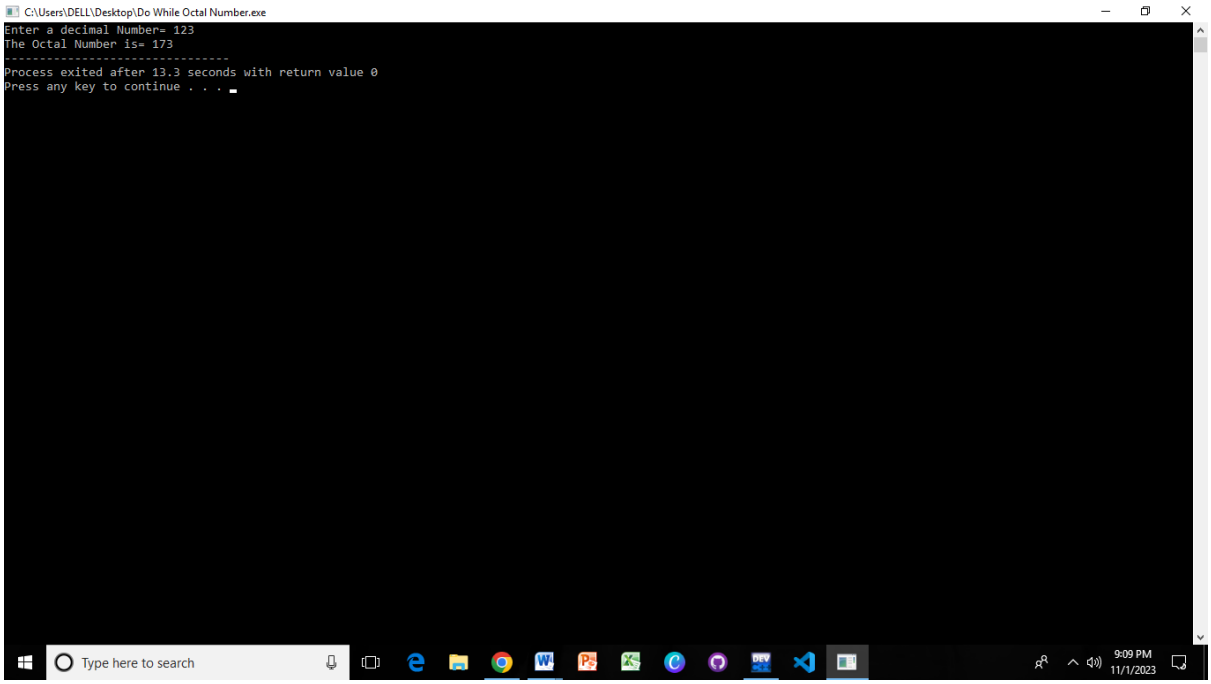
Write a program to convert the given decimal number into octal number using the “do-while” loop.

## CODE:

```
#include<iostream>

using namespace std;

int main()

{

        int decimalnum , remainder;

        int octalnum=0, i=1;


                cout<<"Enter a decimal Number= ";

                cin>>decimalnum;
```

```
        do
        {
                remainder=decimalnum%8;
                decimalnum /=8;
                octalnum+=remainder*i;
                i*=10;

        }
        while(decimalnum!=0);

                cout<<"The Octal Number is= "<< octalnum ;

        return 0;
}
```

## SCREENSHOT:



## PROBLEM #4: Four-Function Calculator.

## Procedure:

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.)

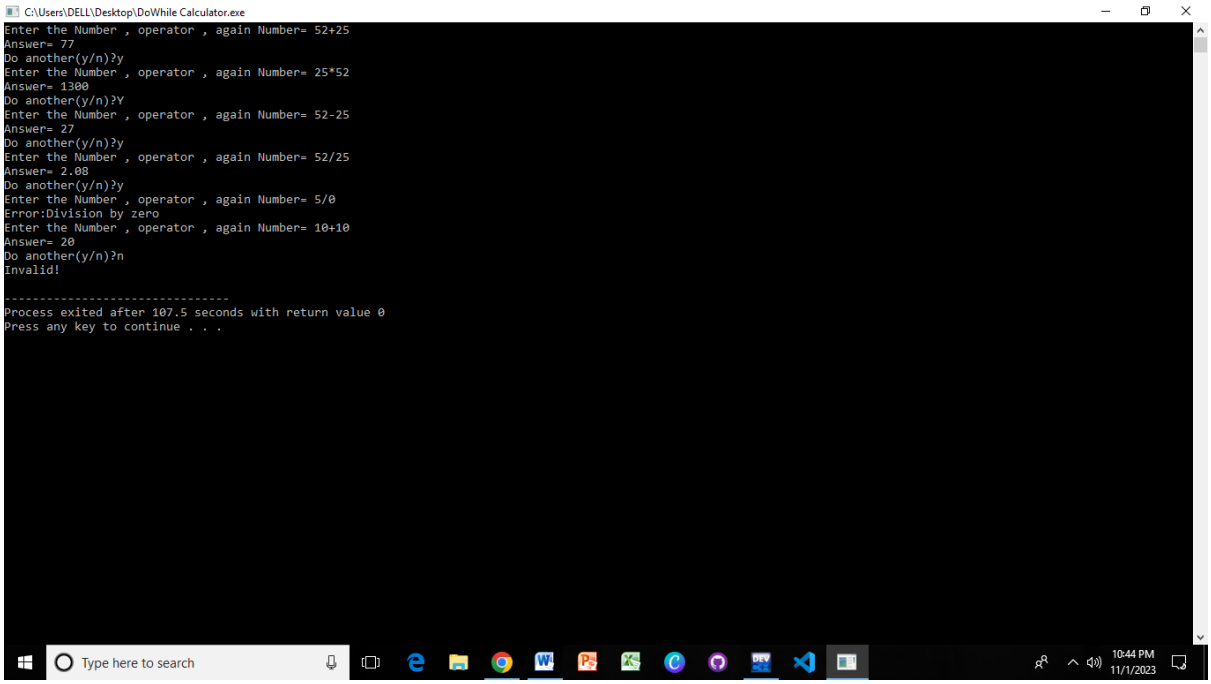
It should then carry out the specified arithmetical operation: adding, subtracting, multiplying, or dividing the two numbers. Use a switch statement to select the operation. Finally, display the result.

## CODE:

```
#include<iostream>

using namespace std;

int main()

{

	float num1, num2, result;

	char op, choice;


	do

	{

		cout<<"Enter the Number , operator , again Number= ";

		cin>> num1 >> op >> num2;


	switch(op)

	{

		case'+':

			result= num1 + num2;

			break;


		case'-':

			result= num1 - num2;

			break;


		case'*':
```

```
                result= num1 * num2;
                break;

        case'/':
                if(num2!=0)
                {
                        result= num1 / num2;
          }
                else
                {
                        cout<<"Error:Division by zero"<<endl;
             continue;
                }
                break;

                default:
                cout<<"Invalid Operator";
                continue;
    }
                cout<<"Answer= "  << result << endl;
                cout<<"Do another(y/n)?";
                cin>>choice;
    }
    while(choice=='y'|| choice=='Y');

    cout<<"Invalid!"<<endl;

    return 0;
}
```

## SCREENSHOT:




## PROBLEM#5: It is necessary for the program to display the following sequence of numbers:

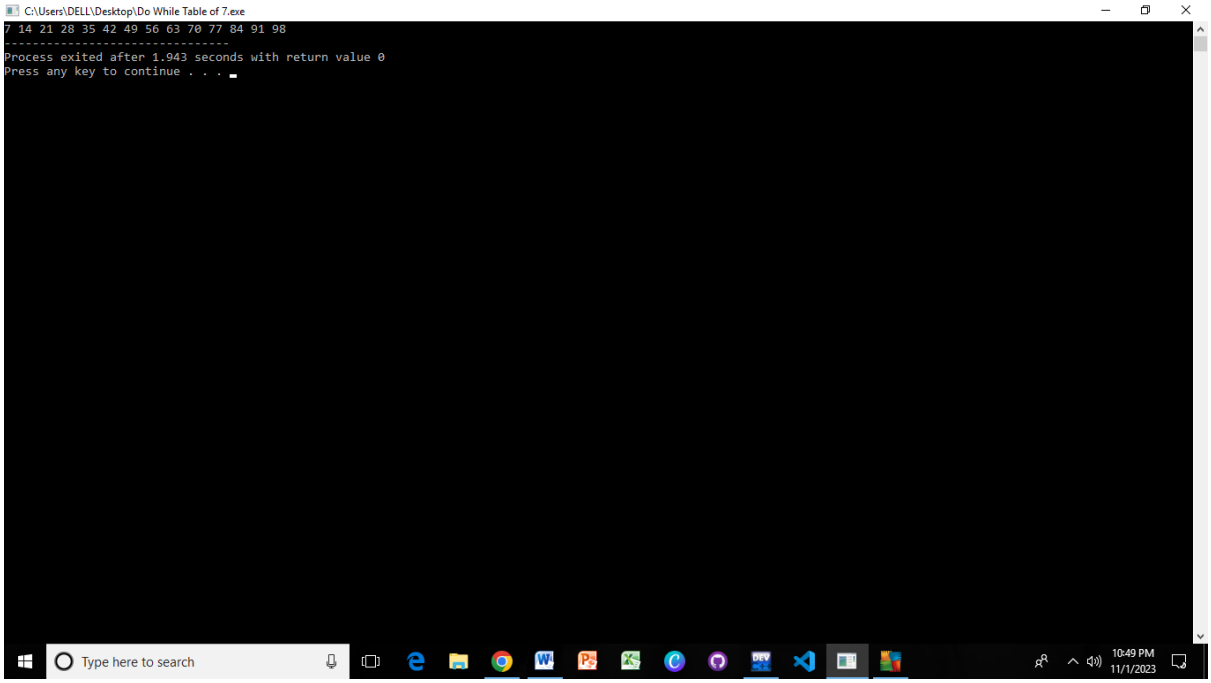
7 14 21 28 35 42 49 56 63 70 77 84 91 98

## CODE:

```
#include<iostream>

using namespace std;

int main()

{

        int i=7;


        do

        {

                cout<< i << " ";

                i+=7;
```

```
        }
        while(i<=98);


        return 0;
}
```

## SCREENSHOT:




## PROBLEM #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 i=1;
```

```
	do
	{
		cout<< i << " ";
		i*=2;

	}
	while(i<=512);

	return 0;
}
```

## SCREENSHOT: