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Lab 1: Tasks on C# Basics Concepts

IN-LAB:

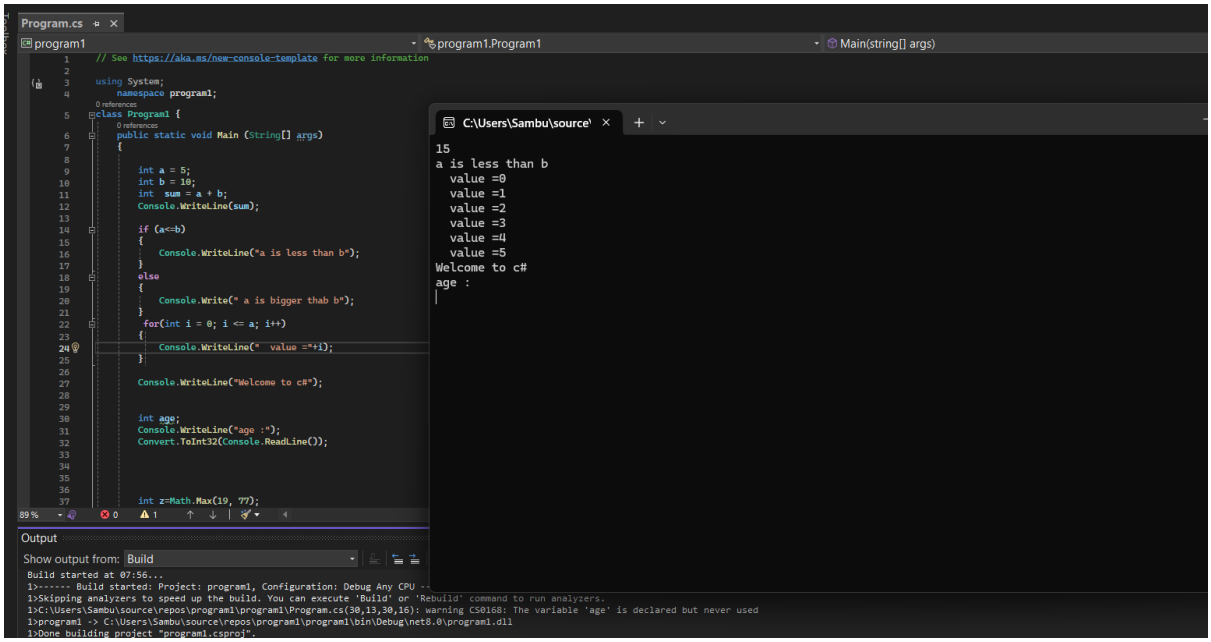
1. Write a C# code to implement the simple calculator?

TASK1: It's required to create a simple calculator with addition and subtraction operations for two integer numbers

For example, how to find the sum of given integer values **a** and **b**. You have a skeleton code:

```
public static int Add(int a, int b)
{
    //TODO Delete line below and write your own solution
    throw new NotImplementedException();
}
```

Task1:



1. Write a C# code to solve the TASK2 and TASK3.

TASK2: For a given integer *n* calculate the value which is equal to:

1. squared number, if its value is strictly positive;
2. modulus of a number, if its value is strictly negative;
3. zero, if the integer n is zero.

Example

n = 4 result = 16

n = -5 result = 5

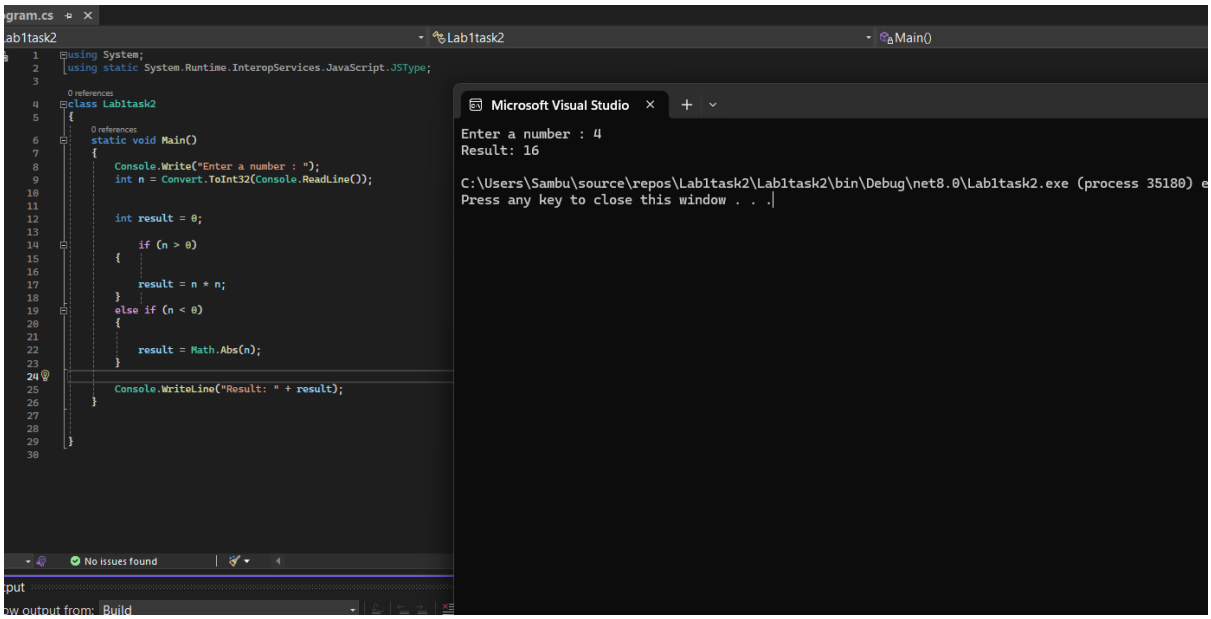
n = 0 result = 0

TASK3: Find the maximum integer, that can be obtained by numbers of an arbitrary three-digit positive integer *n* permutation (100<=n<=999).

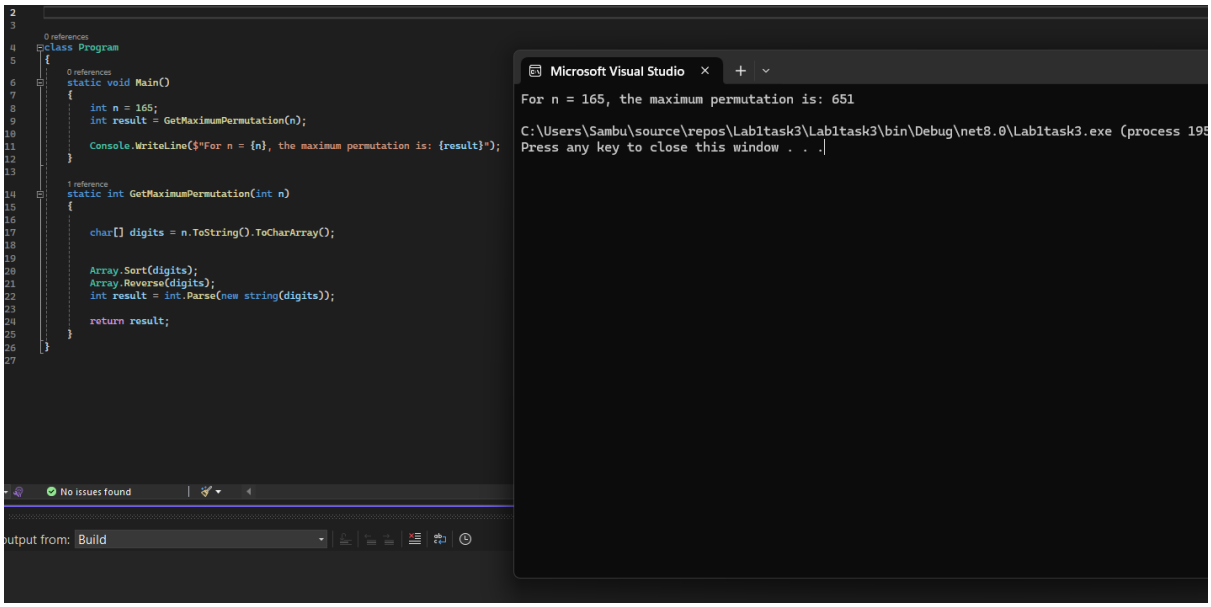
Example

n = 165 result = 651

task2:



task3:



```
class Program
{
    static void Main()
    {
        int n = 165;
        int result = GetMaximumPermutation(n);

        Console.WriteLine($"For n = {n}, the maximum permutation is: {result}");
    }

    static int GetMaximumPermutation(int n)
    {

        char[] digits = n.ToString().ToCharArray();


        Array.Sort(digits);
        Array.Reverse(digits);
        int result = int.Parse(new string(digits));

        return result;
    }
}
```

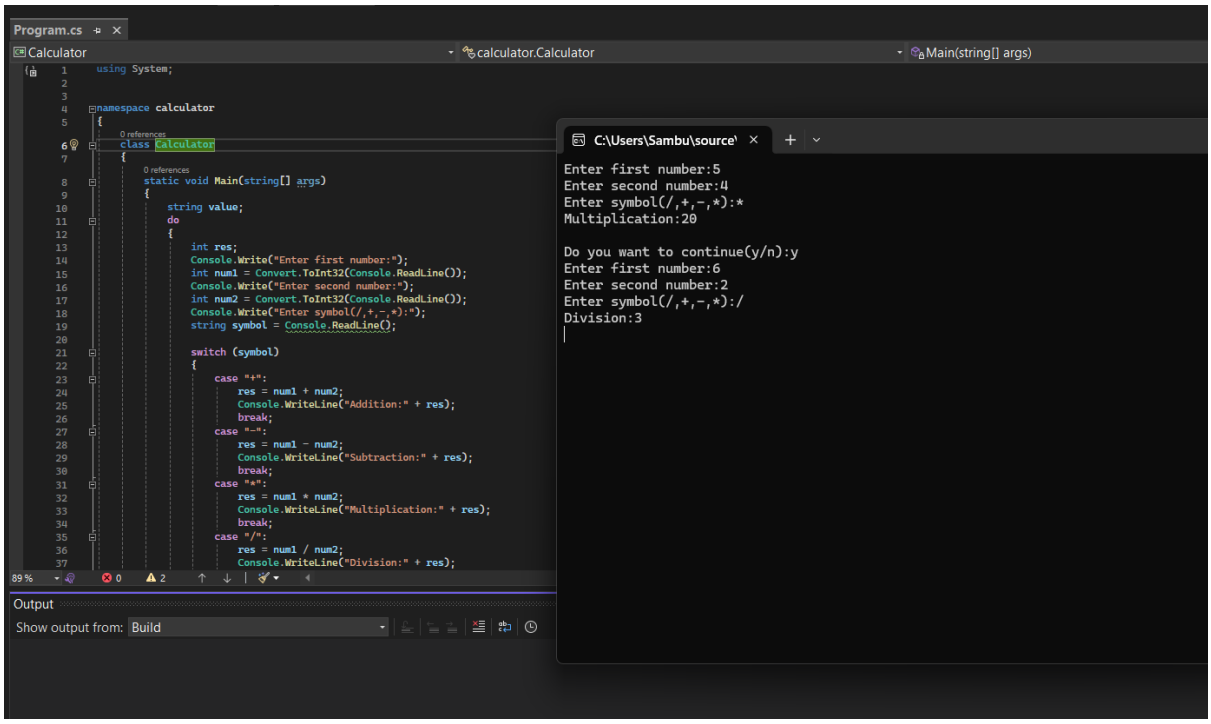
```
Microsoft Visual Studio
For n = 165, the maximum permutation is: 651

C:\Users\Sambu\source\repos\Lab1task3\Lab1task3\bin\Debug\net8.0\Lab1task3.exe (process 195
Press any key to close this window . . .
```

POST-LAB

1. Implement a proper calculator with all the functionalities like addition, subtraction, multiplication, division and square root.

Answer:



```
using System;

namespace calculator
{
    class Calculator
    {
        static void Main(string[] args)
        {
            string value;
            do
            {
                int res;
                Console.Write("Enter first number:");
                int num1 = Convert.ToInt32(Console.ReadLine());
                Console.Write("Enter second number:");
                int num2 = Convert.ToInt32(Console.ReadLine());
                Console.Write("Enter symbol(/,+,-,*):");
                string symbol = Console.ReadLine();

                switch (symbol)
                {
                    case "+":
                        res = num1 + num2;
                        Console.WriteLine("Addition:" + res);
                        break;
                    case "-":
                        res = num1 - num2;
                        Console.WriteLine("Subtraction:" + res);
                        break;
                    case "*":
                        res = num1 * num2;
                        Console.WriteLine("Multiplication:" + res);
                        break;
                    case "/":
                        res = num1 / num2;
                        Console.WriteLine("Division:" + res);
```

```
C:\Users\Sambu\source\
Enter first number:5
Enter second number:4
Enter symbol(/,+,-,*):*
Multiplication:20

Do you want to continue(y/n):y
Enter first number:6
Enter second number:2
Enter symbol(/,+,-,*):/
Division:3
```