

Bahria University,

Karachi Campus



LAB EXPERIMENT NO.

10

LIST OF TASKS

TASK NO	OBJECTIVE
Example	Example 1
1	Write a method named square_cube() that computes the square and cube of the value passed to it and display the result. Ask the user to provide the integer input in the main() and then call the function
2	Write a method table() which generates multiplicative table of an integer. The function receives three integers as its arguments. The first argument determine the table to be generated while the second and the third integer tell the starting and ending point respectively. Ask the user to provide the three integer as input in the main().
3	Create two functions for minimum and maximum value of any int array.
4	Take input of an array in one method and print reverse of that array.
5	Design a fully functional calculator using functions. (In windows form)

Submitted On:

(Date: DD/MM/YY)

Lab 10

EXAMPLE 1

INPUT:

```
using System;
namespace Lab_10
{
    class program
    {
        static void Heading()
        {
            Console.WriteLine("!!!!!!!Function labs!!!!!!!");
        }
        static void AreaOfRectangle(int l , int w)
        {
            int result = l * w;
            Console.WriteLine("Area of rectangle : "+result);
        }
        static float AreaOfCircle(int r)
        {
            float pi = 3.142f;
            double area = pi * Math.Pow(r,2);
            Console.WriteLine("Area of circle : "+area);
            return (float) area;
        }
        static void Main (string [] args)
        {
            Heading();
            Console.ReadLine();

            Console.WriteLine("Enter the lenght of rectangle : ");
            int n = int.Parse(Console.ReadLine());
            Console.WriteLine("Enter the width of rectangle : ");
            int m = int.Parse(Console.ReadLine());
            AreaOfRectangle(n, m);
            Console.ReadLine();
            Console.WriteLine("Enter the radius of the circle : ");
            int r = int.Parse(Console.ReadLine());
            AreaOfCircle(r);
            Console.ReadLine();
        }
    }
}
```

OUTPUT:

C:\Users\Spring2020\source\repos\Lab 10\bin\Debug\netcoreapp3.1\Lab 10.exe

```
!!!!!!!Function labs!!!!!!!

Enter the lenght of rectangle :
12
Enter the width of rectangle :
12
Area of rectangle : 144

Enter the radius of the circle :
12
Area of circle : 452.44799423217773
```

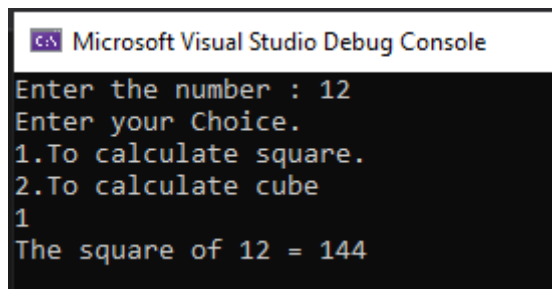
Task 1

Write a method named square_cube() that computes the square and cube of the value passed to it and display the result. Ask the user to provide the integer input in the main() and then call the function.

Input

```
using System;
namespace Lab_10
{
    class program
    {
        static int square_Cube(int a)
        {
            int result = 0;
            char choice;
            Console.WriteLine("Enter your Choice. \n1.To calculate square. \n2.To calculate cube");
            choice = char.Parse(Console.ReadLine());
            if (choice == '1')
            {
                result = a * a;
                Console.WriteLine("The square of {0} = {1} ",a,result);
            }
            else if(choice == '2')
            {
                result = a * a * a;
                Console.WriteLine("The cube of {0} = {1} ", a, result);
            }
            else
            {
                Console.WriteLine("Invalid Input");
            }
            return result;
        }
        static void Main (string [] args)
        {
            int num ;
            Console.Write("Enter the number : ");
            num = int.Parse(Console.ReadLine());
            square_Cube(num);
        }
    }
}
```

Output



```
Microsoft Visual Studio Debug Console
Enter the number : 12
Enter your Choice.
1.To calculate square.
2.To calculate cube
1
The square of 12 = 144
```

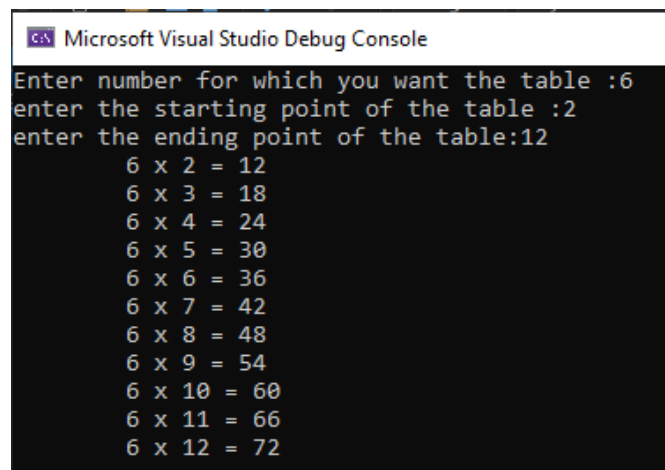
Task 2

Write a method table() which generates multiplicative table of an integer. The function receives three integers as its arguments. The first argument determine the table to be generated while the second and the third integer tell the starting and ending point respectively. Ask the user to provide the three integer as input in the main().

Input

```
using System;
namespace Lab_10
{
    class program
    {
        static void tables(int x, int y, int z)
        {
            for (int i = y; i <= z; i++)
            {
                Console.WriteLine("\t{0} x {1} = {2}", x, i, x * i);
            }
        }
        static void Main(string[] args)
        {
            int num, a, b;
            Console.Write("Enter number for which you want the table :");
            num = int.Parse(Console.ReadLine());
            Console.Write("enter the starting point of the table :");
            a = int.Parse(Console.ReadLine());
            Console.Write("enter the ending point of the table:");
            b = int.Parse(Console.ReadLine());
            tables(num, a, b);
            Console.ReadLine();
        }
    }
}
```

Output



```
Microsoft Visual Studio Debug Console
Enter number for which you want the table :6
enter the starting point of the table :2
enter the ending point of the table:12
    6 x 2 = 12
    6 x 3 = 18
    6 x 4 = 24
    6 x 5 = 30
    6 x 6 = 36
    6 x 7 = 42
    6 x 8 = 48
    6 x 9 = 54
    6 x 10 = 60
    6 x 11 = 66
    6 x 12 = 72
```

Task 3

Create two functions for minimum and maximum value of any int array.

Input

```
using System;
```

```

namespace Lab_10
{
    class Program
    {
        static void Min(int[] arr)
        {
            int min = 0;
            for (int i = 0; i < arr.Length; i++)
            {
                if (i == 0)
                {
                    min = arr[i];
                }
                else if (min > arr[i])
                {
                    min = arr[i];
                }
            }
            Console.WriteLine("Minimum = {0}", min);
        }

        static void Max(int[] arr)
        {
            int max = 0;
            for (int i = 0; i < arr.Length; i++)
            {
                if (i == 0)
                {
                    max = arr[i];
                }
                else if (max < arr[i])
                {
                    max = arr[i];
                }
            }
            Console.WriteLine("Maximum = {0}", max);
        }

        static void Main(string[] args)
        {
            Console.Write("Enter the size of Array : ");
            int size = int.Parse(Console.ReadLine());
            int[] array = new int[size];
            Console.WriteLine("Enter values of Array");
            for (int i = 0; i < array.Length; i++)
            {
                Console.Write("Enter number {0} : ", i+1);
                array[i] = int.Parse(Console.ReadLine());
            }
            Min(array);
            Max(array);
        }
    }
}

```

Output

Microsoft Visual Studio Debug Console

```
Enter the size of Array : 4
Enter values of Array
Enter number 1 : 18
Enter number 2 : 4
Enter number 3 : 123
Enter number 4 : 45
Minimum = 4
Maximum = 123
```

Task 4

Take input of an array in one method and print reverse of that array.

Input

```
using System;
namespace Lab_10
{
    class program
    {
        static void ArrayPrinting(int n, int [] arr)
        {
            for (int i = 0; i < n; i++)
            {
                Console.Write(" " + arr[i]);
            }
        }

        static void Main(string[] args)
        {
            Console.Write("Enter the number of elements of array : ");
            int size = int.Parse(Console.ReadLine());

            int[] arr = new int[size];
            Console.WriteLine("Enter the elements of array : ");
            for (int i = 0; i < size; i++)
            {
                Console.Write("\nEnter element {0} : ", i + 1);
                arr[i] = int.Parse(Console.ReadLine());
            }
            ArrayPrinting(size, arr);
            Array.Reverse(arr);
            for (int i = 0; i < size; i++)
            {
                Console.WriteLine("Reversed Array : {0} ", arr[i]);
            }
        }
    }
}
```

Output

```
Microsoft Visual Studio Debug Console

Enter the number of elements of array : 5
Enter the elements of array.

Enter element 1 : 3
Enter element 2 : 6
Enter element 3 : 7
Enter element 4 : 3
Enter element 5 : 2
3 6 7 3 2
Reversed Array

2 3 7 6 3
```

Task 5

Design a fully functional calculator using functions. (In windows form)

Input

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace Calculator
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }
        static void add(int num1, int num2)
        {
            int sum = num1 + num2;
            MessageBox.Show("THE SUM IS " + sum);
        }
        static void subtract(int num1, int num2)
        {
            int subtract = num1 - num2;
            MessageBox.Show("THE SUB IS " + subtract);
        }
        static void multiply(int num1, int num2)
        {
            int multiply = num1 * num2;
            MessageBox.Show("THE MUL IS " + multiply);
        }
        static void divide(int num1, int num2)
        {
            float divide = num1 / num2;
            MessageBox.Show("THE DIV IS " + divide);
        }

        private void btn_1_Click(object sender, EventArgs e)
```

```

{
    int num1 = int.Parse(txt_1.Text);
    int num2 = int.Parse(txt_2.Text);
    if (rb_add.Checked==true)
    {
        add(num1,num2);
    }
    else if (rb_subtract.Checked == true)
    {
        subtract(num1, num2);
    }
    else if (rb_multiply.Checked == true)
    {
        multiply(num1, num2);
    }
    else if (rb_divide.Checked == true)
    {
        divide(num1, num2);
    }
}
}
}

```

Form:

The form is titled "CALCULATOR" in red text. It contains two input fields for numbers, labeled "NUM1" and "NUM2". Below the input fields are four radio buttons for selecting the operation: "ADD", "SUBTRACT", "MULTIPLY", and "DIVIDE". A "CALCULATE" button is positioned at the bottom center of the form.

OUTPUT:

The form shows the result of the calculation. The "NUM1" field contains the value "12" and the "NUM2" field contains the value "5". The "ADD" radio button is selected. The "CALCULATE" button is highlighted with a blue border. A small dialog box is open in the bottom right corner, displaying the message "THE SUM IS 17" and an "OK" button.