Bahria University,

Karachi Campus

LAB EXPERIMENT NO.

10

LIST OF TASKS

TASK NO.	OBJECTIVE
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 function to find min and maximum value of any int array.
4	Take input of an array in on method and print reverse of that array.
5	Design a fully functional calculator using function.
6	Design a WFP of your marks sheet.

Submitted On:

January, 2022

(Date: DD/MM/YY)

Task 1

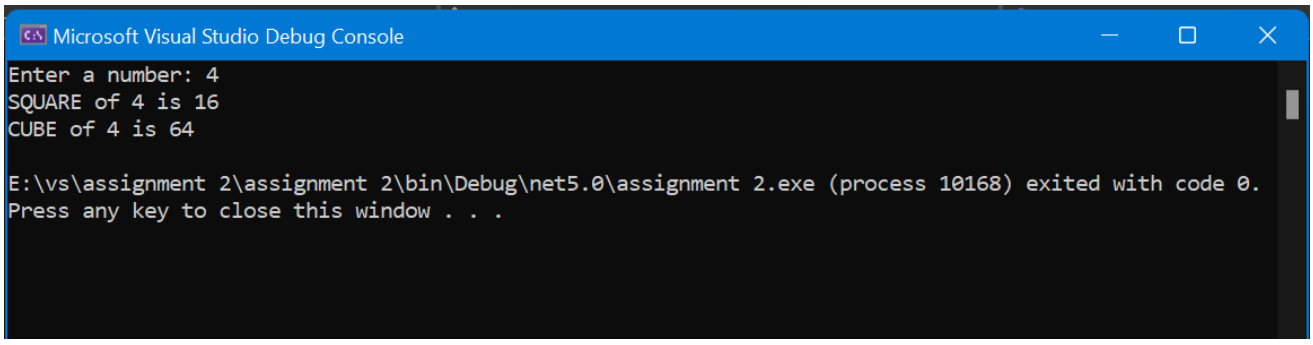
Write a method named square_cube() that computes the square and cube of the value passed to it and display the result. Ask the user to provide the integer input in the main() and then call the function

Solution:

```
using System;

namespace assignment_2
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.Write("Enter a number: ");
            int n = int.Parse(Console.ReadLine());
            square_cube(n);
        }
        public static void square_cube(int num)
        {
            Console.WriteLine("SQUARE of {0} is {1}",num,num*num);
            Console.WriteLine("CUBE of {0} is {1}",num,num*num*num);
        }
    }
}
```


Output:



Task 2

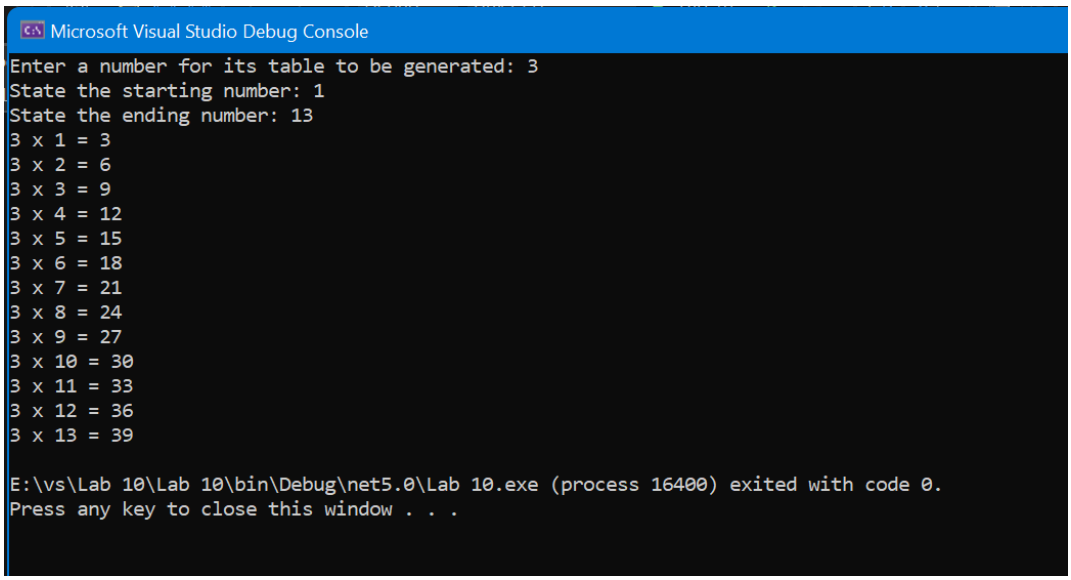
Write a method table() which generates multiplicative table of an integer. The function receives three integers as its arguments. The first argument determine the table to be generated while the second and the third integer tell the starting and ending point respectively. Ask the user to provide the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

Solution:

```
using System;

namespace Lab_10
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.Write("Enter a number for its table to be generated: ");
            int n = int.Parse(Console.ReadLine());
            Console.Write("State the starting number: ");
            int a = int.Parse(Console.ReadLine());
            Console.Write("State the ending number: ");
            int b = int.Parse(Console.ReadLine());
            table(n, a, b);
        }
        public static void table(int n, int a, int b)
        {
            for (int i = a; i <= b; i++)
                Console.WriteLine("{0} x {1} = {2}", n, i, i * n);
        }
    }
}
```


Output:



Task 3

Create two function to find min and maximum value of any int array

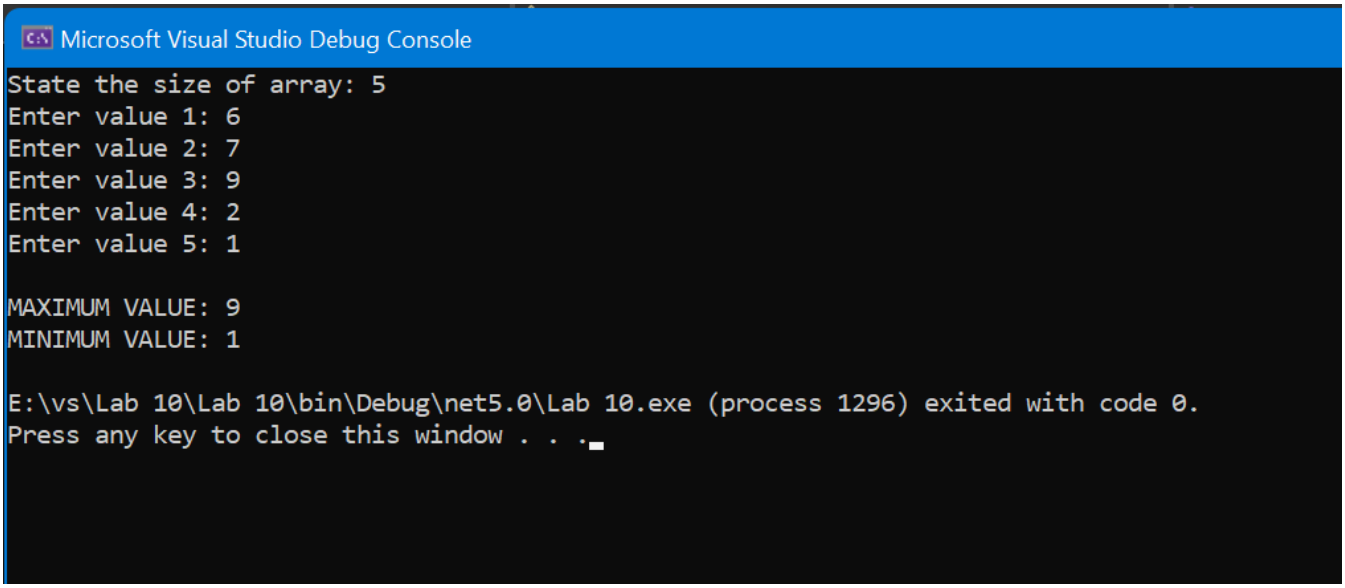
Solution:

```
using System;

namespace Lab_10
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.Write("State the size of array: ");
            int n = int.Parse(Console.ReadLine());
            int[] arr = new int[n];
            for(int i=0;i<n;i++)
            {
                Console.Write("Enter value {0}: ",i+1);
                arr[i] = int.Parse(Console.ReadLine());
            }
            Console.WriteLine("");
            Max(arr);
            Min(arr);
        }
        public static void Max(int[] arr)
        {
            int max = 0;
            for (int i = 0; i < arr.Length; i++)
            {
                if (i == 0)
                    max = arr[i];
                else if (arr[i] > max)
                    max = arr[i];
            }
            Console.WriteLine("MAXIMUM VALUE: {0}",max);
        }
        public static void Min(int[] arr)
        {
            int min = 0;
            for (int i = 0; i < arr.Length; i++)
            {
                if (i == 0)
                    min = arr[i];
                else if (arr[i] < min)
                    min = arr[i];
            }
            Console.WriteLine("MINIMUM VALUE: {0}", min);
        }

    }
}
```

Output:


Microsoft Visual Studio Debug Console
State the size of array: 5
Enter value 1: 6
Enter value 2: 7
Enter value 3: 9
Enter value 4: 2
Enter value 5: 1
MAXIMUM VALUE: 9
MINIMUM VALUE: 1
E:\vs\Lab 10\Lab 10\bin\Debug\net5.0\Lab 10.exe (process 1296) exited with code 0.
Press any key to close this window . . .

Task 4

Take input of an array in on method and print reverse of that array

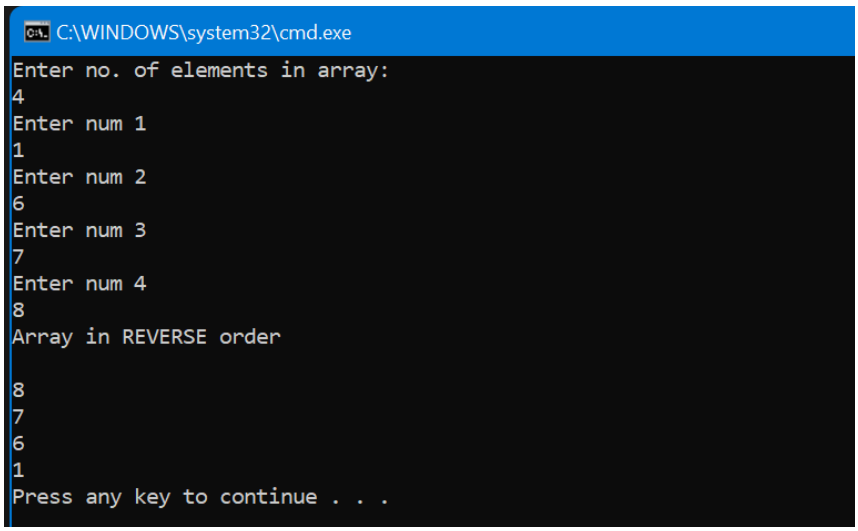
Solution:

```
using System;
using System.Collections;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace lab10
{
    class program
    {
        public static void Main(string[] args)
        {
            Console.WriteLine("Enter no. of elements in array: ");
            int n = int.Parse(Console.ReadLine());
            string[] arr = new string[n];
            for(int i=0;i<n;i++)
            {
                Console.WriteLine("Enter num {0}",i+1);
                arr[i] = Console.ReadLine();
            }
            Console.WriteLine("Array in REVERSE order\n");
            reverse(arr);
        }
        public static void reverse(string[] arr)
        {
            Array.Reverse(arr);
            for(int i=0;i<arr.Length;i++)
            Console.WriteLine(arr[i]);
        }

    }
}
```


Output:



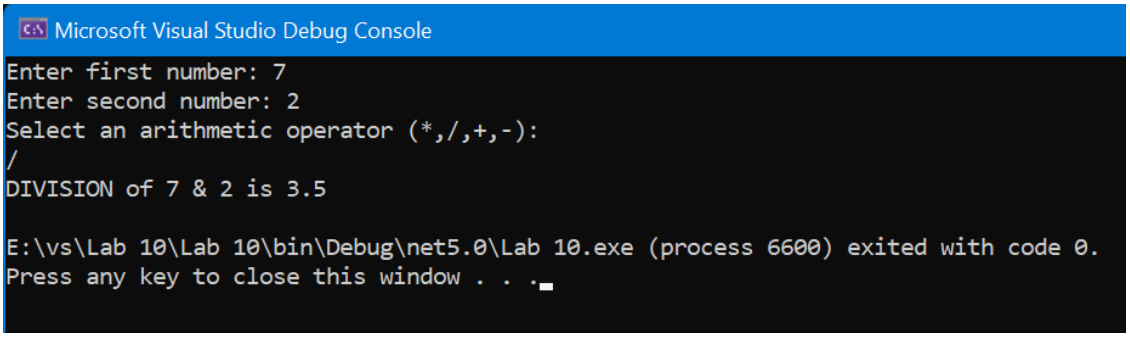
Task 5

Design a fully functional calculator using function

Solution:

```
using System;
namespace Lab_10
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.Write("Enter first number: ");
            double a = Convert.ToDouble(Console.ReadLine());
            Console.Write("Enter second number: ");
            double b = Convert.ToDouble(Console.ReadLine());
            Console.WriteLine("Select an arithmetic operator (*,/,+,-):");
            char oper = Convert.ToChar(Console.ReadLine());
            if (oper == '+') add(a, b);
            else if (oper == '-') sub(a, b);
            else if (oper == '/') divide(a, b);
            else if (oper == '*') multiply(a, b);
            else Console.WriteLine("Invalid Selection");
        }
        public static void add(double a, double b)
        {
            double sum = a + b;
            Console.WriteLine("SUM of {0} & {1} is {2}",a,b,sum);
        }
        public static void sub(double a, double b)
        {
            double diff = a - b;
            Console.WriteLine("DIFFERENCE of {0} & {1} is {2}", a, b, diff);
        }
        public static void multiply(double a, double b)
        {
            double prod = a*b;
            Console.WriteLine("PRODUCT of {0} & {1} is {2}", a, b, prod);
        }
        public static void divide(double a, double b)
        {
            double div = a / b;
            Console.WriteLine("DIVISION of {0} & {1} is {2}", a, b, div);
        }
    }
}
```


Output:



Task 6

Design a WFP of your marks sheet

Solution:

```
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 WFP_LAB10
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }
       private void button1_Click(object sender, EventArgs e)
        {
            double sum=0, pcent;
            double[] sub = {Convert.ToDouble(txtac.Text),
Convert.ToDouble(txtcf.Text),Convert.ToDouble(txtap.Text),Convert.ToDouble(txtcp.Text),Convert.To
Double(txtfe.Text)};
            string gpa, grade;
            for (int i = 0; i < 5; i++)
                sum += sub[i];
            lbltotal.Text = sum.ToString();
            pcent = (sum / 500) * 100;
            lblpcent.Text = pcent.ToString();
            if (pcent <= 100 && pcent >= 85)
            {
                gpa = "4.0";
                grade = "A";
            }
            else if (pcent < 85 && pcent >= 80)
            {
                gpa = "3.67";
                grade = "A-";
            }
            else if (pcent < 80 && pcent >= 75)
            {
                gpa = "3.33";
                grade = "B+";
            }
            else if (pcent < 75 && pcent >= 71)
            {
                gpa = "3.0";
                grade = "B";
            }
```

```
            else if (pcent < 71 && pcent >= 68)
            {
                gpa = "2.67";
                grade = "B-";
            }
            else if (pcent < 68 && pcent >= 64)
            {
                gpa = "2.33";
                grade = "C+";
            }
            else if (pcent < 64 && pcent >= 60)
            {
                gpa = "2.0";
                grade = "C";
            }
            else if (pcent < 60 && pcent >= 50)
            {
                gpa = "1.5";
                grade = "D";
            }
            else
            {
                gpa = "0.0";
                grade = "F";
            }
            lblgpa.Text = gpa;
            lblgrade.Text = grade;
}
```


Output: