

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

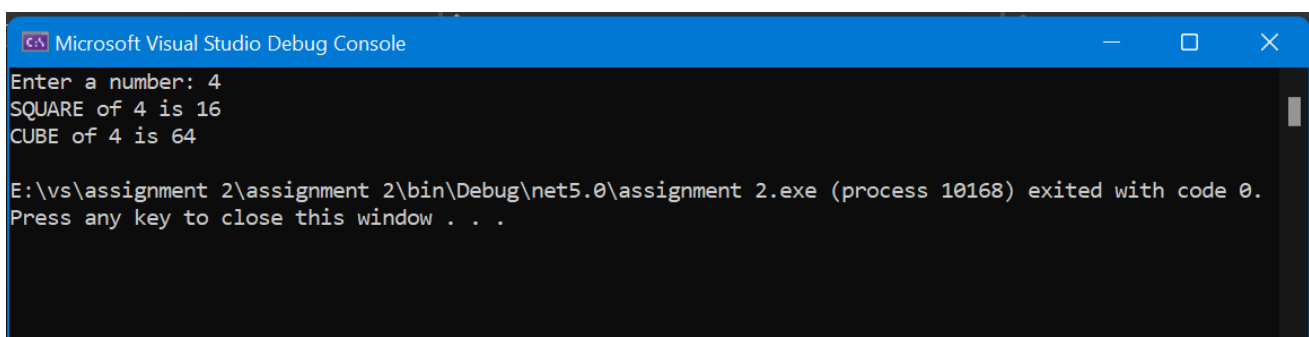
Write a method named `square_cube()` that computes the square and cube of the value passed to it and display the result. Ask the user to provide the integer input in the `main()` and then call the function

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:



```
Microsoft Visual Studio Debug Console
Enter a number: 4
SQUARE of 4 is 16
CUBE of 4 is 64

E:\vs\assignment 2\assignment 2\bin\Debug\net5.0\assignment 2.exe (process 10168) exited with code 0.
Press any key to close this window . . .
```

Task 2

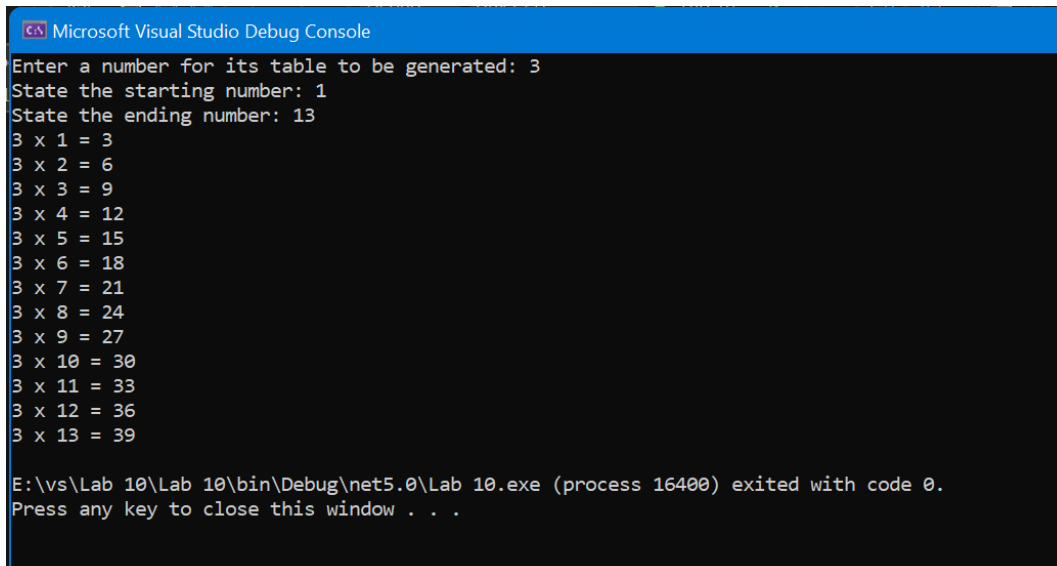
Write a method table() which generates multiplicative table of an integer. The function receives three integers as its arguments. The first argument determine the table to be generated while the second and the third integer tell the starting and ending point respectively. Ask the user to provide the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



```
Microsoft Visual Studio Debug Console
Enter a number for its table to be generated: 3
State the starting number: 1
State the ending number: 13
3 x 1 = 3
3 x 2 = 6
3 x 3 = 9
3 x 4 = 12
3 x 5 = 15
3 x 6 = 18
3 x 7 = 21
3 x 8 = 24
3 x 9 = 27
3 x 10 = 30
3 x 11 = 33
3 x 12 = 36
3 x 13 = 39

E:\vs\Lab 10\Lab 10\bin\Debug\net5.0\Lab 10.exe (process 16400) exited with code 0.
Press any key to close this window . . .
```

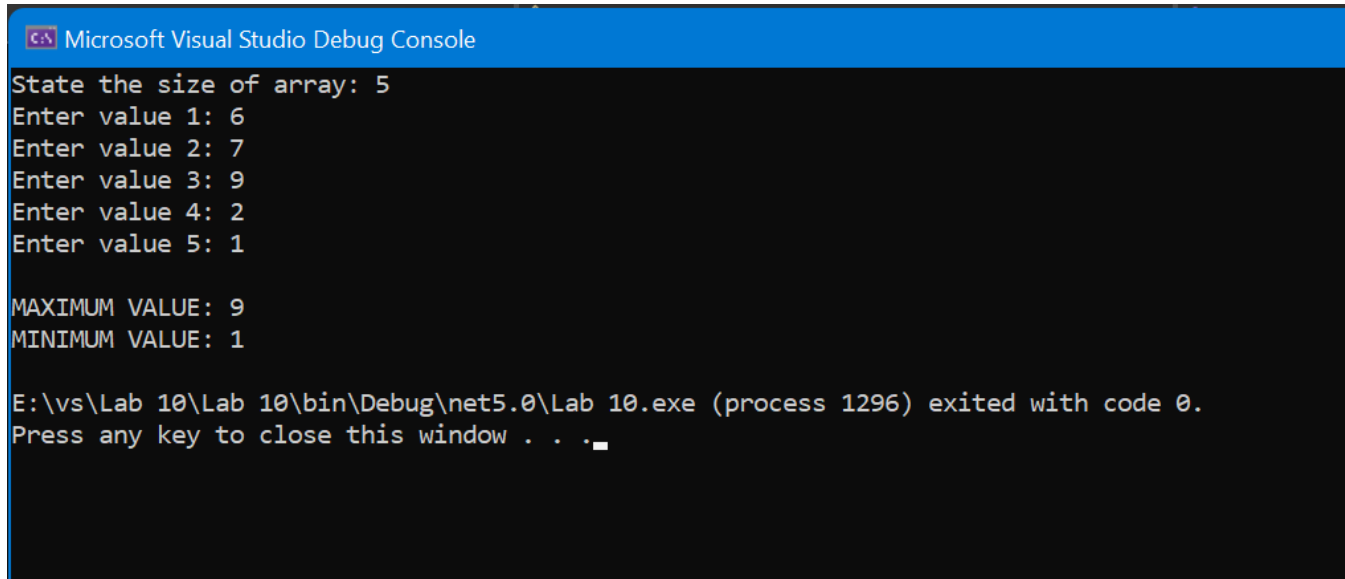
Task 3

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.WriteLine("State the size of array: ");
            int n = int.Parse(Console.ReadLine());
            int[] arr = new int[n];
            for(int i=0;i<n;i++)
            {
                Console.WriteLine("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:A screenshot of the Microsoft Visual Studio Debug Console window. The window has a blue title bar with the text "Microsoft Visual Studio Debug Console". The console area is black with white text. The output shows the program asking for the size of an array (5), then five values (6, 7, 9, 2, 1), then the maximum value (9) and minimum value (1). It ends with a message that the process exited with code 0 and a prompt to press any key to close the window.

```
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 . . .
```

zain

Task 4

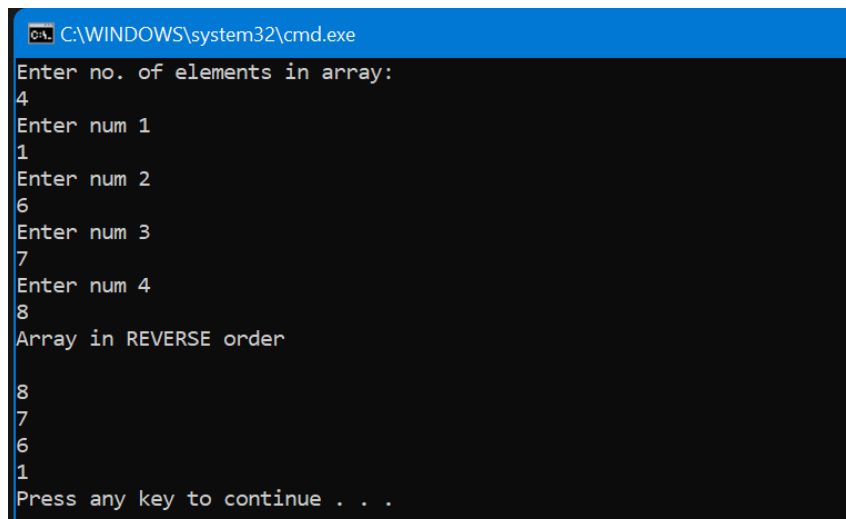
Take input of an array in on method and print reverse of that array

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:



```
C:\WINDOWS\system32\cmd.exe
Enter no. of elements in array:
4
Enter num 1
1
Enter num 2
6
Enter num 3
7
Enter num 4
8
Array in REVERSE order

8
7
6
1
Press any key to continue . . .
```

Task 5

Design a fully functional calculator using function

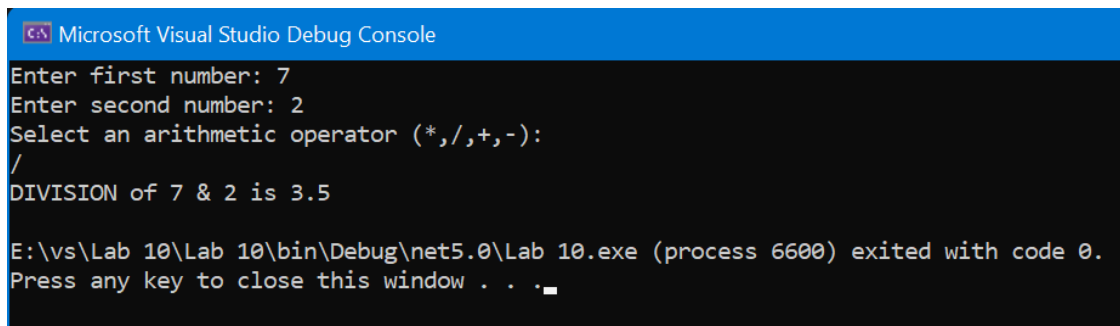
Solution:

```

using System;
namespace Lab_10
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.WriteLine("Enter first number: ");
            double a = Convert.ToDouble(Console.ReadLine());
            Console.WriteLine("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:



```

Microsoft Visual Studio Debug Console
Enter first number: 7
Enter second number: 2
Select an arithmetic operator (*,/,+,-):
/
DIVISION of 7 & 2 is 3.5

E:\vs\Lab 10\Lab 10\bin\Debug\net5.0\Lab 10.exe (process 6600) exited with code 0.
Press any key to close this window . . .

```

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;

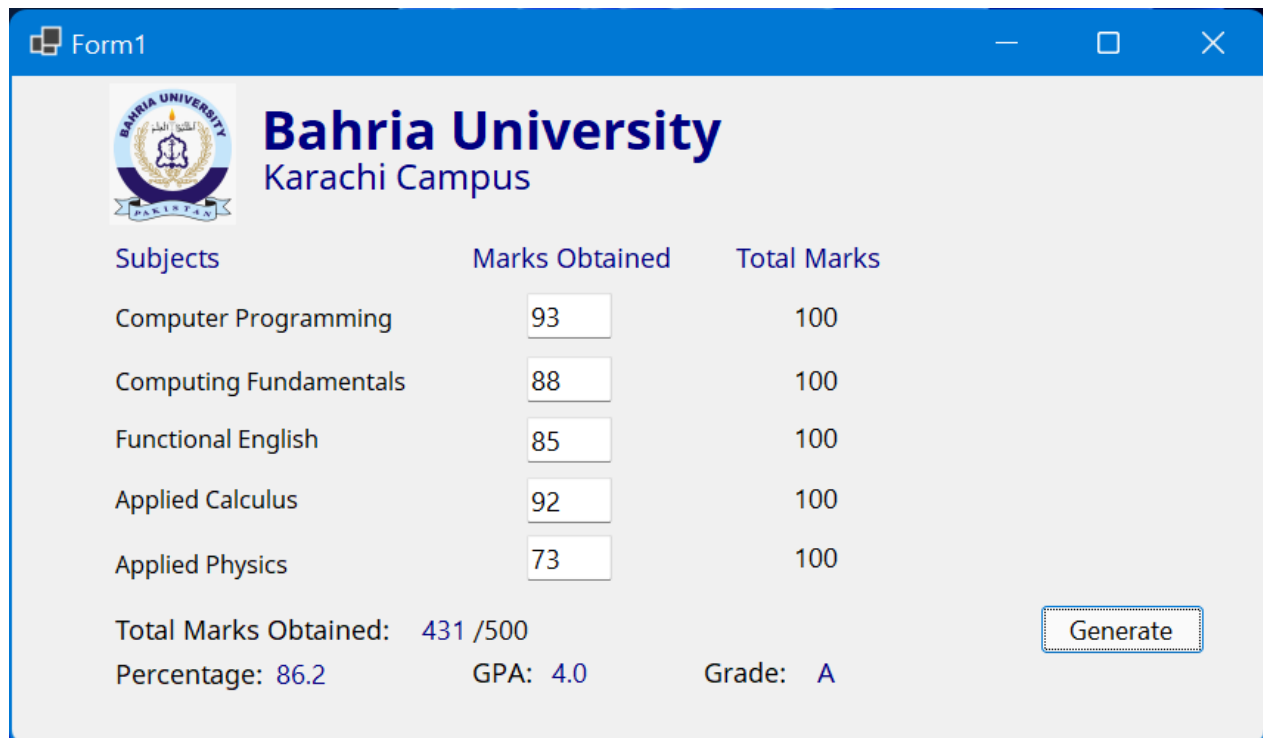
namespace WFP_LAB10
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }
        private void button1_Click(object sender, EventArgs e)
        {
            double sum=0, pcent;
            double[] sub = {Convert.ToDouble(txtac.Text),
Convert.ToDouble(txtcf.Text),Convert.ToDouble(txtap.Text),Convert.ToDouble(txtcp.Text),Convert.ToDouble(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:


Bahria University
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Subjects	Marks Obtained	Total Marks
Computer Programming	93	100
Computing Fundamentals	88	100
Functional English	85	100
Applied Calculus	92	100
Applied Physics	73	100
Total Marks Obtained: 431 /500		
Percentage: 86.2	GPA: 4.0	Grade: A

Generate