

# Bahria University,

## Karachi Campus



### LAB EXPERIMENT NO. 09

#### LIST OF TASKS

TASK NO	OBJECTIVE
1	Enter the first matrix and then display it. Secondly, enter the second matrix and then display it. In the result by apply 2D arrays show Addition, subtraction of 2 matrixes.
2	Take N number of user data input and make sure N is greater than 10, which contain name of the user, his/her nationality and his/her eye color. You have to show the max color of eye in each country .
3	Make a program in C# in which take no. of items, price of items, quantity of items and name of items as input from the user and give the discount according to the following conditions (Use 2D Array): <ul style="list-style-type: none"><li>a. If from rice give discount of 30%.</li><li>b. Else if the total amount is greater than 50,000 and less than 100,000 give discount of 20%.</li><li>c. Else if the total amount is greater than 100,000 give discount of 30%.</li></ul>

#### Task 1:

Enter the first matrix and then display it. Secondly, enter the second matrix and then display it. In the result by apply 2D arrays show Addition, subtraction of 2 matrixes.

**Solution:**

```
using System;
public class Exercise19
{
    public static void Main()
    {
        int i, j, n;
        int[,] arr1 = new int[50, 50];
        int[,] brr1 = new int[50, 50];
        int[,] crr1 = new int[50, 50];

        Console.WriteLine("\n\naddition of two Matrices :\n");
        Console.WriteLine("-----\n");
        Console.WriteLine("Input the size of the square matrix (less than 5): ");
        n = Convert.ToInt32(Console.ReadLine());

        /* Stored values into the array*/
        Console.WriteLine("Input elements in the first matrix :\n");
        for (i = 0; i < n; i++)
        {
            for (j = 0; j < n; j++)
            {
                Console.WriteLine("element - [{0},{1}] : ", i, j);
                arr1[i, j] = Convert.ToInt32(Console.ReadLine());
            }
        }

        Console.WriteLine("Input elements in the second matrix :\n");
        for (i = 0; i < n; i++)
        {
            for (j = 0; j < n; j++)
            {
                Console.WriteLine("element - [{0},{1}] : ", i, j);
                brr1[i, j] = Convert.ToInt32(Console.ReadLine());
            }
        }

        Console.WriteLine("\nThe First matrix is :\n");
        for (i = 0; i < n; i++)
        {
            Console.WriteLine("\n");
            for (j = 0; j < n; j++)
                Console.WriteLine("{0}\t", arr1[i, j]);
        }

        Console.WriteLine("\nThe Second matrix is :\n");
        for (i = 0; i < n; i++)
        {
            Console.WriteLine("\n");
            for (j = 0; j < n; j++)
                Console.WriteLine("{0}\t", brr1[i, j]);
        }

        /* calculate the sum of the matrix */
        for (i = 0; i < n; i++)
            for (j = 0; j < n; j++)
                crr1[i, j] = arr1[i, j] + brr1[i, j];
        Console.WriteLine("\nThe Addition of two matrix is : \n");
        for (i = 0; i < n; i++)
        {
```

```

        Console.WriteLine("\n");
        for (j = 0; j < n; j++)
            Console.WriteLine("{0}\t", crr1[i, j]);
    }
    Console.WriteLine("\n\n");
    /* calculate the subtract of the matrix */
    for (i = 0; i < 5; i++)
        for (j = 0; j < 5; j++)
            crr1[i, j] = arr1[i, j] - brr1[i, j];
    Console.WriteLine("\nThe subtraction of two matrix is : \n");
    for (i = 0; i < 5; i++)
    {
        Console.WriteLine("\n");
        for (j = 0; j < 5; j++)
            Console.WriteLine("{0}\t", crr1[i, j]);
    }

    Console.WriteLine("\n\n");
}
}

```

Output:

```

addition of two Matrices :
-----
Input the size of the square matrix (less than 5): 2
Input elements in the first matrix :
element - [0,0] : 2
element - [0,1] : 4
element - [1,0] : 6
element - [1,1] : 3
Input elements in the second matrix :
element - [0,0] : 1
element - [0,1] : 3
element - [1,0] : 5
element - [1,1] : 7

The First matrix is :

2      4
6      3
The Second matrix is :

1      3
5      7
The Addition of two matrix is :

3      7
11     10

The subtraction of two matrix is :

1      1      0      0      0
1     -4      0      0      0
0      0      0      0      0
0      0      0      0      0
0      0      0      0      0

Press any key to continue . . .

```

**Task 2:** Take N number of user data input and make sure N is greater than 10, which contain name of the user, his/her nationality and his/her eye color. You have to show the max color of eye in each country .

```

using System;

namespace ConsoleApp37
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.WriteLine("\t\tName: Abdul Wahab\n\t\tCNIC No: 110-14119-131\n\t\tSection: 1(b)\n\t\tEye:Black\n");
            int num;
            int num2;
            Console.WriteLine("Enter The Numbers You Want To Enter:");
            num = Convert.ToInt32(Console.ReadLine());
            int[] array = new int[num];
            for (int i = 0; i < num; i++)
            {
                Console.WriteLine("Enter " + i + " Value:");
                array[i] = Convert.ToInt32(Console.ReadLine());
            }

            for (int i = 0; i < num; i++)
            {
                for (int j = 0; j < num - 1; j++)
                {
                    if (array[j] > array[j + 1])
                    {
                        num2 = array[j];
                        array[j] = array[j + 1];
                        array[j + 1] = num2;
                    }
                }
            }

            Console.WriteLine("\n Enter a value :");
            for (int i = 0; i < num; i++)
            {
                Console.WriteLine(array[i]);
            }
            Console.ReadKey();
        }
    }
}

```

**Output:**

```

Enter The Numbers You Want To Enter:
5
Enter 0 Value:
3
Enter 1 Value:
5
Enter 2 Value:
23
Enter 3 Value:
5
Enter 4 Value:
8

```