Bahria University,
Karachi Campus

LAB EXPERIMENT NO.
9
LIST OF TASKS

TASK NO	OBJECTIVE
Example	Example no 1
1	Enter the first matrix and then display it. Secondly enter the second matrix and display it. In the result by applying 2D Show addition and Subtraction of 2 matrices
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): a. If from rice give discount of 30%. b. Else if the total amount is greater than 50,000 and less than 100,000 give discount of 20%. Else if the total amount is greater than 100,000 give discount of 30%.
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.

Submitted On:
_____
(Date: DD/MM/YY)

EXAMPLE 1
INPUT

```csharp
using System;

namespace Lab_09
{
    class Program
    {
        static void Main(string[] args)
        {
            int m;
            int n = 4;
            Console.Write("Enter the number of student : ");
            m = int.Parse(Console.ReadLine());
            string[,] profile = new string[m+1, n];
            //For title
            profile[0, 0] = "NAME";
            profile[0, 1] = "AGE";
            profile[0, 2] = "COURSE";
            profile[0, 3] = "SEMESTER";

            //Inputing the values for the table
            for (int i = 1; i < m+1; i++)
            {
                Console.WriteLine("\nEnter data for profile {0}", i);
                for (int j = 0; j < n; j++)
                {
                    if (j == 0)
                    {
                        Console.Write("Enter the name of the student : ");
                        profile[i, j] = Console.ReadLine();
                    }
                    else if (j == 1)
                    {
                        Console.Write("Enter the age of the student : ");
                        profile[i, j] = Console.ReadLine();
                    }
                    else if (j == 2)
                    {
                        Console.Write("Enter the course of the student : ");
                        profile[i, j] = Console.ReadLine();
                    }
                    else if (j == 3)
                    {
                        Console.Write("Enter the semester of the student : ");
                        profile[i, j] = Console.ReadLine();
                    }
                }
            }


            for (int i = 0; i < m+1 ; i++)
            {
                for (int j = 0; j < n; j++)
                {
                    Console.Write("  " + profile[i, j].PadRight(10));
                }
```

```
            Console.WriteLine();
        }
            Console.ReadLine();
        }

    }
}
```

OUTPUT

TASK 1

Enter the first matrix and then display it. Secondly enter the second matrix and display it. In the result by applying 2D Show addition and Subtraction of 2 matrices

INPUT :

```csharp
using System;
namespace Lab_09
{
    class program
    {
        static void Main (string[]args)
        {
            int rows1, rows2,col1,col2;
            //inputing values for matrix 1
            Console.Write("Enter the number of rows for matrix 1 : ");
            rows1 = int.Parse(Console.ReadLine());
```

```csharp
            Console.Write("Enter the number of columns for matrix 1 : ");
            col1 = int.Parse(Console.ReadLine());

            Console.ReadLine();
            Console.WriteLine("Enter the elements of first matrix");
            int[,] matrix1 = new int[rows1, col1];
            for (int i = 0; i < rows1; i++)
            {
                for (int j = 0; j < col1; j++)
                {
                    Console.Write("Enter the element ({0},{1}) = ",i,j);
                    matrix1[i, j] = int.Parse(Console.ReadLine());
                }
            }
            //printing values for matrix 1
            for (int i = 0; i < rows1; i++)
            {
                for (int j = 0; j < col1; j++)
                {
                    Console.Write(" " +matrix1[i,j]);
                }
                Console.WriteLine();
            }
            //inputing values for matrix 1
            Console.Write("Enter the number of rows for matrix 2 : ");
            rows2 = int.Parse(Console.ReadLine());
            Console.Write("Enter the number of colums for matrix 2 : ");
            col2 = int.Parse(Console.ReadLine());
            Console.ReadLine();
            Console.WriteLine("Enter the elements of first matrix");
            int[,] matrix2 = new int[rows2, col2];
            for (int k = 0; k < rows2; k++)
            {
                for (int l = 0; l < col2; l++)
                {
                    Console.Write("Enter the element ({0},{1}) = ", k, l);
                    matrix2[k, l] = int.Parse(Console.ReadLine());
                }
            }
            //printing values for matrix 2
            for (int k = 0; k < rows2; k++)
            {
                for (int l = 0; l < col2; l++)
                {
                    Console.Write(" " + matrix2[k, l]);
                }
                Console.WriteLine();
            }
            Console.ReadLine();
            //For multiplication
            int[,] result = new int[rows1, col2];
            for (int i = 0; i < rows1; i++)
            {
                for (int j = 0; j < col2; j++)
                {
                    result[i, j] = 0;
                    for (int k = 0; k < col1; k++)
```

```
            {
                result[i, j] = result[i, j] + matrix1[i, k] * matrix2[k, j];
            }

        }
    }
    Console.WriteLine("After Multiplication result is\n");
    for (int i = 0; i < rows1; i++)
    {
        for (int j = 0; j < col2; j++)
        {
            Console.Write(result[i, j] + " ");
        }
        Console.WriteLine();

    }
}

    }
}
```

OUTPUT


```
Microsoft Visual Studio Debug Console
Enter the number of rows for matrix 1 : 3
Enter the number of columns for matrix 1 : 2

Enter the elements of first matrix
Enter the element (0,0) = 2
Enter the element (0,1) = 4
Enter the element (1,0) = 6
Enter the element (1,1) = 7
Enter the element (2,0) = 3
Enter the element (2,1) = 2
 2 4
 6 7
 3 2
Enter the number of rows for matrix 2 : 2
Enter the number of colums for matrix 2 : 3
1
Enter the elements of first matrix
Enter the element (0,0) = 2
Enter the element (0,1) = 3
Enter the element (0,2) = 4
Enter the element (1,0) = 5
Enter the element (1,1) = 6
Enter the element (1,2) = 9
 2 3 4
 5 6 9

After Multiplication result is

24 30 44
47 60 87
16 21 30
```

TASK 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):

       a.   If from rice give discount of 30%.

       b.   Else if the total amount is greater than 50,000 and less than 100,000 give discount of 20%.

Else if the total amount is greater than 100,000 give discount of 30%.

INPUT :

```
using System;

namespace Lab_9
{
    class Program
    {
        static void Main(string[] args)
        {
            int n;
            int total = 0;
            double d = 1, dtotal = 0;
            Console.WriteLine("Enter No. of items:");
            n = int.Parse(Console.ReadLine());
            string[,] item = new string[n, 3];
            for (int x = 0; x < n; x++)
            {
                Console.Write("\nEnter name of item {0} : ", x + 1);
                item[x, 0] = Console.ReadLine();
                if (item[x, 0] == "rice" || item[x, 0] == "Rice")
                {
                    d = 0.7;
                }
                Console.Write("Enter price of {0} : ", item[x, 0]);
                item[x, 1] = Console.ReadLine();
                Console.Write("Enter quantity of {0} : ", item[x, 0]);
                item[x, 2] = Console.ReadLine();
                total += (int.Parse(item[x, 1]) * int.Parse(item[x, 2]));
            }
            if (d != 0.7)
            {
                if (total >= 50000 & total <= 100000)
                {
                    d = 0.8;
                }
                else if (total > 100000)
                {
                    d = 0.7;
                }
            }
            dtotal = total * d;
            Console.WriteLine("#\t\tName\tPrice\t\tQuantity\n");
            for (int x = 0; x < n; x++)
            {
                Console.Write("{0}", x + 1);
```

```
            for (int y = 0; y < 3; y++)
            {
                if (y == 1)
                {
                    Console.Write("\t\t${0}", item[x, y]);
                }
                else
                {
                    Console.Write("\t\t" + item[x, y]);
                }
            }
            Console.WriteLine();
        }
        Console.WriteLine("\n\tTotal : " +total);
        if (d != 1)
        {
            Console.WriteLine("\n\tTotal after discount of {0}% is : ", (1 - d) *
100, dtotal);
        }

    }
  }
}
```

OUTPUT

```
Microsoft Visual Studio Debug Console

Enter No. of items : 3

Enter name of item 1 : Milk
Enter price of Milk : 120
Enter quantity of Milk : 2

Enter name of item 2 : Atta
Enter price of Atta : 1250
Enter quantity of Atta : 3

Enter name of item 3 : Rice
Enter price of Rice : 900
Enter quantity of Rice : 3
#               Name    Price           Quantity

1               Milk            120             2
2               Atta            1250            3
3               Rice            900             3

Total : 6690

Total after discount is : 4683
```