

# Lab 04

## 2D Arrays, ArrayList and DateTime

- 1- Write A program that takes a 2D Array, prints its elements in a user-friendly way, creates an arraylist of diagonal elements and finds the minimum and the maximum of the diagonal elements

```
Module Module1
```

```
Sub Main()  
    Console.WriteLine("Enter number of rows")  
    Dim rows = Integer.Parse(Console.ReadLine())  
    Console.WriteLine("Enter number of columns")  
    Dim cols = Integer.Parse(Console.ReadLine())  
  
    Dim arr(rows - 1, cols - 1) As Integer  
    For i = 0 To rows - 1  
        For j = 0 To cols - 1  
            Console.WriteLine("Enter element ({0},{1})", i, j)  
            arr(i, j) = Integer.Parse(Console.ReadLine())  
        Next  
    Next  
  
    Console.WriteLine("Visual Representation")  
    For i = 0 To rows - 1  
        For j = 0 To cols - 1  
            Console.Write(" {0} ", arr(i, j))  
        Next  
        Console.WriteLine("")  
    Next  
  
    Dim diagonalElements As New ArrayList  
    Console.WriteLine("Diagonal Elements")  
    For i = 0 To rows - 1
```

```
        Console.WriteLine(arr(i, i))
        diagonalElements.Add(arr(i, i))
    Next

    diagonalElements.Sort()
    Console.WriteLine("Minimum diagonal element is: {0}",
diagonalElements(0))
    diagonalElements.Reverse()
    Console.WriteLine("Maximum diagonal element is: {0}",
diagonalElements(0))

End Sub

End Module
```

2- Write a program that takes a 2D Array and finds the average of the elements

```
Module Module1
```

```
Sub Main()
```

```
    Console.WriteLine("Enter number of rows")
```

```
    Dim rows = Integer.Parse(Console.ReadLine())
```

```
    Console.WriteLine("Enter number of columns")
```

```
    Dim cols = Integer.Parse(Console.ReadLine())
```

```
    Dim sum As Integer = 0
```

```
    Dim avg As Double = 0
```

```
    Dim arr(rows - 1, cols - 1) As Integer
```

```
    For i = 0 To rows - 1
```

```
        For j = 0 To cols - 1
```

```
            Console.WriteLine("Enter element ({0},{1})", i, j)
```

```
            arr(i, j) = Integer.Parse(Console.ReadLine())
```

```
            sum += arr(i, j)
```

```
        Next
```

```
    Next
```

```
    avg = sum / arr.Length
```

```
    Console.WriteLine("Average of all elements is: {0} ", avg)
```

```
End Sub
```

```
End Module
```

- 3- Write a program that takes a date from the user in the format "dd/mm/yyyy" and prints the corresponding day of week. Example:  
12/3/2000 => Sunday

```
Module Module1
```

```
    Sub Main()  
        Console.WriteLine("Enter date in the format  
dd/mm/yyyy")  
        Dim string_d = Console.ReadLine()  
        Dim split_date() = string_d.Split("/")  
        Dim d = New DateTime(split_date(2), split_date(1),  
split_date(0))  
        Console.WriteLine(d.DayOfWeek.ToString())  
    End Sub
```

```
End Module
```

## Assignment:

**Write a program that takes names and birthdates of students and finds the oldest one**

**Assignment should be sent to: [khaled.3ttia@gmail.com](mailto:khaled.3ttia@gmail.com)**