Estadísticas de laboratorio.

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Module Module1
    'Estructura con miembros nombre y cedula
    Structure dato
        Dim nombre As String
        Dim cedula As Integer
    End Structure
    'Subprograma de lectura de datos
    Sub leer(ByVal narch As Integer, ByRef V() As dato, ByRef Z(,) As Integer, ByRef
M As Integer, ByVal N As Integer)
        M = 0
        While Not EOF(1)
            Input(narch, V(M).nombre)
            Input(narch, V(M).cedula)

            For i = 0 To N - 1
                Input(narch, Z(M, i))
            Next
            M += 1
        End While
    End Sub
    'Funcion que calcula la sumatoria de una fila
    Function sumatoriaF(ByVal Z(,) As Integer, ByVal M As Integer, ByVal N As
Integer, ByVal kf As Integer) As Integer
        sumatoriaF = 0
        For i = 0 To N - 1
            sumatoriaF += Z(kf, i)
        Next
    End Function
    'Funcion que calcula la sumatoria de una columna
    Function sumatoriaC(ByVal Z(,) As Integer, ByVal M As Integer, ByVal N As
Integer, ByVal kc As Integer) As Integer
        sumatoriaC = 0
        For i = 0 To M - 1
            sumatoriaC += Z(i, kc)
        Next
    End Function
    'Subprograma que genera un vector donde cada elemento i representa la suma de la
fila i de la matriz Z
    Sub GeneraVsf(ByVal Z(,) As Integer, ByVal M As Integer, ByVal N As Integer,
ByRef Vsf() As Integer)
        For i = 0 To M - 1
            Vsf(i) = sumatoriaF(Z, M, N, i)
        Next
    End Sub
    'Subprograma que genera un vector donde cada elemento i representa la suma de la
columna i de la matriz Z
    Sub GeneraVsc(ByVal Z(,) As Integer, ByVal M As Integer, ByVal N As Integer,
ByRef Vsc() As Integer)
        For i = 0 To N - 1
            Vsc(i) = sumatoriaF(Z, M, N, i)
        Next
    End Sub
    'Funcion que calcula la posicion del maximo en un vector
    Function PmaxV(ByVal V() As Integer, ByVal M As Integer) As Integer
        Dim mayor As Integer
        PmaxV = 0
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        mayor = V(PmaxV)
        For i = 1 To M - 1
            If mayor < V(i) Then
                mayor = V(i)
                PmaxV = i
            End If
        Next
    End Function
    'Subprograma de impresion de resultados
    Sub imprimir(ByVal narch As Integer, ByVal V() As dato, ByVal Z(,) As Integer,
ByVal vsf() As Integer, ByVal Vsc() As Integer, ByVal M As Integer, ByVal N As
Integer)
        Print(narch, "Usuario     Cedula     LU  MA  MI  JU  VI     Total usuario")
        PrintLine(narch, " ")
        For i = 0 To M - 1
            Print(narch, V(i).nombre.PadRight(12))
            Print(narch, V(i).cedula.ToString.PadRight(11))
            For j = 0 To N - 1
                Print(narch, Z(i, j).ToString.PadRight(4))
            Next
            Print(narch, "    " & vsf(i).ToString.PadLeft(6))
            PrintLine(narch, " ")
        Next
        Print(narch, "Total del laboratorio  ")
        For i = 0 To N - 1
            Print(narch, Vsc(i).ToString.PadRight(3) & " ")
        Next
        PrintLine(narch, " ")
        Print(narch, "Estudiante que uso mas el laboratorio: " & V(PmaxV(vsf,
M)).nombre & "  " & V(PmaxV(vsf, M)).cedula)
    End Sub
    Sub Main()
        'Declaracion de variables
        Dim Z(100, 5), Vsc(5), Vsf(100) As Integer
        Dim V(100) As dato
        Dim M, N As Integer
        M = 0 : N = 5
        'Apertura de archivos
        FileOpen(1, "../../../Usos.txt", OpenMode.Input)
        FileOpen(2, "../../../Estadisticas.txt", OpenMode.Output)
        'Lectura de datos
        leer(1, V, Z, M, N)
        'Cierre del archivo 1
        FileClose(1)
        'Generando Vector que suma filas y Vector que suma columnas
        GeneraVsf(Z, M, N, Vsf)
        GeneraVsc(Z, M, N, Vsc)
        'Impresion de resultados en el archivo con el calculo del maximo incluido
        imprimir(2, V, Z, Vsf, Vsc, M, N)
        'Cierre del archivo 2
        FileClose(2)
        'Fin del programa
        Console.WriteLine("El Programa a finalizado con exito")
        Console.ReadKey()
    End Sub

End Module
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