

Convertir Imagen a Escala de Grises con Visual Basic.NET

```
' Aquí Declaro una Estructura llamada RGB
Public Structure RGB
    Private _r As Byte
    Private _g As Byte
    Private _b As Byte

    Public Sub New(r As Byte, g As Byte, b As Byte)
        Me._r = r
        Me._g = g
        Me._b = b
    End Sub

    Public Property R() As Byte
        Get
            Return Me._r
        End Get
        Set(value As Byte)
            Me._r = value
        End Set
    End Property

    Public Property G() As Byte
        Get
            Return Me._g
        End Get
        Set(value As Byte)
            Me._g = value
        End Set
    End Property

    Public Property B() As Byte
        Get
            Return Me._b
        End Get
        Set(value As Byte)
            Me._b = value
        End Set
    End Property

    Public Overloads Function Equals(rgb As RGB) As Boolean
        Return (Me.R = rgb.R) AndAlso (Me.G = rgb.G) AndAlso (Me.B = rgb.B)
    End Function
End Structure
```

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```
' Este procedimiento obtiene el Color en la Escala de Grises Correcta de la Imagen
Public Sub ConvertirEscalaDeGrises(ByVal Imagen As PictureBox)

On Error Resume Next

Dim imAgtEmp1 As New Bitmap(Imagen.Image)
Dim imAgtEmp2 As New Bitmap(Imagen.Image)
Dim elgrIs As Long
Largo = imAgtEmp1.Width
Alto = imAgtEmp1.Height
For Me.i = 0 To Alto - 1
    For Me.j = 0 To Largo - 1
        Dim ColorActual As RGB
        ElColor = imAgtEmp1.GetPixel(Me.j, Me.i)
        ColorActual.R = CByte(ElColor.R.ToString)
        ColorActual.G = CByte(ElColor.G.ToString)
        ColorActual.B = CByte(ElColor.B.ToString)
        Dim Valor As Double
        If ColorActual.B > 128 Then
            If ColorActual.G < 128 Then
                If ColorActual.R < 128 Then
                    ' Azules
                    Valor = ((ColorActual.B - 127) * (ColorActual.G + 1) * (ColorActual.R + 1)) + 2097152
                Else
                    ' Magentas
                    Valor = ((ColorActual.B - 127) * (ColorActual.G + 1) * (ColorActual.R - 127)) + (2097152 * 2)
                End If
            Else
                If ColorActual.R < 128 Then
                    ' Cyanes
                    Valor = ((ColorActual.B - 127) * (ColorActual.G - 127) * (ColorActual.R + 1)) + (2097152 * 6)
                Else
                    ' Blancos
                    Valor = ((ColorActual.B - 127) * (ColorActual.G - 127) * (ColorActual.R - 127)) + (2097152 * 7)
                End If
            End If
        Else
            If ColorActual.G < 128 Then
                If ColorActual.R < 128 Then
                    ' Negros
                    Valor = (ColorActual.B + 1) * (ColorActual.G + 1) * (ColorActual.R + 1)
                Else
                    ' Rojos
                    Valor = ((ColorActual.B + 1) * (ColorActual.G + 1) * (ColorActual.R - 127)) + (2097152 * 3)
                End If
            Else
                If ColorActual.R < 128 Then
                    ' Verdes
                    Valor = ((ColorActual.B + 1) * (ColorActual.G - 127) * (ColorActual.R + 1)) + (2097152 * 5)
                Else
                    ' Amarillos
                    Valor = ((ColorActual.B + 1) * (ColorActual.G - 127) * (ColorActual.R - 127)) + (2097152 * 4)
                End If
            End If
        End If
        Valor = ((Valor / (256 ^ 3)) * 256) - 1
        ElColor = Color.FromArgb(CInt(Valor), CInt(Valor), CInt(Valor))
        imAgtEmp2.SetPixel(Me.j, Me.i, ElColor)
    Next
Next
Imagen.Image = imAgtEmp2.Clone
End Sub
```