

## LISTING PROGRAM

```
Private Sub cmdambil_Click()

Picture1.Cls
Picture2.Cls
Listk.Clear
Listft.Clear
Listx.Clear
Listy.Clear
Listdata.Clear
Text1.Text = 0
Text2.Text = 0
Text3.Text = 255
Text4.Text = 0
Text5.Text = 255
Texti3.Text = 0
Textj3.Text = 0
Texti5.Text = 0
Textj5.Text = 0
Texti7.Text = 0
Textj7.Text = 0
ProgressBar1.Value = 0

Dim p
CommonDialog1.DialogTitle = "Pilih Gambar"
CommonDialog1.ShowOpen
p = CommonDialog1.FileName
Picture1.Picture = LoadPicture(p)

If Picture1.Picture = 0 Then
    MsgBox "Anda belum memasukkan gambar!!!", vbOKOnly, "Peringatan!!!"
End If

End Sub

Private Sub Cmdbibir_Click()

ProgressBar1.Value = 0
If Picture1.Picture = 0 Then
    MsgBox "Anda belum memasukkan gambar!!!", vbOKOnly, "Peringatan!!!"
GoTo 1
End If
```

```

'inisialisasi
Dim h1(400, 400) As Integer
Dim he(256), ch(256), wx(400, 300) As Integer
For i = 1 To 256
    he(i) = 0: ch(i) = 0
Next i
Dim cb(400, 400) As Integer

n1 = 0
For i = 0 To Picture1.ScaleWidth Step 15
    n1 = n1 + 1
    n2 = 0
    For j = 0 To Picture1.ScaleHeight Step 15
        n2 = n2 + 1
        warna = Picture1.Point(i, j)
        r = warna And RGB(255, 0, 0)
        g = Int((warna And RGB(0, 255, 0)) / 256)
        b = Int(Int((warna And RGB(0, 0, 255)) / 256) / 256)

'chromatic transformation
l = (r + g + b) / 3

Rcor = (r / (r + (0.4 * l) + 0.4)) * 255
Gcor = (g / (g + (0.4 * l) + 0.4)) * 255
Bcor = (b / (b + (0.4 * l) + 0.4)) * 255

'pseudo hue
h = (Rcor / (Rcor + Gcor)) * 255
h1(n1, n2) = h

'h max
If h > Val(Text2.Text) Then
    Text2.DataChanged = True
    Text2.Text = h
End If

'h min
If h < Val(Text3.Text) Then
    Text3.DataChanged = True
    Text3.Text = h
End If

Picture2.PSet (i, j), RGB(h, h, h)
Next j
Next i

ProgressBar1.Value = 40

```

```

'defenisi variable reduksi noise dengan rata2
Dim xt(400, 400) As Integer
Dim wt(400, 400) As Integer
Dim NFilter As Integer
    NFilter = 5
Dim hf(5, 5) As Single
    Randomize Timer
For i = 1 To NFilter
For j = 1 To NFilter
    hf(i, j) = 1 / (NFilter ^ 2)
Next j
Next i

'normalisasi pseudo hue
n3 = 0
For i = 1 To n1
n3 = n3 + 1
n4 = 0
For j = 1 To n2
n4 = n4 + 1

h2 = h1(i, j)
k = ((h2 - Val(Text3.Text)) / (Val(Text2.Text) - Val(Text3.Text))) * 128
If k < 0 Then k = 0
    Listk.AddItem (k)
    xt(n3, n4) = k

Picture2.PSet ((i - 1) * 15 + 1, (j - 1) * 15 + 1), RGB(k, k, k)
Next j
Next i

ProgressBar1.Value = 50

'reduksi noise dengan filter rata2
m = Int(NFilter / 2)
n5 = 0
For i = 1 To n3
n5 = n5 + 1
n6 = 0
For j = 1 To n4
n6 = n6 + 1
    z = 0
    For u1 = -m To m
    For u2 = -m To m
        If i + u1 < 0 Or j + u2 < 0 Then ft = 0 Else ft = xt(i + u1, j + u2)
        z = z + hf(u1 + (m + 1), u2 + 2) * ft
    z = Round(z, 3)

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        cb(n5, n6) = z
    Next u2
Next u1

Listft.AddItem (z)

ProgressBar1.Value = 65

Picture2.PSet ((i - 1) * 15 + 1, (j - 1) * 15 + 1), RGB(z, z, z)
Next j
Next i

For X = 0 To 11475
    If Listft.List(X) > Val(Text4.Text) Then
        Text4.DataChanged = True
        Text4.Text = Listft.List(X)
    End If
    If Listft.List(X) < Val(Text5.Text) Then
        Text5.DataChanged = True
        Text5.Text = Listft.List(X)
    End If
Next X

th = (Val(Text4.Text) + Val(Text5.Text)) / 2

For i = 1 To n5
    For j = 1 To n6
        xb = cb(i, j)
        If xb >= th - (th / 10) Then xb = 255 Else xb = 0

Picture2.PSet ((i - 1) * 15 + 1, (j - 1) * 15 + 1), RGB(xb, xb, xb)
Next j
Next i

ProgressBar1.Value = 100
1:

End Sub

Private Sub cmdhitung_Click()

warna = Picture2.Point(1, 1)
If Picture1.Picture = 0 Then
    MsgBox "Anda belum memasukkan gambar!!!", vbOKOnly, "Peringatan!!!"
ElseIf warna <> vbBlack Then
    MsgBox "Segmentasi Bibir Terlebih Dahulu!!!", vbOKOnly, "Peringatan!!!"

```

```

GoTo 2
End If

"cari titik
'titik P1
For i = 1 To Picture2.ScaleWidth Step 15
For j = 1 To Picture2.ScaleHeight Step 15
    warna = Picture2.Point(i, j)
    If warna = vbWhite Then
'proses simpan 0
Listx.AddItem (i)
Listy.AddItem (j)
GoTo P1
End If
Next j
Next i
P1:

'titik P2
For i = Picture2.ScaleWidth To 1 Step -15
For j = 1 To Picture2.ScaleHeight Step 15
    warna = Picture2.Point(i, j)
    If warna = vbWhite Then
'proses simpan 1
Listx.AddItem (i)
Listy.AddItem (j)
GoTo P2
End If
Next j
Next i
P2:

'titik P3
For i = Int(Listx.List(0)) To Picture2.ScaleWidth Step 15
For j = 1 To Picture2.ScaleHeight Step 15
    warna = Picture2.Point(i, j)
    If warna = vbWhite And j <= Val(Textj3.Text) Then
        Texti3.DataChanged = True
        Texti3.Text = i
        Textj3.DataChanged = True
        Textj3.Text = j
    End If
    If warna = vbWhite And j > Val(Textj3.Text) Then
        GoTo keluar3
    End If
Next j
Next i

```

```

keluar3:
'proses simpan2
Listx.AddItem (Texti3.Text)
Listy.AddItem (Textj3.Text)

'titik P4
For i = Int(Listx.List(2)) To Int(Listx.List(2)) Step 15
For j = Picture2.ScaleHeight To 1 Step -15
    warna = Picture2.Point(i, j)
    If warna = vbWhite Then
'proses simpan 3
Listx.AddItem (i)
Listy.AddItem (j)
GoTo P4
End If
Next j
Next i
P4:

'titik P5
For i = Int(Listx.List(2)) To Picture2.ScaleWidth Step 15
For j = 1 To Picture2.ScaleHeight Step 15
    warna = Picture2.Point(i, j)
    If warna = vbWhite And j >= Val(Textj5.Text) Then
        Texti5.DataChanged = True
        Texti5.Text = i
        Textj5.DataChanged = True
        Textj5.Text = j
    End If
    If warna = vbWhite And j < Val(Textj5.Text) Then
        GoTo keluar5
    End If
Next j
Next i
keluar5:
'proses simpan4
Listx.AddItem (Texti5.Text)
Listy.AddItem (Textj5.Text)

'titik P6
For i = Int(Listx.List(4)) To Int(Listx.List(4)) Step 15
For j = Picture2.ScaleHeight To 1 Step -15
    warna = Picture2.Point(i, j)
    If warna = vbWhite Then
'proses simpan 5
Listx.AddItem (i)
Listy.AddItem (j)

```

```

GoTo P6
End If
Next j
Next i
P6:

```

```

'titik P7
For i = Int(Listx.List(4)) To Picture2.ScaleWidth Step 15
For j = 1 To Picture2.ScaleHeight Step 15
    warna = Picture2.Point(i, j)
    If warna = vbWhite And j <= Val(Textj7.Text) Then
        Texti7.DataChanged = True
        Texti7.Text = i
        Textj7.DataChanged = True
        Textj7.Text = j
    End If
    If warna = vbWhite And j > Val(Textj7.Text) Then
        GoTo keluar7
    End If

```

```

Next j
Next i
keluar7:
'proses simpan6
Listx.AddItem (Texti7.Text)
Listy.AddItem (Textj7.Text)

```

```

'titik P8
For i = Int(Listx.List(6)) To Int(Listx.List(6)) Step 15
For j = Picture2.ScaleHeight To 1 Step -15
    warna = Picture2.Point(i, j)
    If warna = vbWhite Then
'proses simpan 7
Listx.AddItem (i)
Listy.AddItem (j)
GoTo P8
End If
Next j
Next i
P8:

```

```

"proses perhitungan
'proses hitung lebar
lebar1 = Sqr(((Int(Listx.List(1)) - Int(Listx.List(0))) ^ 2) + _
    ((Int(Listy.List(1)) - Int(Listy.List(0))) ^ 2))
lebar1 = Round(lebar1, 3)

```

```

lebar2 = Sqr(((Int(Listx.List(6)) - Int(Listx.List(2))) ^ 2) + _

```

```
((Int(Listy.List(6)) - Int(Listy.List(2))) ^ 2))  
lebar2 = Round(lebar2, 3)
```

```
'proses hitung tebal  
tebal1 = Int(Listy.List(3) - Listy.List(2))  
tebal2 = Int(Listy.List(5) - Listy.List(4))  
tebal3 = Int(Listy.List(7) - Listy.List(6))
```

```
'proses hitung sudut  
p1p2x = Int(Listx.List(1)) - Int(Listx.List(0))  
p1p2y = Int(Listy.List(1)) - Int(Listy.List(0))  
Rp1p2 = Abs(Sqr((p1p2x ^ 2) + (p1p2y ^ 2)))
```

```
p1p3x = Int(Listx.List(2)) - Int(Listx.List(0))  
p1p3y = Int(Listy.List(2)) - Int(Listy.List(0))  
Rp1p3 = Abs(Sqr((p1p3x ^ 2) + (p1p3y ^ 2)))
```

```
jumlah1 = (((p1p3x * p1p2x) + (p1p3y * p1p2y)) / (Rp1p3 * Rp1p2))  
sudut1 = (Atn(-jumlah1 / Sqr(-jumlah1 * jumlah1 + 1)) + 2 * Atn(1))  
sudut1 = Round(sudut1, 3)
```

```
p1p4x = Int(Listx.List(3) - Listx.List(0))  
p1p4y = Int(Listy.List(3) - Listy.List(0))  
Rp1p4 = Abs(Sqr((p1p4x ^ 2) + (p1p4y ^ 2)))  
jumlah2 = (((p1p4x * p1p2x) + (p1p4y * p1p2y)) / (Rp1p4 * Rp1p2))  
sudut2 = (Atn(-jumlah2 / Sqr(-jumlah2 * jumlah2 + 1)) + 2 * Atn(1))  
sudut2 = Round(sudut2, 3)
```

```
p5p3x = Int(Listx.List(2) - Listx.List(4))  
p5p3y = Int(Listy.List(2) - Listy.List(4))  
Rp5p3 = Abs(Sqr((p5p3x ^ 2) + (p5p3y ^ 2)))
```

```
p5p7x = Int(Listx.List(6) - Listx.List(4))  
p5p7y = Int(Listy.List(6) - Listy.List(4))  
Rp5p7 = Abs(Sqr((p5p7x ^ 2) + (p5p7y ^ 2)))
```

```
jumlah3 = (((p5p3x * p5p7x) + (p5p3y * p5p7y)) / (Rp5p3 * Rp5p7))  
sudut3 = (Atn(-jumlah3 / Sqr(-jumlah3 * jumlah3 + 1)) + 2 * Atn(1))  
sudut3 = Round(sudut3, 3)
```

```
'proses penyimpanan  
Listdata.AddItem (lebar1)  
Listdata.AddItem (lebar2)  
Listdata.AddItem (tebal1)  
Listdata.AddItem (tebal2)  
Listdata.AddItem (tebal3)  
Listdata.AddItem (sudut1)
```



```
Listdata.AddItem (sudut2)
Listdata.AddItem (sudut3)
```

```
2:
End Sub
```

```
Private Sub cmdreset_Click()
```

```
Picture1.Cls
Picture2.Cls
Listk.Clear
Listft.Clear
Listx.Clear
Listy.Clear
Listdata.Clear
Listdtbase.Clear
Text1.Text = 0
Text2.Text = 0
Text3.Text = 255
Text4.Text = 0
Text5.Text = 255
Texti3.Text = 0
Textj3.Text = 0
Texti5.Text = 0
Textj5.Text = 0
Texti7.Text = 0
Textj7.Text = 0
ProgressBar1.Value = 0
```

```
End Sub
```

```
Private Sub Cmdselesai_Click()
```

```
Unload Me
End Sub
```

```
Private Sub Cmdsimpan_Click()
```

```
warna = Picture2.Point(1, 1)
Text6.Text = Listdata.List(0)
If Listdata.List(0) = Empty Then
    Text6.Text = 0
End If
```

```
If Picture1.Picture = 0 Then
    MsgBox "Anda belum memasukkan gambar!!!", vbOKOnly, "Peringatan!!!"
```

```

ElseIf warna <> vbBlack Then
    MsgBox "Segmentasi Bibir Terlambakan!!!", vbOKOnly, "Peringatan!!!"
ElseIf Text6.Text = 0 Then
    MsgBox "Tekan Tombol Hitung Terlambakan!!!", vbOKOnly,
        "Peringatan!!!"
GoTo 4
End If

```

```

For X = 0 To 7 Step 1
    Listdtbase.AddItem Listdata.List(X)
Next X

```

```

Picture1.Cls
Picture2.Cls
Listx.Clear
Listy.Clear
Listk.Clear
Listft.Clear
Listdata.Clear
Texti3.Text = 0
Textj3.Text = 0
Texti5.Text = 0
Textj5.Text = 0
Texti7.Text = 0
Textj7.Text = 0
Text2.Text = 0
Text3.Text = 255
Text4.Text = 0
Text5.Text = 255

```

```

4:
End Sub

```

```

Private Sub Cmdpersentase_Click()

```

```

    Text6.Text = Listdata.List(0)
    If Listdata.List(0) = Empty Then
        Text6.Text = 0
    End If
    Text7.Text = Listdtbase.List(0)
    If Listdtbase.List(0) = Empty Then
        Text7.Text = 0
    End If
    warna = Picture2.Point(1, 1)

```

```

If Picture1.Picture = 0 Then
    MsgBox "Anda belum memasukkan gambar!!!", vbOKOnly, "Peringatan!!!"
ElseIf warna <> vbBlack Then
    MsgBox "Segmentasi Bibir Terlebih Dahulu & Tekan Tombol Hitung!!!",
        vbOKOnly, "Peringatan!!!"
ElseIf Text6.Text = 0 Then
    MsgBox "Tekan Tombol Hitung Terlebih Dahulu!!!", vbOKOnly,
        "peringatan!!!"
ElseIf Text7.Text = 0 Then
    MsgBox "Data Pembanding Kosong!!!", vbOKOnly, "Peringatan!!!"
GoTo 3
End If

```

Dim z As Integer

```

a = (Listdtbase.List(0) * 0.0366)
a = Round(a, 3)
If (Listdata.List(0)) >= ((Listdtbase.List(0)) - a) _
    And (Listdata.List(0)) <= ((Listdtbase.List(0)) + a) Then z = z + 1

```

```

b = (Listdtbase.List(1) * 0.202)
b = Round(b, 3)
If (Listdata.List(1)) >= ((Listdtbase.List(1)) - b) _
    And (Listdata.List(1)) <= ((Listdtbase.List(1)) + b) Then z = z + 1

```

```

c = (Listdtbase.List(2) * 0.102)
c = Round(c, 3)
If (Listdata.List(2)) >= ((Listdtbase.List(2)) - c) _
    And (Listdata.List(2)) <= ((Listdtbase.List(2)) + c) Then z = z + 1

```

```

d = (Listdtbase.List(3) * 0.1152)
d = Round(d, 3)
If (Listdata.List(3)) >= ((Listdtbase.List(3)) - d) _
    And (Listdata.List(3)) <= ((Listdtbase.List(3)) + d) Then z = z + 1

```

```

e = (Listdtbase.List(4) * 0.0993)
e = Round(e, 3)
If (Listdata.List(4)) >= (Int(Listdtbase.List(4)) - e) _
    And (Listdata.List(4)) <= ((Listdtbase.List(4)) + e) Then z = z + 1

```

```

f = (Listdtbase.List(5) * 0.1324)
f = Round(f, 3)
If (Listdata.List(5)) >= ((Listdtbase.List(5)) - f) _
    And (Listdata.List(5)) <= ((Listdtbase.List(5)) + f) Then z = z + 1

```

```

g = (Listdtbase.List(6) * 0.2792)
g = Round(g, 3)

```

```
If (Listdata.List(6)) >= ((Listdtbase.List(6)) - g) _  
    And (Listdata.List(6)) <= ((Listdtbase.List(6)) + g) Then z = z + 1
```

```
h = (Listdtbase.List(7)) * 0.1773
```

```
h = Round(h, 3)
```



















```
If (Listdata.List(7)) >= ((Listdtbase.List(7)) - h) _  
    And (Listdata.List(7)) <= ((Listdtbase.List(7)) + h) Then z = z + 1
```

```
Text1.Text = (z / 8) * 100
```

```
3:
```

```
End Sub
```

**CITRA BIBIR YANG DIGUNAKAN SEBAGAI DATA  
PENGAMATAN**

Nama	Citra ke-1	Citra ke-2	Citra ke-3
Agus			
Danil			
Inggar			
Oki			
Paskal			
Rizki			
Willy	