



Harip Santoso

VB.NET

untuk
.NET Programmer



- Memberikan gambaran penulisan aplikasi VB.NET dengan ringkas, padat, dan jelas
- Dapat membantu Anda untuk menjadi programmer .NET yang handal

Disertai CD
berisi contoh program pendukung buku

Spesifikasi:

Ukuran: 14x21 cm

Tebal: 343 hlm

Harga: Rp 51.800

Terbit pertama: Oktober 2004

Sinopsis singkat:

Pembahasan dalam buku ini diawali dengan pemahaman konsep teknologi .NET dan dilanjutkan dengan contoh pembuatan program serta beberapa hal baru pada VB.NET dan Class. Selanjutnya, penjelasan ADO.NET sebagai metode pengaksesan sumber data serta contoh pembuatan Laporan RecordSet Bertingkat akan membantu Anda melewati salah satu tahap yang penting dalam penulisan aplikasi program VB.NET. Pembahasan diakhiri dengan contoh Aplikasi Program Penjualan Barang yang tidak hanya memperlihatkan keandalan VB.NET, tetapi juga memberi kesempatan Anda untuk melihat perbedaan aplikasi VB 6 yang telah dikonversi menjadi aplikasi VB.NET.

Buku ini disertai CD pendamping berisi contoh program dan Aplikasi Program Penjualan Barang dalam VB 6, VB.NET/ASP.NET (aplikasi Web), dan VB.NET.

BAB 7

DATAVIEW, TABEL DATA, DAN DATAGRID

DataView, tabel data, dan DataGrid merupakan tiga objek yang terkait erat dengan objek DataSet. DataView digunakan untuk memfilter, mengurut, dan mencari baris record yang tersimpan pada objek DataSet (objek tabel data). Tabel data (Data Tabel) merupakan bagian dari objek DataSet dimana baris data yang diperoleh dari sumber data disimpan dan selanjutnya direferensikan melalui objek DataTable (objek TabelData), sedangkan DataGrid berfungsi menampilkan baris data, baik itu berasal dari objek tabel data maupun melalui objek DataView.

7.1 DataView

Pada bab sebelumnya, kita telah melihat struktur dari objek DataSet yang dapat menampung satu atau lebih tabel data. Kemampuan ini memungkinkan objek DataSet bersifat seolah-olah sebagai suatu database saja sehingga kode program dapat melakukan filtrasi data, membuat hubungan antartabel, dan lain-lain. Proses filtrasi ini diakomodir oleh objek DataView.

Objek DataView dapat dimanfaatkan untuk memfilter, mengurutkan, mencari, maupun mengatur kolom kunci dari objek tabel data. Kemampuan ini berguna saat kita berusaha untuk

mengurangi aktifitas/kesibukan pada SQL server dengan mengambil suatu porsi data yang cukup besar dan menyimpannya pada objek DataSet. Selanjutnya proses pencarian dilakukan pada objek DataSet, jadi tidak melibatkan SQL Server lagi.

Bila tidak ada kebutuhan untuk mengurangi kesibukan pada SQL Server, Anda tidak harus menggunakan objek DataView. Lakukan saja proses sebagaimana biasanya, yakni setiap proses pencarian langsung dilakukan pada database/sumber data.

Oleh karena inti pemanfaatan objek DataView adalah untuk mengurangi aktifitas pada SQL server dalam bentuk pencarian record, pemanfaatan baris data melalui objek DataView bersifat *read only*. Penulis tidak menganjurkan Anda untuk melibatkan penggunaan objek DataView pada proses penambahan record maupun penghapusan record bila mungkin, karena akan menyebabkan data yang ada pada objek DataView berubah dan hal ini cukup memusingkan saat penulisan program.

Tidak ada hal yang istimewa pada objek ini. Pernyataan baris perintahnya cukup jelas, logis, dan hasil yang ditampilkan cukup mudah dipahami. Berikut ini adalah contoh penggunaan objek DataView dengan tampilan pada Gambar 7.1. Pada program ini, Anda dapat melihat penggunaan filter, *sorting*, maupun mencari record.

Sumber data objek DataView diperoleh dari objek Tabel Data, kemudian DataGrid digunakan untuk menampung serta menampilkan baris data yang telah dipoles untuk ditampilkan pada layar monitor.

Baris record yang akan dicari (kolom record) harus menjadi kolom kunci pengurutan (penyortiran). Anda dapat menyortir pada lebih dari satu kolom dengan menambahkan tanda koma di antara kedua kolom yang akan digunakan. Bila proses pencarian berhasil maka akan dikembalikan nilai posisi baris record yang dicari, dimulai dari angka 0. Bila pencarian gagal maka akan dikembalikan nilai -1.

Secara default, aktifitas yang dilakukan pada objek DataSet bersifat tidak *case sensitive*, jadi berhati-hatilah dengan sifat ini. Berikut ini adalah contoh program yang dimaksud.

```

Listing Program objDataView.vb:
Public Class objDataView
    Inherits System.Windows.Forms.Form

#Region " Windows Form Designer generated code "

    Public Sub New()
        MyBase.New()

        'This call is required by the Windows Form Designer.
        InitializeComponent()

        'Add any initialization after the
        'InitializeComponent() call

    End Sub

    'Form overrides dispose to clean up the component list.
    Protected Overrides Sub Dispose(ByVal disposing
As Boolean)
        If disposing Then
            If Not (components Is Nothing) Then
                components.Dispose()
            End If
        End If
        MyBase.Dispose(disposing)
    End Sub

    'Required by the Windows Form Designer
    Private components As System.ComponentModel.IContainer

    'NOTE: The following procedure is required by the Windows
    'Form Designer
    'It can be modified using the Windows Form Designer.
    'Do not modify it using the code editor.
    Friend WithEvents DataGrid1 As
System.Windows.Forms.DataGrid
    Friend WithEvents Label1 As System.Windows.Forms.Label
    Friend WithEvents TextBox1 As
System.Windows.Forms.TextBox
    Friend WithEvents TextBox2 As
System.Windows.Forms.TextBox
    Friend WithEvents Label2 As System.Windows.Forms.Label
    Friend WithEvents TextBox3 As
System.Windows.Forms.TextBox
    Friend WithEvents Label3 As System.Windows.Forms.Label
    Friend WithEvents TextBox6 As
System.Windows.Forms.TextBox
    Friend WithEvents Label6 As System.Windows.Forms.Label
    Friend WithEvents TextBox5 As
System.Windows.Forms.TextBox
    Friend WithEvents Label5 As System.Windows.Forms.Label
    Friend WithEvents TextBox4 As
System.Windows.Forms.TextBox
    Friend WithEvents Label4 As System.Windows.Forms.Label
    Friend WithEvents DataGrid2 As
System.Windows.Forms.DataGrid
    Friend WithEvents Label9 As System.Windows.Forms.Label
    Friend WithEvents TextBox8 As
System.Windows.Forms.TextBox
    Friend WithEvents Label8 As System.Windows.Forms.Label

```

```

Friend WithEvents TextBox7 As
System.Windows.Forms.TextBox
Friend WithEvents Label7 As System.Windows.Forms.Label
Friend WithEvents DataGrid3 As
System.Windows.Forms.DataGrid
Friend WithEvents TextBox9 As
System.Windows.Forms.TextBox
<System.Diagnostics.DebuggerStepThrough()> Private Sub
InitializeComponent()
    Me.DataGrid1 = New System.Windows.Forms.DataGrid
    Me.Label1 = New System.Windows.Forms.Label
    Me.TextBox1 = New System.Windows.Forms.TextBox
    Me.TextBox2 = New System.Windows.Forms.TextBox
    Me.Label2 = New System.Windows.Forms.Label
    Me.TextBox3 = New System.Windows.Forms.TextBox
    Me.Label3 = New System.Windows.Forms.Label
    Me.TextBox6 = New System.Windows.Forms.TextBox
    Me.Label6 = New System.Windows.Forms.Label
    Me.TextBox5 = New System.Windows.Forms.TextBox
    Me.Label5 = New System.Windows.Forms.Label
    Me.TextBox4 = New System.Windows.Forms.TextBox
    Me.Label4 = New System.Windows.Forms.Label
    Me.DataGrid2 = New System.Windows.Forms.DataGrid
    Me.TextBox9 = New System.Windows.Forms.TextBox
    Me.Label9 = New System.Windows.Forms.Label
    Me.TextBox8 = New System.Windows.Forms.TextBox
    Me.Label8 = New System.Windows.Forms.Label
    Me.TextBox7 = New System.Windows.Forms.TextBox
    Me.Label7 = New System.Windows.Forms.Label
    Me.DataGrid3 = New System.Windows.Forms.DataGrid
    CType(Me.DataGrid1,
System.ComponentModel.ISupportInitialize).BeginInit()
    CType(Me.DataGrid2,
System.ComponentModel.ISupportInitialize).BeginInit()
    CType(Me.DataGrid3,
System.ComponentModel.ISupportInitialize).BeginInit()
    Me.SuspendLayout()
    'DataGrid1
    '
    Me.DataGrid1.DataMember = ""
    Me.DataGrid1.HeaderForeColor =
System.Drawing.SystemColors.ControlText
    Me.DataGrid1.Location = New System.Drawing.Point(0, 0)
    Me.DataGrid1.Name = "DataGrid1"
    Me.DataGrid1.Size = New System.Drawing.Size(240, 128)
    Me.DataGrid1.TabIndex = 0
    '
    'Label1
    '
    Me.Label1.Location = New System.Drawing.Point(248, 16)
    Me.Label1.Name = "Label1"
    Me.Label1.Size = New System.Drawing.Size(144, 16)
    Me.Label1.TabIndex = 1
    '
    'TextBox1
    '
    Me.TextBox1.Location = New System.Drawing.Point
(400, 8)
    Me.TextBox1.Name = "TextBox1"
    Me.TextBox1.TabIndex = 2

```

```

Me.TextBox1.Text = ""
|
|
'TextBox2
|
Me.TextBox2.Location = New System.Drawing.Point
(400, 40)
Me.TextBox2.Name = "TextBox2"
Me.TextBox2.TabIndex = 4
Me.TextBox2.Text = ""
|
|
'Label2
|
Me.Label2.Location = New System.Drawing.Point(248, 48)
Me.Label2.Name = "Label2"
Me.Label2.Size = New System.Drawing.Size(144, 16)
Me.Label2.TabIndex = 3
|
|
'TextBox3
|
Me.TextBox3.Location = New System.Drawing.Point
(400, 72)
Me.TextBox3.Name = "TextBox3"
Me.TextBox3.TabIndex = 6
Me.TextBox3.Text = ""
|
|
'Label3
|
Me.Label3.Location = New System.Drawing.Point(248, 80)
Me.Label3.Name = "Label3"
Me.Label3.Size = New System.Drawing.Size(144, 16)
Me.Label3.TabIndex = 5
|
|
'TextBox6
|
Me.TextBox6.Location = New System.Drawing.Point
(400, 224)
Me.TextBox6.Name = "TextBox6"
Me.TextBox6.TabIndex = 13
Me.TextBox6.Text = ""
|
|
'Label6
|
Me.Label6.Location = New System.Drawing.Point
(248, 232)
Me.Label6.Name = "Label6"
Me.Label6.Size = New System.Drawing.Size(144, 16)
Me.Label6.TabIndex = 12
|
|
'TextBox5
|
Me.TextBox5.Location = New System.Drawing.Point
(400, 192)
Me.TextBox5.Name = "TextBox5"
Me.TextBox5.TabIndex = 11
Me.TextBox5.Text = ""
|
|
'Label5
|
Me.Label5.Location = New System.Drawing.Point
(248, 200)
Me.Label5.Name = "Label5"

```

```

Me.Label5.Size = New System.Drawing.Size(144, 16)
Me.Label5.TabIndex = 10
'
' TextBox4
Me.TextBox4.Location = New System.Drawing.Point
(400, 160)
Me.TextBox4.Name = "TextBox4"
Me.TextBox4.TabIndex = 9
Me.TextBox4.Text = ""
'
' Label4
Me.Label4.Location = New System.Drawing.Point
(248, 168)
Me.Label4.Name = "Label4"
Me.Label4.Size = New System.Drawing.Size(144, 16)
Me.Label4.TabIndex = 8
'
' DataGrid2
Me.DataGrid2.DataMember = ""
Me.DataGrid2.HeaderForeColor =
System.Drawing.SystemColors.ControlText
Me.DataGrid2.Location = New System.Drawing.Point
(0, 152)
Me.DataGrid2.Name = "DataGrid2"
Me.DataGrid2.Size = New System.Drawing.Size(240, 128)
Me.DataGrid2.TabIndex = 7
'
' TextBox9
Me.TextBox9.Location = New System.Drawing.Point
(400, 376)
Me.TextBox9.Name = "TextBox9"
Me.TextBox9.TabIndex = 20
Me.TextBox9.Text = ""
'
' Label9
Me.Label9.Location = New System.Drawing.Point
(248, 384)
Me.Label9.Name = "Label9"
Me.Label9.Size = New System.Drawing.Size(144, 16)
Me.Label9.TabIndex = 19
'
' TextBox8
Me.TextBox8.Location = New System.Drawing.Point
(400, 344)
Me.TextBox8.Name = "TextBox8"
Me.TextBox8.TabIndex = 18
Me.TextBox8.Text = ""
'
' Label8
Me.Label8.Location = New System.Drawing.Point
(248, 352)
Me.Label8.Name = "Label8"
Me.Label8.Size = New System.Drawing.Size(144, 16)
Me.Label8.TabIndex = 17

```

```

'TextBox7
'
Me.TextBox7.Location = New System.Drawing.Point
(400, 312)
Me.TextBox7.Name = "TextBox7"
Me.TextBox7.TabIndex = 16
Me.TextBox7.Text = ""
'
'Label7
'
Me.Label7.Location = New System.Drawing.Point
(248, 320)
Me.Label7.Name = "Label7"
Me.Label7.Size = New System.Drawing.Size(144, 16)
Me.Label7.TabIndex = 15
'
'DataGrid3
'
Me.DataGrid3.DataMember = ""
Me.DataGrid3.HeaderForeColor =
System.Drawing.SystemColors.ControlText
Me.DataGrid3.Location = New System.Drawing.Point
(0, 304)
Me.DataGrid3.Name = "DataGrid3"
Me.DataGrid3.Size = New System.Drawing.Size(240, 128)
Me.DataGrid3.TabIndex = 14
'
'objDataView
'
Me.AutoScaleBaseSize = New System.Drawing.Size(5, 13)
Me.ClientSize = New System.Drawing.Size(512, 429)
Me.Controls.Add(Me.TextBox9)
Me.Controls.Add(Me.Label9)
Me.Controls.Add(Me.TextBox8)
Me.Controls.Add(Me.Label8)
Me.Controls.Add(Me.TextBox7)
Me.Controls.Add(Me.Label7)
Me.Controls.Add(Me.DataGrid3)
Me.Controls.Add(Me.TextBox6)
Me.Controls.Add(Me.Label6)
Me.Controls.Add(Me.TextBox5)
Me.Controls.Add(Me.Label5)
Me.Controls.Add(Me.TextBox4)
Me.Controls.Add(Me.Label4)
Me.Controls.Add(Me.DataGrid2)
Me.Controls.Add(Me.TextBox3)
Me.Controls.Add(Me.Label3)
Me.Controls.Add(Me.TextBox2)
Me.Controls.Add(Me.Label2)
Me.Controls.Add(Me.TextBox1)
Me.Controls.Add(Me.Label1)
Me.Controls.Add(Me.DataGrid1)
Me.Name = "objDataView"
Me.StartPosition =
System.Windows.Forms.FormStartPosition.CenterScreen
Me.Text = "objDataView"
CType(Me.DataGrid1,
System.ComponentModel.ISupportInitialize).EndInit()
CType(Me.DataGrid2,
System.ComponentModel.ISupportInitialize).EndInit()

```



```

CType(Me.DataGrid3,
System.ComponentModel.ISupportInitialize).EndInit()
Me.ResumeLayout(False)

End Sub

#End Region

Private Sub objDataView_Load(ByVal sender As
System.Object, ByVal e As System.EventArgs) Handles
MyBase.Load
    Dim objConnection As SqlConnection
    Dim objCommand As SqlCommand
    Dim objDataAdapter As SqlDataAdapter
    Dim objDataSet As New DataSet
    Dim objDataView As New DataView
    Dim strConn, strSQL As String
    Dim form MenuInduk As New MenuInduk

    strConn = form MenuInduk.mRoot StrConn
    strSQL = "select album id, album singer, album title
from AlbumList order by album id"
    objConnection = New SqlConnection(strConn)
    objCommand = New SqlCommand(strSQL, objConnection)
    objConnection.Open()
    objDataAdapter = New SqlDataAdapter(objCommand)
    objDataAdapter.Fill(objDataSet, "mDT albumlist")

    ' Set objDataView, data berasal dari objek Tabel
    objDataView = New
    DataView(objDataSet.Tables("mDT AlbumList"))
    DataGrid1.DataSource = objDataView
    DataGrid1.CaptionText = "Data tanpa filter"
    'album id harus di sort agar bisa di cari/find
    objDataView.Sort() = "album id"
    Label1.Text = "cari posisi AL0004 : "
    Dim mPos As Integer = objDataView.Find("AL0004")
    TextBox1.Text = mPos
    Label2.Text = "cari posisi AL0001 : "
    TextBox2.Text = objDataView.Find("AL0001")
    Label3.Text = "cari posisi ALZZZZ : "
    TextBox3.Text = objDataView.Find("ALZZZZ")

    objDataView = New
    DataView(objDataSet.Tables("mDT AlbumList"))
    DataGrid2.DataSource = objDataView
    DataGrid2.CaptionText = "Filter Singer - Andien"
    ' bila CaseSensitive() di set True, album singer
    'andien'
    ' disertakan karena 'andien' <> 'aNdIeN'
    objDataSet.CaseSensitive() = False
    objDataView.RowFilter() = "album singer <> 'aNdIeN' "
    objDataView.Sort() = "album id"
    Label4.Text = "cari posisi AL0004 : "
    Dim mPos2 As Integer = objDataView.Find("AL0004")
    TextBox4.Text = mPos2
    Label5.Text = "cari posisi AL0001 : "
    TextBox5.Text = objDataView.Find("AL0001")
    Label6.Text = "cari posisi ALZZZZ : "
    TextBox6.Text = objDataView.Find("ALZZZZ")

```

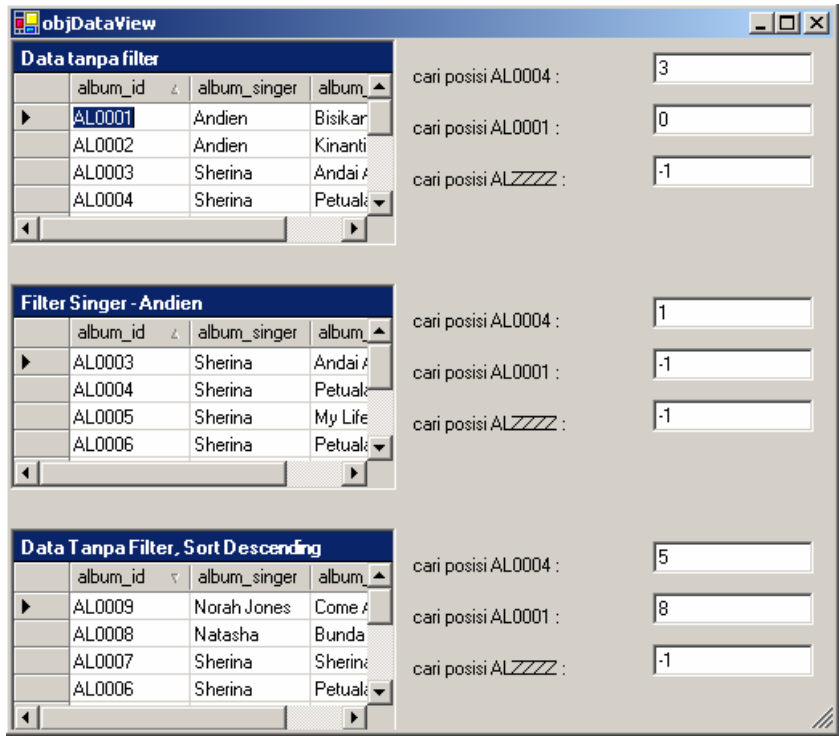
```

objDataView = New
DataView(objDataSet.Tables("mDT AlbumList"))
DataGrid3.DataSource = objDataView
DataGrid3.CaptionText = "Data Tanpa Filter, Sort
Descending"
objDataView.Sort() = "album id desc"
Label7.Text = "cari posisi AL0004 :"
Dim mPos3 As Integer = objDataView.Find("AL0004")
TextBox7.Text = mPos3
Label8.Text = "cari posisi AL0001 :"
TextBox8.Text = objDataView.Find("AL0001")
Label9.Text = "cari posisi ALZZZZ :"
TextBox9.Text = objDataView.Find("ALZZZZ")

objConnection.Close()
End Sub

End Class

```



Gambar 7.1 Penggunaan Objek DataView

7.2 Tabel Data

`DataTable` (tabel data) adalah komponen dimana baris data yang diperoleh dari sumber data ditampung sebelum diproses lebih lanjut. Baris data ini kemudian direferensi melalui objek `DataTable`. Perubahan yang terjadi pada `DataTable` ditangani library .NET Framework, jadi SQL Server sudah tidak terlibat lagi.

Kita telah mengetahui bahwa ADO.NET bekerja dalam bentuk hubungan terputus sehingga perubahan yang terjadi pada tabel data tidak akan mempengaruhi sumber data sebelum program menjalankan proses modifikasi, baik melalui objek `Command` maupun objek `DataAdapter` sehingga program dapat memperlakukan `DataTable` sebagai “file sementara” untuk berbagai keperluan.

Setelah objek `DataTable` dideklarasikan, objek tersebut dikaitkan ke komponen tabel objek `DataSet`, selanjutnya digunakan nama variabel objek data tabel untuk melakukan aktifitas yang terkait dengan objek tersebut, misalnya memperoleh baris data, mengambil nilai dari kolom tertentu, atau memindahkan posisi `record/pointer` ke baris tertentu.

Perintah **`BindingContext`** diperlukan ketika akan dilakukan perubahan yang mereferensi objek data tabel, baik itu untuk memindahkan posisi `record`, memperoleh baris data, maupun menghapus baris. Khusus untuk menambah baris baru atau memperbarui `record`, program harus menjalankan perintah `objDataTable.AcceptChanges()` sebelum melakukan perubahan pada `DataTabel`.

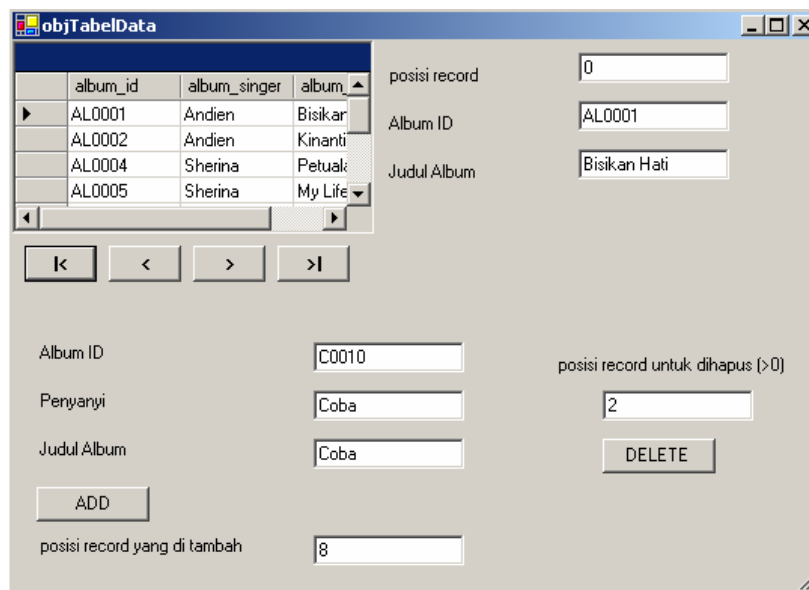
Bila program melakukan penghapusan suatu baris `record`, posisi/`pointer` ke `record` tersebut harus dipindahkan karena keberadaan `pointer` tersebut telah terhapus (ditiadakan). Bila posisi/`pointer` tidak dipindahkan, program akan *crash*. Hal yang sama (*crash*) juga akan terjadi bila program mencoba mereferensi ke `pointer` (posisi `record`) yang telah dihapus.

Properti `row` yang dimiliki oleh `DataTable` bisa jadi merupakan properti yang paling sering digunakan. Melalui properti `rows.items`, dapat diperoleh data dari masing-masing kolom. Biasanya properti

tersebut digunakan untuk mengatur nilai ke baris tersebut. Di samping itu, properti *rows.count* sangat berguna untuk mengetahui jumlah baris yang dimiliki objek DataTable. Dengan menghitung jumlah baris yang ada, program dapat mengetahui apakah suatu record telah *exist*/ada pada database atau belum.

Contoh program berikut dengan tampilan seperti Gambar 7.2 tampaknya cukup jelas untuk memberi ilustrasi penggunaan objek DataTable. Proses *update* sumber data (database) tidak dicontohkan di sini karena Anda dapat melihat variasi *update* database pada contoh *Aplikasi Program Penjualan Barang*.

Silahkan memperhatikan listing program dan bermain-main (berimajinasi) dengan record yang akan ditampilkan pada layar ketika Anda menekan/mengklik tombol navigasi atau menambah sembarang baris baru. Jangan bermain-main dulu dengan proses penghapusan karena ada hal menarik yang terjadi di sana.



Gambar 7.2 Contoh Penggunaan Objek Tabel Data

```
objTabelData.vb:
Public Class objTabelData
```

```

Inherits System.Windows.Forms.Form
#Region " Windows Form Designer generated code "

Public Sub New()
    MyBase.New()

    'This call is required by the Windows Form Designer.
    InitializeComponent()

    'Add any initialization after the
InitializeComponent()
    call

End Sub

'Form overrides dispose to clean up the component list.
Protected Overrides Sub Dispose(ByVal disposing
As Boolean)
    If disposing Then
        If Not (components Is Nothing) Then
            components.Dispose()
        End If
    End If
    MyBase.Dispose(disposing)
End Sub

'Required by the Windows Form Designer
Private components As System.ComponentModel.IContainer

'NOTE: The following procedure is required by the Windows
'Form Designer
'It can be modified using the Windows Form Designer.
'Do not modify it using the code editor.
Friend WithEvents DataGridView1 As
System.Windows.Forms.DataGridView
Friend WithEvents Label1 As System.Windows.Forms.Label
Friend WithEvents TextBox1 As
System.Windows.Forms.TextBox
Friend WithEvents TextBox2 As
System.Windows.Forms.TextBox
Friend WithEvents Label2 As System.Windows.Forms.Label
Friend WithEvents TextBox3 As
System.Windows.Forms.TextBox
Friend WithEvents Label3 As System.Windows.Forms.Label
Friend WithEvents TextBox6 As
System.Windows.Forms.TextBox
Friend WithEvents Label6 As System.Windows.Forms.Label
Friend WithEvents TextBox5 As
System.Windows.Forms.TextBox
Friend WithEvents Label5 As System.Windows.Forms.Label
Friend WithEvents TextBox4 As
System.Windows.Forms.TextBox
Friend WithEvents Label4 As System.Windows.Forms.Label
Friend WithEvents TextBox7 As
System.Windows.Forms.TextBox
Friend WithEvents Label7 As System.Windows.Forms.Label
Friend WithEvents Btn Button As
System.Windows.Forms.Button
Friend WithEvents Btn Previous As
System.Windows.Forms.Button

```

```

Friend WithEvents Btn Next As System.Windows.Forms.Button
Friend WithEvents Btn Top As System.Windows.Forms.Button
Friend WithEvents Button1 As System.Windows.Forms.Button
Friend WithEvents Button2 As System.Windows.Forms.Button
Friend WithEvents TextBox8 As
System.Windows.Forms.TextBox
Friend WithEvents Label8 As System.Windows.Forms.Label
<System.Diagnostics.DebuggerStepThrough()> Private Sub
InitializeComponent ()
    Me.DataGrid1 = New System.Windows.Forms.DataGrid
    Me.Label1 = New System.Windows.Forms.Label
    Me.TextBox1 = New System.Windows.Forms.TextBox
    Me.TextBox2 = New System.Windows.Forms.TextBox
    Me.Label2 = New System.Windows.Forms.Label
    Me.TextBox3 = New System.Windows.Forms.TextBox
    Me.Label3 = New System.Windows.Forms.Label
    Me.TextBox6 = New System.Windows.Forms.TextBox
    Me.Label6 = New System.Windows.Forms.Label
    Me.TextBox5 = New System.Windows.Forms.TextBox
    Me.Label5 = New System.Windows.Forms.Label
    Me.TextBox4 = New System.Windows.Forms.TextBox
    Me.Label4 = New System.Windows.Forms.Label
    Me.TextBox7 = New System.Windows.Forms.TextBox
    Me.Label7 = New System.Windows.Forms.Label
    Me.Btn Buttom = New System.Windows.Forms.Button
    Me.Btn Previous = New System.Windows.Forms.Button
    Me.Btn Next = New System.Windows.Forms.Button
    Me.Btn Top = New System.Windows.Forms.Button
    Me.Button1 = New System.Windows.Forms.Button
    Me.Button2 = New System.Windows.Forms.Button
    Me.TextBox8 = New System.Windows.Forms.TextBox
    Me.Label8 = New System.Windows.Forms.Label
    CType(Me.DataGrid1,
System.ComponentModel.ISupportInitialize).BeginInit ()
    Me.SuspendLayout ()
    '
    'DataGrid1
    '
    Me.DataGrid1.DataMember = ""
    Me.DataGrid1.HeaderForeColor =
System.Drawing.SystemColors.ControlText
    Me.DataGrid1.Location = New System.Drawing.Point(0, 0)
    Me.DataGrid1.Name = "DataGrid1"
    Me.DataGrid1.Size = New System.Drawing.Size(240, 128)
    Me.DataGrid1.TabIndex = 0
    '
    'Label1
    '
    Me.Label1.Location = New System.Drawing.Point(248, 16)
    Me.Label1.Name = "Label1"
    Me.Label1.Size = New System.Drawing.Size(104, 16)
    Me.Label1.TabIndex = 1
    '
    'TextBox1
    '
    Me.TextBox1.Location = New System.Drawing.Point
(376, 8)
    Me.TextBox1.Name = "TextBox1"
    Me.TextBox1.TabIndex = 2
    Me.TextBox1.Text = ""
    '

```

```

'TextBox2
|
Me.TextBox2.Location = New System.Drawing.Point
(376, 40)
Me.TextBox2.Name = "TextBox2"
Me.TextBox2.TabIndex = 4
Me.TextBox2.Text = ""
|
'Label2
|
Me.Label2.Location = New System.Drawing.Point(248, 48)
Me.Label2.Name = "Label2"
Me.Label2.Size = New System.Drawing.Size(104, 16)
Me.Label2.TabIndex = 3
|
'TextBox3
|
Me.TextBox3.Location = New System.Drawing.Point
(376, 72)
Me.TextBox3.Name = "TextBox3"
Me.TextBox3.TabIndex = 6
Me.TextBox3.Text = ""
|
'Label3
|
Me.Label3.Location = New System.Drawing.Point(248, 80)
Me.Label3.Name = "Label3"
Me.Label3.Size = New System.Drawing.Size(104, 16)
Me.Label3.TabIndex = 5
|
'TextBox6
|
Me.TextBox6.Location = New System.Drawing.Point
(200, 264)
Me.TextBox6.Name = "TextBox6"
Me.TextBox6.TabIndex = 13
Me.TextBox6.Text = ""
|
'Label6
|
Me.Label6.Location = New System.Drawing.Point(16, 264)
Me.Label6.Name = "Label6"
Me.Label6.Size = New System.Drawing.Size(168, 16)
Me.Label6.TabIndex = 12
|
'TextBox5
|
Me.TextBox5.Location = New System.Drawing.Point
(200, 232)
Me.TextBox5.Name = "TextBox5"
Me.TextBox5.TabIndex = 11
Me.TextBox5.Text = ""
|
'Label5
|
Me.Label5.Location = New System.Drawing.Point(16, 232)
Me.Label5.Name = "Label5"
Me.Label5.Size = New System.Drawing.Size(168, 16)
Me.Label5.TabIndex = 10
|
'TextBox4

```

```

|
Me.TextBox4.Location = New System.Drawing.Point
(200, 200)
Me.TextBox4.Name = "TextBox4"
Me.TextBox4.TabIndex = 9
Me.TextBox4.Text = ""
|
'Label4
|
Me.Label4.Location = New System.Drawing.Point(16, 200)
Me.Label4.Name = "Label4"
Me.Label4.Size = New System.Drawing.Size(168, 16)
Me.Label4.TabIndex = 8
|
'TextBox7
|
Me.TextBox7.Location = New System.Drawing.Point
(392, 232)
Me.TextBox7.Name = "TextBox7"
Me.TextBox7.TabIndex = 16
Me.TextBox7.Text = ""
|
'Label7
|
Me.Label7.Location = New System.Drawing.Point
(360, 208)
Me.Label7.Name = "Label7"
Me.Label7.Size = New System.Drawing.Size(168, 16)
Me.Label7.TabIndex = 15
|
'Btn Buttom
|
Me.Btn Buttom.Font = New
System.Drawing.Font("Microsoft
Sans Serif", 8.25!, System.Drawing.FontStyle.Bold,
System.Drawing.GraphicsUnit.Point, CType(0, Byte))
Me.Btn Buttom.Location = New System.Drawing.Point
(176, 136)
Me.Btn Buttom.Name = "Btn Buttom"
Me.Btn Buttom.Size = New System.Drawing.Size(48, 24)
Me.Btn Buttom.TabIndex = 24
Me.Btn Buttom.Text = ">|"
|
'Btn Previous
|
Me.Btn Previous.Font = New
System.Drawing.Font("Microsoft Sans Serif", 8.25!,
System.Drawing.FontStyle.Bold,
System.Drawing.GraphicsUnit.Point, CType(0, Byte))
Me.Btn Previous.Location = New System.Drawing.Point
(64, 136)
Me.Btn Previous.Name = "Btn Previous"
Me.Btn Previous.Size = New System.Drawing.Size(48, 24)
Me.Btn Previous.TabIndex = 22
Me.Btn Previous.Text = "<"
|
'Btn Next
|
Me.Btn Next.Font = New System.Drawing.Font("Microsoft
Sans Serif", 8.25!, System.Drawing.FontStyle.Bold,
System.Drawing.GraphicsUnit.Point, CType(0, Byte))

```



```

Me.Btn Next.Location = New System.Drawing.Point
(120, 136)
Me.Btn Next.Name = "Btn Next"
Me.Btn Next.Size = New System.Drawing.Size(48, 24)
Me.Btn Next.TabIndex = 23
Me.Btn Next.Text = ">"
'
'Btn Top
'
Me.Btn Top.Font = New System.Drawing.Font("Microsoft
Sans Serif", 8.25!, System.Drawing.FontStyle.Bold,
System.Drawing.GraphicsUnit.Point, CType(0, Byte))
Me.Btn Top.Location = New System.Drawing.Point(8, 136)
Me.Btn Top.Name = "Btn Top"
Me.Btn Top.Size = New System.Drawing.Size(48, 24)
Me.Btn Top.TabIndex = 21
Me.Btn Top.Text = "|<"
'
'Button1
'
Me.Button1.Location = New System.Drawing.Point
(16, 296)
Me.Button1.Name = "Button1"
Me.Button1.TabIndex = 25
Me.Button1.Text = "ADD"
'
'Button2
'
Me.Button2.Location = New System.Drawing.Point
(392, 264)
Me.Button2.Name = "Button2"
Me.Button2.TabIndex = 26
Me.Button2.Text = "DELETE"
'
'TextBox8
'
Me.TextBox8.Location = New System.Drawing.Point
(200, 328)
Me.TextBox8.Name = "TextBox8"
Me.TextBox8.TabIndex = 28
Me.TextBox8.Text = ""
'
'Label8
'
Me.Label8.Location = New System.Drawing.Point(16, 328)
Me.Label8.Name = "Label8"
Me.Label8.Size = New System.Drawing.Size(168, 16)
Me.Label8.TabIndex = 27
'
'objTabelData
'
Me.AutoScaleBaseSize = New System.Drawing.Size(5, 13)
Me.ClientSize = New System.Drawing.Size(536, 365)
Me.Controls.Add(Me.TextBox8)
Me.Controls.Add(Me.Label8)
Me.Controls.Add(Me.Button2)
Me.Controls.Add(Me.Button1)
Me.Controls.Add(Me.Btn Bottom)
Me.Controls.Add(Me.Btn Previous)
Me.Controls.Add(Me.Btn Next)
Me.Controls.Add(Me.Btn_Top)

```

```

Me.Controls.Add(Me.TextBox7)
Me.Controls.Add(Me.Label7)
Me.Controls.Add(Me.TextBox6)
Me.Controls.Add(Me.Label6)
Me.Controls.Add(Me.TextBox5)
Me.Controls.Add(Me.Label5)
Me.Controls.Add(Me.TextBox4)
Me.Controls.Add(Me.Label4)
Me.Controls.Add(Me.TextBox3)
Me.Controls.Add(Me.Label3)
Me.Controls.Add(Me.TextBox2)
Me.Controls.Add(Me.Label2)
Me.Controls.Add(Me.TextBox1)
Me.Controls.Add(Me.Label1)
Me.Controls.Add(Me.DataGrid1)
Me.Name = "objTabelData"
Me.Text = "objTabelData"
CType(Me.DataGrid1,
System.ComponentModel.ISupportInitialize).EndInit()
Me.ResumeLayout(False)

End Sub

#End Region

Dim objConnection As SqlConnection
Dim objCommand As SqlCommand
Dim objDataAdapter As SqlDataAdapter
Dim objDataSet As New DataSet
Dim strConn, strSQL As String
Dim objDataTable As New DataTable

Private Sub objTabelData_Load(ByVal sender As
System.Object, ByVal e As System.EventArgs) Handles
 MyBase.Load
Dim form MenuInduk As New MenuInduk
strConn = form MenuInduk.mRoot StrConn
strSQL = "select album id, album singer, album title
from AlbumList order by album id"
objConnection = New SqlConnection(strConn)
objCommand = New SqlCommand(strSQL, objConnection)
objConnection.Open()
objDataAdapter = New SqlDataAdapter(objCommand)
objDataAdapter.Fill(objDataSet, "mDT albumlist")

objDataTable = objDataSet.Tables("mDT AlbumList")
DataGrid1.DataSource = objDataTable
DataGrid1.ReadOnly = True
objConnection.Close()
Label11.Text = "posisi record"
Label12.Text = "Album ID"
Label13.Text = "Judul Album"
Label14.Text = "Album ID"
Label15.Text = "Penyanyi"
Label16.Text = "Judul Album"
Label17.Text = "posisi record untuk dihapus (>0)"
Label18.Text = "posisi record yang di tambah"
End Sub

Private Sub Display_data()
Dim mPosition As Integer =

```

```

BindingContext(objDataTable).Position
TextBox1.Text = mPosition
With objDataTable.Rows(mPosition)
    TextBox2.Text = .Item("Album ID")
    TextBox3.Text = .Item("Album title")
End With
End Sub

Private Sub Btn Top Click(ByVal sender As
System.Object,
ByVal e As System.EventArgs) Handles Btn Top.Click
    BindingContext(objDataTable).Position = 0
    Display data()
End Sub

Private Sub Btn Previous Click(ByVal sender As
System.Object, ByVal e As System.EventArgs) Handles
Btn Previous.Click
    BindingContext(objDataTable).Position -= 1
    Display data()
End Sub

Private Sub Btn Next Click(ByVal sender As System.Object,
ByVal e As System.EventArgs) Handles Btn Next.Click
    BindingContext(objDataTable).Position += 1
    Display data()
End Sub

Private Sub Btn Bottom Click(ByVal sender As
System.Object, ByVal e As System.EventArgs) Handles
Btn Bottom.Click
    BindingContext(objDataTable).Position =
objDataTable.Rows.Count - 1
    Display data()
End Sub

Private Sub Button1 Click(ByVal sender As System.Object,
ByVal e As System.EventArgs) Handles Button1.Click
    objDataSet.AcceptChanges()
    BindingContext(objDataTable).AddNew()
    Dim mPos As Integer =
BindingContext(objDataTable).Position
    BindingContext(objDataTable).Position = mPos
    With objDataTable.Rows(mPos)
        .Item("Album ID") = TextBox4.Text
        .Item("Album Singer") = TextBox5.Text
        .Item("Album Title") = TextBox6.Text
    End With
    TextBox8.Text = mPos
End Sub

Private Sub Button2 Click(ByVal sender As System.Object,
ByVal e As System.EventArgs) Handles Button2.Click
    Dim mPosHapus As Integer = TextBox7.Text
    Dim Row As DataRow = objDataTable.Rows(mPosHapus)
    Row.Delete()
    BindingContext(objDataTable).Position -= 1
End Sub

End Class

```

Apa gerangan hal menarik dari proses penghapusan record pada tabel data? Sekilas memang tidak ada hal yang istimewa, tetapi coba jalankan program dan hapus posisi record ke-3 (isi dengan angka 2 pada kolom entri) dan tekan tombol **Delete**. Anda akan melihat record tersebut dihapus dari tampilan DataGridView.

Coba lakukan navigasi ke **Beginning of Record (|<)** dan **End of Record (>|)**. Posisi record yang ditampilkan baik-baik saja. Akan tetapi cobalah mulai melakukan navigasi baris satu per satu. *Booomm!!* Program *crash* saat mendekati posisi record ke-3.

Coba jalankan kembali program tersebut dan hapus kembali posisi record ke-3, dilanjutkan dengan menambahkan record baru. Silahkan menggunakan tombol navigasi dan program akan berjalan dengan mulus. Lakukan kembali penghapusan posisi record ke-3. Anda akan melihat baris yang bersangkutan dihapus.

Selanjutnya bila Anda mengerjakan tombol navigasi maka program akan *crash*, tetapi bila dilakukan penambahan record baru, program akan bekerja dengan normal pada pergerakan posisi record. Singkatnya, dapat dikatakan tabel data baru akan di-*update* secara fisik bila terjadi penambahan record baru.

Masalah yang muncul dalam penulisan aplikasi program adalah bagaimana kita mengetahui seorang pengguna akan menambah record baru setelah dia melakukan penghapusan? Bagaimana bila dia mengerjakan/navigasi posisi record? Tentunya kita tidak ingin program *crash*.

Ingin tahu solusinya? Sabar saja, lupakan saja masalah ini untuk sementara waktu, lebih baik belajar masalah lain karena permasalahan tersebut akan diilustrasikan pada *Aplikasi Program Penjualan Barang* dan Anda dapat melihat solusinya serta melihat cara lain untuk menambah/menghapus baris tanpa melibatkan sistem tombol navigasi.

Selain memperoleh (struktur) tabel data secara otomatis dari hasil proses Selection Query, Anda dapat juga membuat (struktur) tabel data melalui program dengan cara membuat objek data tabel baru, membuat objek column dan menambahkan objek column ke dalam objek data tabel, serta mengisi tabel data dengan baris

baru. Proses selanjutnya sama dengan proses struktur tabel yang diperoleh dari proses Selection Query.

```
objTabelData2.vb:
Public Class objTabelData2
    Inherits System.Windows.Forms.Form

    #Region " Windows Form Designer generated code "

    Public Sub New()
        MyBase.New()

        'This call is required by the Windows Form Designer.
        InitializeComponent()

        'Add any initialization after the
        InitializeComponent()
        call

    End Sub

    'Form overrides dispose to clean up the component list.
    Protected Overrides Sub Dispose(ByVal disposing
    As Boolean)
        If disposing Then
            If Not (components Is Nothing) Then
                components.Dispose()
            End If
        End If
        MyBase.Dispose(disposing)
    End Sub

    'Required by the Windows Form Designer
    Private components As System.ComponentModel.IContainer

    'NOTE: The following procedure is required by the Windows
    'Form Designer
    'It can be modified using the Windows Form Designer.
    'Do not modify it using the code editor.
    Friend WithEvents DataGridView1 As
    System.Windows.Forms.DataGridView
    <System.Diagnostics.DebuggerStepThrough()> Private Sub
    InitializeComponent()
        Me.DataGridView1 = New System.Windows.Forms.DataGridView
        CType(Me.DataGridView1,
        System.ComponentModel.ISupportInitialize).BeginInit()
        Me.SuspendLayout()
        '
        'DataGridView1
        '
        Me.DataGridView1.DataMember = ""
        Me.DataGridView1.HeaderForeColor =
        System.Drawing.SystemColors.ControlText
        Me.DataGridView1.Location = New System.Drawing.Point
        (16, 16)
        Me.DataGridView1.Name = "DataGridView1"
        Me.DataGridView1.Size = New System.Drawing.Size(312, 152)
        Me.DataGridView1.TabIndex = 0
        '
    End Sub
End Class
objTabelData2
```

```

'
Me.AutoScaleBaseSize = New System.Drawing.Size(5, 13)
Me.ClientSize = New System.Drawing.Size(344, 181)
Me.Controls.Add(Me.DataGrid1)
Me.Name = "objTabelData2"
Me.Text = "objTabelData2"
CType(Me.DataGrid1,
System.ComponentModel.ISupportInitialize).EndInit()
Me.ResumeLayout(False)

End Sub

#End Region

Private Sub objTabelData2_Load(ByVal sender As Object,
ByVal e As System.EventArgs) Handles MyBase.Load
'Buat objDataTable
Dim objDataTable As New DataTable

'Buat objek Column - objColumn dan set propertinya
Dim objColumn As DataColumn = New DataColumn
objColumn.DataType =
System.Type.GetType("System.String")
objColumn.AllowDBNull = False
objColumn.Caption = "EMP ID"
objColumn.ColumnName = "Nomor Karyawan"
objColumn.DefaultValue = "K0000"
'Tambahkan objColumn ke tabel
objDataTable.Columns.Add(objColumn)

'Buat objek Column - objColumn1 dan set propertinya
objColumn = New DataColumn
objColumn.DataType =
System.Type.GetType("System.String")
objColumn.AllowDBNull = False
objColumn.Caption = "EMP Name"
objColumn.ColumnName = "Nama Karyawan"
objDataTable.Columns.Add(objColumn)

' Tambahkan baris ke tabel
Dim objRow As DataRow
Dim i As Integer
For i = 0 To 5
objRow = objDataTable.NewRow()
objRow("Nomor Karyawan") = "K000" & Trim(Str(i))
objRow("Nama Karyawan") = "Nama Karyawan " & Str(i)
' Btambahkan baris baru ke dalam objDataTable
objDataTable.Rows.Add(objRow)
Next i

'set ukuran kolom dan row sebelum tabel dikaitkan ke
'DataGrid
DataGrid1.PreferredColumnWidth() = 125
DataGrid1.PreferredRowHeight() = 20
DataGrid1.DataSource = objDataTable
End Sub

End Class

```

	Nomor Karyawan	Nama Karyawan
▶	K0000	Nama Karyawan 0
	K0001	Nama Karyawan 1
	K0002	Nama Karyawan 2
	K0003	Nama Karyawan 3
	K0004	Nama Karyawan 4

Gambar 7.3 Tampilan Data Tabel yang Dibuat via Program

7.3 DataGrid - VB6 menjadi VB.NET

Kontrol/objek DataGrid bermanfaat untuk menampilkan tabel data dalam bentuk baris dan kolom. Di samping itu, kontrol ini juga membantu menyederhanakan penulisan program untuk entri detail transaksi sehingga tidak heran jika kontrol ini banyak dijumpai pada aplikasi program.

Ada beberapa hal dasar dilakukan pada DataGrid untuk memperjelas informasi yang ditampilkan, misalnya memberi judul DataGrid, mengganti judul kolom, mengatur lebar kolom, mengatur format tampilan kolom, dan sebagainya. Adapun hal yang lebih rumit terkait dengan DataGrid dapat berupa proses entri data, baik untuk menambah, mengubah, serta menghapus suatu baris record, maupun melibatkan event pada DataGrid, misalnya event klik, event perubahan posisi cell, dan lainnya.

Oleh karena tingkat kegunaan kontrol DataGrid yang besar, penulis ingin mengajak Anda untuk mendalaminya dengan menulis program untuk menampilkan baris tabel *AlbumList* pada kontrol DataGrid menggunakan VB6. Tampilan DataGrid akan dipoles sedikit dengan memberi judul DataGrid, memberi judul kolom, mengatur lebar kolom, dan lain-lain seperti tampak pada Gambar 7.4 dan listing program berikut ini.

```
Listing Program VB6 pada folder objDataGrid.VB6:
Private Sub Form Load()
    DataGrid1.Caption = "Judul DataGrid"
```

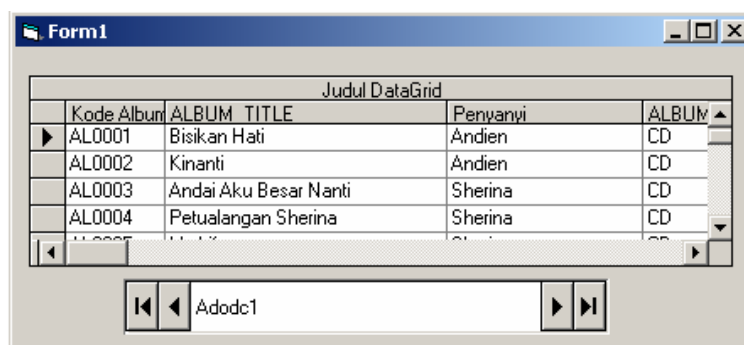
```

' tidak mengizinkan update album id
DataGrid1.Columns("album id").Locked = True
DataGrid1.Columns("album id").Caption = "Kode Album"

DataGrid1.Columns("album singer").Caption = "Penyanyi"
DataGrid1.Columns("album title").Width = 2500

DataGrid1.Columns("added by").Visible = flase
End Sub

```



Gambar 7.4 Tampilan DataGrid yang telah dipoles

Selanjutnya target kita adalah menampilkan informasi serupa dengan VB.NET menggunakan cara apa pun. Adapun cara yang paling mudah adalah dengan membuka proyek/program tersebut melalui VB.NET dan membiarkan fasilitas *Upgrade Wizard* melakukan konversi sehingga akan Anda dapati hasil konversi program seperti listing berikut ini (proses konversi akan menambahkan file referensi/class/namespace yang diperlukan pada subdirektori *.bin* untuk membantu kelancaran eksekusi program hasil konversi).

```

Option Strict Off
Option Explicit On

Friend Class Form1
    Inherits System.Windows.Forms.Form

    #Region "Windows Form Designer generated code "

    Public Sub New()
        MyBase.New()
        If m vb6FormDefInstance Is Nothing Then
            If m InitializingDefInstance Then
                m vb6FormDefInstance = Me
            Else
                Try

```



```

        'For the start-up form, the first instance
        'created
        'is the default instance.
    If
        System.Reflection.Assembly.
        GetExecutingAssembly.EntryPoint.DeclaringType
    Is Me.GetType Then
        m vb6FormDefInstance = Me
    End If
    Catch
    End Try
    End If
    End If
    'This call is required by the Windows Form Designer.
    InitializeComponent()
    VB6 AddADODataBinding()
End Sub

'Form overrides dispose to clean up the component list.
Protected Overrides Sub Dispose(ByVal Disposing
As Boolean)
    If Disposing Then
        VB6 RemoveADODataBinding()
        If Not components Is Nothing Then
            components.Dispose()
        End If
    End If
    MyBase.Dispose(Disposing)
End Sub

'Required by the Windows Form Designer
Private components As System.ComponentModel.IContainer
Public ToolTip1 As System.Windows.Forms.ToolTip
Private ADOBind Adodc1 As VB6.MBindingCollection
Public WithEvents DataGrid1 As
AxMSDataGridLib.AxDataGrid
Public WithEvents Adodc1 As VB6.ADODC
'NOTE: The following procedure is required by the
'Windows Form Designer
'It can be modified using the Windows Form Designer.
'Do not modify it using the code editor.
<System.Diagnostics.DebuggerStepThrough()> Private Sub
InitializeComponent()
    Dim resources As System.Resources.ResourceManager =
    New
    System.Resources.ResourceManager(GetType(Form1))
    Me.components = New System.ComponentModel.Container
    Me.ToolTip1 = New
    System.Windows.Forms.ToolTip(components)
    Me.ToolTip1.Active = True
    Me.DataGrid1 = New AxMSDataGridLib.AxDataGrid
    Me.Adodc1 = New VB6.ADODC
    CType(Me.DataGrid1,
    System.ComponentModel.ISupportInitialize).BeginInit()
    Me.Text = "Form1"
    Me.ClientSize = New System.Drawing.Size(436, 174)
    Me.Location = New System.Drawing.Point(4, 23)
    Me.StartPosition =
    System.Windows.Forms.FormStartPosition.
    WindowsDefaultLocation

```

```

Me.Font = New System.Drawing.Font("Arial", 8.0!,
System.Drawing.FontStyle.Regular,
System.Drawing.GraphicsUnit.Point, CType(0, Byte))
Me.AutoScaleBaseSize = New System.Drawing.Size(5, 13)
Me.BackColor = System.Drawing.SystemColors.Control
Me.FormBorderStyle =
System.Windows.Forms.FormBorderStyle.Sizable
Me.ControlBox = True
Me.Enabled = True
Me.KeyPreview = False
Me.MaximizeBox = True
Me.MinimizeBox = True
Me.Cursor = System.Windows.Forms.Cursors.Default
Me.RightToLeft = System.Windows.Forms.RightToLeft.No
Me.ShowInTaskbar = True
Me.HelpButton = False
Me.WindowState =
System.Windows.Forms.FormWindowState.Normal
Me.Name = "Form1"
DataGrid1.OcxState =
CType(resources.GetObject("DataGrid1.OcxState"),
System.Windows.Forms.AxHost.State)
Me.DataGrid1.Size = New System.Drawing.Size(417, 113)
Me.DataGrid1.Location = New System.Drawing.Point
(8, 16)
Me.DataGrid1.TabIndex = 0
Me.DataGrid1.Name = "DataGrid1"
Me.Adodc1.Size = New System.Drawing.Size(288, 33)
Me.Adodc1.Location = New System.Drawing.Point(64, 136)
Me.Adodc1.CursorLocation =
ADODB.CursorLocationEnum.adUseClient
Me.Adodc1.ConnectionTimeout = 15
Me.Adodc1.CommandTimeout = 30
Me.Adodc1.CursorType =
ADODB.CursorTypeEnum.adOpenStatic
Me.Adodc1.LockType =
ADODB.LockTypeEnum.adLockOptimistic
Me.Adodc1.CommandType =
ADODB.CommandTypeEnum.adCmdTable
Me.Adodc1.CacheSize = 50
Me.Adodc1.MaxRecords = 0
Me.Adodc1.BOFAction =
Microsoft.VisualBasic.Compatibility.VB6.ADODC.
BOFActionEnum.adDoMoveFirst
Me.Adodc1.EOFAction =
Microsoft.VisualBasic.Compatibility.VB6.ADODC.
EOFActionEnum.adDoMoveLast
Me.Adodc1.BackColor =
System.Drawing.SystemColors.Window
Me.Adodc1.ForeColor =
System.Drawing.SystemColors.WindowText
Me.Adodc1.Orientation =
Microsoft.VisualBasic.Compatibility.VB6.ADODC.
OrientationEnum.adHorizontal
Me.Adodc1.Enabled = True
Me.Adodc1.UserName = ""
Me.Adodc1.RecordSource = "ALBUMLIST"
Me.Adodc1.Text = "Adodc1"
Me.Adodc1.Font = New System.Drawing.Font("Arial",
8.25!, System.Drawing.FontStyle.Regular,
System.Drawing.GraphicsUnit.Point, CType(0, Byte))

```

```

Me.Adodc1.ConnectionString =
"Provider=SQLOLEDB.1;Password=emc;Persist Security
Info=True;User ID=eMC;Initial Catalog=eMusicCity;Data
Source=localhost"
Me.Adodc1.Name = "Adodc1"
Me.Controls.Add(DataGrid1)
Me.Controls.Add(Adodc1)
CType(Me.DataGrid1,
System.ComponentModel.ISupportInitialize).EndInit()
End Sub
#End Region

#Region "Upgrade Support "
Private Shared m vb6FormDefInstance As Form1
Private Shared m InitializingDefInstance As Boolean
Public Shared Property DefInstance() As Form1
Get
    If m vb6FormDefInstance Is Nothing OrElse
m vb6FormDefInstance.IsDisposed Then
        m InitializingDefInstance = True
        m vb6FormDefInstance = New Form1
        m InitializingDefInstance = False
    End If
    DefInstance = m vb6FormDefInstance
End Get
Set (ByVal Value As Form1)
    m vb6FormDefInstance = Value
End Set
End Property
#End Region

Private Sub Form1 Load(ByVal eventSender As
System.Object, ByVal EventArgs As System.EventArgs)
Handles MyBase.Load
    Dim flase As Object
    DataGrid1.Text = "Judul DataGrid"

    ' tidak mengizinkan update album id
    DataGrid1.Columns("album id").Locked = True
    DataGrid1.Columns("album id").Caption = "Kode Album"

    DataGrid1.Columns("album singer").Caption = "Penyanyi"
    DataGrid1.Columns("album title").Width =
VB6.TwipsToPixelsX(2500)

    'UPGRADE WARNING: Couldn't resolve default property of
'object flase. Click for more: 'ms-
'help://MS.VSCC.2003/commoner/redirect/
'redirect.htm?keyword="vbup1037"'
    DataGrid1.Columns("added by").Visible = flase
End Sub

Public Sub VB6 AddADODataBinding()
    ADOBind Adodc1 = New VB6.MBindingCollection
    ADOBind Adodc1.DataSource = CType(Adodc1,
msdatasrc.DataSource)
    ADOBind Adodc1.UpdateMode =
VB6.UpdateMode.vbUpdateWhenPropertyChanges
    ADOBind Adodc1.UpdateControls()
End Sub

```

```
Public Sub VB6 RemoveADODataBinding()  
    ADOBind Adodc1.Clear()  
    ADOBind Adodc1.Dispose()  
    ADOBind Adodc1 = Nothing  
End Sub  
  
End Class
```

Anda tidak perlu pusing dengan kode program yang disisipkan, cukup Anda lihat prosedur *form1_load* dan baris pernyataan yang dimilikinya. Tampak hampir sama dengan pernyataan pada VB6, bukan?

Mari jalankan program untuk melihat hasilnya, dan *wOoooo...*, program menampilkan pesan kesalahan pada baris *DataGrid1.Text = "Judul DataGrid"*. Tidak menjadi masalah karena memang sintaks pernyataan tersebut salah. Jadikan saja baris tersebut menjadi baris komentar dan coba eksekusi program sekali lagi... Anda akan memperoleh pesan kesalahan pada baris selanjutnya.

Oleh karena sintaks pernyataan berikutnya hampir sama, Anda pasti sudah menduga baris itu pun akan memberi pesan kesalahan, karenanya jadikan saja semua baris tersebut menjadi baris komentar dan jalankan program. Eksekusi program akan berjalan lancar, tetapi tidak ada data yang ditampilkan pada kontrol DataGrid.

Singkat kata, proses *Upgrade Wizard* tidak menghasilkan program seperti yang diharapkan. Setelah gagal dengan mujizat pertama, mari kita lakukan cara kedua. Sebagai programmer yang baik tentunya Anda akan mencari solusinya melalui buku yang Anda miliki. Adapun materi buku yang penulis peroleh adalah:

- Buku manual (eBook) edisi 2001-2003.
- Buku VB.NET edisi 2001-2003.
- Buku VB.NET dalam Bahasa Indonesia edisi 2003-2004 dengan referensi buku edisi 2001-2003.

Cukup baik jika ditinjau dari tahun penerbitannya, karena itu mari kita cari materi pembahasan kontrol DataGrid. Akan Anda dapati pembahasan yang sekilas maupun cukup detail mengenai kontrol DataGrid, tetapi jangan bergembira dulu karena pembahasan topik

DataGrid yang cukup detail ini bukan untuk aplikasi Windows (Windows Applications), melainkan untuk aplikasi Web (ASP.NET), jadi tidak ada gunanya bagi kita.

Dua jurus telah kita coba lakukan untuk mendandani kontrol DataGrid tidak berhasil sehingga ada baiknya kita hentikan dulu pembahasan DataGrid sampai di sini dulu.

Anda mungkin sedikit bertanya mengapa penulis membahas topik ini seperti telah Anda baca di atas? Jawabnya adalah sebagai suatu ilustrasi untuk memecahkan masalah. Mungkin Anda memiliki program VB6 yang akan dikonversikan ke VB.NET atau mencoba membuat aplikasi VB.NET, tetapi mengalami kendala pada hal tertentu yang sebenarnya dapat diatasi dengan mudah bila menggunakan VB6. Besar kemungkinan Anda akan melakukan tindakan seperti diilustrasikan penulis untuk memancing munculnya ide guna mengatasi masalah yang dihadapi sampai akhirnya Anda mendapatkan solusi atau Anda menghadapi jalan buntu.

Tidak banyak referensi yang dapat diandalkan untuk memecahkan masalah pemrograman pada VB.NET karena memang banyak hal baru pada VB.NET. Cara terbaik adalah dengan melihat buku-buku VB.NET yang ada untuk sekedar memperkaya referensi seandainya kita menghadapi kendala dalam pemrograman dan tentunya membiasakan diri dengan sintaks pada VB.NET agar lebih terbiasa dengan cara penulisan pernyataan pada VB.NET. Tidak kalah pentingnya, milikilah CD *MSDN Documentation Library* agar Anda dapat memperoleh bantuan melalui Help menu.

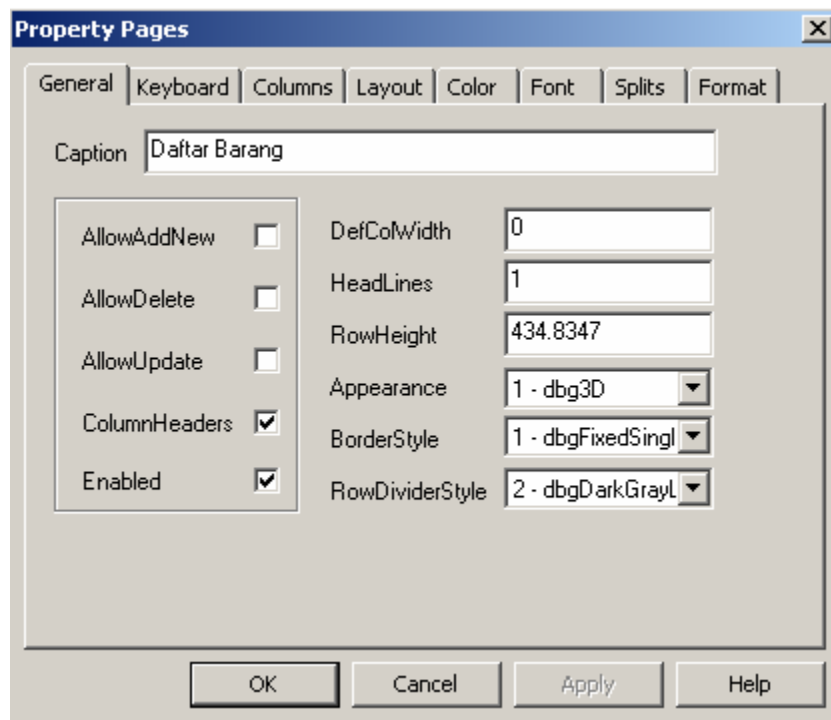
7.4 DataGrid pada VB.NET

Bila dilihat dari tampilan DataGrid, sekilas Anda akan menduga kontrol DataGrid pada VB.NET memiliki banyak kesamaan dengan kontrol DataGrid pada VB6. Akan tetapi dari segi pemrograman tidaklah demikian. Ada dua hal yang sangat berbeda, yakni:

- VB6 memiliki fasilitas jendela DataGrid-Property Pages (Gambar 7.5), untuk mempercantik informasi yang ditampilkan, sedangkan VB.NET tidak memilikinya.

- ☑ Pada VB.NET, Events kontrol seperti AfterColEdit, BeforeDelete, atau OnAddNew yang digunakan berkaitan dengan perubahan, penghapusan, maupun penambahan baris record tidak ada lagi. Hal ini dapat dimengerti karena penggunaan ADO.NET yang bersifat *disconnected fashion* tidak membutuhkan/mengizinkan hal tersebut.

Ada pun titik permasalahan yang dihadapi adalah kita sudah memiliki aplikasi program VB6 yang memanfaatkan Property Pages maupun Event seperti tersebut di atas sehingga mau tidak mau kita harus melakukan modifikasi pada program VB6 agar dapat dijalankan pada VB.NET.



Gambar 7.5 DataGrid-Property Pages pada VB6

Kecuali bila Anda telah mengetahui (membaca) bagaimana cara memperjelas penampilan datagrid, proses pencarian informasi

tersebut cukup mengonsumsi waktu. Akan tetapi kini Anda tidak perlu khawatir lagi, penulis telah mendapatkannya dan Anda dapat menggunakan contoh yang diberikan dan melakukan perubahan sesuai dengan yang diinginkan.

Anda dapat mengatur kolom pada tampilan datagrid melalui objek `DataTable`, sayangnya tidak banyak pilihan/fasilitas yang disediakan. Di samping itu, *set-up* melalui objek `DataTable` akan berlaku untuk semua tampilan datagrid yang menggunakan objek data tabel tersebut sebagai sumber datanya.

Cara lain adalah dengan menggunakan class `DataGridTableStyle`. Untuk itu kontrol datagrid harus di-*binding*/dikaitkan ke objek `DataSet` dengan nama tabel yang akan digunakan. Selanjutnya deklarasikan sebuah `DataGridTableStyle` baru, dilanjutkan dengan mengatur `DataGridTableStyle.MappingName` ke nama tabel objek `DataSet` dan akhiri proses ini dengan menambahkan `DataGridTableStyle` ke dalam koleksi `DataGrid.TableStyles` serta perjelas penampilan data pada kontrol datagrid seperti contoh program berikut ini.

```
objDataGrid.vb:
Public Class objDataGrid
    Inherits System.Windows.Forms.Form

    #Region " Windows Form Designer generated code "

    Public Sub New()
        MyBase.New()

        'This call is required by the Windows Form Designer.
        InitializeComponent()

        'Add any initialization after the
        InitializeComponent()
        'call

    End Sub

    'Form overrides dispose to clean up the component list.
    Protected Overloads Overrides Sub Dispose(ByVal disposing
    As Boolean)
        If disposing Then
            If Not (components Is Nothing) Then
                components.Dispose()
            End If
        End If
        MyBase.Dispose(disposing)
    End Sub

    'Required by the Windows Form Designer
```

```

Private components As System.ComponentModel.IContainer

'NOTE: The following procedure is required by the
'Windows Form Designer
'It can be modified using the Windows Form Designer.
'Do not modify it using the code editor.
Friend WithEvents DataGrid2 As
System.Windows.Forms.DataGrid
Friend WithEvents DataGrid1 As
System.Windows.Forms.DataGrid
<System.Diagnostics.DebuggerStepThrough()> Private Sub
InitializeComponent()
    Me.DataGrid2 = New System.Windows.Forms.DataGrid
    Me.DataGrid1 = New System.Windows.Forms.DataGrid
    CType(Me.DataGrid2,
System.ComponentModel.ISupportInitialize).BeginInit()
    CType(Me.DataGrid1,
System.ComponentModel.ISupportInitialize).BeginInit()
    Me.SuspendLayout()
    '
    'DataGrid2
    '
    Me.DataGrid2.AlternatingBackColor =
System.Drawing.Color.GhostWhite
    Me.DataGrid2.BackColor =
System.Drawing.Color.GhostWhite
    Me.DataGrid2.BackgroundColor =
System.Drawing.Color.Lavender
    Me.DataGrid2.BorderStyle =
System.Windows.Forms.BorderStyle.None
    Me.DataGrid2.CaptionBackColor =
System.Drawing.Color.RoyalBlue
    Me.DataGrid2.CaptionFont = New
System.Drawing.Font("Microsoft Sans Serif", 8.0!)
    Me.DataGrid2.CaptionForeColor =
System.Drawing.Color.White
    Me.DataGrid2.DataMember = ""
    Me.DataGrid2.FlatMode = True
    Me.DataGrid2.Font = New System.Drawing.Font("Microsoft
Sans Serif", 8.0!)
    Me.DataGrid2.ForeColor =
System.Drawing.Color.MidnightBlue
    Me.DataGrid2.GridLineColor =
System.Drawing.Color.RoyalBlue
    Me.DataGrid2.HeaderBackColor =
System.Drawing.Color.MidnightBlue
    Me.DataGrid2.HeaderFont = New
System.Drawing.Font("Microsoft Sans Serif", 8.0!)
    Me.DataGrid2.HeaderForeColor =
System.Drawing.Color.Lavender
    Me.DataGrid2.LinkColor = System.Drawing.Color.Teal
    Me.DataGrid2.Location = New System.Drawing.Point
(8, 168)
    Me.DataGrid2.Name = "DataGrid2"
    Me.DataGrid2.ParentRowsBackColor =
System.Drawing.Color.Lavender
    Me.DataGrid2.ParentRowsForeColor =
System.Drawing.Color.MidnightBlue
    Me.DataGrid2.SelectionBackColor =
System.Drawing.Color.Teal
    Me.DataGrid2.SelectionForeColor =

```



```

System.Drawing.Color.PaleGreen
Me.DataGrid2.Size = New System.Drawing.Size(584, 144)
Me.DataGrid2.TabIndex = 10
'
'DataGrid1
'
Me.DataGrid1.AlternatingBackColor =
System.Drawing.Color.White
Me.DataGrid1.BackColor = System.Drawing.Color.White
Me.DataGrid1.BackgroundColor =
System.Drawing.Color.Gainsboro
Me.DataGrid1.BorderStyle =
System.Windows.Forms.BorderStyle.FixedSingle
Me.DataGrid1.CaptionBackColor =
System.Drawing.Color.Silver
Me.DataGrid1.CaptionFont = New
System.Drawing.Font("Microsoft Sans Serif", 8.0!)
Me.DataGrid1.CaptionForeColor =
System.Drawing.Color.Black
Me.DataGrid1.DataMember = ""
Me.DataGrid1.FlatMode = True
Me.DataGrid1.Font = New System.Drawing.Font("Microsoft
Sans Serif", 8.0!)
Me.DataGrid1.ForeColor =
System.Drawing.Color.DarkSlateGray
Me.DataGrid1.GridLineColor =
System.Drawing.Color.DarkGray
Me.DataGrid1.HeaderBackColor =
System.Drawing.Color.DarkGreen
Me.DataGrid1.HeaderFont = New
System.Drawing.Font("Microsoft Sans Serif", 8.0!)
Me.DataGrid1.HeaderForeColor =
System.Drawing.Color.White
Me.DataGrid1.LinkColor =
System.Drawing.Color.DarkGreen
Me.DataGrid1.Location = New System.Drawing.Point
(16, 8)
Me.DataGrid1.Name = "DataGrid1"
Me.DataGrid1.ParentRowsBackColor =
System.Drawing.Color.Gainsboro
Me.DataGrid1.ParentRowsForeColor =
System.Drawing.Color.Black
Me.DataGrid1.SelectionBackColor =
System.Drawing.Color.DarkSeaGreen
Me.DataGrid1.SelectionForeColor =
System.Drawing.Color.Black
Me.DataGrid1.Size = New System.Drawing.Size(576, 128)
Me.DataGrid1.TabIndex = 39
'
'objDataGrid
'
Me.AutoScaleBaseSize = New System.Drawing.Size(5, 13)
Me.ClientSize = New System.Drawing.Size(608, 333)
Me.Controls.Add(Me.DataGrid1)
Me.Controls.Add(Me.DataGrid2)
Me.Name = "objDataGrid"
Me.StartPosition =
System.Windows.Forms.FormStartPosition.CenterScreen
Me.Text = "objDataGrid"
CType(Me.DataGrid2,
System.ComponentModel.ISupportInitialize).EndInit()

```

```

CType(Me.DataGrid1,
System.ComponentModel.ISupportInitialize).EndInit()
Me.ResumeLayout(False)

End Sub

#End Region

Dim objConnection As SqlConnection
Dim objCommand As SqlCommand
Dim objDataAdapter As SqlDataAdapter
Dim strConn, strSQL As String
Dim objDataSet As New DataSet
Dim objDataTable As New DataTable
Dim mPosition As Integer

Private Sub objDataGrid_Load(ByVal sender As
System.Object, ByVal e As System.EventArgs) Handles
 MyBase.Load
Dim form MenuInduk As New MenuInduk
strConn = form.MenuInduk.mRoot.StrConn
strSQL = "Select * From AlbumList"
objConnection = New SqlConnection(strConn)
Try
objConnection.Open()
objCommand = New SqlCommand
objCommand.Connection = objConnection
objCommand.CommandType = CommandType.Text
objCommand.CommandText = strSQL
objDataAdapter = New SqlDataAdapter(objCommand)
objDataAdapter.Fill(objDataSet, "mDT AlbumList")
objConnection.Close()
Catch When Err.Number <> 0
MsgBox("Tidak dapat membuat hubungan ke database"
& vbCrLf & Err.Description)
Me.Close()
End Try

' >> Set DataGridView via objDataTable <<
' set-up 'preferred..' harus diset sebelum set-up data
'source
DataGridView1.PreferredColumnWidth() = 100
DataGridView1.PreferredRowHeight() = 20

' Judul DataGridView
objDataTable = objDataSet.Tables("mDT AlbumList")
DataGridView1.DataSource = objDataTable
DataGridView1.ReadOnly = False
DataGridView1.CaptionText = "Judul DataGridView (setup via
objDataTable)"
DataGridView1.Item(2, 2) = ">> *** <<"
DataGridView1.ColumnHeadersVisible() = True

' Nama Kolom baru & Menampilkannya nilainya
objDataTable.Columns(0).ColumnName = "Nomor Album"
objDataTable.Columns(1).ColumnName = "Judul Album"
objDataTable.Columns(2).ColumnName = "Penyanyi"

' Tidak mengizinkan mengganti nilai Album ID
objDataTable.Columns(0).ReadOnly() = True

```

```

' >> Set DataGrid via DataGridTableStyle <<
' Judul DataGrid
DataGrid2.DataSource = objDataTable
DataGrid2.ReadOnly = False
DataGrid2.CaptionText = "Judul DataGrid (Setup via
DataGridTableStyle)"
DataGrid2.ColumnHeadersVisible() = True

' lakukan proses databinding dan deklarasikan
'DataTableStyle
' sebelum ditambahkan ke koleksi DataGrid.TableStyles
DataGrid2.SetDataBinding(objDataSet, "mDT AlbumList")
Dim mDG TableStyle As DataGridTableStyle = New
DataGridTableStyle
mDG TableStyle.ForeColor = Color.Tomato
mDG TableStyle.AlternatingBackColor = Color.LightGreen
mDG TableStyle.BackColor = Color.LightBlue
mDG TableStyle.MappingName = DataGrid2.DataMember
DataGrid2.TableStyles.Add(mDG TableStyle)

' Judul kolom
DataGrid2.TableStyles(0).GridColumnStyles(2).HeaderText
= "Penyanyi/Singer"

DataGrid2.TableStyles(0).GridColumnStyles(3).HeaderText
= "Satuan"

DataGrid2.TableStyles(0).GridColumnStyles(4).HeaderText
= "Harga"

' kolom Satuan/Album unit read only
DataGrid2.TableStyles(0).GridColumnStyles(1).ReadOnly()
= True

DataGrid2.TableStyles(0).GridColumnStyles(3).ReadOnly()
= True

' Lebar kolom diperbesar
DataGrid2.TableStyles(0).GridColumnStyles(1).
Width = 150

'Menyembunyikan/hide kolom
DataGrid2.TableStyles(0).GridColumnStyles(7).Width = 0
DataGrid2.TableStyles(0).GridColumnStyles(8).Width = 0

' set format tampilan
Dim myGridTextBoxColumn As DataGridTextBoxColumn =
CType(DataGrid2.TableStyles("mDT AlbumList").
GridColumnStyles("album price"),
DataGridTextBoxColumn)
myGridTextBoxColumn.Format = "###,###"

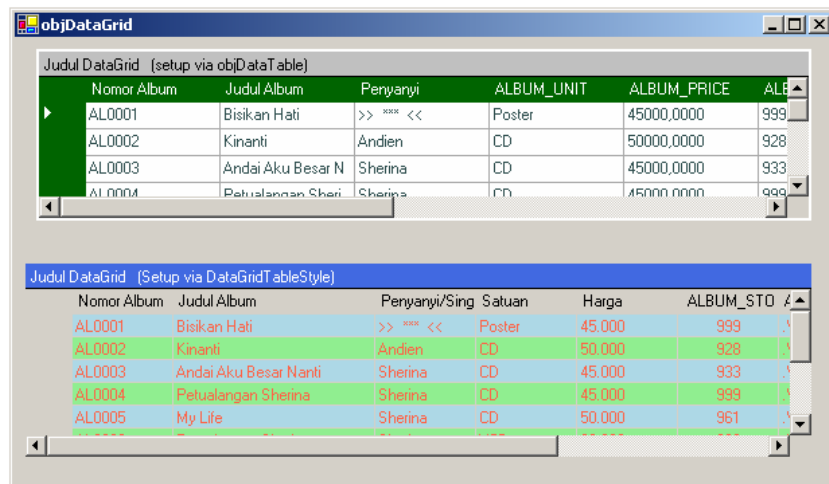
Dim myGridTextBoxColumn2 As DataGridTextBoxColumn =
CType(DataGrid2.TableStyles(0).
GridColumnStyles("edited on"), DataGridTextBoxColumn)
myGridTextBoxColumn2.Format = "MMM dd, yyyy"

```

```

DataGrid2.TableStyles(0).GridColumnStyles(5).Alignment
= HorizontalAlignment.Center
End Sub
End Class

```



Gambar 7.6 DataGrid pada VB.NET

7.5 Event Handler pada Data Tabel

Kontrol datagrid pada VB6 memiliki event seperti AfterColEdit, BeforeDelete, AfterDelete, dan lain-lain yang digunakan sebagai *handler*/penanganan sebelum atau sesudah ada perubahan pada kolom/record objek RecordSet. Sayangnya pada VB.NET event tersebut sudah tidak disertakan lagi, padahal *event* tersebut sangat diperlukan pada pengentrian detail transaksi via kontrol datagrid.

Sebagai gantinya, VB.NET menyediakan fasilitas *event handler* yang terkait dengan objek data tabel yang cara kerjanya mirip dengan yang dimiliki oleh kontrol datagrid VB6, yakni:

- ColumnChanged:** Event ini terpicu ketika sebuah nilai berhasil dimasukkan ke dalam sebuah kolom.

- ☑ **ColumnChanging:** Terjadi ketika sebuah nilai diberikan/*submitted* pada sebuah kolom (sebelum terjadi perubahan pada suatu kolom).
- ☑ **RowChanged:** Terpicu ketika sebuah baris berhasil diedit.
- ☑ **RowChanging:** Terpicu sebelum sebuah baris diedit.
- ☑ **RowDeleted:** Terpicu setelah sebuah baris ditandai dihapus/*deleted*.
- ☑ **RowDeleting:** Terpicu sebelum sebuah baris ditandai dihapus.

Event `ColumnChanged` mirip dengan event `AfterColEdit`, sedangkan event `RowDeleting` mirip dengan event `BeforeDelete`. Penyertaan event tersebut ke dalam program cukup sederhana, Anda cukup menyisipkan perintah `AddHandler` ke dalam program dan menambahkan subrutin untuk menangani event tersebut seperti pada contoh berikut ini:

```
AddHandler objDataTable.ColumnChanging, AddressOf
Me.myDataTable.ColumnChanging

Private Sub myDataTable.ColumnChanging
    (ByVal sender As System.Object, ByVal e As
    System.Data.DataColumnChangeEventArgs)
    Label1.Text = e.Column.ColumnName
    mPosition = BindingContext(objDataTable).Position
    With objDataTable.Rows(mPosition)
        TextBox1.Text = .Item("Album ID")
        TextBox2.Text = .Item("Album title")
    End With
End Sub
```

Untuk event perubahan pada `Column` maupun `Row`, tidak ada masalah sama sekali. Perintah cukup jelas dan hasil/proses penanganannya pun mudah dipahami. Permasalahan muncul ketika kita mencoba bermain dengan event penghapusan baris.

Adalah hal yang normal untuk membatalkan suatu proses penghapusan dan menggantinya dengan proses *update* atau meneruskan proses penghapusan, dilanjutkan dengan menambahkan baris baru ke dalam objek data tabel, tapi apa yang terjadi?

Pada contoh program *ObjDataGrid2*, penulis menemukan hal yang agak aneh pada proses penghapusan. Seperti telah dijelaskan pada pembahasan objek data tabel, bila terjadi proses

penghapusan maka akan ada *pointer* yang menunjuk pada record yang telah dihapus dan program akan *crash* bila mencoba menampilkan baris tersebut. Oleh karenanya, pada event penghapusan baris penulis mencoba membelokkan arah proses dengan membatalkan proses penghapusan atau menambahkan record baru setelah proses penghapusan agar program dapat bekerja dengan baik sehingga yang terjadi adalah:

- ☑ Bila proses penghapusan dibatalkan dan dilakukan proses perubahan, tetap terjadi proses penghapusan tetapi penghapusan terjadi pada record terakhir dan begitu seterusnya bila Anda mencoba menghapus sebuah record.
- ☑ Bila proses penghapusan dilakukan, kemudian dilanjutkan dengan menambahkan baris baru, baris baru tidak tampak pada tampilan DataGrid. Proses yang paling fatal adalah program akan *crash* bila Anda mencoba menghapus record yang telah ditunjuk/*pointed* setelah penghapusan bila tidak diselingi proses lain pada baris record yang berbeda terlebih dulu.
- ☑ Anda dapat juga mengedit program dan menonaktifkan event *handler deleting* dan *deleted*, lalu jalankan program, kemudian tekan tombol **Delete** untuk menghapus baris record yang mana saja, dan program akan berjalan dengan normal. Anda tidak melihat tampilan record yang telah dihapus pada datagrid, semua terlihat berjalan normal-normal saja. Akan tetapi coba ganti nilai pada suatu kolom dan coba pindah dengan kursor **Up/Down**, maka Anda akan melihat tampilan kesalahan!

Melihat penjelasan di atas, penulis menarik kesimpulan bahwa proses modifikasi data tabel (Update/Insert) tidak dapat dilakukan selama proses (dalam prosedur) *event handler (deleted)* berlangsung dan aktifitas penghapusan record tidak dapat menghindari terjadinya *pointer* ke slot record yang kosong/terhapus. Jadi, dibutuhkan cara lain untuk mengatasi permasalahan penghapusan ini. Berikut ini adalah listing program tersebut dengan tampilan pada Gambar 7.7.

```
ObjDataGrid2.vb:  
Public Class objDataGrid2  
    Inherits System.Windows.Forms.Form
```

```

#Region " Windows Form Designer generated code "

Public Sub New()
    MyBase.New()

    'This call is required by the Windows Form Designer.
    InitializeComponent()

    'Add any initialization after the
    InitializeComponent() call

End Sub

'Form overrides dispose to clean up the component list.
Protected Overrides Sub Dispose(ByVal disposing As Boolean)
    If disposing Then
        If Not (components Is Nothing) Then
            components.Dispose()
        End If
    End If
    MyBase.Dispose(disposing)
End Sub

'Required by the Windows Form Designer
Private components As System.ComponentModel.IContainer

'NOTE: The following procedure is required by the
Windows Form Designer
'It can be modified using the Windows Form Designer.
'Do not modify it using the code editor.
Friend WithEvents DataGridView1 As
System.Windows.Forms.DataGridView
Friend WithEvents TextBox1 As
System.Windows.Forms.TextBox
Friend WithEvents TextBox2 As
System.Windows.Forms.TextBox
Friend WithEvents TextBox3 As
System.Windows.Forms.TextBox
Friend WithEvents TextBox4 As
System.Windows.Forms.TextBox
Friend WithEvents Label1 As System.Windows.Forms.Label
Friend WithEvents TextBox5 As
System.Windows.Forms.TextBox
Friend WithEvents TextBox6 As
System.Windows.Forms.TextBox
Friend WithEvents TextBox7 As
System.Windows.Forms.TextBox
Friend WithEvents TextBox8 As
System.Windows.Forms.TextBox
Friend WithEvents Label2 As System.Windows.Forms.Label
Friend WithEvents TextBox9 As
System.Windows.Forms.TextBox
Friend WithEvents TextBox10 As
System.Windows.Forms.TextBox
Friend WithEvents TextBox11 As
System.Windows.Forms.TextBox
Friend WithEvents Label3 As System.Windows.Forms.Label
Friend WithEvents Label4 As System.Windows.Forms.Label

```

```

Friend WithEvents Label5 As System.Windows.Forms.Label
Friend WithEvents Label6 As System.Windows.Forms.Label
<System.Diagnostics.DebuggerStepThrough()> Private Sub
InitializeComponent()
    Me.DataGrid1 = New System.Windows.Forms.DataGrid
    Me.TextBox1 = New System.Windows.Forms.TextBox
    Me.TextBox2 = New System.Windows.Forms.TextBox
    Me.Label1 = New System.Windows.Forms.Label
    Me.TextBox3 = New System.Windows.Forms.TextBox
    Me.TextBox4 = New System.Windows.Forms.TextBox
    Me.TextBox5 = New System.Windows.Forms.TextBox
    Me.TextBox6 = New System.Windows.Forms.TextBox
    Me.TextBox7 = New System.Windows.Forms.TextBox
    Me.TextBox8 = New System.Windows.Forms.TextBox
    Me.Label2 = New System.Windows.Forms.Label
    Me.TextBox9 = New System.Windows.Forms.TextBox
    Me.TextBox10 = New System.Windows.Forms.TextBox
    Me.TextBox11 = New System.Windows.Forms.TextBox
    Me.TextBox12 = New System.Windows.Forms.TextBox
    Me.Label3 = New System.Windows.Forms.Label
    Me.Label4 = New System.Windows.Forms.Label
    Me.Label5 = New System.Windows.Forms.Label
    Me.Label6 = New System.Windows.Forms.Label
    CType(Me.DataGrid1,
System.ComponentModel.ISupportInitialize).BeginInit()
    Me.SuspendLayout()
    '
    'DataGrid1
    '
    Me.DataGrid1.DataMember = ""
    Me.DataGrid1.HeaderForeColor =
System.Drawing.SystemColors.ControlText
    Me.DataGrid1.Location = New System.Drawing.Point
(8, 232)
    Me.DataGrid1.Name = "DataGrid1"
    Me.DataGrid1.Size = New System.Drawing.Size(528, 128)
    Me.DataGrid1.TabIndex = 0
    '
    'TextBox1
    '
    Me.TextBox1.Location = New System.Drawing.Point
(120, 16)
    Me.TextBox1.Name = "TextBox1"
    Me.TextBox1.Size = New System.Drawing.Size(200, 20)
    Me.TextBox1.TabIndex = 2
    Me.TextBox1.Text = ""
    '
    'TextBox2
    '
    Me.TextBox2.Location = New System.Drawing.Point
(336, 16)
    Me.TextBox2.Name = "TextBox2"
    Me.TextBox2.Size = New System.Drawing.Size(200, 20)
    Me.TextBox2.TabIndex = 4
    Me.TextBox2.Text = ""
    '
    'Label1
    '
    Me.Label1.Location = New System.Drawing.Point(8, 16)
    Me.Label1.Name = "Label1"
    Me.Label1.Size = New System.Drawing.Size(96, 16)

```



```

Me.Label1.TabIndex = 3
Me.Label1.Text = "Col ChangING"
'
'TextBox3
Me.TextBox3.Location = New System.Drawing.Point
(120, 48)
Me.TextBox3.Name = "TextBox3"
Me.TextBox3.Size = New System.Drawing.Size(200, 20)
Me.TextBox3.TabIndex = 6
Me.TextBox3.Text = ""
'
'TextBox4
Me.TextBox4.Location = New System.Drawing.Point
(336, 48)
Me.TextBox4.Name = "TextBox4"
Me.TextBox4.Size = New System.Drawing.Size(200, 20)
Me.TextBox4.TabIndex = 8
Me.TextBox4.Text = ""
'
'TextBox5
Me.TextBox5.Location = New System.Drawing.Point
(120, 88)
Me.TextBox5.Name = "TextBox5"
Me.TextBox5.Size = New System.Drawing.Size(200, 20)
Me.TextBox5.TabIndex = 13
Me.TextBox5.Text = ""
'
'TextBox6
Me.TextBox6.Location = New System.Drawing.Point
(336, 88)
Me.TextBox6.Name = "TextBox6"
Me.TextBox6.Size = New System.Drawing.Size(200, 20)
Me.TextBox6.TabIndex = 12
Me.TextBox6.Text = ""
'
'TextBox7
Me.TextBox7.Location = New System.Drawing.Point
(120, 120)
Me.TextBox7.Name = "TextBox7"
Me.TextBox7.Size = New System.Drawing.Size(200, 20)
Me.TextBox7.TabIndex = 11
Me.TextBox7.Text = ""
'
'TextBox8
Me.TextBox8.Location = New System.Drawing.Point
(336, 120)
Me.TextBox8.Name = "TextBox8"
Me.TextBox8.Size = New System.Drawing.Size(200, 20)
Me.TextBox8.TabIndex = 9
Me.TextBox8.Text = ""
'
'Label2
Me.Label2.Location = New System.Drawing.Point(8, 48)
Me.Label2.Name = "Label2"

```

```

Me.Label2.Size = New System.Drawing.Size(96, 16)
Me.Label2.TabIndex = 10
Me.Label2.Text = "Col ChangED"
'
'TextBox9
'
Me.TextBox9.Location = New System.Drawing.Point
(120, 152)
Me.TextBox9.Name = "TextBox9"
Me.TextBox9.Size = New System.Drawing.Size(200, 20)
Me.TextBox9.TabIndex = 18
Me.TextBox9.Text = ""
'
'TextBox10
'
Me.TextBox10.Location = New System.Drawing.Point
(336, 152)
Me.TextBox10.Name = "TextBox10"
Me.TextBox10.Size = New System.Drawing.Size(200, 20)
Me.TextBox10.TabIndex = 17
Me.TextBox10.Text = ""
'
'TextBox11
'
Me.TextBox11.Location = New System.Drawing.Point
(120, 184)
Me.TextBox11.Name = "TextBox11"
Me.TextBox11.Size = New System.Drawing.Size(200, 20)
Me.TextBox11.TabIndex = 16
Me.TextBox11.Text = ""
'
'TextBox12
'
Me.TextBox12.Location = New System.Drawing.Point
(336, 184)
Me.TextBox12.Name = "TextBox12"
Me.TextBox12.Size = New System.Drawing.Size(200, 20)
Me.TextBox12.TabIndex = 14
Me.TextBox12.Text = ""
'
'Label3
'
Me.Label3.Location = New System.Drawing.Point(8, 88)
Me.Label3.Name = "Label3"
Me.Label3.Size = New System.Drawing.Size(96, 16)
Me.Label3.TabIndex = 15
Me.Label3.Text = "Row ChangING"
'
'Label4
'
Me.Label4.Location = New System.Drawing.Point(8, 120)
Me.Label4.Name = "Label4"
Me.Label4.Size = New System.Drawing.Size(96, 16)
Me.Label4.TabIndex = 19
Me.Label4.Text = "Row ChangED"
'
'Label5
'
Me.Label5.Location = New System.Drawing.Point(8, 160)
Me.Label5.Name = "Label5"
Me.Label5.Size = New System.Drawing.Size(88, 16)

```

```

Me.Label5.TabIndex = 20
Me.Label5.Text = "Rpw DeletING"
'
'Label6
Me.Label6.Location = New System.Drawing.Point(8, 192)
Me.Label6.Name = "Label6"
Me.Label6.Size = New System.Drawing.Size(96, 16)
Me.Label6.TabIndex = 21
Me.Label6.Text = "Row DeleTED"
'
'objDataGrid2
Me.AutoScaleBaseSize = New System.Drawing.Size(5, 13)
Me.ClientSize = New System.Drawing.Size(552, 381)
Me.Controls.Add(Me.Label6)
Me.Controls.Add(Me.Label5)
Me.Controls.Add(Me.Label4)
Me.Controls.Add(Me.TextBox9)
Me.Controls.Add(Me.TextBox10)
Me.Controls.Add(Me.TextBox11)
Me.Controls.Add(Me.TextBox12)
Me.Controls.Add(Me.Label3)
Me.Controls.Add(Me.TextBox5)
Me.Controls.Add(Me.TextBox6)
Me.Controls.Add(Me.TextBox7)
Me.Controls.Add(Me.TextBox8)
Me.Controls.Add(Me.Label2)
Me.Controls.Add(Me.TextBox4)
Me.Controls.Add(Me.TextBox3)
Me.Controls.Add(Me.TextBox2)
Me.Controls.Add(Me.TextBox1)
Me.Controls.Add(Me.Label1)
Me.Controls.Add(Me.DataGrid1)
Me.Name = "objDataGrid2"
Me.StartPosition =
System.Windows.Forms.FormStartPosition.CenterScreen
Me.Text = "objDataGrid2"
CType(Me.DataGrid1,
System.ComponentModel.ISupportInitialize).EndInit()
Me.ResumeLayout(False)

End Sub

#End Region

Dim objConnection As SqlConnection
Dim objCommand As SqlCommand
Dim objDataAdapter As SqlDataAdapter
Dim objDataSet As New DataSet
Dim strConn, strSQL As String
Dim form MenuInduk As New MenuInduk
Dim objDataTable As New DataTable
Dim mDeleted Record Position As Integer
Dim mDeleted Record Album ID As String
Dim mPosition As Integer

Private Sub objDataView Load(ByVal sender As
System.Object, ByVal e As System.EventArgs) Handles
MyBase.Load
strConn = form_MenuInduk.mRoot_StrConn

```

```

strSQL = "select * from AlbumList order by album id"
objConnection = New SqlConnection(strConn)
objCommand = New SqlCommand(strSQL, objConnection)
objConnection.Open()
objDataAdapter = New SqlDataAdapter(objCommand)
objDataAdapter.Fill(objDataSet, "mDT albumlist")

objDataTable = objDataSet.Tables("mDT AlbumList")
DataGrid1.DataSource = objDataTable
DataGrid1.CaptionText = "Judul DataGrid (area object
DataGrid)"

' event DataGrid AfterColEdit (VB6) +/- ==
ColumnChang"ED" (VB.NET)
' event DataGrid BeforeDelete (VB6) +/- ==
RowDelet"ING" (VB.NET)

AddHandler objDataTable.ColumnChanging, AddressOf
Me.myDataTable ColumnChanging
AddHandler objDataTable.ColumnChanged, AddressOf
Me.myDataTable ColumnChanged

AddHandler objDataTable.RowChanging, AddressOf
Me.myDataTable RowChanging
AddHandler objDataTable.RowChanged, AddressOf
Me.myDataTable RowChanged

AddHandler objDataTable.RowDeleting, AddressOf
Me.myDataTable RowDeleting
AddHandler objDataTable.RowDeleted, AddressOf
Me.myDataTable RowDeleted

objConnection.Close()
End Sub

Private Sub myDataTable ColumnChanging
(ByVal sender As System.Object, ByVal e As
System.Data.DataColumnChangeEventArgs)
Label1.Text = e.Column.ColumnName
mPosition = BindingContext(objDataTable).Position
With objDataTable.Rows(mPosition)
    TextBox1.Text = .Item("Album ID")
    TextBox2.Text = .Item("Album title")
End With
End Sub

Private Sub myDataTable ColumnChanged
(ByVal sender As System.Object, ByVal e As
System.Data.DataColumnChangeEventArgs)
mPosition = BindingContext(objDataTable).Position
With objDataTable.Rows(mPosition)
    TextBox3.Text = .Item("Album ID")
    TextBox4.Text = .Item("Album title")
End With
End Sub

Private Sub myDataTable RowChanging
(ByVal sender As System.Object, ByVal e As
System.Data.DataRowChangeEventArgs)
mPosition = BindingContext(objDataTable).Position
With objDataTable.Rows(mPosition)

```

```

        TextBox5.Text = .Item("Album ID")
        TextBox6.Text = .Item("Album title")
    End With
End Sub

Private Sub myDataTable RowChanged
    (ByVal sender As System.Object, ByVal e As
System.Data.DataRowChangeEventArgs)
    mPosition = BindingContext(objDataTable).Position
    With objDataTable.Rows(mPosition)
        TextBox7.Text = .Item("Album ID")
        TextBox8.Text = .Item("Album title")
    End With
End Sub

Private Sub myDataTable RowDeleting
    (ByVal sender As System.Object, ByVal e As
System.Data.DataRowChangeEventArgs)
    mDeleted Record Position =
BindingContext(objDataTable).Position
    mPosition = BindingContext(objDataTable).Position
    With objDataTable.Rows(mPosition)
        TextBox9.Text = .Item("Album ID")
        TextBox10.Text = .Item("Album title")
    mDeleted Record Album ID = .Item("Album ID")
    End With
End Sub

Private Sub myDataTable RowDeleted
    (ByVal sender As System.Object, ByVal e As
System.Data.DataRowChangeEventArgs)
    Label16.Text = "Del = " & mDeleted Record Album ID
    Dim mTest As Boolean = True
    If mTest Then
        ' batalkan deleted kemudian lakukan replaced sbq
        ' kode deleted
        ' MASALAH : record paling akhir dihapus, WHY?? tidak
        ' ada opini
        e.Row.RejectChanges()
        objDataSet.AcceptChanges()
        BindingContext(objDataTable).Position =
mDeleted Record Position
        With objDataTable.Rows(mDeleted Record Position)
            .Item("album title") = "DELETED"
        End With
    Else
        ' biarkan dihapus kemudian tambah record baru
        ' MASALAH :
        ' 1. record baru tidak muncul di datagrid, biarkan
        ' saja?!
        ' 2. Prg CRASH, bila mencoba delete record
        ' selanjutnya setelah proses delete dilakukan !!!
        ' 3. posisi (keterangan Album ID) yg di hapus juga
        ' tidak benar, bergantung dari posisi delete row
        ' dilakukan
        objDataSet.AcceptChanges()
        BindingContext(objDataTable).AddNew()
        mPosition = BindingContext(objDataTable).Position
        BindingContext(objDataTable).Position = mPosition
        With objDataTable.Rows(mPosition)
            .Item("album_ID") = "ABC123"
        End With
    End If
End Sub

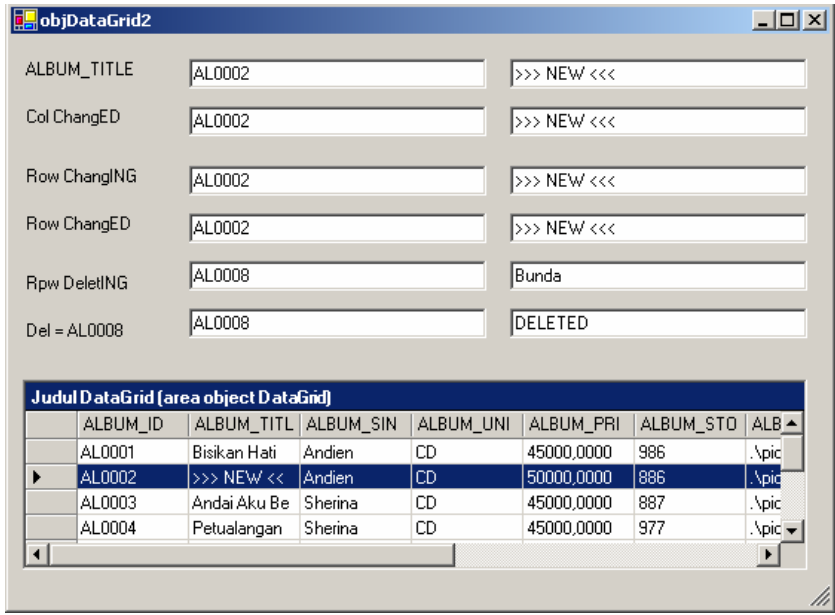
```

```

.Item("album title") = "Add after DELETE"
End With
End If

mPosition = BindingContext(objDataTable).Position
With objDataTable.Rows(mPosition)
    TextBox11.Text = .Item("Album ID")
    TextBox12.Text = .Item("Album title")
End With
End Sub
End Class

```



Gambar 7.7 Event Handler pada Data Tabel

Sebelum kita meninggalkan pembahasan Event Handler pada DataGrid, ada hal yang menarik untuk diperhatikan. Apa yang terjadi saat Anda memasukkan nilai pada suatu kolom dalam kaitannya dengan pembahasan Event (KeyUp) pada DataGrid?

Suatu kontrol datagrid pada dasarnya dapat kita bagi menjadi dua kelompok area, yakni area *header*/judul DataGrid dan area kolom datagrid yang terbagi menjadi tiga subkelompok area, yakni judul kolom, *RowHeader* (sisi kolom paling kiri), dan area kolom untuk menampilkan nilai/data.

Pada kondisi normal (*rest state*), Anda akan melihat tanda segitiga hitam pada area *RowHeader* dan baris kolom akan di *highlight* (sorot) bila Anda akan melakukan penghapusan melalui tombol Del (delete). Saat pengisian kolom, Anda akan melihat icon pensil menulis atau icon segitiga hitam dengan posisi kursor yang siap menerima entri.

Mari kita mulai perhatikan hal yang menarik. Coba Anda masukkan data. Anda akan melihat icon pensil menulis. Selanjutnya pindahlah ke kolom atau ke baris yang berbeda. Anda akan melihat event handler diaktifkan. OK? Mari lakukan hal yang sama, kemudian pindahkan pointer mouse ke area judul datagrid. Anda masih akan melihat icon pensil menulis dan event handler belum diaktifkan.

Apa arti hal tersebut di atas? Ketika icon pensil menulis muncul, berarti Anda sedang memasukan suatu nilai. Masalahnya nilai tersebut belum diakui/dikenal oleh DataGrid sampai icon segitiga hitam muncul. Jadi bila Anda mengklik area judul datagrid, entri tersebut pun belum diakui keberadaannya.

Mungkin Anda bertanya kenapa penulis mengatakan hal tersebut sebagai suatu masalah? Memang hal itu adalah suatu masalah karena event kontrol datagrid (dalam hal ini event *KeyUp*) hanya mengenal nilai entri bila icon segitiga hitam muncul, jadi singkatnya entri tidak dikenal sehingga event *KeyUp* tidak bermanfaat saat pengisian kolom, padahal ini diperlukan sekali, misalnya pada kasus pengentrian transaksi barang dan kita membutuhkan bantuan untuk mencari kode barang, tetapi entri kode barang tidak dikenal. Permasalahan ini akan dibahas pada bagian selanjutnya. Untuk saat ini, mari lihat dulu permasalahan Delete.

7.6 Solusi Terhadap Permasalahan Delete via DataGrid

Penggunaan kontrol DataGrid sebagai salah satu cara untuk memasukkan detail suatu transaksi amat dibutuhkan. Di sisi lain,

Anda juga menyadari permasalahan pada proses penghapusan yang timbul. Jadi bagaimana permasalahan ini harus ditangani?

Kita tahu bahwa proses perubahan via DataGrid tidak menimbulkan efek samping pada objek DataTable terhadap proses lainnya, maka gunakan saja teknik perubahan sebagai pengganti proses penghapusan. Proses ini cukup mudah, yakni cukup dengan menambahkan satu kolom tambahan (*HAPUS*) sebagai tanda baris tersebut dianggap telah dihapus walaupun masih muncul pada kontrol DataGrid.

Akan tetapi bukankah seorang pengguna masih dapat menekan tombol Delete (DEL) untuk menghapus baris? Hal ini dapat ditanggulangi dengan mengatur properti *DataGrid1.RowHeadersVisible = False* sehingga tidak ada cara untuk menghapus baris lagi.

Itulah salah satu strategi untuk mengatasi masalah Delete. Anda akan melihat strategi lain dalam praktek pada pembahasan *Aplikasi Program Penjualan Barang*. Untuk sementara, pahami dulu strategi yang ada lewat listing program berikut ini.

```
ObjDataGrid3.VB:
Public Class objDataGrid3
    Inherits System.Windows.Forms.Form

    #Region " Windows Form Designer generated code "

    Public Sub New()
        MyBase.New()

        'This call is required by the Windows Form Designer.
        InitializeComponent()

        'Add any initialization after the
        'InitializeComponent() call

    End Sub

    'Form overrides dispose to clean up the component list.
    Protected Overloads Overrides Sub Dispose(ByVal
    disposing As Boolean)
        If disposing Then
            If Not (components Is Nothing) Then
                components.Dispose()
            End If
        End If
        MyBase.Dispose(disposing)
    End Sub

    'Required by the Windows Form Designer
    Private components As System.ComponentModel.IContainer
```



```

'NOTE: The following procedure is required by the
'Windows Form Designer
'It can be modified using the Windows Form Designer.
'Do not modify it using the code editor.
Friend WithEvents DataGridView1 As
System.Windows.Forms.DataGridView
Friend WithEvents TextBox1 As
System.Windows.Forms.TextBox
Friend WithEvents TextBox2 As
System.Windows.Forms.TextBox
Friend WithEvents TextBox3 As
System.Windows.Forms.TextBox
Friend WithEvents TextBox4 As
System.Windows.Forms.TextBox
Friend WithEvents Label1 As System.Windows.Forms.Label
Friend WithEvents TextBox5 As
System.Windows.Forms.TextBox
Friend WithEvents TextBox6 As
System.Windows.Forms.TextBox
Friend WithEvents TextBox7 As
System.Windows.Forms.TextBox
Friend WithEvents TextBox8 As
System.Windows.Forms.TextBox
Friend WithEvents Label2 As System.Windows.Forms.Label
Friend WithEvents TextBox9 As
System.Windows.Forms.TextBox
Friend WithEvents Label3 As System.Windows.Forms.Label
Friend WithEvents Label4 As System.Windows.Forms.Label
Friend WithEvents Label5 As System.Windows.Forms.Label
<System.Diagnostics.DebuggerStepThrough()> Private Sub
InitializeComponent()
    Me.DataGridView1 = New System.Windows.Forms.DataGridView
    Me.TextBox1 = New System.Windows.Forms.TextBox
    Me.TextBox2 = New System.Windows.Forms.TextBox
    Me.Label1 = New System.Windows.Forms.Label
    Me.TextBox3 = New System.Windows.Forms.TextBox
    Me.TextBox4 = New System.Windows.Forms.TextBox
    Me.TextBox5 = New System.Windows.Forms.TextBox
    Me.TextBox6 = New System.Windows.Forms.TextBox
    Me.TextBox7 = New System.Windows.Forms.TextBox
    Me.TextBox8 = New System.Windows.Forms.TextBox
    Me.Label2 = New System.Windows.Forms.Label
    Me.TextBox9 = New System.Windows.Forms.TextBox
    Me.Label3 = New System.Windows.Forms.Label
    Me.Label4 = New System.Windows.Forms.Label
    Me.Label5 = New System.Windows.Forms.Label
    CType(Me.DataGridView1,
System.ComponentModel.ISupportInitialize).BeginInit()
    Me.SuspendLayout()
    'DataGridView1
    '
    Me.DataGridView1.DataMember = ""
    Me.DataGridView1.HeaderForeColor =
System.Drawing.SystemColors.ControlText
    Me.DataGridView1.Location = New System.Drawing.Point
(8, 192)
    Me.DataGridView1.Name = "DataGridView1"
    Me.DataGridView1.Size = New System.Drawing.Size(528, 128)
    Me.DataGridView1.TabIndex = 0

```

```

'TextBox1
'
Me.TextBox1.Location = New System.Drawing.Point
(120, 16)
Me.TextBox1.Name = "TextBox1"
Me.TextBox1.Size = New System.Drawing.Size(200, 20)
Me.TextBox1.TabIndex = 2
Me.TextBox1.Text = ""
'
'TextBox2
'
Me.TextBox2.Location = New System.Drawing.Point
(336, 16)
Me.TextBox2.Name = "TextBox2"
Me.TextBox2.Size = New System.Drawing.Size(200, 20)
Me.TextBox2.TabIndex = 4
Me.TextBox2.Text = ""
'
'Label1
'
Me.Label1.Location = New System.Drawing.Point(8, 16)
Me.Label1.Name = "Label1"
Me.Label1.Size = New System.Drawing.Size(96, 16)
Me.Label1.TabIndex = 3
Me.Label1.Text = "Col ChangING"
'
'TextBox3
'
Me.TextBox3.Location = New System.Drawing.Point
(120, 48)
Me.TextBox3.Name = "TextBox3"
Me.TextBox3.Size = New System.Drawing.Size(200, 20)
Me.TextBox3.TabIndex = 6
Me.TextBox3.Text = ""
'
'TextBox4
'
Me.TextBox4.Location = New System.Drawing.Point
(336, 48)
Me.TextBox4.Name = "TextBox4"
Me.TextBox4.Size = New System.Drawing.Size(200, 20)
Me.TextBox4.TabIndex = 8
Me.TextBox4.Text = ""
'
'TextBox5
'
Me.TextBox5.Location = New System.Drawing.Point
(120, 88)
Me.TextBox5.Name = "TextBox5"
Me.TextBox5.Size = New System.Drawing.Size(200, 20)
Me.TextBox5.TabIndex = 13
Me.TextBox5.Text = ""
'
'TextBox6
'
Me.TextBox6.Location = New System.Drawing.Point
(336, 88)
Me.TextBox6.Name = "TextBox6"
Me.TextBox6.Size = New System.Drawing.Size(200, 20)
Me.TextBox6.TabIndex = 12

```

```

Me.TextBox6.Text = ""
'
' TextBox7
'
Me.TextBox7.Location = New System.Drawing.Point
(120, 120)
Me.TextBox7.Name = "TextBox7"
Me.TextBox7.Size = New System.Drawing.Size(200, 20)
Me.TextBox7.TabIndex = 11
Me.TextBox7.Text = ""
'
' TextBox8
'
Me.TextBox8.Location = New System.Drawing.Point
(336, 120)
Me.TextBox8.Name = "TextBox8"
Me.TextBox8.Size = New System.Drawing.Size(200, 20)
Me.TextBox8.TabIndex = 9
Me.TextBox8.Text = ""
'
' Label2
'
Me.Label2.Location = New System.Drawing.Point(8, 48)
Me.Label2.Name = "Label2"
Me.Label2.Size = New System.Drawing.Size(96, 16)
Me.Label2.TabIndex = 10
Me.Label2.Text = "Col ChangED"
'
' TextBox9
'
Me.TextBox9.Location = New System.Drawing.Point
(120, 152)
Me.TextBox9.Name = "TextBox9"
Me.TextBox9.Size = New System.Drawing.Size(200, 20)
Me.TextBox9.TabIndex = 18
Me.TextBox9.Text = ""
'
' Label3
'
Me.Label3.Location = New System.Drawing.Point(8, 88)
Me.Label3.Name = "Label3"
Me.Label3.Size = New System.Drawing.Size(96, 16)
Me.Label3.TabIndex = 15
Me.Label3.Text = "Row ChangING"
'
' Label4
'
Me.Label4.Location = New System.Drawing.Point(8, 120)
Me.Label4.Name = "Label4"
Me.Label4.Size = New System.Drawing.Size(96, 16)
Me.Label4.TabIndex = 19
Me.Label4.Text = "Row ChangED"
'
' Label5
'
Me.Label5.Location = New System.Drawing.Point(8, 160)
Me.Label5.Name = "Label5"
Me.Label5.Size = New System.Drawing.Size(88, 16)
Me.Label5.TabIndex = 20
Me.Label5.Text = "Price * Stock"
'

```

```

'objDataGrid3
'
Me.AutoScaleBaseSize = New System.Drawing.Size(5, 13)
Me.ClientSize = New System.Drawing.Size(544, 325)
Me.Controls.Add(Me.Label5)
Me.Controls.Add(Me.Label4)
Me.Controls.Add(Me.TextBox9)
Me.Controls.Add(Me.Label3)
Me.Controls.Add(Me.TextBox5)
Me.Controls.Add(Me.TextBox6)
Me.Controls.Add(Me.TextBox7)
Me.Controls.Add(Me.TextBox8)
Me.Controls.Add(Me.Label2)
Me.Controls.Add(Me.TextBox4)
Me.Controls.Add(Me.TextBox3)
Me.Controls.Add(Me.TextBox2)
Me.Controls.Add(Me.TextBox1)
Me.Controls.Add(Me.Label1)
Me.Controls.Add(Me.DataGrid1)
Me.Name = "objDataGrid3"
Me.StartPosition =
System.Windows.Forms.FormStartPosition.CenterScreen
Me.Text = "objDataGrid3"
CType(Me.DataGrid1,
System.ComponentModel.ISupportInitialize).EndInit()
Me.ResumeLayout(False)

End Sub

#End Region

Dim objConnection As SqlConnection
Dim objCommand As SqlCommand
Dim objDataAdapter As SqlDataAdapter
Dim objDataSet As New DataSet
Dim strConn, strSQL As String
Dim form MenuInduk As New MenuInduk
Dim objDataTable As New DataTable
Dim mPosition As Integer

Private Sub objDataGrid3 Load(ByVal sender As
System.Object, ByVal e As System.EventArgs) Handles
 MyBase.Load
    strConn = form MenuInduk.mRoot StrConn
    strSQL = "select album id, album Singer, album title,
HAPUS = 'No' ," &
        "album price, album stock qty from AlbumList order
        by album id"
    objConnection = New SqlConnection(strConn)
    objCommand = New SqlCommand(strSQL, objConnection)
    objConnection.Open()
    objDataAdapter = New SqlDataAdapter(objCommand)
    objDataAdapter.Fill(objDataSet, "mDT albumlist")

    objDataTable = objDataSet.Tables("mDT AlbumList")
    DataGrid1.DataSource = objDataTable
    DataGrid1.RowHeadersVisible = False

    AddHandler objDataTable.ColumnChanging, AddressOf
    Me.myDataTable ColumnChanging
    AddHandler objDataTable.ColumnChanged, AddressOf

```

```

Me.myDataTable ColumnChanged
AddHandler objDataTable.RowChanging, AddressOf
Me.myDataTable RowChanging
AddHandler objDataTable.RowChanged, AddressOf
Me.myDataTable RowChanged

objConnection.Close()
End Sub

Private Sub myDataTable ColumnChanging
(ByVal sender As System.Object, ByVal e As
System.Data.DataColumnChangeEventArgs)
Label1.Text = e.Column.ColumnName
mPosition = BindingContext(objDataTable).Position
With objDataTable.Rows(mPosition)
    TextBox1.Text = .Item("Album ID")
    TextBox2.Text = .Item("Album title")
    If e.Column.ColumnName = "HAPUS" Then
        TextBox9.Text = .Item("Album price") *
        .Item("Album stock qty")
        .Item("Album price") = 0
        .Item("Album stock qty") = 0
    End If
End With
End Sub

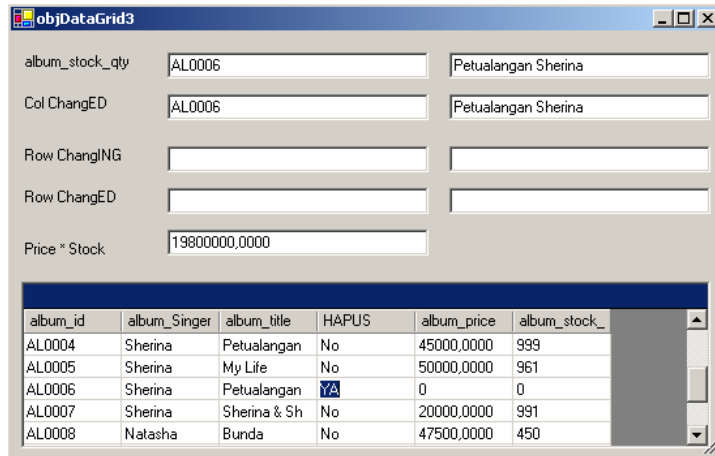
Private Sub myDataTable ColumnChanged
(ByVal sender As System.Object, ByVal e As
System.Data.DataColumnChangeEventArgs)
mPosition = BindingContext(objDataTable).Position
With objDataTable.Rows(mPosition)
    TextBox3.Text = .Item("Album ID")
    TextBox4.Text = .Item("Album title")
End With
End Sub

Private Sub myDataTable RowChanging
(ByVal sender As System.Object, ByVal e As
System.Data.DataRowChangeEventArgs)
mPosition = BindingContext(objDataTable).Position
With objDataTable.Rows(mPosition)
    TextBox5.Text = .Item("Album ID")
    TextBox6.Text = .Item("Album title")
End With
End Sub

Private Sub myDataTable RowChanged
(ByVal sender As System.Object, ByVal e As
System.Data.DataRowChangeEventArgs)
mPosition = BindingContext(objDataTable).Position
With objDataTable.Rows(mPosition)
    TextBox7.Text = .Item("Album ID")
    TextBox8.Text = .Item("Album title")
End With
End Sub

End Class

```



Gambar 7.8 Proses Penghapus via Update

7.7 Event pada Kontrol DataGrid

Adalah hal yang normal bagi seorang pengguna untuk mencari kode barang saat melakukan entrian transaksi. Untuk membantu hal tersebut, penulis menggunakan tombol **F8** untuk mencari daftar barang berdasarkan kode barang atau **F9** untuk melakukan pencarian berdasarkan judul album, dimana penekanan tombol **F8** maupun **F9** termasuk dalam kelompok event KeyUp.

Sebelumnya penulis telah mengatakan bahwa event KeyUp pada kontrol DataGrid tidak dapat bekerja saat icon pensil menulis tampak pada *row headers*. Untuk membuktikan hal tersebut, Anda boleh mencoba menjalankan program *ObjDataGrid4*. Lakukan entri satu huruf a, s, atau b pada kolom *Album_ID* dan tekan **F8** maupun **F9** pada status tampilan icon berbeda. Mungkin Anda akan melihat jendela pencarian, mungkin juga tidak. Mungkin juga record yang ditampilkan tidak sesuai dengan kode karakter yang Anda masukkan. Singkatnya, terlalu merepotkan untuk mengetahui daftar record yang akan ditampilkan pada jendela pencarian.

Kini lakukan hal yang sama, tetapi klik tombol **ID** atau tombol **Judul**. Dengan cepat Anda dapat memvalidasi kebenaran proses pencarian. Mengapa pencarian melalui tombol tersebut dapat berjalan dengan benar? Oleh karena setelah Anda mengklik tombol tersebut, nilai entri yang Anda masukkan dianggap valid/benar dan Anda dapat melihat icon segitiga hitam pada area *row header*.

Oleh karena permasalahan event `KeyUp` tersebut di atas maka keperluan bantuan pencarian record pada kontrol datagrid tidak dilakukan melalui `KeyUp`, tetapi dilakukan dengan bantuan kontrol `Button`. Anda dapat melihat aplikasinya nanti, dan berikut ini adalah listing program yang dimaksud (listing program *Lib_Help_AlbumList* dapat Anda lihat pada pembahasan *Aplikasi Program Penjualan Barang*).

```
ObjDataGrid4.VB:
Public Class objDataGrid4
    Inherits System.Windows.Forms.Form

    #Region " Windows Form Designer generated code "

    Public Sub New()
        MyBase.New()

        'This call is required by the Windows Form Designer.
        InitializeComponent()

        'Add any initialization after the
        'InitializeComponent() call

    End Sub

    'Form overrides dispose to clean up the component list.
    Protected Overrides Sub Dispose(ByVal disposing As Boolean)
        If disposing Then
            If Not (components Is Nothing) Then
                components.Dispose()
            End If
        End If
        MyBase.Dispose(disposing)
    End Sub

    'Required by the Windows Form Designer
    Private components As System.ComponentModel.IContainer

    'NOTE: The following procedure is required by the
    'Windows Form Designer
    'It can be modified using the Windows Form Designer.
    'Do not modify it using the code editor.
    Friend WithEvents DataGrid1 As
    System.Windows.Forms.DataGrid
```

```

Friend WithEvents Label1 As System.Windows.Forms.Label
Friend WithEvents Button1 As
System.Windows.Forms.Button
Friend WithEvents Button2 As
System.Windows.Forms.Button
<System.Diagnostics.DebuggerStepThrough()> Private Sub
InitializeComponent()
    Me.DataGrid1 = New System.Windows.Forms.DataGrid
    Me.Label1 = New System.Windows.Forms.Label
    Me.Button1 = New System.Windows.Forms.Button
    Me.Button2 = New System.Windows.Forms.Button
    CType(Me.DataGrid1,
System.ComponentModel.ISupportInitialize).BeginInit()
    Me.SuspendLayout()
    '
    'DataGrid1
    '
    Me.DataGrid1.DataMember = ""
    Me.DataGrid1.HeaderForeColor =
System.Drawing.SystemColors.ControlText
    Me.DataGrid1.Location = New System.Drawing.Point
(8, 24)
    Me.DataGrid1.Name = "DataGrid1"
    Me.DataGrid1.Size = New System.Drawing.Size(352, 144)
    Me.DataGrid1.TabIndex = 0
    '
    'Label1
    '
    Me.Label1.Location = New System.Drawing.Point(0, 0)
    Me.Label1.Name = "Label1"
    Me.Label1.Size = New System.Drawing.Size(360, 24)
    Me.Label1.TabIndex = 1
    Me.Label1.Text = "Label1"
    '
    'Button1
    '
    Me.Button1.Location = New System.Drawing.Point
(16, 176)
    Me.Button1.Name = "Button1"
    Me.Button1.TabIndex = 2
    Me.Button1.Text = "ID"
    '
    'Button2
    '
    Me.Button2.Location = New System.Drawing.Point
(112, 176)
    Me.Button2.Name = "Button2"
    Me.Button2.TabIndex = 3
    Me.Button2.Text = "JUDUL"
    '
    'objDataGrid4
    '
    Me.AutoScaleBaseSize = New System.Drawing.Size(5, 13)
    Me.ClientSize = New System.Drawing.Size(368, 213)
    Me.Controls.Add(Me.Button2)
    Me.Controls.Add(Me.Button1)
    Me.Controls.Add(Me.Label1)
    Me.Controls.Add(Me.DataGrid1)
    Me.Name = "objDataGrid4"
    Me.StartPosition =
System.Windows.Forms.FormStartPosition.CenterScreen

```



```

Me.Text = "objDataGrid4"
CType(Me.DataGrid1,
System.ComponentModel.ISupportInitialize).EndInit()
Me.ResumeLayout(False)

End Sub

#End Region

Dim objConnection As SqlConnection
Dim objCommand As SqlCommand
Dim objDataAdapter As SqlDataAdapter
Dim objDataSet As New DataSet
Dim strConn, strSQL As String
Dim form MenuInduk As New MenuInduk
Dim objDataTable As New DataTable

Private Sub objDataGrid4_Load(ByVal sender As
System.Object, ByVal e As System.EventArgs) Handles
MyBase.Load
    strConn = form MenuInduk.mRoot StrConn
    strSQL = "select Album ID, Album title, Album price
from AlbumList where album ID = 'ZZZ'"
    objConnection = New SqlConnection(strConn)
    objCommand = New SqlCommand(strSQL, objConnection)
    objConnection.Open()
    objDataAdapter = New SqlDataAdapter(objCommand)
    objDataAdapter.Fill(objDataSet, "mDT Entry albumlist")

    objDataTable =
objDataSet.Tables("mDT Entry AlbumList")
    DataGrid1.DataSource = objDataTable
    DataGrid1.CaptionText = "Judul DataGrid
(area object DataGrid)"
    objConnection.Close()

    objDataTable.AcceptChanges()
    BindingContext(objDataTable).AddNew()
    DataGrid1.Item(0, 0) = ""

End Sub

Private Sub DataGrid1_KeyUp(ByVal sender As
System.Object, ByVal e As
System.Windows.Forms.KeyEventArgs) Handles
DataGrid1.KeyUp
    Dim form Lib Help AlbumList As New Lib Help AlbumList
    Dim mRow As Integer
    mRow = DataGrid1.CurrentCell.RowNumber

    Try
        Label1.Text = "via Key UP - " & DataGrid1.Item
(mRow, 0)
        form MenuInduk.mRoot Find It = DataGrid1.Item
(mRow, 0)
    Catch
        Label1.Text = "via Key UP - Nilai via DataGrid =
NULL"
        form MenuInduk.mRoot Find It = ""
    End Try

```

```

If e.KeyCode = Shortcut.F8 Then
    form MenuInduk.mRoot IO Sort By = "ID"
    form Lib Help AlbumList.ShowDialog()
End If
If e.KeyCode = Shortcut.F9 Then
    form MenuInduk.mRoot IO Sort By = "TITLE"
    form Lib Help AlbumList.ShowDialog()
End If
If form MenuInduk.mRoot Return Album ID <> "" Then
    Dim mTemp As String =
    form MenuInduk.mRoot Return Album ID
    DataGrid1.Item(mRow, 1) =
    form Lib Help AlbumList.mAlbum Title
    DataGrid1.Item(mRow, 2) =
    form Lib Help AlbumList.mAlbum Price
    form MenuInduk.mRoot Return Album ID = ""
    DataGrid1.Item(mRow, 0) = mTemp
End If
End Sub

Private Sub Button1 Click(ByVal sender As
System.Object, ByVal e As System.EventArgs) Handles
Button1.Click
    Dim form Lib Help AlbumList As New Lib Help AlbumList
    Dim mRow As Integer
    mRow = DataGrid1.CurrentCell.RowNumber

    Try
        Label1.Text = "via ID " & DataGrid1.Item(mRow, 0)
        form MenuInduk.mRoot Find It = DataGrid1.Item
        (mRow, 0)
    Catch
        form MenuInduk.mRoot Find It = ""
        Label1.Text = "Via ID - nilai kolom NULL "
    End Try

    form MenuInduk.mRoot IO Sort By = "ID"
    form Lib Help AlbumList.ShowDialog()
    If form MenuInduk.mRoot Return Album ID <> "" Then
        Dim mTemp As String =
        form MenuInduk.mRoot Return Album ID
        DataGrid1.Item(mRow, 1) =
        form Lib Help AlbumList.mAlbum Title
        DataGrid1.Item(mRow, 2) =
        form Lib Help AlbumList.mAlbum Price
        form MenuInduk.mRoot Return Album ID = ""
        DataGrid1.Item(mRow, 0) = mTemp
    End If
End Sub

Private Sub Button2 Click(ByVal sender As
System.Object, ByVal e As System.EventArgs) Handles
Button2.Click
    Dim form Lib Help AlbumList As New Lib Help AlbumList
    Dim mRow As Integer
    mRow = DataGrid1.CurrentCell.RowNumber

    Try
        Label1.Text = "via Judul " & DataGrid1.Item
        (mRow, 0)
    End Try

```

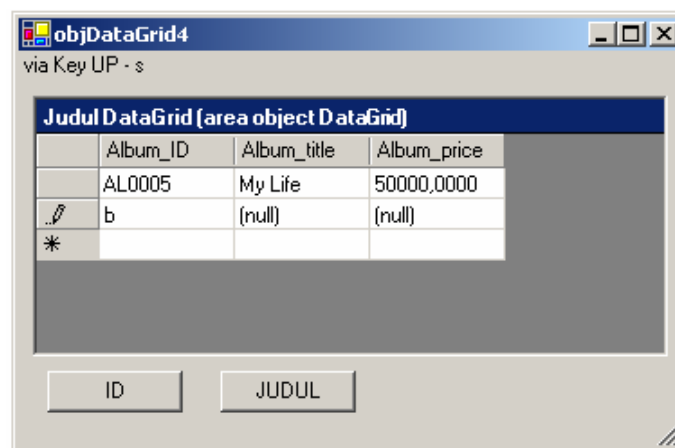
```

form MenuInduk.mRoot Find It = DataGrid1.Item
(mRow, 0)
Catch
form MenuInduk.mRoot Find It = ""
Label1.Text = "Via Judul - nilai kolom NULL "
End Try

form MenuInduk.mRoot IO Sort By = "TITLE"
form Lib Help AlbumList.ShowDialog()

If form MenuInduk.mRoot Return Album ID <> "" Then
Dim mTemp As String =
form MenuInduk.mRoot Return Album ID
DataGrid1.Item(mRow, 1) =
form Lib Help AlbumList.mAlbum Title
DataGrid1.Item(mRow, 2) =
form Lib Help AlbumList.mAlbum Price
form MenuInduk.mRoot Return Album ID = ""
DataGrid1.Item(mRow, 0) = mTemp
End If
End Sub
End Class

```



Gambar 7.9 Menangani Event -KeyUp pada DataGrid

7.8 Membaca XML File

Selain memperoleh baris data dari database, sebuah program juga dapat memperolehnya melalui file eXtended Meta Language (XML). Setelah XML dibaca, selanjutnya Anda dapat menuliskan

kode program sebagaimana biasanya untuk mengolah baris yang ada.

Pada contoh program berikut, Anda dapat melihat bagaimana sebuah XML dibaca. Bagian yang perlu Anda perhatikan dari program ini adalah contoh penulisan penyertaan Namespace *System.IO* pada awal program dan penggunaan path relatif (titik dua) untuk membaca XML file. Ingat bahwa file exe berada di folder *.bin*.

```
Baca XML File.vb:
Imports System.IO
Public Class Baca XML File
    Inherits System.Windows.Forms.Form

#Region " Windows Form Designer generated code "

    Public Sub New()
        MyBase.New()

        'This call is required by the Windows Form Designer.
        InitializeComponent()

        'Add any initialization after the
        InitializeComponent() call

    End Sub

    'Form overrides dispose to clean up the component list.
    Protected Overloads Overrides Sub Dispose(ByVal
    disposing As Boolean)
        If disposing Then
            If Not (components Is Nothing) Then
                components.Dispose()
            End If
        End If
        MyBase.Dispose(disposing)
    End Sub

    'Required by the Windows Form Designer
    Private components As System.ComponentModel.IContainer

    'NOTE: The following procedure is required by the
    'Windows Form Designer
    'It can be modified using the Windows Form Designer.
    'Do not modify it using the code editor.
    Friend WithEvents ListBox1 As
    System.Windows.Forms.ListBox
    Friend WithEvents DataGrid1 As
    System.Windows.Forms.DataGrid
    Friend WithEvents TextBox1 As
    System.Windows.Forms.TextBox
    Friend WithEvents Button1 As
    System.Windows.Forms.Button
    <System.Diagnostics.DebuggerStepThrough()> Private Sub
    InitializeComponent()
        Me.ListBox1 = New System.Windows.Forms.ListBox
```

```

Me.DataGrid1 = New System.Windows.Forms.DataGrid
Me.TextBox1 = New System.Windows.Forms.TextBox
Me.Button1 = New System.Windows.Forms.Button
CType(Me.DataGrid1,
System.ComponentModel.ISupportInitialize).BeginInit()
Me.SuspendLayout()
'
'ListBox1
'
Me.ListBox1.Font = New System.Drawing.Font("Microsoft
Sans Serif", 9.0!, System.Drawing.FontStyle.Regular,
System.Drawing.GraphicsUnit.Point, CType(0, Byte))
Me.ListBox1.ItemHeight = 15
Me.ListBox1.Location = New System.Drawing.Point(24, 8)
Me.ListBox1.Name = "ListBox1"
Me.ListBox1.Size = New System.Drawing.Size(512, 109)
Me.ListBox1.TabIndex = 0
'
'DataGrid1
'
Me.DataGrid1.DataMember = ""
Me.DataGrid1.Font = New System.Drawing.Font("Microsoft
Sans Serif", 9.0!, System.Drawing.FontStyle.Regular,
System.Drawing.GraphicsUnit.Point, CType(0, Byte))
Me.DataGrid1.HeaderForeColor =
System.Drawing.SystemColors.ControlText
Me.DataGrid1.Location = New System.Drawing.Point
(24, 128)
Me.DataGrid1.Name = "DataGrid1"
Me.DataGrid1.Size = New System.Drawing.Size(512, 128)
Me.DataGrid1.TabIndex = 16
'
'TextBox1
'
Me.TextBox1.Location = New System.Drawing.Point
(24, 264)
Me.TextBox1.Name = "TextBox1"
Me.TextBox1.Size = New System.Drawing.Size(352, 30)
Me.TextBox1.TabIndex = 17
Me.TextBox1.Text = "..\File XML.xml"
'
'Button1
'
Me.Button1.Location = New System.Drawing.Point
(384, 264)
Me.Button1.Name = "Button1"
Me.Button1.Size = New System.Drawing.Size(152, 32)
Me.Button1.TabIndex = 18
Me.Button1.Text = "Process"
'
'Baca XML File
'
Me.AutoScaleBaseSize = New System.Drawing.Size(10, 23)
Me.ClientSize = New System.Drawing.Size(544, 309)
Me.Controls.Add(Me.Button1)
Me.Controls.Add(Me.TextBox1)
Me.Controls.Add(Me.DataGrid1)
Me.Controls.Add(Me.ListBox1)
Me.Font = New System.Drawing.Font("Microsoft Sans
Serif", 15.0!, System.Drawing.FontStyle.Regular,
System.Drawing.GraphicsUnit.Point, CType(0, Byte))

```

```

Me.Name = "Baca XML File"
Me.StartPosition =
System.Windows.Forms.FormStartPosition.CenterScreen
Me.Text = "Baca XML File"
CType(Me.DataGrid1,
System.ComponentModel.ISupportInitialize).EndInit()
Me.ResumeLayout(False)

End Sub

#End Region

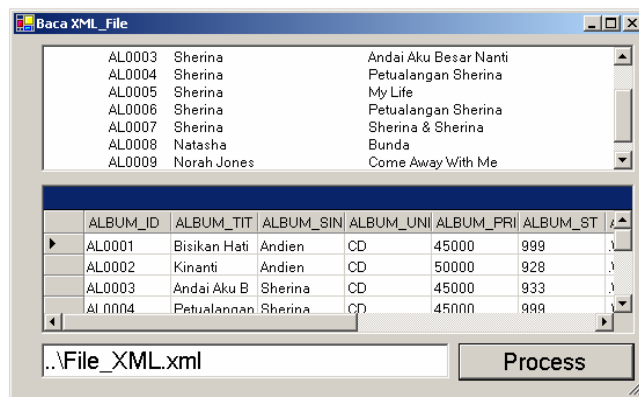
Private Sub Button1_Click(ByVal sender As
System.Object, ByVal e As System.EventArgs) Handles
Button1.Click
    DataGrid1.ReadOnly = True
    Dim objDataSet As New DataSet
    Dim objDataTable As New DataTable
    ListBox1.Items.Clear()

    Dim FS As New FileStream((TextBox1.Text),
    FileMode.Open, FileAccess.Read)
    Dim xmlstream As New StreamReader(FS)
    objDataSet.ReadXml(xmlstream)
    FS.Close()
    objDataTable = objDataSet.Tables(0)
    DataGrid1.DataSource = objDataTable

    Dim mData Row As DataRow
    Dim mTemp As String
    ListBox1.Items().Add("")
    For Each mData Row In objDataTable.Rows
        mTemp = Chr(9) & mData Row.Item(0) &
        Chr(9) & mData Row.Item(2) & Chr(9) &
        mData Row.Item(1)
        ListBox1.Items().Add(mTemp)
    Next
    ListBox1.Items().Add("")
End Sub

End Class

```



Gambar 7.10 Membaca XML File