



DataTable

- Locate a record (row) in a data table



Add references to System.Data.dll and System.Xml.dll

(1) View Project Build Debug Data Tools W

(2) Add Reference...

(3) Add Reference

(4) Component Name Version Runtime Path

Component Name	Version	Runtime	Path
System.Configuration	2.0.0.0	v2.0.50727	C:\WINDOWS\Microsof.
System.Configuration.I...	2.0.0.0	v2.0.50727	C:\WINDOWS\Microsof.
System.Data	2.0.0.0	v2.0.50727	C:\WINDOWS\Microsof.
System.Data.OracleClient	2.0.0.0	v2.0.50727	C:\WINDOWS\Microsof.
System.Data.SqlClient	3.0.3600.0	v2.0.50727	C:\Program Files\Micro.

(5) Add Reference

(6) Component Name Version Runtime Path

Component Name	Version	Runtime	Path
System.Web	2.0.0.0	v2.0.50727	C:\WINDOWS\Microsof.
System.Xml	2.0.0.0	v2.0.50727	C:\WINDOWS\Microsof.
VsMacroHierarchyLib	8.0.0.0	v2.0.50727	C:\Program Files\Micro.
VsWebSite.Interop	8.0.0.0	v1.0.3705	C:\Program Files\Micro.

OK Cancel



Connecting with a DataTable

```
Dim dt As New DataTable()  
Dim connStr As String = _  
    "Provider=Microsoft.Jet.OLEDB.4.0;" & _  
    "Data Source=MEGACITIES.MDB"  
Dim sqlStr As String = "SELECT * FROM Cities"  
Dim dataAdapter As New _  
    OleDb.OleDbDataAdapter(sqlStr, connStr)  
dataAdapter.Fill(dt)  
dataAdapter.Dispose()
```

(Boiler plate to be inserted into every program in chapter.)



Properties of the DataTable

Property Count	Usage
dt.Rows.Count	Number of Records
dt.Column.Count	Number of columns

- The records are numbered 0 through
dt.Rows.Count - 1
- The fields are numbered 0 through
dt.Columns.Count - 1



More Properties

- The name of the j^{th} field is given by
`dt.Columns(j)`
- The entry in the j^{th} field of the i^{th} record is
`dt.Rows(i)(j)`
- The entry in the specified field of the i^{th} record is
`dt.Rows(i)(fieldName)`



Lab

- Lab sheet 10.2



Lab sheet 10.2 : Form

The screenshot shows a Windows-style application window with a blue title bar containing the text "Cities Data" and standard minimize, maximize, and close buttons. The main content area is light gray and contains the following elements:

- Three buttons labeled "Find", "Next", and "Previous" arranged horizontally at the top.
- Four text input fields stacked vertically, each preceded by a label:
 - "City:" followed by an empty text box.
 - "Country:" followed by an empty text box.
 - "Population 2005:" followed by an empty text box.
 - "Population 2015:" followed by an empty text box.

Display one record at a time from the Cities table.



Lab sheet 10.2 : Partial Code

```
Dim dt As New DataTable()  
Dim rowIndex As Integer = 0  
Private Sub frmCities_Load(...) Handles MyBase.Load  
    (Last five statements of boilerplate)  
    UpdateTextBoxes()  
End Sub  
Sub UpdateTextBoxes()  
    'Display contents of row specified by rowIndex variable  
    txtCity.Text = CStr(dt.Rows(rowIndex)("city"))  
    txtCountry.Text = CStr(dt.Rows(rowIndex)("country"))  
    txtPop2005.Text = CStr(dt.Rows(rowIndex)("pop2005"))  
    txtPop2015.Text = CStr(dt.Rows(rowIndex)("pop2015"))  
End Sub
```



Lab sheet 10.2 : Partial Code cont.

```
Private Sub btnNext_Click(...) Handles btnNext.Click
    'Show the next record if current one is not the last
    If (rowIndex < dt.Rows.Count - 1) Then
        rowIndex += 1      'Increase rowIndex by 1
        UpdateTextBoxes()
    End If
End Sub

Private Sub btnPrevious_Click(...) Handles _
    btnPrevious.Click
    'Show previous record if current one is not the first
    If (rowIndex > 0) Then
        rowIndex = rowIndex - 1
        UpdateTextBoxes()
    End If
End Sub
```

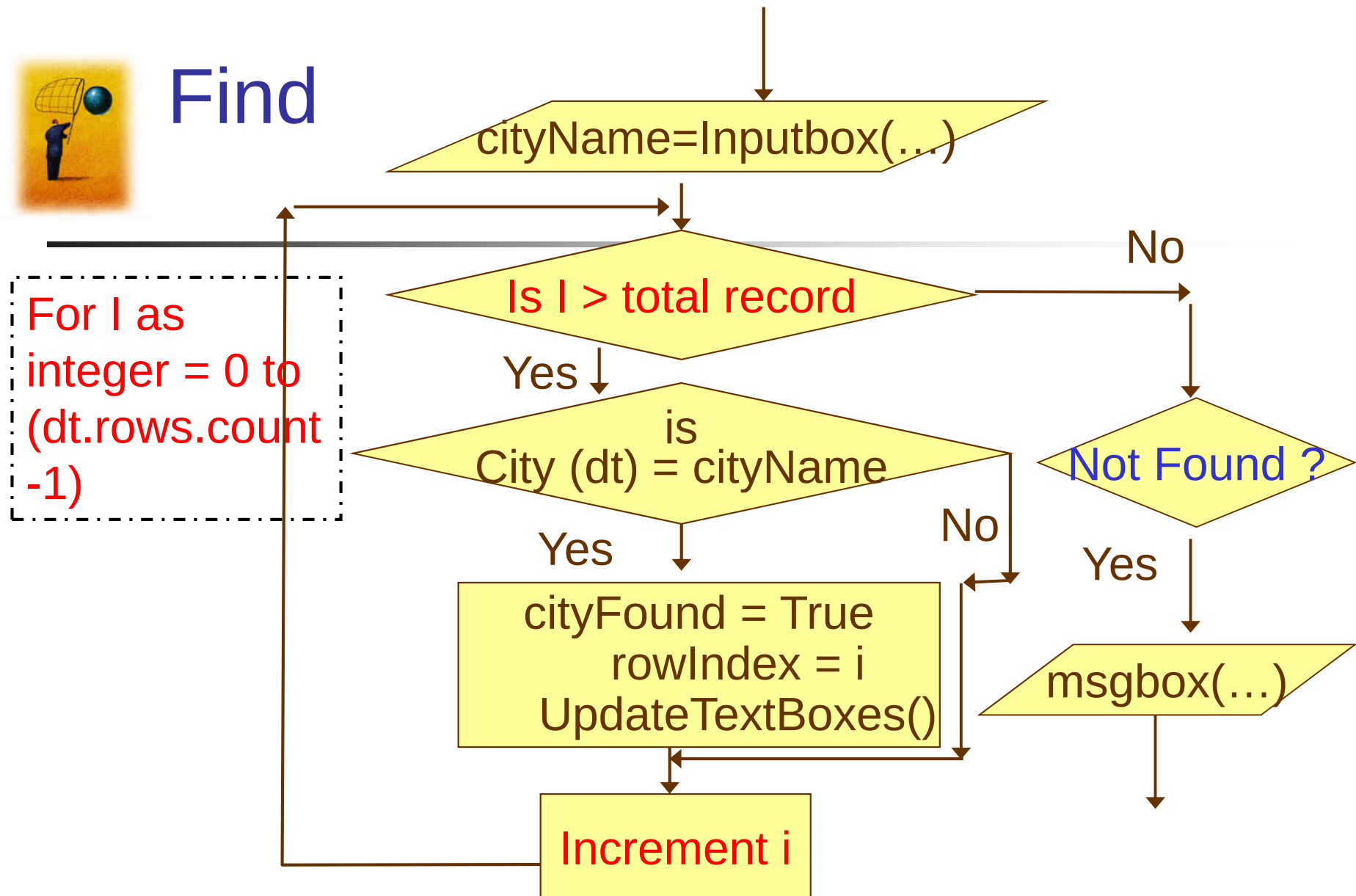


Lab sheet 10.2 : Partial Code cont.

```
Private Sub btnFind_Click(...) Handles btnFind.Click
    Dim cityName As String
    Dim cityFound As Boolean = False
    cityName = InputBox("Enter name of city to search for.")
    For i As Integer = 0 To (dt.Rows.Count - 1)
        If CStr(dt.Rows(i)("city")) = cityName Then
            cityFound = True
            rowIndex = i
            UpdateTextBoxes()
        End If
    Next
    If (Not cityFound) Then
        MsgBox("Cannot find requested city", 0, "Not in Table")
    End If
End Sub
```



Find





Lab sheet 10.2 : Output

A screenshot of a Windows-style application window titled 'Cities Data'. The window has a blue title bar with standard minimize, maximize, and close buttons. Inside the window, there are three buttons at the top: 'Find', 'Next', and 'Previous'. Below these are four text input fields, each with a label to its left. The first field is labeled 'City:' and contains 'New York'. The second is labeled 'Country:' and contains 'USA'. The third is labeled 'Population 2005:' and contains '18.5'. The fourth is labeled 'Population 2015:' and contains '19.7'.

Field	Value
City:	New York
Country:	USA
Population 2005:	18.5
Population 2015:	19.7



Question 1

- If there are 10 records in the table Cities, how many time does the *if-then-end if* statement execute?



Question 2

```
Private Sub btnFind_Click(...) Handles btnFind.Click
    Dim cityName As String
    Dim cityFound As Boolean = False
    cityName = InputBox("Enter name of city to search for.")
    For i As Integer = 0 To (dt.Rows.Count - 1)
        If CStr(dt.Rows(i)("city")) = cityName Then
            cityFound = True
            rowIndex = i
            UpdateTextBoxes()
        End If
    Next
    msgbox(i)
    If (Not cityFound) Then
        MsgBox("Cannot find requested city", 0, "Not in Table")
    End If
End Sub
```

- If the msgbox(i) is inserted, what error occurs? Explain