

Module 11: Data Access Using the Data Control



Overview

Overview of a Database

How Does Visual Basic Access Databases?

What Is the Data Control?

The Current Row and the Dynaset

Finding Records

Updating, Deleting, and Adding Records

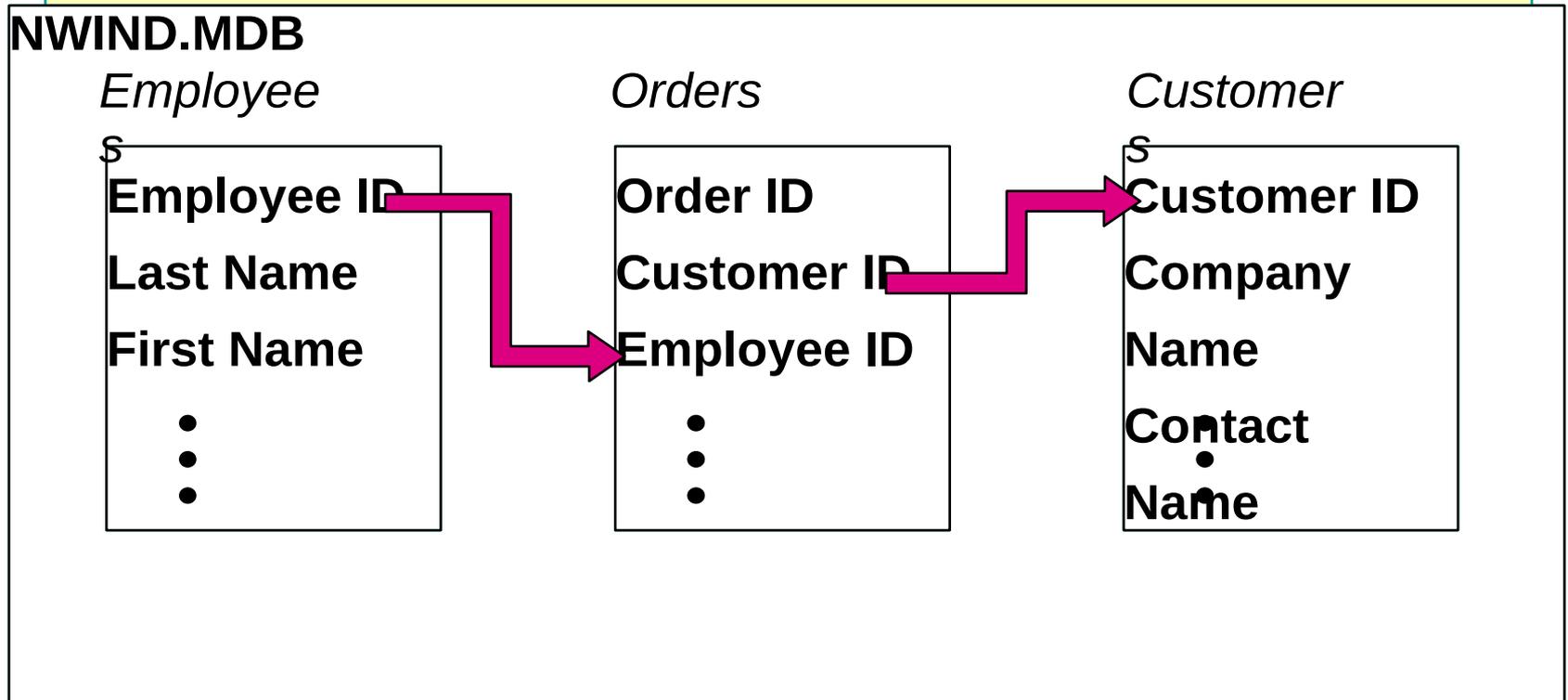
Data Control Events

How Locking Is Handled

Filling a Grid with Data from a Table



Overview of a Database



Overview of a Table

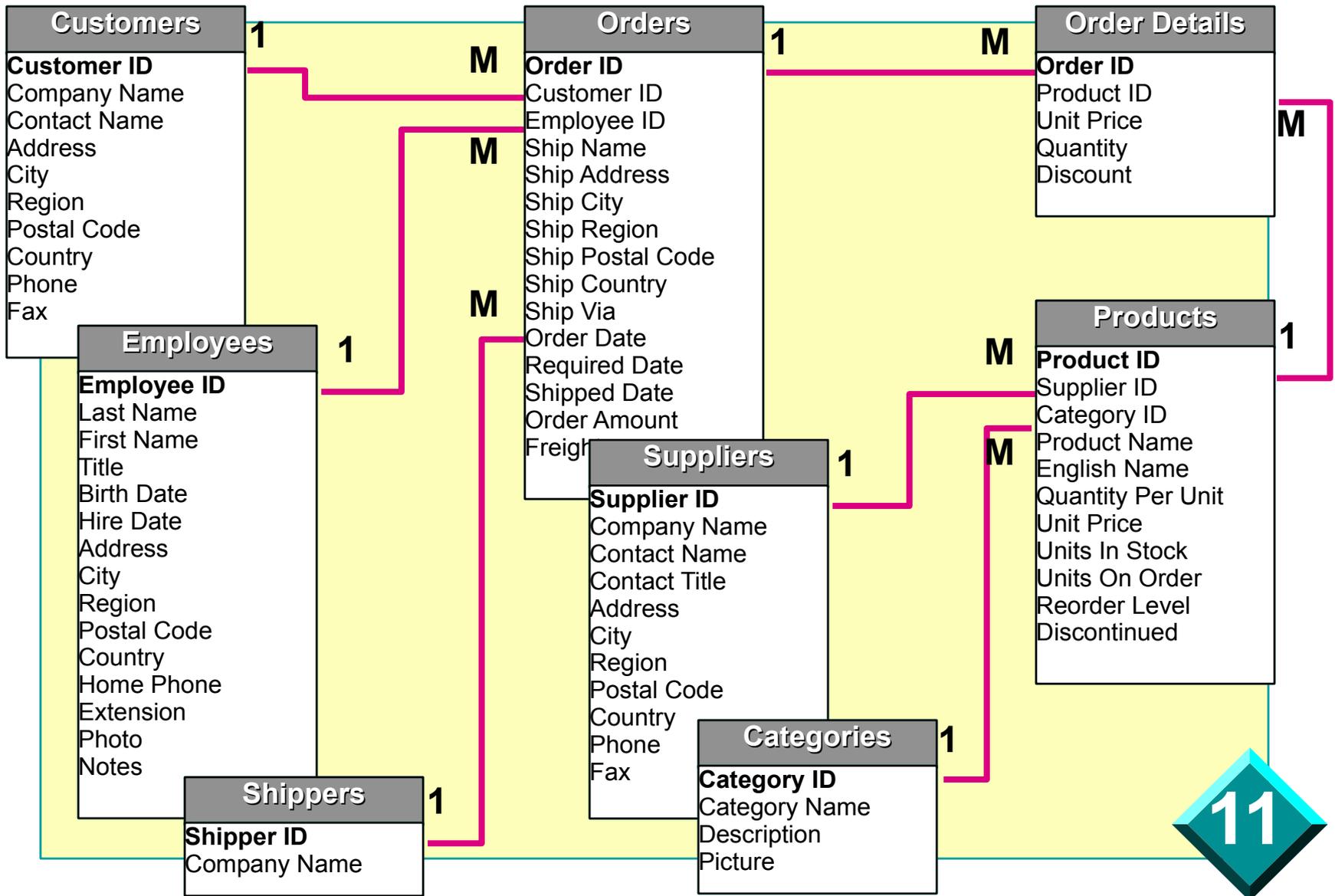
Employees Table

Employee ID	Last Name	First Name
135	Leverling	Tim
284	Buchanan	B.L.
•	•	•
•	•	•
•	•	•

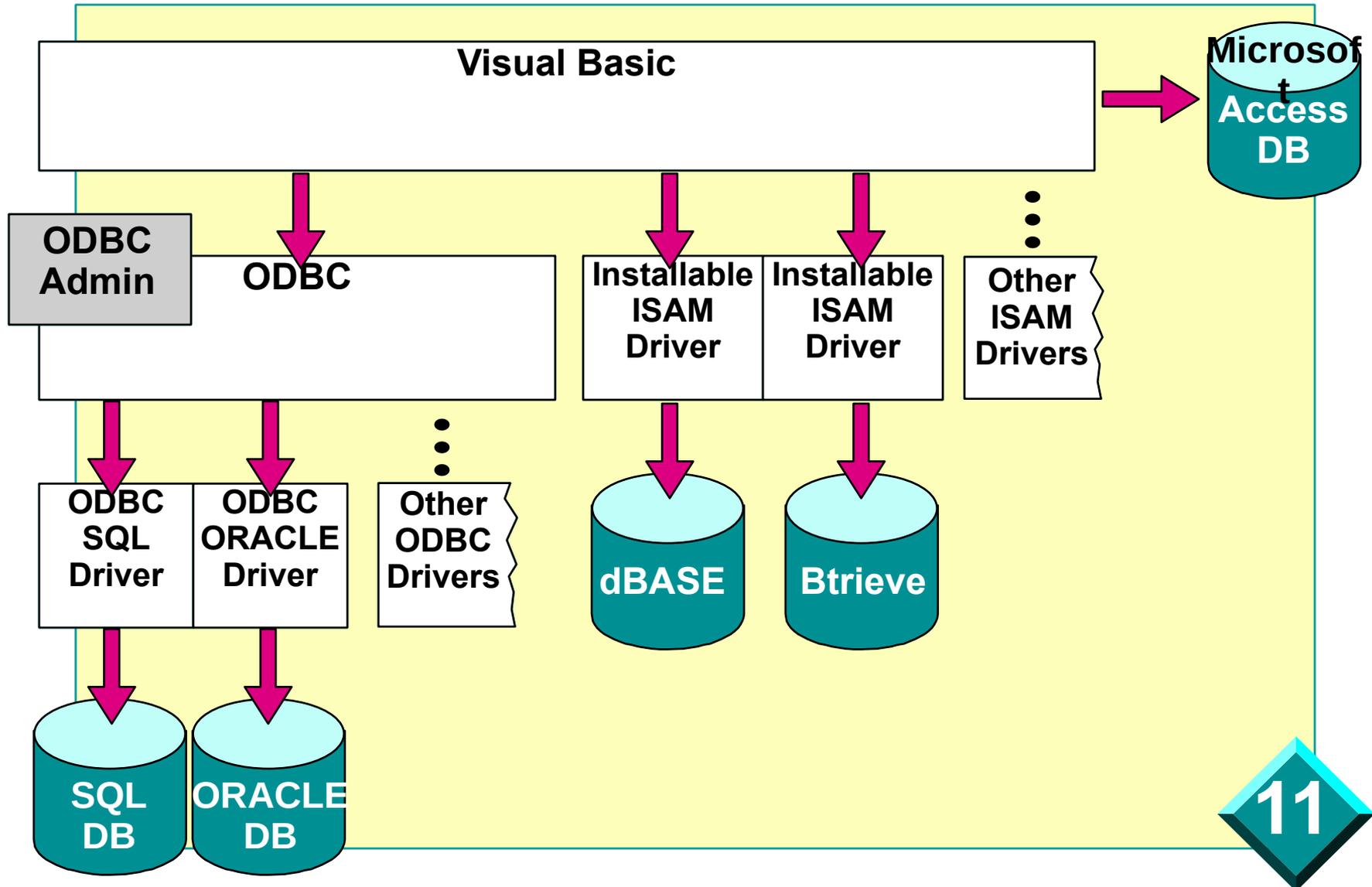
**Rows
(records)**

Columns (fields)

Northwind Database Diagram



How Does Visual Basic Access Databases?



The Data Control

Creates DYNASET
Reflects DB Table or SQL Query



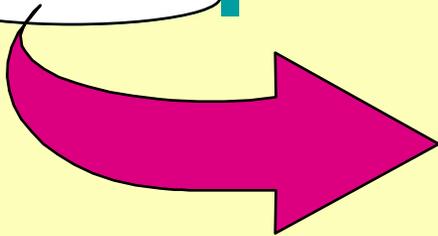
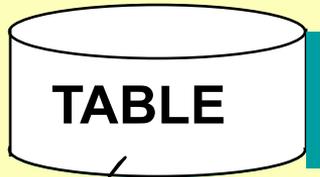
Move First

Move Previous

Move Next

Move Last

Characteristics of a DYNASET Object



Emp ID	Last Name	First Name
--------	-----------	------------

1		
2		
3		
4		

N		

**Populated 2048 Bytes
worth of Records at
a time on demand**

**Default ordered by
Primary Index Key
e.g. Emp ID**

Binding Controls to the Data Control

```
.DataSource = Data1  
.DataField = 'Last Name'
```

The diagram illustrates a form window titled "Form1" with a standard Windows-style title bar. Inside the form, there is a text box labeled "Last Name:". Below the text box is a data control labeled "Data1", which includes navigation buttons (back, forward, first, last). A pink arrow points from the code block above to the text box, indicating the binding of the code to the control.

Data Control Walkthrough

The image shows a screenshot of a Windows application window titled "Form1". The window has a standard Windows-style title bar with a minimize button, a maximize button, and a close button. Inside the window, there are two text input fields. The first is labeled "Last Name:" and the second is labeled "First Name:". Below these fields is a control labeled "Data1". This control has four buttons: a left-pointing arrow with a vertical bar on the left, a left-pointing arrow, a right-pointing arrow, and a right-pointing arrow with a vertical bar on the right. The "Data1" control appears to be a data grid or list box.

Displaying a Calculated Field

Form1

Quantity:

Price:

Total:

total = [Unit Price] * Quantity

Data1

```
.RecordSource = "Select [Unit Price], quantity,  
[Unit Price] * quantity As total from [Order Details]"
```

Data Control Methods and Properties

Refresh Method

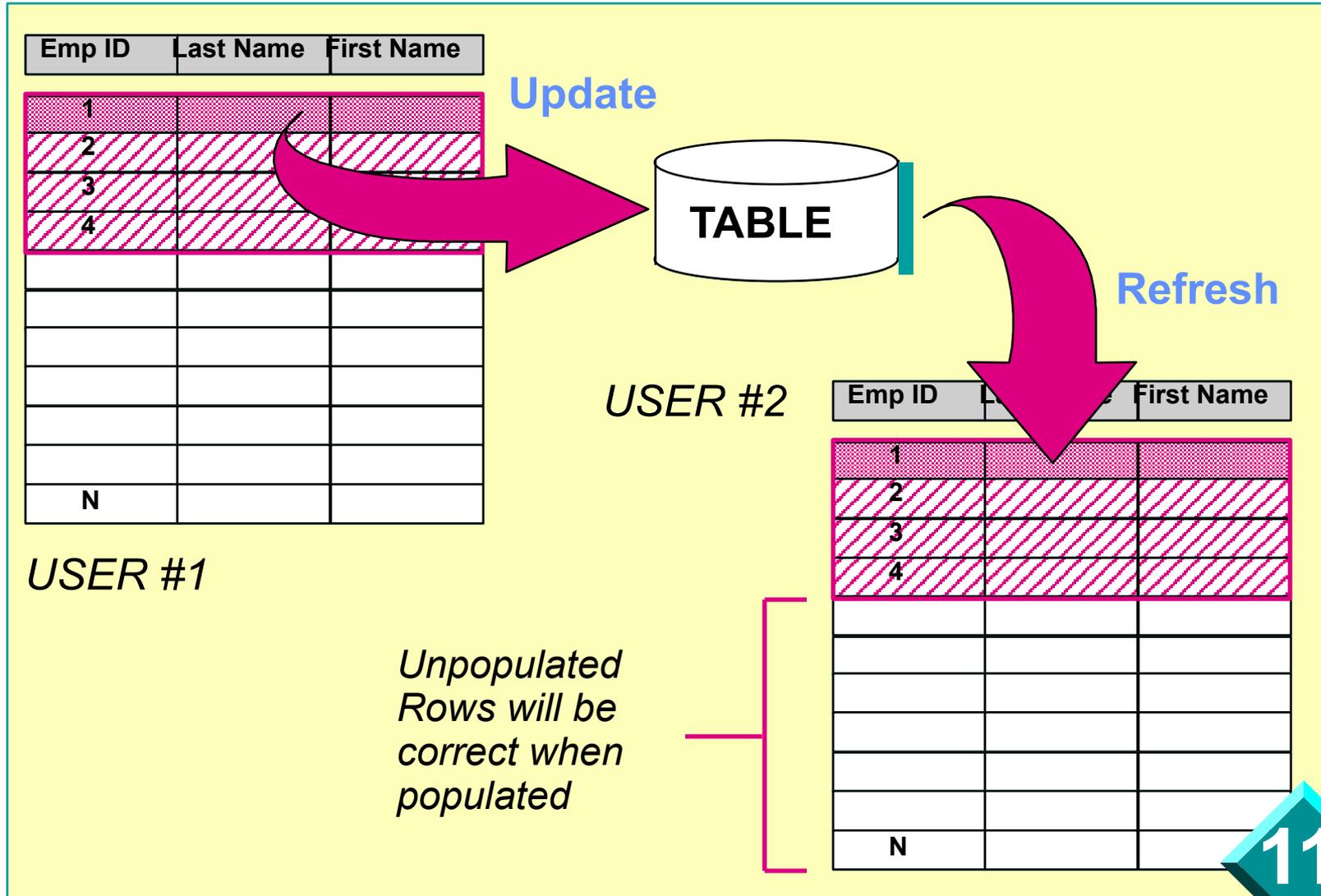
Connect Property

Exclusive Property

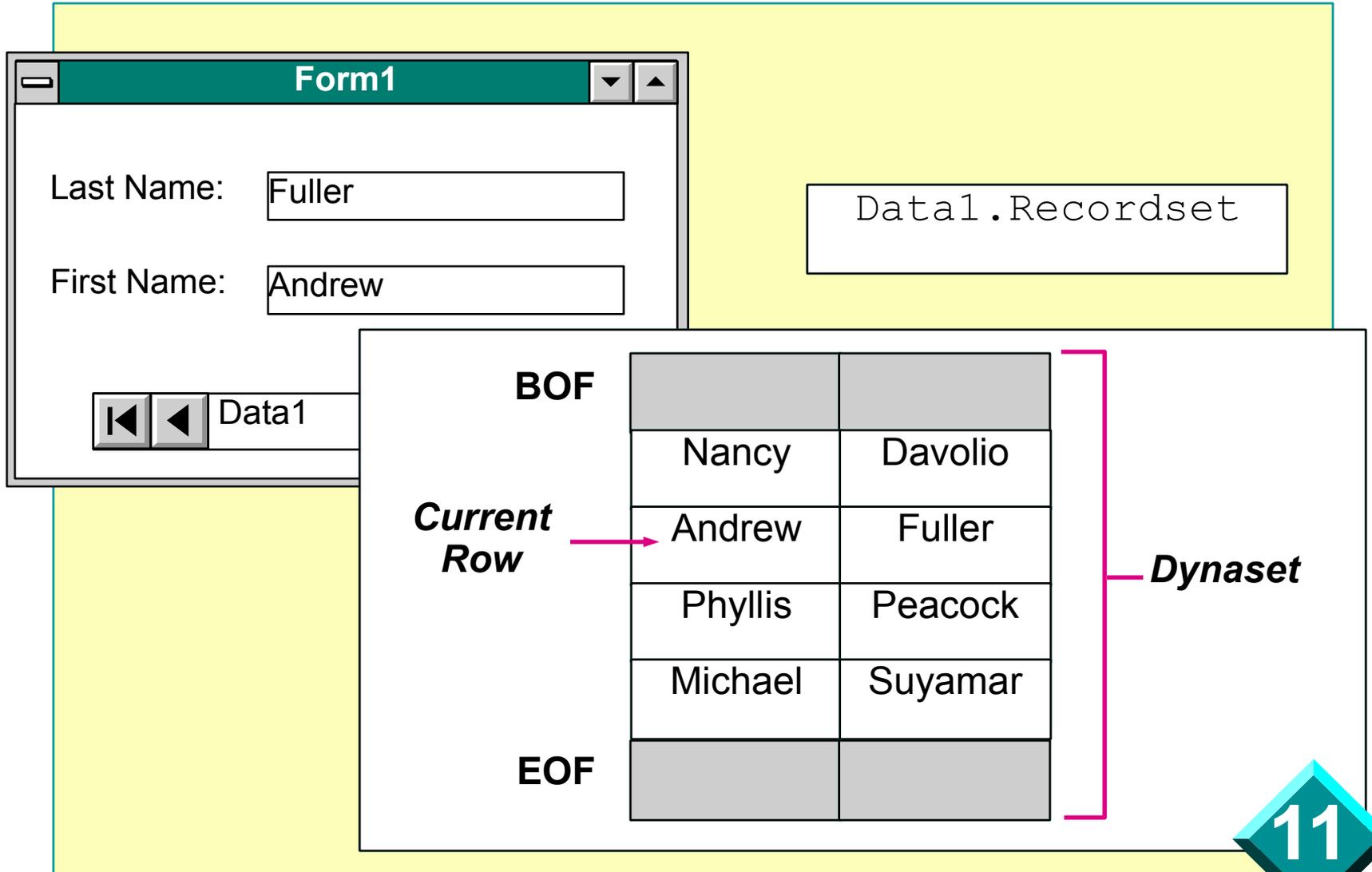
ReadOnly Property



Multiple Concurrent TABLE Users



The Current Row and The Dynaset



Finding Records

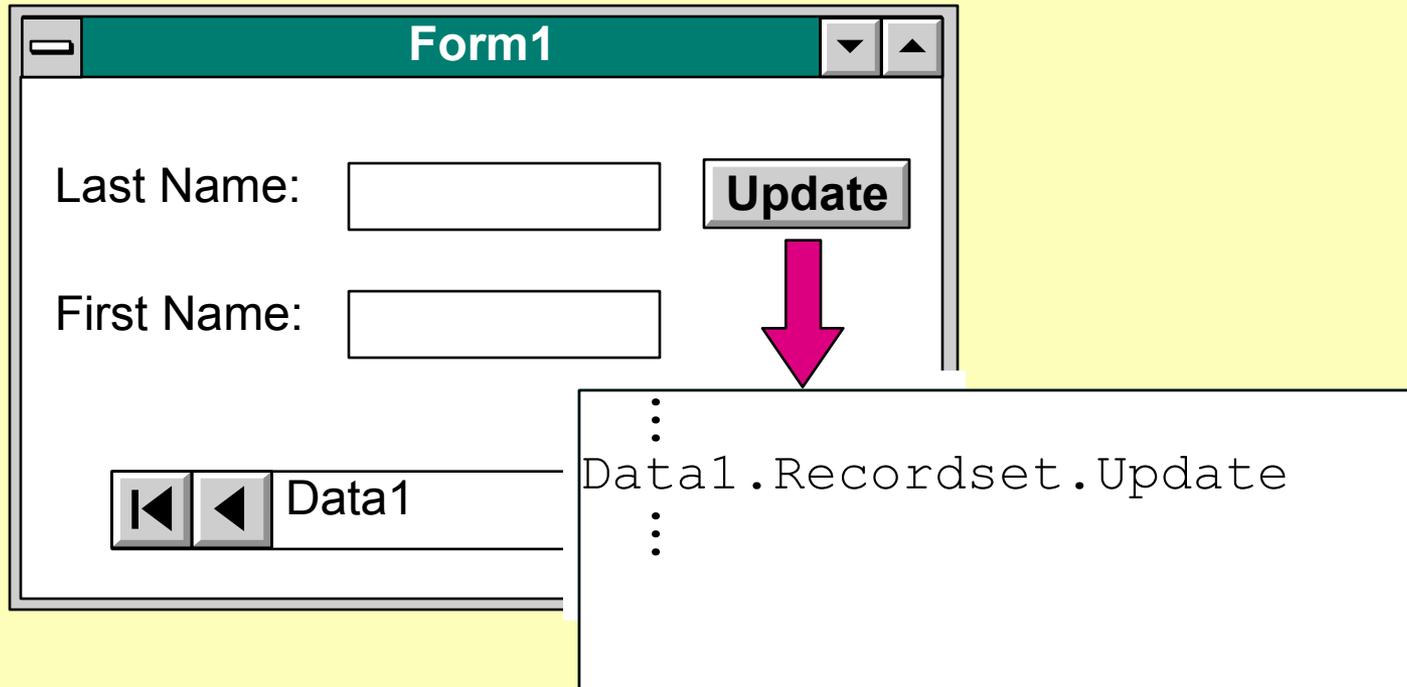
Find Methods: **FindFirst**, **FindLast**, **FindPrevious**, **FindNext**

The screenshot shows a window titled "Form1" with a green title bar. Inside the window, there are two text input fields: "Last Name:" and "First Name:". To the right of the "Last Name:" field is a button labeled "Find". A large pink arrow points downwards from the "Find" button to a data grid below. The data grid has a header row with "Data1.Recordset.FindFirst criteria" and two columns of vertical ellipsis dots. To the left of the data grid are two navigation buttons: a left-pointing arrow and a double left-pointing arrow.

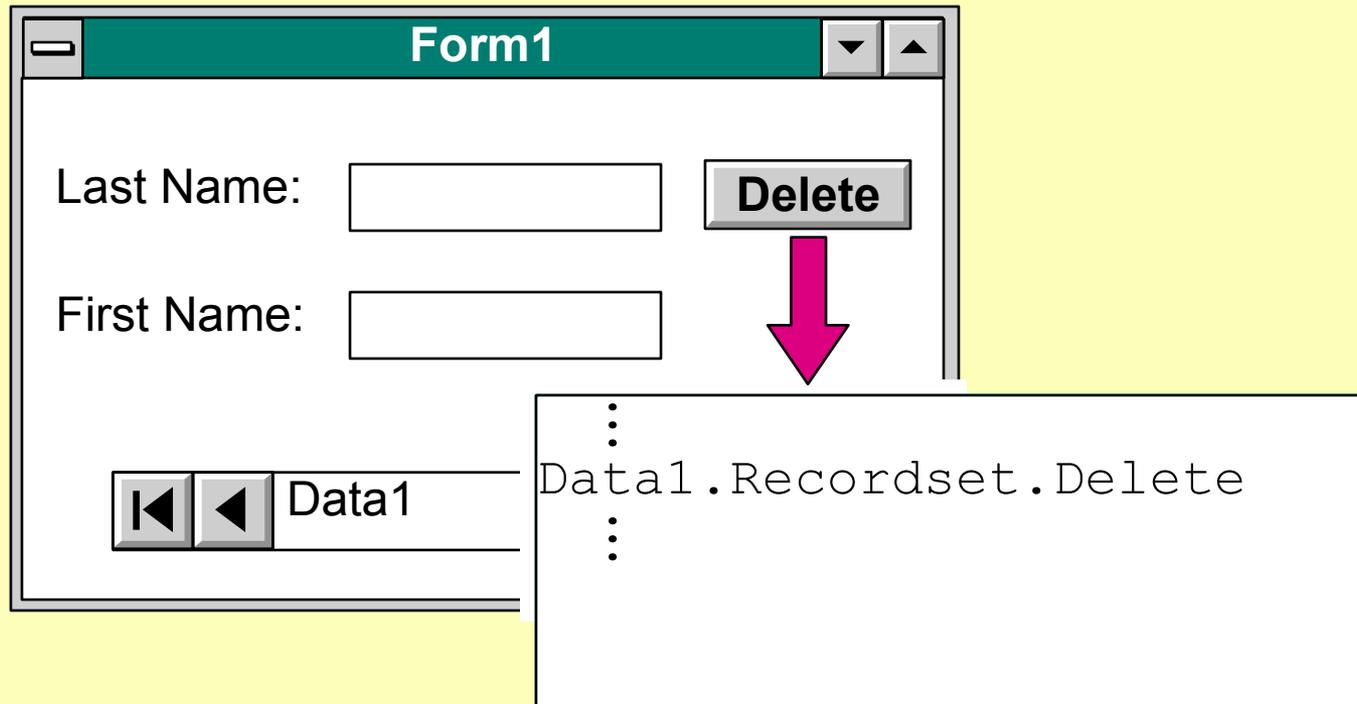
Criteria: Any Valid SQL "Where" Clause

Use Bookmark Property to Save Current Position

Updating Records



Deleting Records



Adding New Records

The screenshot shows a Windows form titled "Form1". It contains two text input fields: "Last Name:" and "First Name:". To the right of the "Last Name" field is a button labeled "Add". To the right of the "First Name" field is a button labeled "Save". At the bottom of the form is a data grid control labeled "Data1" with navigation arrows on either side.

```
⋮  
Data1.Recordset.AddNew  
⋮
```

```
⋮  
Data1.Recordset.Update  
⋮
```

Data Control Events

Validate

Reposition

Error



The Validate Event

Form1

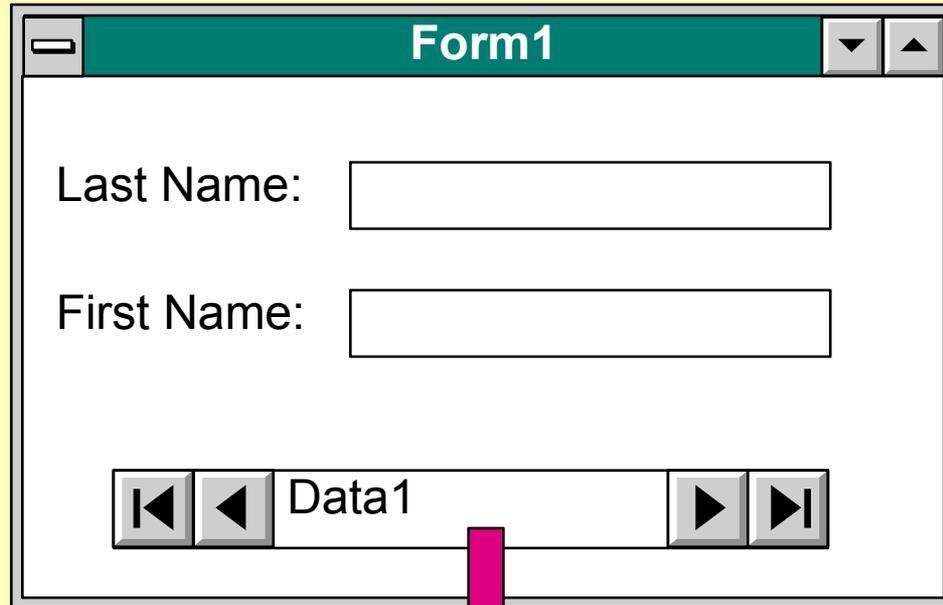
Last Name:

First Name:

Data1

```
Sub Data1_Validate (Action As Integer, Save As Integer)  
    'Occurs when current record changes
```

The Reposition Event



The image shows a screenshot of a Windows form titled "Form1". The form contains two text boxes: "Last Name:" and "First Name:". Below these is a control labeled "Data1" with navigation buttons (back, forward, first, last). A pink arrow points from the "Data1" control to a code block below.

```
Sub Data1_Reposition()  
    'Occurs when current record changes
```

The Error Event

Form1

Employee ID: Update

Last Name:

First Name:

Navigation: |<< Data1 >>|

```
Sub cmd Update  
  On Error...  
  :  
  'Handle Duplicate Key
```

```
Sub Data1_Error()  
  'If error occurs, for example: Duplicate Key
```

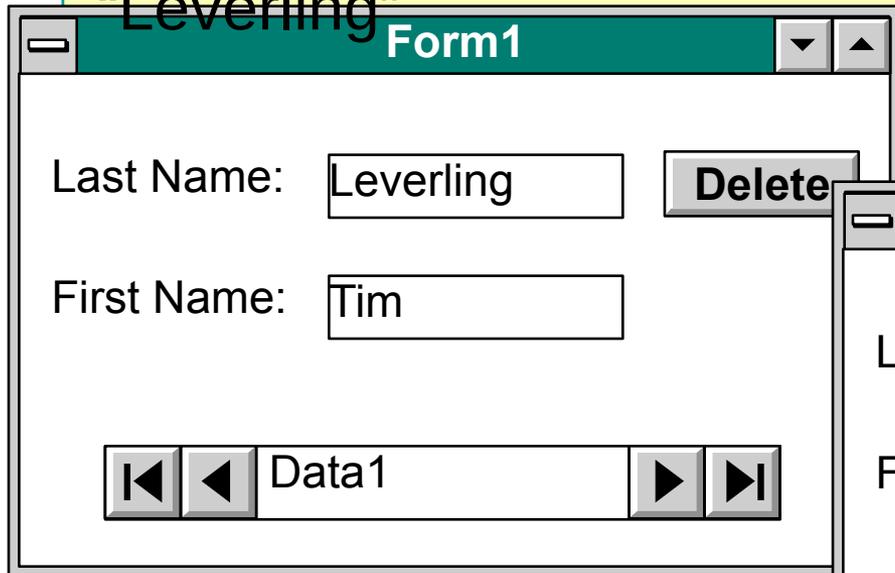
Handling Multiple Users

User #1
Deletes

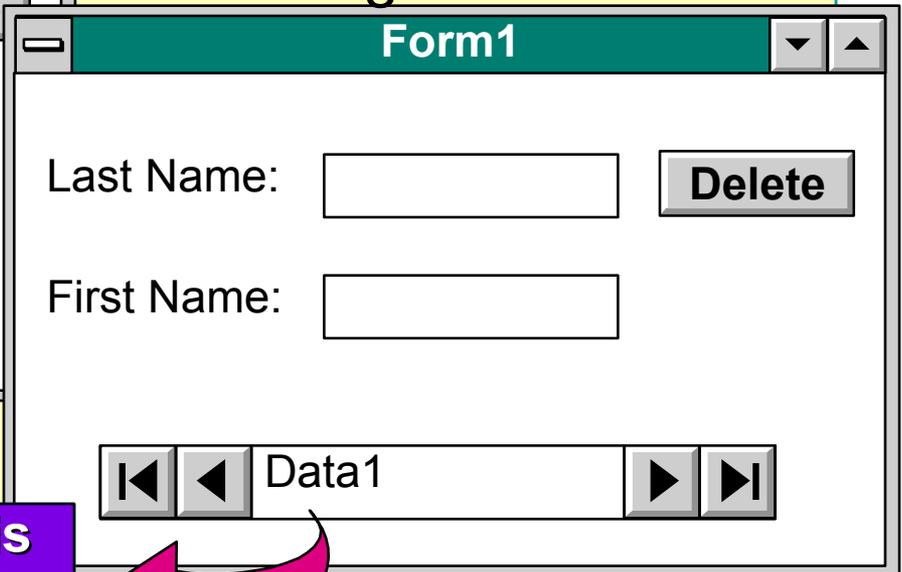
“Leverling”

User #2

“Record is Deleted”
message
when moving to
“Leverling”

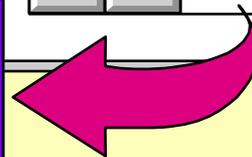


A screenshot of a Windows-style window titled "Form1". It contains two text input fields: "Last Name:" with the text "Leverling" and "First Name:" with the text "Tim". To the right of the "Last Name" field is a "Delete" button. Below the input fields is a data grid with a header "Data1" and four navigation buttons (back, forward, first, last).

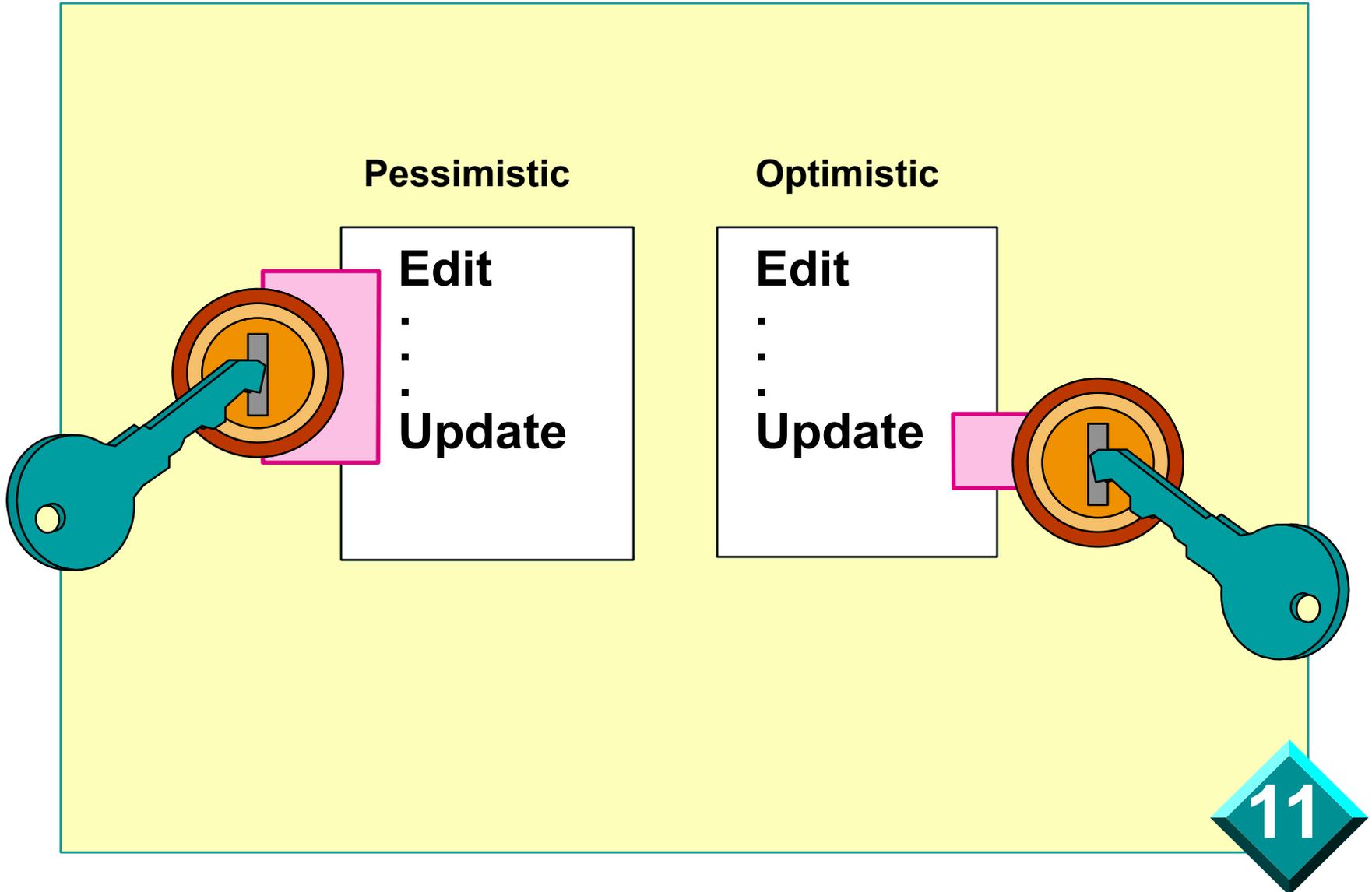


A screenshot of a Windows-style window titled "Form1". It contains two empty text input fields: "Last Name:" and "First Name:". To the right of the "Last Name" field is a "Delete" button. Below the input fields is a data grid with a header "Data1" and four navigation buttons (back, forward, first, last).

“Record is Deleted”



How Locking Is Handled



Accessing Data Programmatically

```
Data1.Recordset("Last Name")  
Data1.Recordset![Last Name]  
Data1.Recordset.Fields(0).Value
```

Filling a Grid with Data

Single Record

Last Name:

First Name:

Multiple Records

Last Name	First Name
Leverling	Tim
Buchanan	B.L.
⋮	⋮

Note: Many 3rd Party Grid Control are Bound Controls

Determining the Files You Need to Distribute

Special DLLs Are Required For

Data control

Accessing Btrieve, Paradox, or Microsoft
FoxPro® files

Accessing ODBC format databases

Accessing SQL Server (Professional Edition
only)

Summary

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Updating, Deleting, and Adding Records

Data Control Events

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Filling a Grid with Data from a Table

