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# More Reports

INFO/CSE 100, Spring 2005  
Fluency in Information Technology

<http://www.cs.washington.edu/100>

# Readings and References

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- Reading
  - » *Fluency with Information Technology*
    - Chapter 15, Case Study in Database Design
- References
  - » MS Access Help files
    - keyword “form”
  - » MS Access Help files
    - Section “Reports and Report Snapshots”

## Explore the Design capabilities

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- Properties of the various controls can be set
- Controls and labels can be moved around
- Images and patterns can be applied
- Event handlers can be written just like on HTML pages with onClick, etc
  - » these are written in Basic, not JavaScript

# Displaying an image

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- In general, images are not stored directly in the database
  - » This would mean copying the image and storing it as part of the database file
    - The resulting database is very big
    - The image files are not available outside of the database program
- But we can easily store a link to the image file
  - » a text field containing the path to the image file
  - » use the path to find, load, and display the image




# Simple Display Form

Photo Display

ID:

ImagePath:



Record:  of 12

ImagePaths table



ID	ImagePath
+	1 images\image1.gif
+	2 images\image2.gif
+	3 images\image3.gif
+	4 images\image4.gif
+	5 images\image5.gif
+	6 images\image6.gif
+	7 images\image7.gif
+	8 images\image8.gif
+	9 images\image9.gif
+	10 images\image10.gif
+	11 images\image11.gif
+	12 images\image12.gif

Record:  of 13

## To display a linked image

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- Create a form based on a table or query that includes the path attribute
  - » include a text field on the form to hold the path
- Create an image control on the form
  - » this is where the image is actually displayed
- Create event handlers to load the image when something changes
  - » associated with the form event OnCurrent
  - » associated with the text field event AfterUpdate

text field that holds the value of the primary key for the ImagePaths table, the ID attribute

text field that holds the value of the attribute ImagePath

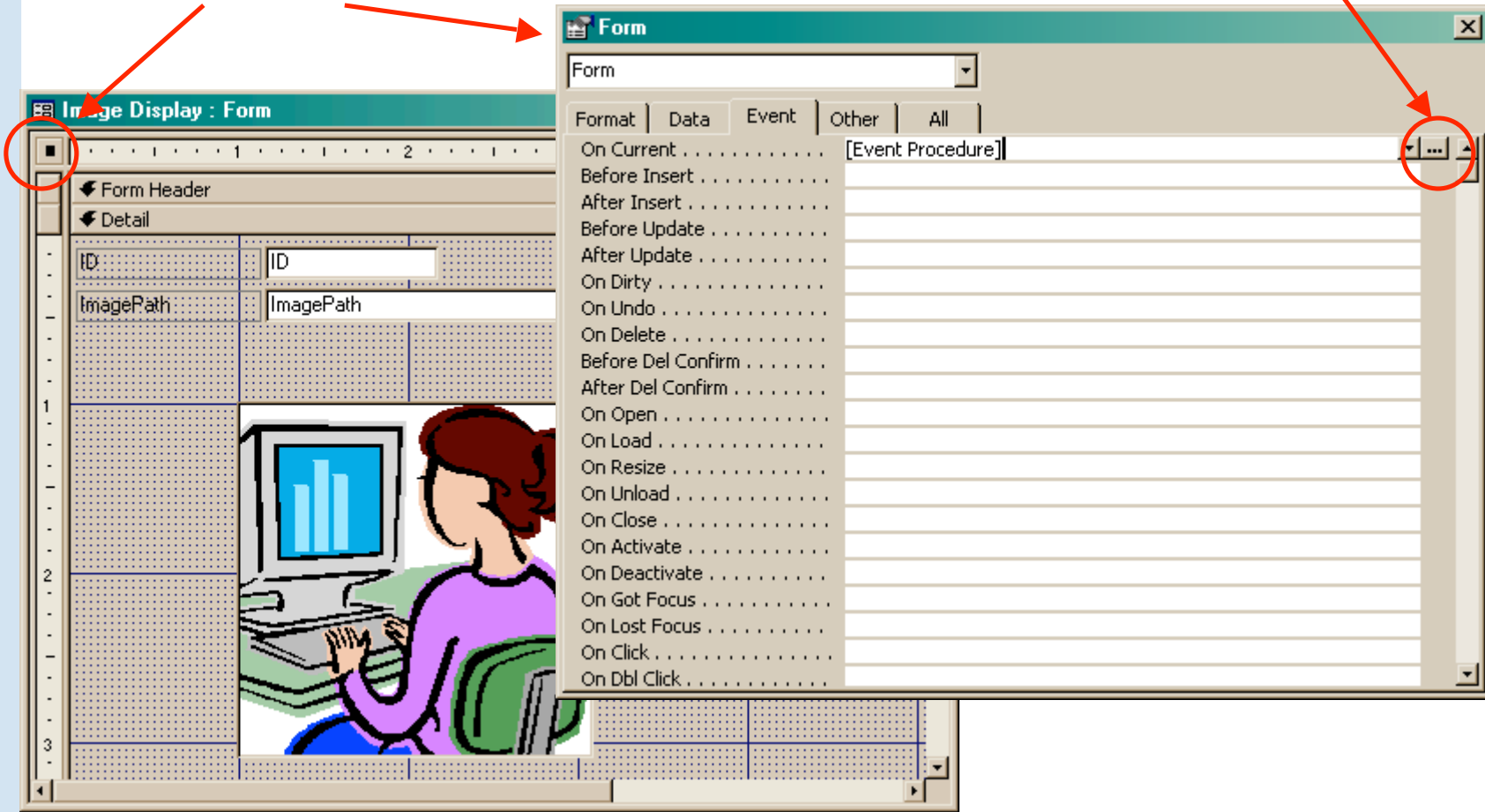
The screenshot shows a software window titled "Image Display : Form". The window contains a form with a grid layout. The top section is labeled "Form Header" and "Detail". Below this, there are two rows of fields: "ID" and "ImagePath". The "ID" field is a text box containing the text "ID". The "ImagePath" field is a text box containing the text "ImagePath". Below these fields is a large image field containing a cartoon illustration of a woman with brown hair in a bun, wearing a purple shirt, sitting at a desk with a computer monitor and keyboard. The image field is currently empty, showing a placeholder for the image. The form is set against a grid background.

image field that displays the image pointed to by ImagePath

# Event Handlers

double click here to get this

then click here





# OnCurrent event handler for the form

```
employees - Form_Image Display (Code)
Form Current
Option Compare Database

Private Sub Form_Current()
If IsNull(Me![ImagePath]) Then
    Exit Sub
End If

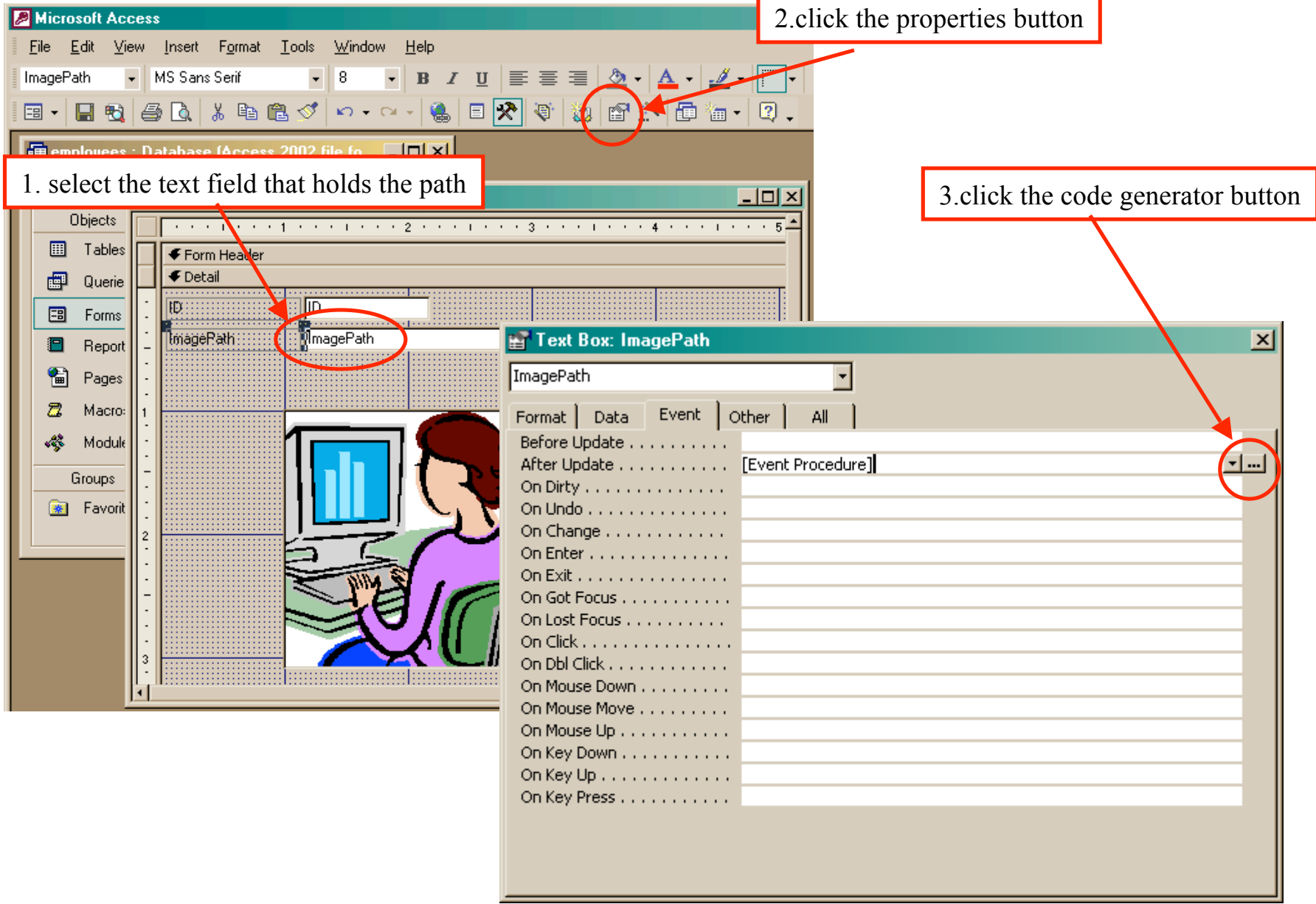
If (IsRelative(Me!ImagePath) = True) Then
    Me![ImageFrame].Picture = CurrentProject.path & "\" & Me![ImagePath]
Else
    Me![ImageFrame].Picture = Me![ImagePath]
End If
End Sub

Private Sub ImagePath_AfterUpdate()
If IsNull(Me![ImagePath]) Then
    Exit Sub
If (IsRelative(Me!ImagePath) = True) Then
    Me![ImageFrame].Picture = CurrentProject.path & "\" & Me![ImagePath]
Else
    Me![ImageFrame].Picture = Me![ImagePath]
End If
End Sub

Function IsRelative(fName As String) As Boolean
    ' Return false if the file name contains a drive or UNC path
    IsRelative = (InStr(1, fName, ":") = 0) And (InStr(1, fName, "\\") = 0)
End Function
```

ImagePath is the name of the text field that holds the path to the image on your form.

ImageFrame is the name of the Image control that displays the image on your form.



# AfterUpdate event handler for the field

```
employees - Form_Image Display (Code)
ImagePath AfterUpdate

Option Compare Database

Private Sub Form_Current()
    If Not IsNull(Me![ImagePath]) Then
        ImageFrame1.Picture = CurrentProject.Path & "\" & Me![ImagePath]
    End If
End Sub

Else
    Me![ImageFrame].Picture = Me![ImagePath]
End If
End Sub

Private Sub ImagePath_AfterUpdate()
    If IsNull(Me![ImagePath]) Then
        Exit Sub
    End If

    If (IsRelative(Me!ImagePath) = True) Then
        Me![ImageFrame].Picture = CurrentProject.Path & "\" & Me![ImagePath]
    Else
        Me![ImageFrame].Picture = Me![ImagePath]
    End If
End Sub

Function IsRelative(fName As String) As Boolean
    ' Return false if the file name contains a drive or UNC path
    IsRelative = (InStr(1, fName, ":") = 0) And (InStr(1, fName, "\\") = 0)
End Function
```

ImagePath is the name of the text field that holds the path to the image on your form.

ImageFrame is the name of the Image control that displays the image on your form.

# Views as Tables

- Recall that the result of a query is a table
- We have been presenting the table to the user in simple tabular form

All Books from Another Press : Select Query

ISBN	Title	Price	Name
1-2	Your Reader	\$12.00	Another Press
2-2	His Reader	\$25.00	Another Press

Record: 3 of 3

All Books by Alex : Select Query

Name	ISBN	Title
Alex	1-1	My Reader
Alex	1-2	Your Reader

Record: 3 of 3

Book Info for Given ISBN : Select Query

ISBN	Title	Price	authors.Name	publishers.Nam
1-1	My Reader	\$10.00	Alex	A Press

Record: 1 of 1

# But tables are not pretty ...



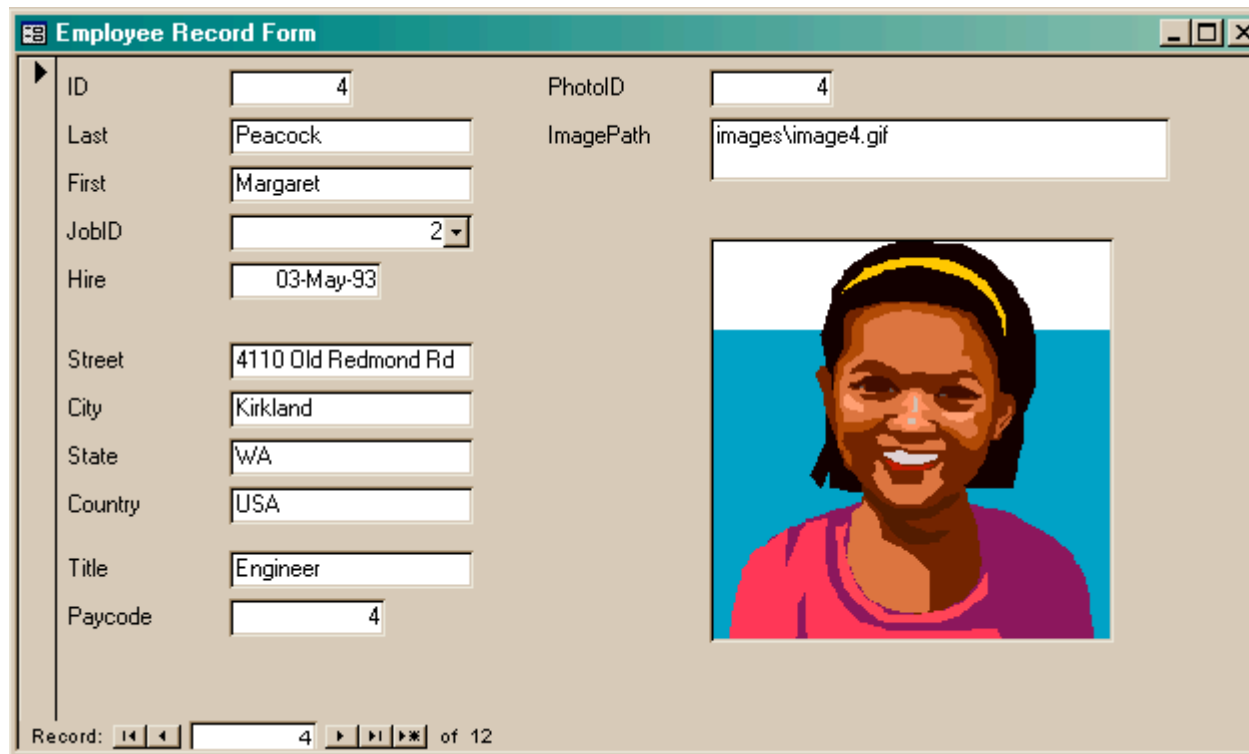
Users need help understanding what they are looking at and what they can do with it ...

... so we developed Forms for controlling the display of data for the user who is reviewing or updating specific records.



# Views as Forms

A form is primarily used to enter or display data in a database



The screenshot shows a window titled "Employee Record Form" with a light beige background. It contains several input fields and a photo. The fields are arranged in two columns. The left column contains: ID (4), Last (Peacock), First (Margaret), JobID (2), Hire (03-May-93), Street (4110 Old Redmond Rd), City (Kirkland), State (WA), Country (USA), Title (Engineer), and Paycode (4). The right column contains: PhotoID (4) and ImagePath (images\image4.gif). Below the ImagePath field is a photo of a woman with dark hair, wearing a yellow headband and a purple top, smiling. At the bottom of the window, there is a record navigation bar showing "Record: 4 of 12" with navigation icons.

Last lecture we developed Forms for better display to the user while updating the table.

# But forms are not very compact ...



One Portals Way, Twin Points WA 98156  
 Phone: 1-206-555-1417 Fax: 1-206-555-5938

**Ship To:** Rattlesnake Canyon Grocery  
 2817 Milton Dr.  
 Albuquerque NM 87110  
 USA

**Bill To:** Rattlesnake Canyon Grocery  
 2817 Milton Dr.  
 Albuquerque NM 87110  
 USA

Users like to have reports densely packed with information and logically arranged ...

Order ID:	Customer ID:	Salesperson:	Order Date:	Required Date:	Shipped Date:	Ship Via:
11077	RATTC	Nancy Davolio	06-May-1998	03-Jun-1998		United Package

Product ID:	Product Name:	Quantity:	Unit Price:	Discount:	Extended Price:
2	Chang	24	\$19.00	20%	\$364.80
3	Aniseed Syrup	4	\$10.00	0%	\$40.00
4	Chef Anton's Cajun Seasoning	1	\$22.00	0%	\$22.00
6	Grandma's Boysenberry Spread	1	\$25.00	2%	\$24.50
7	Uncle Bob's Organic Dried Pears	1	\$30.00	5%	\$28.50

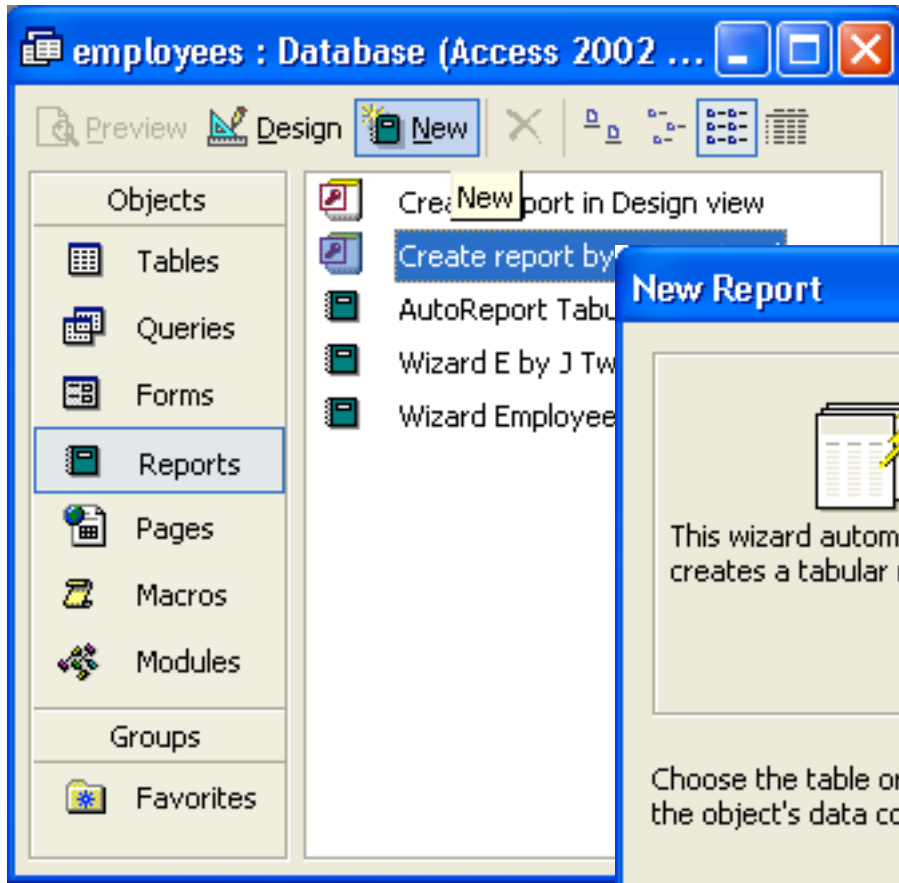
So this lecture we will develop **Reports** for compact display of multiple records.

## A Report is another face for a table (or query)

- The report lets the designer arrange the data, label it, provide some control over events, etc
  - » the **presentation**
  - » multiple presentations are possible depending on the specific needs of each user
- Underlying data comes from a table or a query
  - » the **content**
  - » single source of data ensures consistency



# How does a report get built?



The New Report wizard can build a complete report for you.

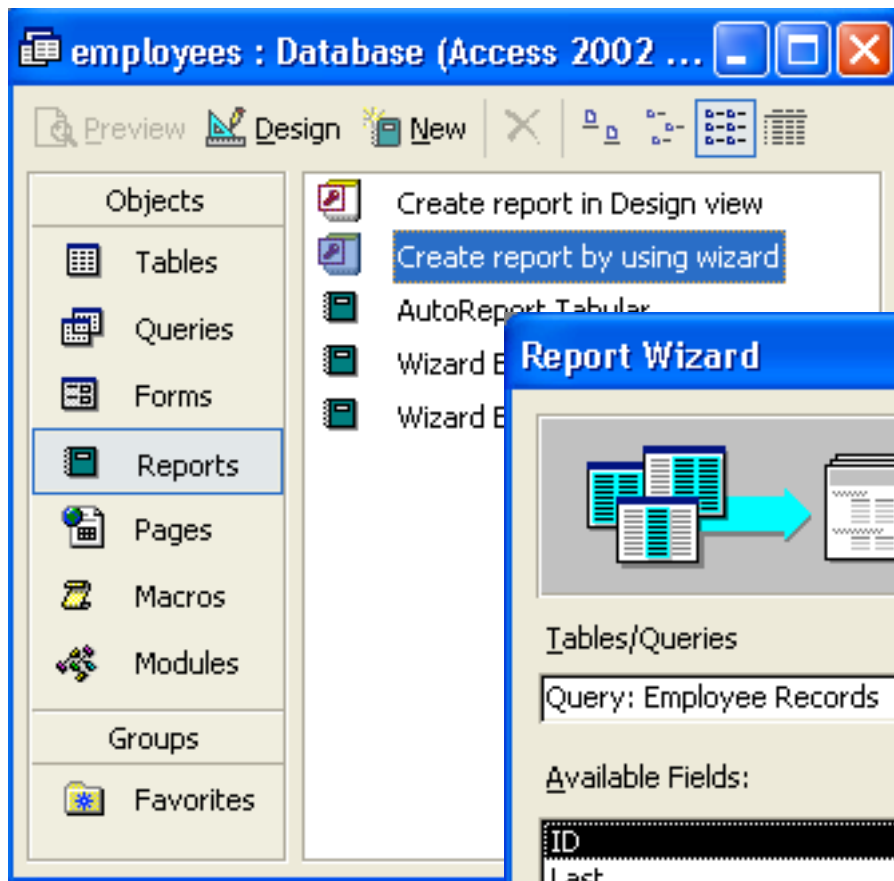
# But this wizard is kind of naïve ...

ImagePaths

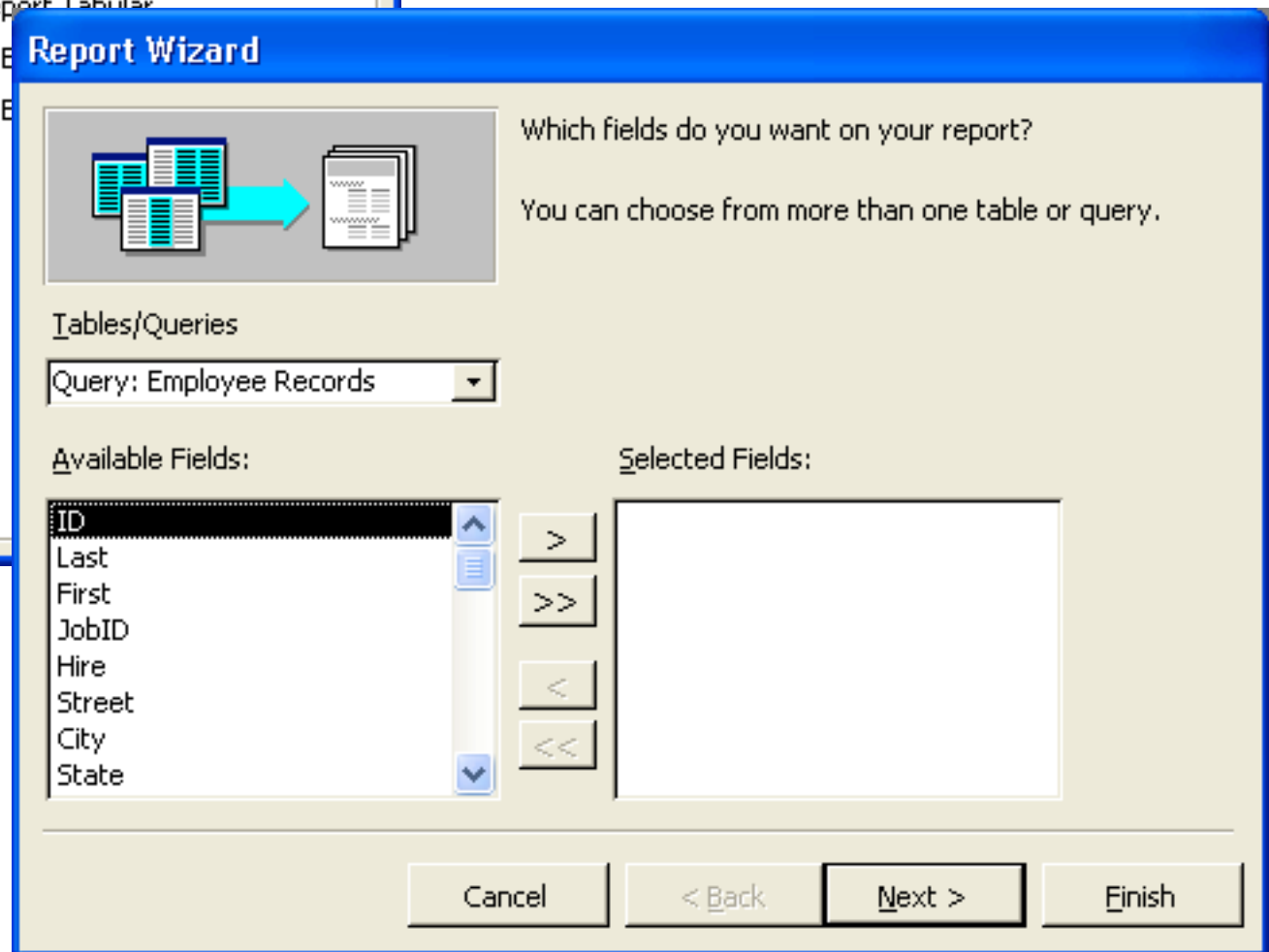
*ImagePaths*

<i>ID</i>	<i>Last</i>	<i>First</i>	<i>JobID</i>	<i>Hire</i>	<i>Street</i>	<i>City</i>	<i>State</i>	<i>Country</i>	<i>otoID</i>	<i>Title</i>	<i>rcode</i>	<i>ImagePath</i>
1	Davalino	Nanci	0	1ay-92	507 20th Ave	Seattle	WA	USA	1	CEO	8	images\image1.gif
2	Fuller	Andrew	3	ug-92	908 W. Capit	Seattle	WA	USA	2	Administrativ	6	images\image2.gif
3	Wooster	Berton	1	%pr-93	722 Moss Ba	Seattle	WA	USA	3	VP	7	images\image3.gif
4	Peacock	Margaret	2	1ay-93	4110 Old Re	Kirkland	WA	USA	4	Engineer	4	images\image4.gif
5	Buchanan	Steven	3	Oct-94	13 Garrett Hil	Seattle	WA	USA	5	Administrativ	6	images\image5.gif
6	Sullimari	Okan	2	Dec-94	Coventry Hou	Seattle	WA	USA	6	Engineer	4	images\image6.gif
101	Soggy	Peter	2	Jun-04	1300 20th Av	Seattle	WA	USA	7	Engineer	4	images\image7.gif
102	Morken	Xavier	3	ep-03	100 Eastlake	Seattle	WA	USA	8	Administrativ	6	images\image8.gif
103	Wilshire	Bruce	3	Mar-98	34 15th Ave	Seattle	WA	USA	9	Administrativ	6	images\image9.gif
104	Brazely	Tanya	2	Mar-02	103 29th Ave	Seattle	WA	USA	10	Engineer	4	images\image10.gif
105	Compton	Sarah	3	Nov-99	4034 NW 50t	Seattle	WA	USA	11	Administrativ	6	images\image11.gif
106	Zanzy	Ovid	2	Jan-99	4502 NW 52	Seattle	WA	USA	12	Engineer	4	images\image12.gif

Page: 1



You might want to use the Report Wizard instead since it gives you more control.



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## *Employees by JobCode*

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*Title*                      *Administrative*

*Paycode*                      6

<i>Last</i>	<i>ID</i>	<i>First</i>	<i>JobID</i>	<i>Hire</i>	<i>Street</i>	<i>City</i>	<i>State</i>	<i>Country</i>	<i>ImagePath</i>
Buchanan	5	Steven	3	Oct-94	13 Garrett Hill	Seattle	WA	USA	images/image5.gif
Compton	105	Sarah	3	Nov-99	4034 NW 50th	Seattle	WA	USA	images/image11.gif
Fuller	2	Andrew	3	Aug-92	908 W. Capitol	Seattle	WA	USA	images/image2.gif
Morken	102	Xavier	3	Sep-03	100 Eastlake	Seattle	WA	USA	images/image8.gif
Wilshire	103	Bruce	3	Mar-98	34 15th Ave	Seattle	WA	USA	images/image9.gif

*Title*                      *CEO*

*Paycode*                      8

<i>Last</i>	<i>ID</i>	<i>First</i>	<i>JobID</i>	<i>Hire</i>	<i>Street</i>	<i>City</i>	<i>State</i>	<i>Country</i>	<i>ImagePath</i>
Davalino	1	Nanci	0	May-92	507 20th Ave	Seattle	WA	USA	images/image1.gif

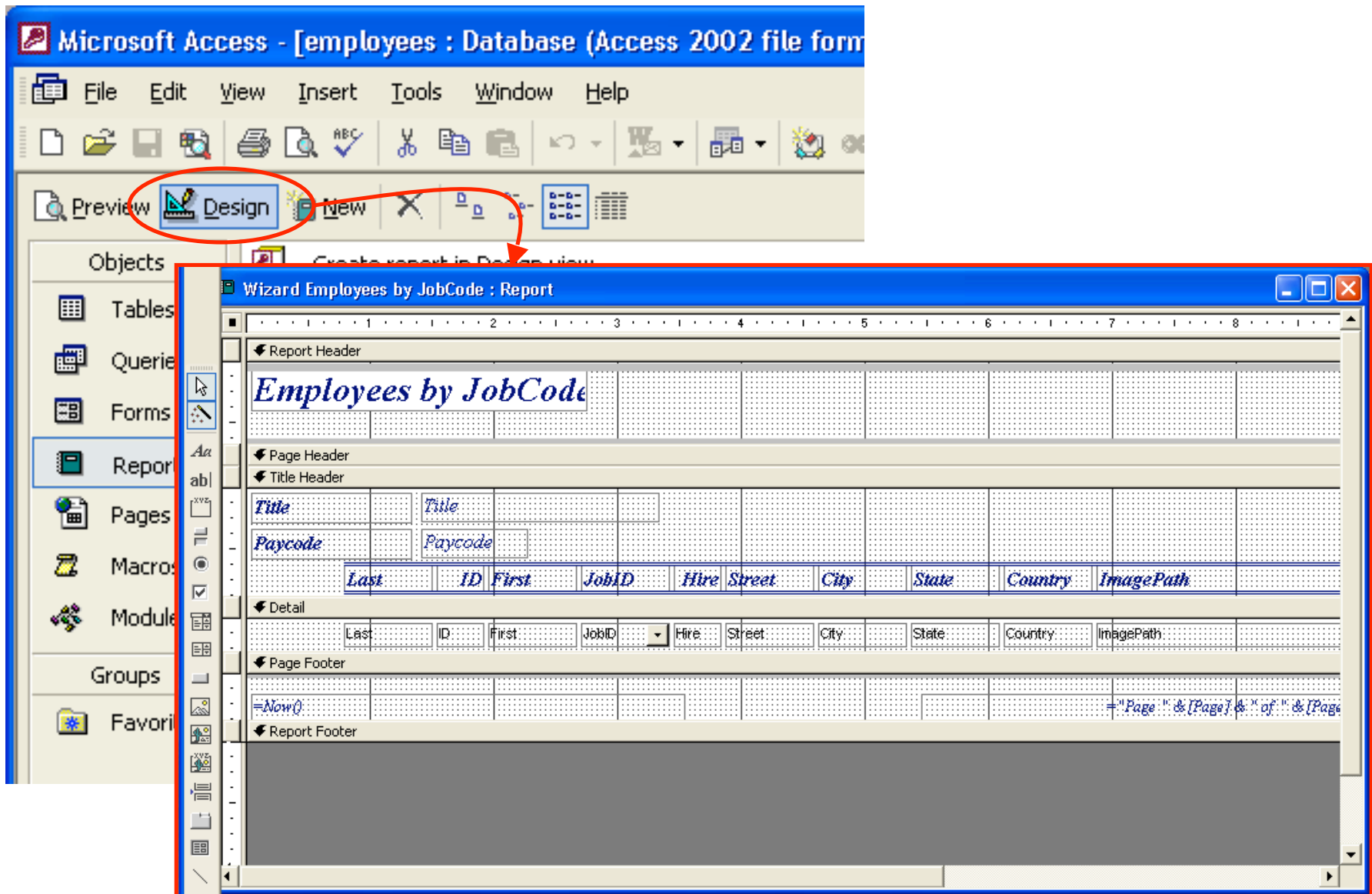
*Title*                      *Engineer*

*Paycode*                      4

<i>Last</i>	<i>ID</i>	<i>First</i>	<i>JobID</i>	<i>Hire</i>	<i>Street</i>	<i>City</i>	<i>State</i>	<i>Country</i>	<i>ImagePath</i>
Brazely	104	Tanya	2	Mar-02	103 25th Ave	Seattle	WA	USA	images/image10.gif
Peacock	4	Margaret	2	May-93	4110 Old Re	Kirkland	WA	USA	images/image4.gif

Better looking report, but you still probably want to tweak it ...

But you probably want to tweak it ...



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## *Employees by JobCode*

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*Title*                      *Administrative*

*Paycode*                      *6*

<i>ID</i>	<i>Last</i>	<i>First</i>	<i>JobID</i>	<i>Hire</i>	<i>Street</i>	<i>City</i>	<i>State</i>	<i>Country</i>	<i>ImagePath</i>
5	Buchanan	Steven	3	17-Oct-94	13 Garrett Hill	Seattle	WA	USA	images/image5.gif
105	Compton	Sarah	3	17-Nov-99	4034 NW 50th St	Seattle	WA	USA	images/image11.gif
2	Fuller	Andrew	3	14-Aug-92	908W. Capital Way	Seattle	WA	USA	images/image2.gif
102	Morken	Xavier	3	14-Sep-03	100 Eastlake Drive	Seattle	WA	USA	images/image8.gif
103	Wilshire	Bruce	3	01-Mar-98	34 15th Ave NE	Seattle	WA	USA	images/image9.gif

*Title*                      *CEO*

*Paycode*                      *8*

<i>ID</i>	<i>Last</i>	<i>First</i>	<i>JobID</i>	<i>Hire</i>	<i>Street</i>	<i>City</i>	<i>State</i>	<i>Country</i>	<i>ImagePath</i>
1	Davalino	Nandi	0	01-May-92	507 20th Ave E	Seattle	WA	USA	images/image1.gif

*Title*                      *Engineer*

*Paycode*                      *4*

<i>ID</i>	<i>Last</i>	<i>First</i>	<i>JobID</i>	<i>Hire</i>	<i>Street</i>	<i>City</i>	<i>State</i>	<i>Country</i>	<i>ImagePath</i>
104	Brazely	Tanya	2	03-Mar-02	103 25th Ave NW	Seattle	WA	USA	images/image10.gif
4	Peacock	Margaret	2	03-May-93	4110 Old Redmond R	Kirkland	WA	USA	images/image4.gif
101	Soggy	Peter	2	01-Jun-04	1300 20th Ave W	Seattle	WA	USA	images/image7.gif

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## Explore the Design capabilities

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- Properties of the various controls can be set
  - Controls and labels can be moved around
  - Images and patterns can be applied
  - Totals, averages, subtotals etc can be calculated
  - Information can be grouped by selected fields
  - Etc, etc – there is a lot of flexibility in how these reports get generated
-