

Databases Using MS Access Part III

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Importing Data into Access

- Can import data from many sources (like Excel or text files)

Microsoft Access can use your column headings as field names for your table. Does the first row specified contain column headings?

First Row Contains Column Headings

	Name	ID	Ownership	FAA File Number	Latitude
1	VIRGINIA HIGHLANDS	VJI	PU	25600.*A	36.68711111
2	ALPHA NATURAL RESOURCES	22VG	PR	25600.01*H	36.69666666
3	MOUNT VERNON HOSPITAL	V82	PR	25609.*H	38.74039222
4	ALEXANDRIA HOSPITAL HELISTOP	9VA2	PR	25609.01*H	38.82261277
5	HILL TOP	V864	PR	25617.*A	37.41598305
6	MERLIN AERODROME	2VA3	PR	25617.2*A	37.315
7	TIMBERDOODLE	93VA	PR	25618.*A	37.53625333
8	FULCHER FAMILY FARMS	VG06	PR	25618.01*A	37.72513611
9	NASHS	10VA	PR	25622.*A	37.38625555
10	STATE POLICE DIVISION THREE	38VA	PU	25622.01*H	37.3604225
11	HIGHVIEW FARMS	94VA	PR	25622.1*A	37.26305555
12	GLASCOCK	98VA	PR	25624.*A	38.94233277
13	SMITH	VG23	PR	25624.01*A	38.92788888
14	NAT'L HOSP FOR ORTHOPAEDICS/REHABILITATION	65VA	PR	25624.4*H	38.84805555

Buttons: Cancel, < Back, Next >, Finish

Importing Data into Access

- As you import data, you can specify the data types for each field of the data to import

Import Spreadsheet Wizard

You can specify information about each of the fields you are importing. Select fields in the area below. You can then modify field information in the 'Field Options' area.

Field Options

Field Name: Data Type:

Indexed: Do not import field (Skip)

	Name	ID	Ownership	FAA File Number	Latitude
1	VIRGINIA HIGHLANDS	VJI	PU	25600.*A	36.68711111
2	ALPHA NATURAL RESOURCES	22VG	PR	25600.01*H	36.69666666
3	MOUNT VERNON HOSPITAL	VA82	PR	25609.*H	38.74039222
4	ALEXANDRIA HOSPITAL HELISTOP	9VA2	PR	25609.01*H	38.82261277
5	HILL TOP	VA64	PR	25617.*A	37.41598305
6	MERLIN AERODROME	2VA3	PR	25617.2*A	37.315
7	TIMBERDOODLE	93VA	PR	25618.*A	37.53625333
8	FULCHER FAMILY FARMS	VG06	PR	25618.01*A	37.72513611
9	NASHS	10VA	PR	25622.*A	37.38625555
10	STATE POLICE DIVISION THREE	38VA	PU	25622.01*H	37.3604225
11	HIGHVIEW FARMS	94VA	PR	25622.1*A	37.26305555
12	GLASCOCK	98VA	PR	25624.*A	38.94233277
13	SMITH	VG23	PR	25624.01*A	38.92788888
14	NAT'L HOSP FOR ORTHOPAEDICS/REHABILITATION	65VA	PR	25624.4*H	38.84805555

Cancel < Back Next > Finish

Importing Data into Access

- Selecting the Primary Key of the data (I am letting Access define a new column for me)

Import Spreadsheet Wizard

Microsoft Access recommends that you define a primary key for your new table. A primary key is used to uniquely identify each record in your table. It allows you to retrieve data more quickly.

Let Access add primary key.
 Choose my own primary key.
 No primary key.

ID1	Name	ID	Ownership	F&A File Number	Latitu
1	VIRGINIA HIGHLANDS	VJI	PU	25600.*A	36.687
2	ALPHA NATURAL RESOURCES	22VG	PR	25600.01*H	36.696
3	MOUNT VERNON HOSPITAL	VA82	PR	25609.*H	38.740
4	ALEXANDRIA HOSPITAL HELISTOP	9VA2	PR	25609.01*H	38.822
5	HILL TOP	VA64	PR	25617.*A	37.415
6	MERLIN AERODROME	2VA3	PR	25617.2*A	37.315
7	TIMBERDOODLE	93VA	PR	25618.*A	37.536
8	FULCHER FAMILY FARMS	VG06	PR	25618.01*A	37.725
9	NASHS	10VA	PR	25622.*A	37.386
10	STATE POLICE DIVISION THREE	38VA	PU	25622.01*H	37.360
11	HIGHVIEW FARMS	94VA	PR	25622.1*A	37.263
12	GLASCOCK	98VA	PR	25624.*A	38.942
13	SMITH	VG23	PR	25624.01*A	38.927
14	NAT'L HOSP FOR ORTHOPAEDICS/REHABILITATION	65VA	PR	25624.4*H	38.848

Cancel < Back Next > Finish

Importing Data into Access

- Imported Virginia Airports Excel file

The screenshot shows the Design View of a table in Microsoft Access. The table is named 'export_virginia_airports'. The fields and their data types are as follows:

Field Name	Data Type
ID1	AutoNumber
Name	Text
ID	Text
Ownership	Text
FAA File Number	Text
Latitude	Number
Longitude	Number

The 'ID1' field is highlighted as the primary key. The 'General' tab of the property sheet is visible at the bottom, showing settings for 'Field Size' (Long Integer), 'New Values' (Increment), 'Format', 'Caption', 'Indexed' (Yes (No Duplicates)), 'Smart Tags', and 'Text Align' (General).

Design View

The screenshot shows the Datasheet View of the 'export_virginia_airports' table. The data is as follows:

ID1	Name	ID	Ownership	FAA File Number	Latitude	Longitude
1	VIRGINIA HIGH VJI		PU	25600.*A	36.6871111111111	-82.0333333333333
2	ALPHA NATUR/ 22VG		PR	25600.01*H	36.6966666666666	-81.9953333333333
3	MOUNT VERN VA82		PR	25609.*H	38.7403922222222	-77.0771999999999
4	ALEXANDRIA H 9VA2		PR	25609.01*H	38.8226127777777	-77.1041452777777
5	HILL TOP VA64		PR	25617.*A	37.4159830555555	-77.9538902777777
6	MERLIN AEROD 2VA3		PR	25617.2*A	37.315	-77.8661111111111
7	TIMBERDOODL 93VA		PR	25618.*A	37.5362533333333	-79.0233563888888
8	FULCHER FAMIL VG06		PR	25618.01*A	37.7251361111111	-79.0830805555555
9	NASHS 10VA		PR	25622.*A	37.3862555555555	-78.8130686111111
10	STATE POLICE 38VA		PU	25622.01*H	37.3604225	-78.8689038888888
11	HIGHVIEW FAR 94VA		PR	25622.1*A	37.2630555555555	-78.8494444444444
12	GLASCOCK 98VA		PR	25624.*A	38.9423327777777	-77.5422133333333
13	SMITH VG23		PR	25624.01*A	38.9278888888888	-77.5627691666666
14	NAT'L HOSP FO 65VA		PR	25624.4*H	38.8480555555555	-77.0769444444444
15	STARR 4VA5		PR	25624.7*A	37.6595861111111	-78.9222438888888
	DW FARR 69VA		PR	25626.1*A	37.8570841666666	-77.4205369444444
	IS VG24		PR	25626.12*A	37.7818088888888	-77.4938724999999
	WATER 4VG2		PR	25626.13*A	37.8580555555555	-77.5472222222222
	R 4VA6		PR	25627.*A	37.8806802777777	-75.5060366666666
	20 WOODBURY FA 25VA		PR	25628.*A	37.8176388888888	-77.1030277777777
	21 SKY BRYCE VG18		PR	25631.*A	38.8159458333333	-78.7702980555555

Data View

Importing the Runways Excel File

- Import a second file containing runways at the Virginia Airports

Microsoft Access can use your column headings as field names for your table. Does the first row specified contain column headings?

First Row Contains Column Headings

	FAA File Number	Runway Label	Length (feet)	Width (ft)	Surface	Lights
1	25600.*A	06/24	4471	75	ASPH-G	
2		06/24	4471	75	ASPH-G	ODALS
3	25600.01*H	H1	600	100	TURF	
4		H1	600	100	TURF	
5	25609.*H	H1	75	75	CONC	
6		H1	75	75	CONC	
7	25609.01*H	H1	35	35	ASPH	
8		H1	35	35	ASPH	
9	25617.*A	10/28	2000	120	TURF-F	
10		10/28	2000	120	TURF-F	
11	25617.2*A	14/32	3200	100	TURF-G	
12		14/32	3200	100	TURF-G	
13	25618.*A	04/22	1400	75	TURF	
14		04/22	1400	75	TURF	

Longitude

82.0333333333333

81.9953333333333

77.0771999999999

77.1041452777777

77.9538902777777

77.8661111111111

79.0233563888888

79.0830805555555

78.8130686111111

78.8689038888888

78.8494444444444

77.5422133333333

77.5627691666666

77.0769444444444

78.9222438888888

77.4205369444444

77.4938724999999

77.5472222222222

75.5060366666666

77.1030277777777

78.7702980555555

Imported Runway File

- Imported Virginia Airports Runway Excel file

The screenshot shows the Design View of a table in Microsoft Access. The ribbon includes 'Table Tools' and 'Design'. The table structure is as follows:

Field Name	Data Type
ID	AutoNumber
FAA File Number	Text
Runway Label	
Length (feet)	
Width (ft)	
Surface	
Lights	

Design View

The screenshot shows the Data View of the same table. The data is as follows:

ID	FAA File Number	Runway Label	Length (feet)	Width (ft)	Surface	Lights
1	25600.*A	06/24	4471	75	ASPH-G	
2		06/24	4471	75	ASPH-G	ODALS
3	25600.01*H	H1	600	100	TURF	
4		H1	600	100	TURF	
5	25609.*H	H1	75	75	CONC	
6		H1	75	75	CONC	
7	25609.01*H	H1	35	35	ASPH	
8		H1	35	35	ASPH	
9	25617.*A	10/28	2000	120	TURF-F	
10		10/28	2000	120	TURF-F	
11	25617.2*A	14/32	3200	100	TURF-G	
12		14/32	3200	100	TURF-G	
13	25618.*A	04/22	1400	75	TURF	
14		04/22	1400	75	TURF	
15	25618.01*A	11/29	3000	100	TURF-G	
16		11/29	3000	100	TURF-G	
17	25622.*A	05/23	1800	20	ASPH	
18		05/23	1800	20	ASPH	
19	25622.01*H	H1	80	80	TURF	

Exporting Data Out of Access

- Once we have done wonderful things we our database, we need to produce useful reports or perhaps export data to other applications such as at Matlab, Excel or JMP (a Statistical software)
- The choices to produce data out are:
 - Access reports
 - Access export data capability

Access Reports

- Useful to print hard copies of your database elements
- Can generate professional-looking reports for printing
- Can be used to communicate with other non-Access users
- Can be used to debug or validate your database

Access Reports - The Basics

- Useful to print hard copies of your database elements
- Can generate professional-looking reports for printing
- Can be used to communicate with other non-Access users
- Can be used to debug or validate your database
- Reports are Access objects and they can be customized

Access Reports - One Click Report

- Access provides ready-made formats to produce a simple one click report
- This is simple but lacks customization

The screenshot shows the Microsoft Access 2007 interface. The ribbon is set to the 'Table Tools' group, with the 'Create' tab selected. The 'Report' icon is highlighted in the 'Reports' group. The 'Virginia_airports' table is selected in the 'All Tables' pane, and its data is displayed in the main window. The data table is as follows:

Name	ID	Ownership	Airport_ID	Latitude
VIRGINIA HIGH	VJI	PU	25600.*A	36.687111111111111
ALPHA NATURA	22VG	PR	25600.01*H	36.696666666666666
MOUNT VERNON	VA82	PR	25609.*H	38.740392222222222
ALEXANDRIA H	9VA2	PR	25609.01*H	38.822612777777777
HILL TOP	VA64	PR	25617.*A	37.415983055555555
MERLIN AEROD	2VA3	PR	25617.01*H	37.315
BERDOODL	93VA	PR	25617.01*H	37.315
CHER FAMILI	VG06	PR	25617.01*H	37.315
NASHS	10VA	PR	25622.*A	37.386255555555555

Access Reports - One Click Report

- A basic report is produced with the Access table (or part of the table) selected

The screenshot shows the Microsoft Access interface with the 'Report Layout Tools' ribbon. The 'Format' tab is selected, showing various formatting options. The 'All Tables' pane on the left shows the 'Virginia_airports' table selected. The main area displays a report layout for the 'Virginia_airports' table. The report header includes the title 'Virginia_airports' and the date 'Tuesday, Ap'. The report body contains a table with columns for 'Name', 'ID', and 'Ownership'. A callout box labeled 'Customizable labels' points to the 'Virginia_airports' title in the report header.

Name	ID	Ownership
VIRGINIA HIGHLANDS	VJI	PU
ALPHA NATURAL RESOURCES	22VG	PR
MOUNT VERNON HOSPITAL	VA82	PR
ALEXANDRIA HOSPITAL HELISTOP	9VA2	PR
	VA64	PR
DROME	2VA3	PR
E	93VA	PR
LY FARMS	VG06	PR

Access Reports - One Click Report

- Use the formatting Icons to customize the report as needed

The screenshot shows the Microsoft Access 2007 interface. The 'Report Layout Tools' ribbon is active, with the 'Format' group selected. A callout box labeled 'Format tools' points to the 'Gridlines' group, which includes icons for gridlines, borders, and shading. The main window displays a report titled 'Virginia_airports' with a table of data. The table has columns for Name, ID, Ownership, and Airport_ID. The data is as follows:

Name	ID	Ownership	Airport_ID
VIRGINIA HIGHLANDS	VJI	PU	25600.*A
ALPHA NATURAL RESOURCES	22VG	PR	25600.01*H
MOUNT VERNON HOSPITAL	VA82	PR	25609.*H
ALEXANDRIA HOSPITAL HELISTOP	9VA2	PR	25609.01*H
HILL TOP	VA64	PR	25617.*A
MERLIN AERODROME	2VA3	PR	25617.2*A
TIMBERDOODLE	93VA	PR	25618.*A
FULCHER FAMILY FARMS	1G06	PR	25618.01*H

Access Reports - Printing

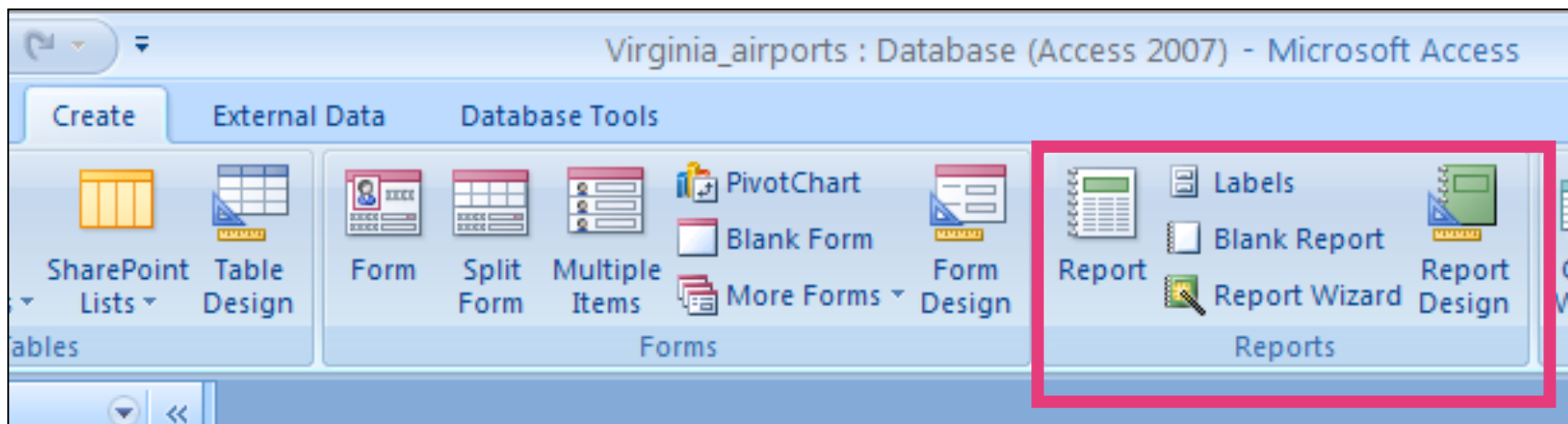
- Before printing the report always Preview

The screenshot shows the Microsoft Access 2007 interface. The File menu is open, and the 'Print' option is expanded to show 'Print Preview'. A black arrow points from a callout box to the 'Print Preview' option. The callout box contains the text: 'Printing is under the File pull down menu'. The background shows a report preview for 'Virginia Airports' with columns for Ownership and Airport_ID.

Ownership	Airport_ID
PU	25600.*A
PR	25600.01*H
PR	
PR	
PR	
PR	
PR	
PR	
PR	
PR	
PR	

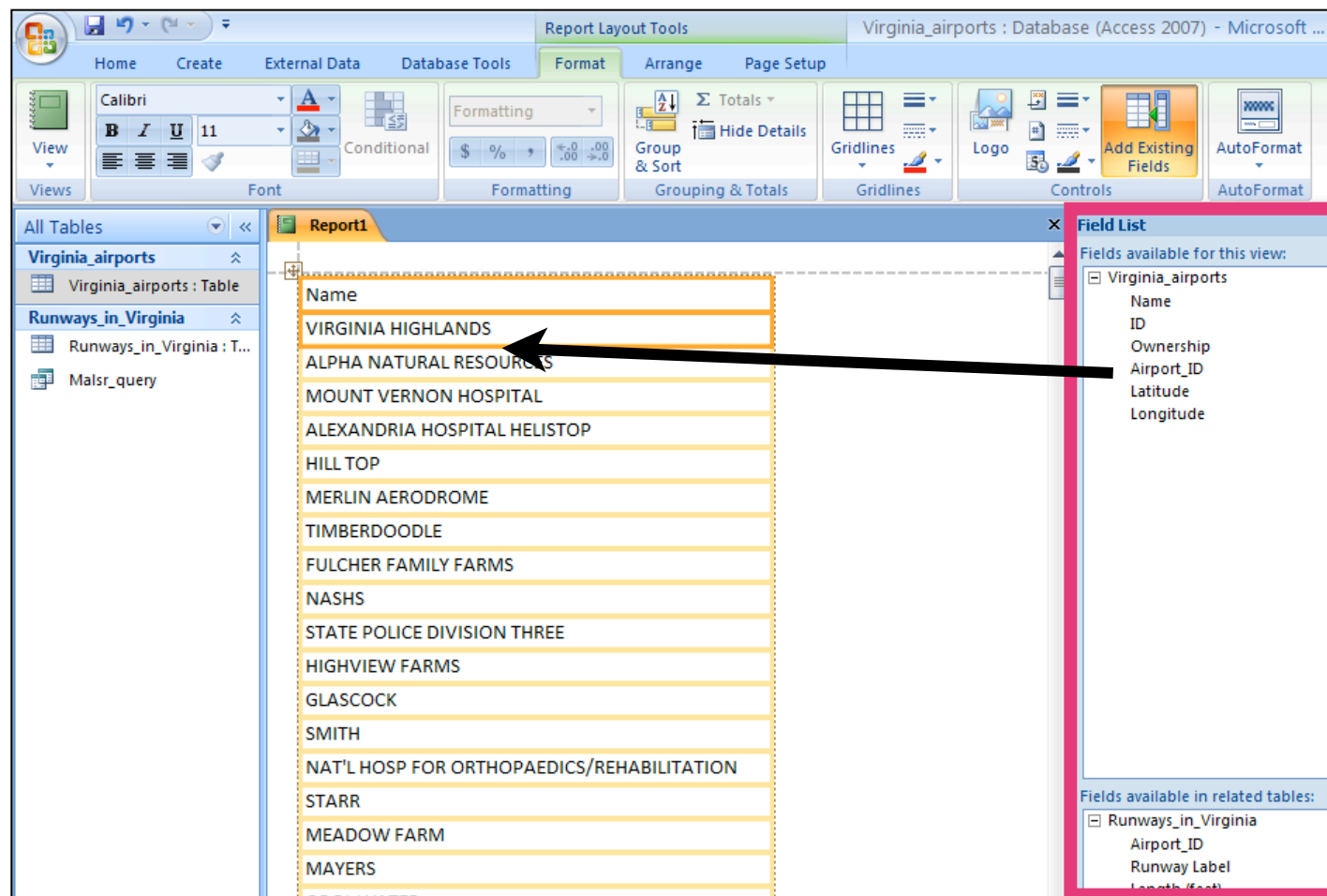
Access Reports - Custom Reports

- You can create custom reports starting from a blank report and adding the elements that you need
- Use the Create > Reports > Blank Report
- Access also provides a Report Wizard



Access Reports - Custom Report

- Just select the tables and the fields of those tables to be used in the report
- You can format the table using the formatting tools



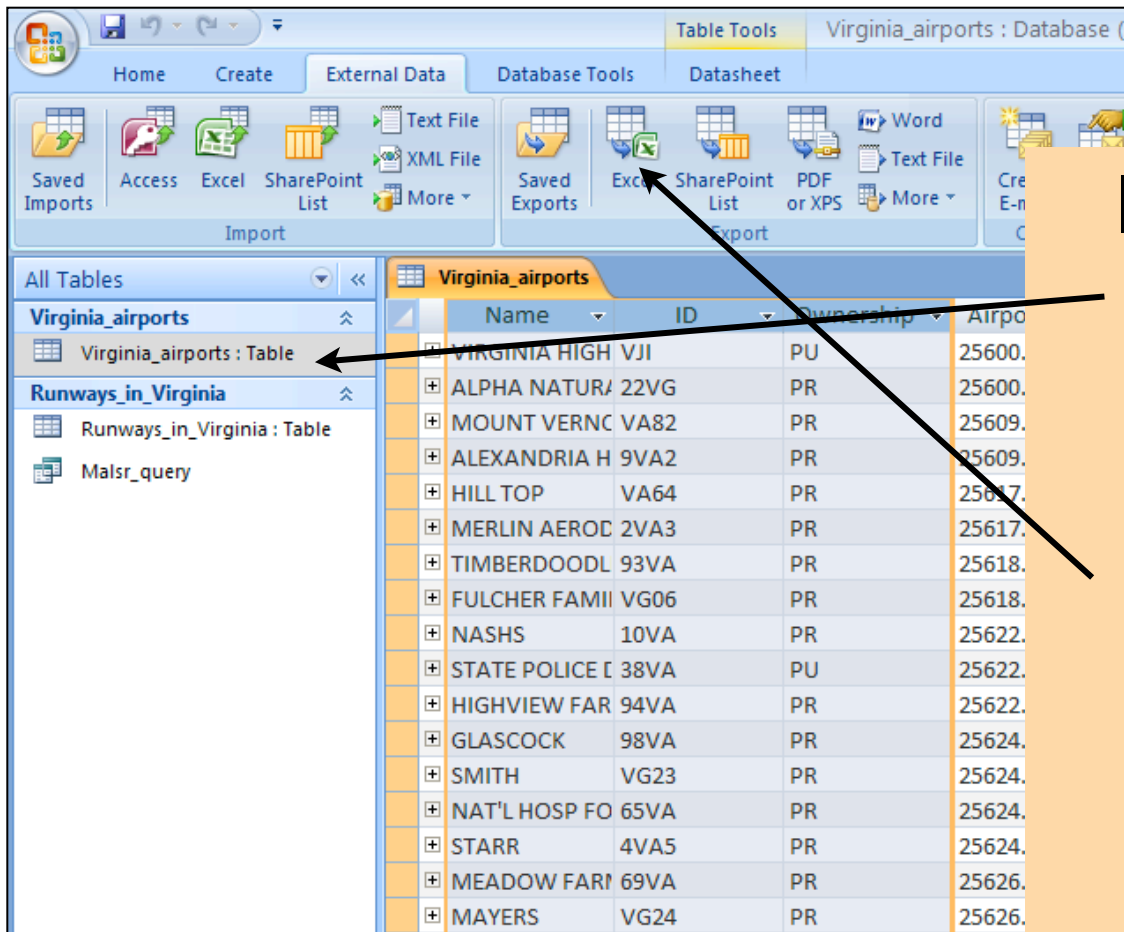
Access Export Capabilities

- Natural way to review, share or present data generated in Access
- Reports can be formatted professionally
- Various output formats are possible:
 - Text files
 - Excel file
 - Word files
 - HTML (to publish the file to the web)
 - PDF or XPS
 - XML (Extensible Markup Language)

You can also export
Access Tables to
other Access database
applications

Access Export Data Wizard

- Suppose I want to export the Access Table Virginia Airports to an Excel file



1. Select the table (or part of the table) to be exported

2. Select the format

3. Follow the simple instructions

Access Export Data Wizard

- Exporting the Access Table Virginia Airports to an Excel file
- Note multiple Excel sub-formats (.xls, .xlsx, .xlsb)

Export - Excel Spreadsheet

Select the destination for the data you want to export

Specify the destination file name and format.

File name: C:\Documents and Settings\Administrator\My Documents\Virginia_airports.xlsxcc Browse...

File format: Excel Workbook (*.xlsx)


- Excel Binary Workbook (*.xlsb)
- Excel Workbook (*.xlsx)
- Microsoft Excel 5.0/95 Workbook (*.xls)
- Excel 97 - Excel 2003 Workbook (*.xls)

Specify export options

Export data with formatting and layout.
Select this option to preserve most formatting and layout information when exporting a table, query, form, or report.

Open the destination file after the export operation is complete

Sample Access Report (PDF Format)

AIRPORT INFORMATION																																					
ROLE / CLASSIFICATION INFORMATION																																					
VATSP Classification (2008):	General Aviation Regional																																				
NPIAS Role (2008):	General Aviation																																				
Study Classification:	General Aviation Regional (1/2 mile visibility)																																				
ACTIVITY INFORMATION																																					
Based Aircraft (2007):	33																																				
Annual Operations (2020):	9995																																				
Annual Enplanements (2020):	n/a																																				
DEVELOPMENT INFORMATION (2008)																																					
Critical Airport Reference Code (Existing):	B-II																																				
Critical Airport Reference Code (Proposed):	C-III																																				
Airport Layout Plan (Original):	December, 1996																																				
Airport Layout Plan (Revision):	n/a																																				
Proposed Development (from ALD):	- Upgrade to C-III - - - -																																				
AERONAUTICAL SURVEY INFORMATION																																					
Runway End	Survey Type	Survey Date																																			
all	OC-PSK 5084	1986																																			
																																					
			AVAILABILITY OF COMMUNICATION / NAVIGATION / WEATHER AIDS																																		
			Available Weather Reporting:	AWOS-III																																	
			Common Traffic Advisory Frequency:	122.7																																	
			Clearance Delivery:	RTR																																	
			Nearby Navigational Aids:	<table border="1"> <tbody> <tr> <td>PULASKI</td> <td>VORTAC</td> <td>116.8</td> <td>PSK</td> <td>035°/ 3.4 NM TO FIELD</td> </tr> <tr> <td>BLUEFIELD</td> <td>VORTAC</td> <td>110</td> <td>BLF</td> <td>115°/ 26.6 NM TO FIELD</td> </tr> <tr> <td>TECH</td> <td>NDB</td> <td>368</td> <td>TEC</td> <td>258°/ 13.8 NM TO FIELD</td> </tr> <tr> <td>WOODRUM</td> <td>VOR</td> <td>114.9</td> <td>ODR</td> <td>257°/ 35.2 NM TO FIELD</td> </tr> <tr> <td>ROANOKE</td> <td>VORTAC</td> <td>109.4</td> <td>ROA</td> <td>251°/ 31.6 NM TO FIELD</td> </tr> <tr> <td>BLUEFIELD</td> <td>VORTAC</td> <td>110</td> <td>BLF</td> <td>115°/ 26.6 NM TO FIELD</td> </tr> <tr> <td>PULASKI</td> <td>VORTAC</td> <td>116.8</td> <td>PSK</td> <td>035°/ 3.4 NM TO FIELD</td> </tr> </tbody> </table>		PULASKI	VORTAC	116.8	PSK	035°/ 3.4 NM TO FIELD	BLUEFIELD	VORTAC	110	BLF	115°/ 26.6 NM TO FIELD	TECH	NDB	368	TEC	258°/ 13.8 NM TO FIELD	WOODRUM	VOR	114.9	ODR	257°/ 35.2 NM TO FIELD	ROANOKE	VORTAC	109.4	ROA	251°/ 31.6 NM TO FIELD	BLUEFIELD	VORTAC	110	BLF	115°/ 26.6 NM TO FIELD	PULASKI	VORTAC
PULASKI	VORTAC	116.8	PSK	035°/ 3.4 NM TO FIELD																																	
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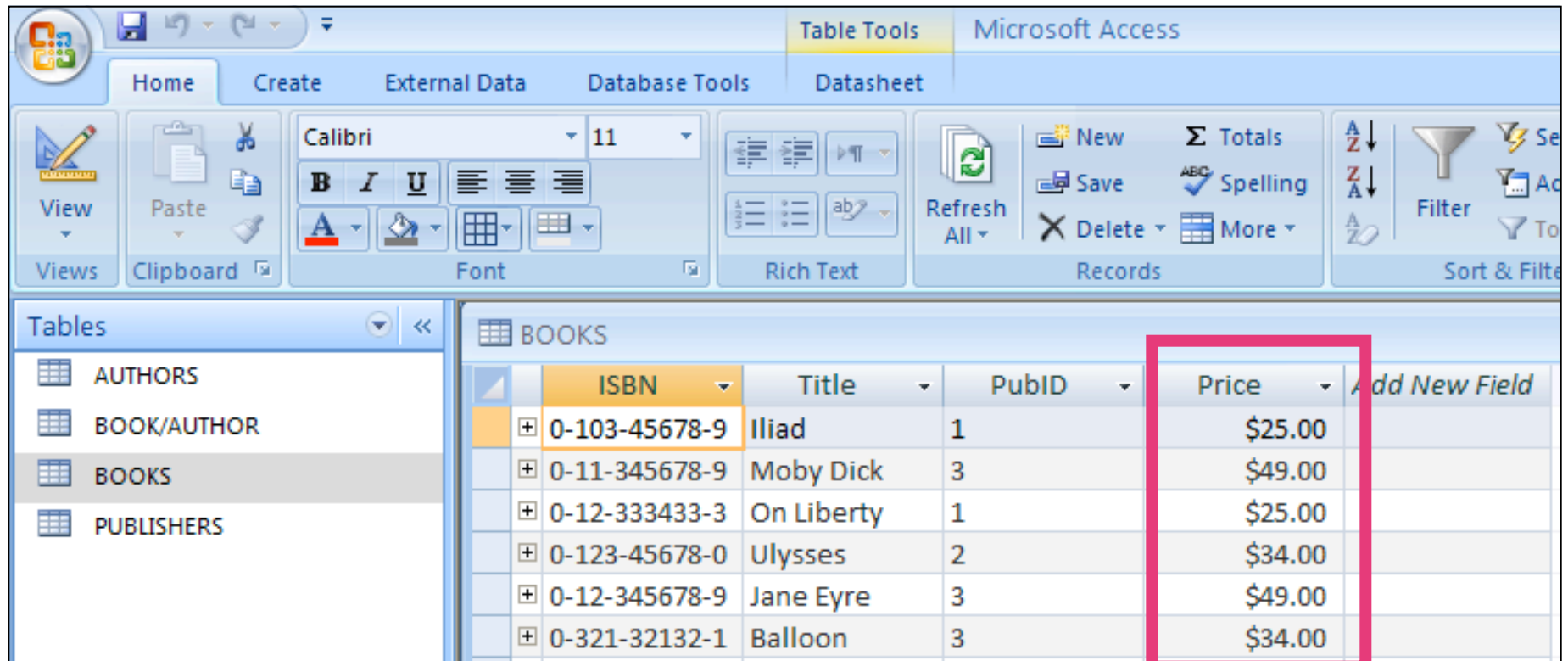
- Access report taken from a Virginia Airports study done at the Air Transportation Systems Lab
- Note: database includes graphical elements

Access and Calculations

- Simple way to extend the power of Access
- Access can do calculations using “Calculated Fields”
- Calculated fields require:
 - Field name
 - Expression to apply to that field
- Calculated fields can be done as a **query**

Access Calculated Field Example

- Suppose that I want to add a 10% **discount** to the books in the myBooks v4 database
- Use a calculated field in a query



The screenshot shows the Microsoft Access interface with the 'Table Tools' ribbon selected. The 'Datasheet' view of the 'BOOKS' table is displayed. The table has the following data:

ISBN	Title	PubID	Price	Add New Field
0-103-45678-9	Iliad	1	\$25.00	
0-11-345678-9	Moby Dick	3	\$49.00	
0-12-333433-3	On Liberty	1	\$25.00	
0-123-45678-0	Ulysses	2	\$34.00	
0-12-345678-9	Jane Eyre	3	\$49.00	
0-321-32132-1	Balloon	3	\$34.00	

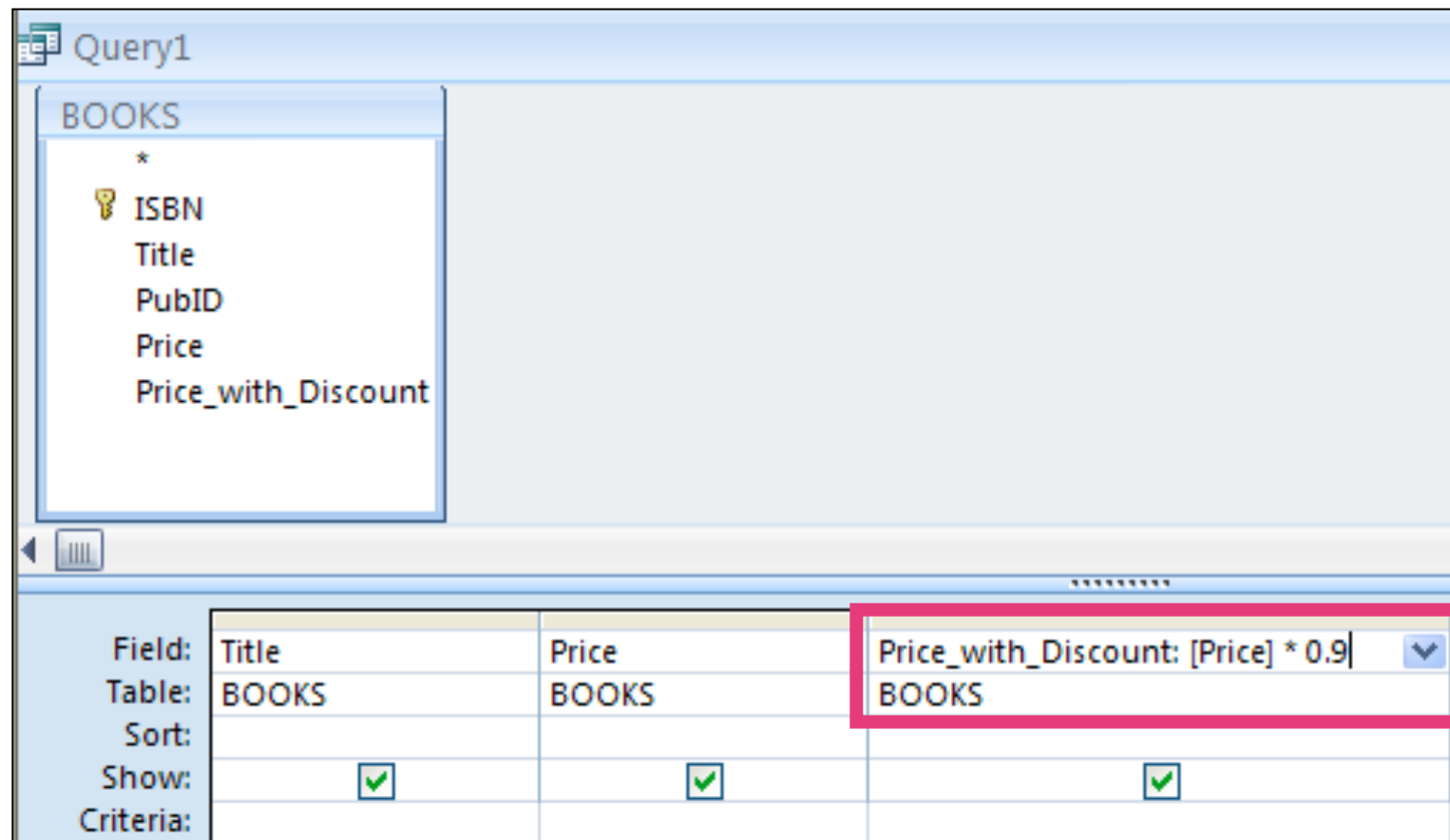
Access Calculated Field Example

- Start with the Design View of the Table where the Calculated Field is to be added
- I used Price_with_Discount as the new field

Field Name	Data Type
ISBN	Text
Title	Text
PubID	Text
Price	Currency
Price_with_Discount	Currency

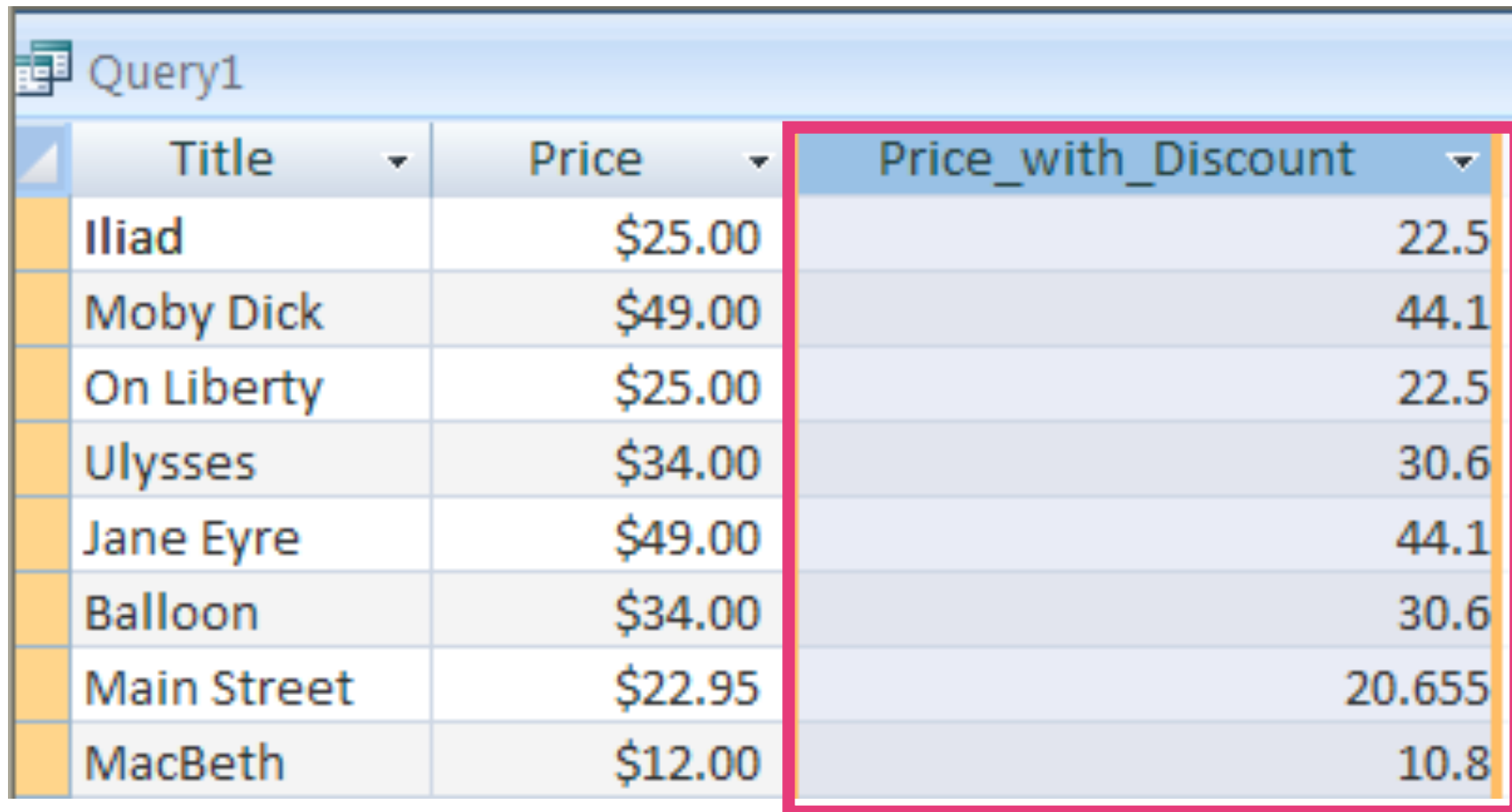
Access Calculated Field Example

- Now start a new query using the standard Query Design tool in Access
- Use the previously define Price_with_Discount as the calculated field field



Access Calculated Field Example

- Output of simple Calculated Field (after Query)



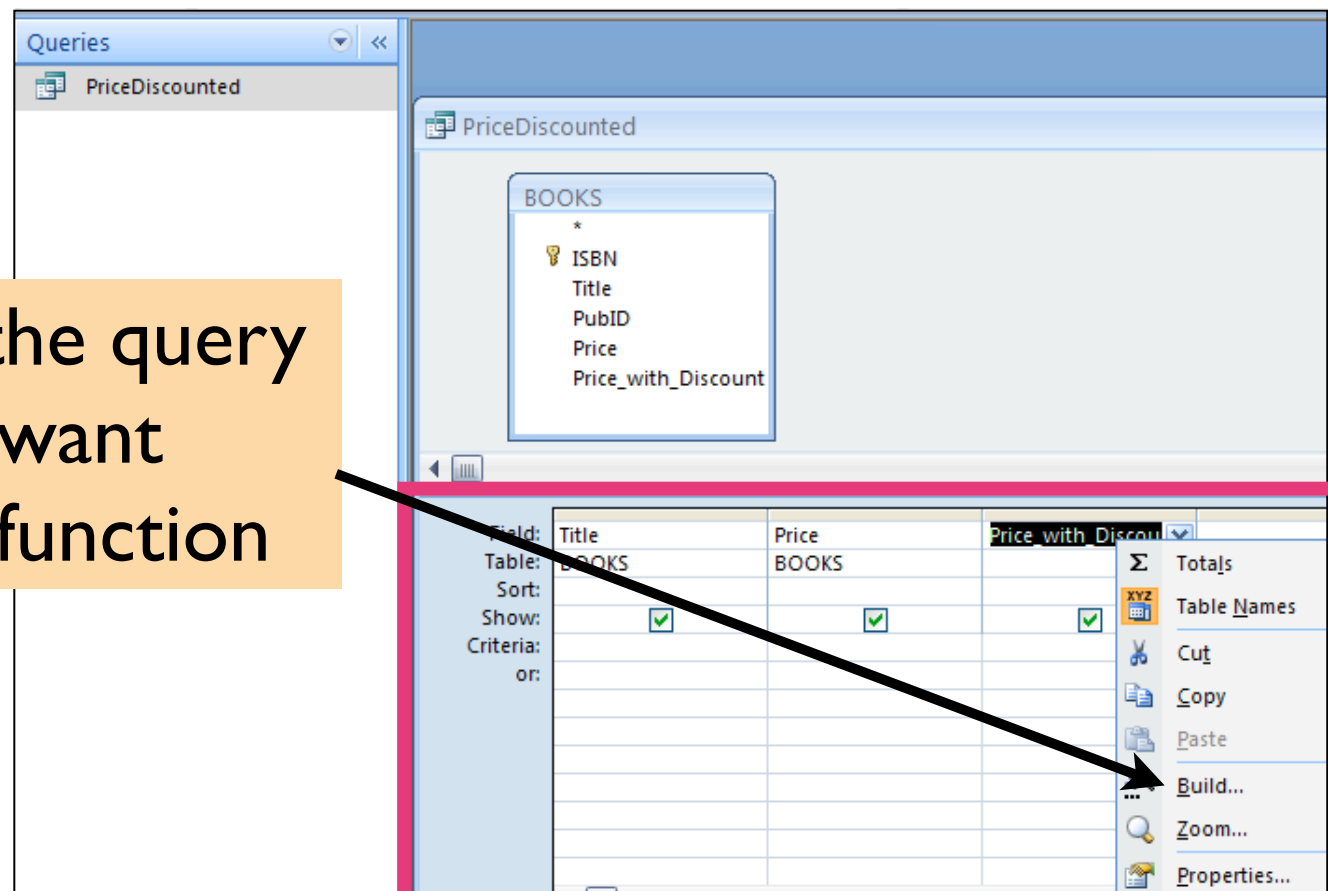
The screenshot shows a table with three columns: Title, Price, and Price_with_Discount. The Price column contains values with dollar signs and two decimal places. The Price_with_Discount column contains values with one decimal place. A pink rectangular box highlights the Price and Price_with_Discount columns.

Title	Price	Price_with_Discount
Iliad	\$25.00	22.5
Moby Dick	\$49.00	44.1
On Liberty	\$25.00	22.5
Ulysses	\$34.00	30.6
Jane Eyre	\$49.00	44.1
Balloon	\$34.00	30.6
Main Street	\$22.95	20.655
MacBeth	\$12.00	10.8

Access Calculation Expression Builder

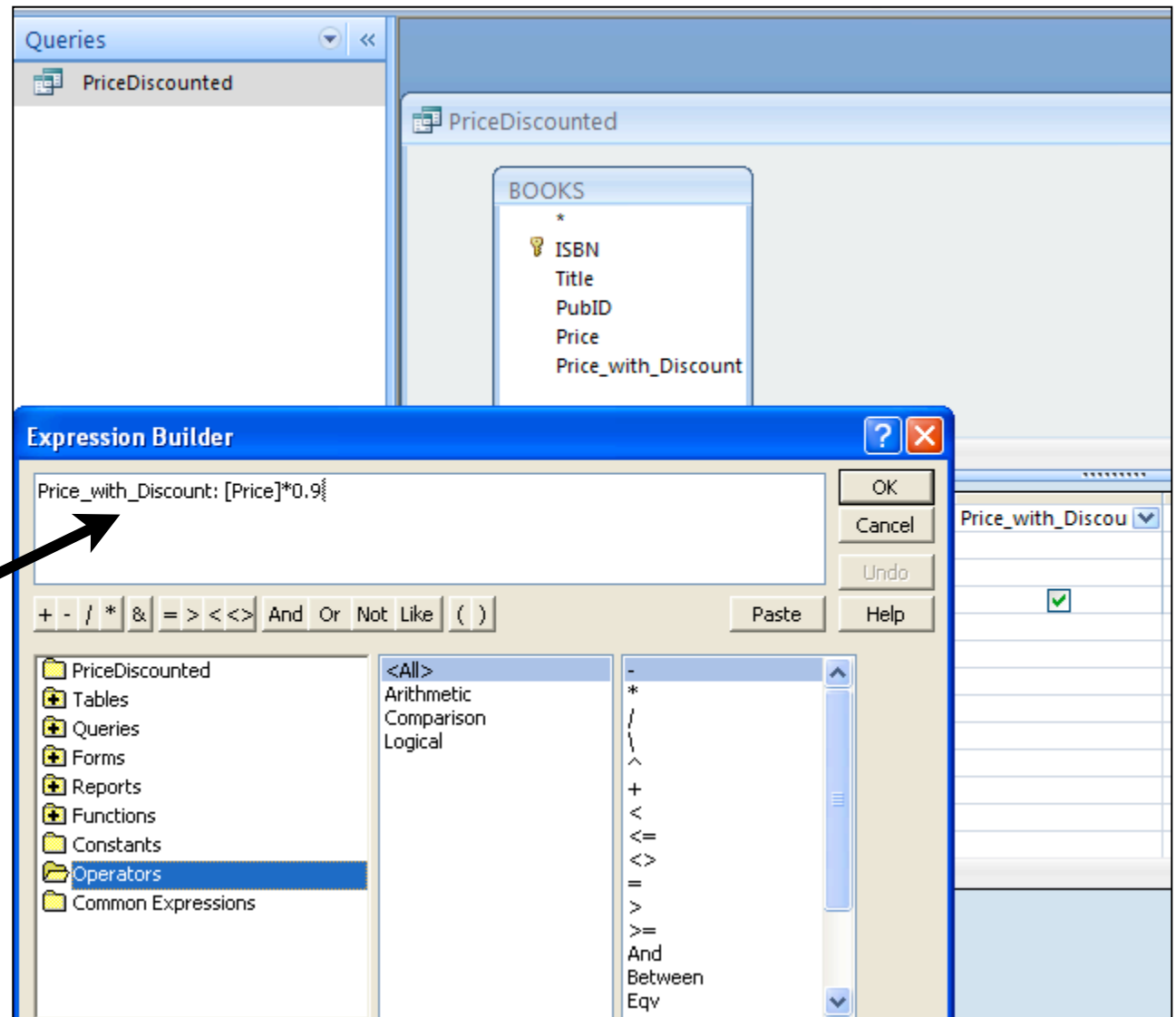
- Use Access Functions to build more complex expressions in new fields
- Functions can be opened from a Query in Design View

Right click on the query where we want to design the function



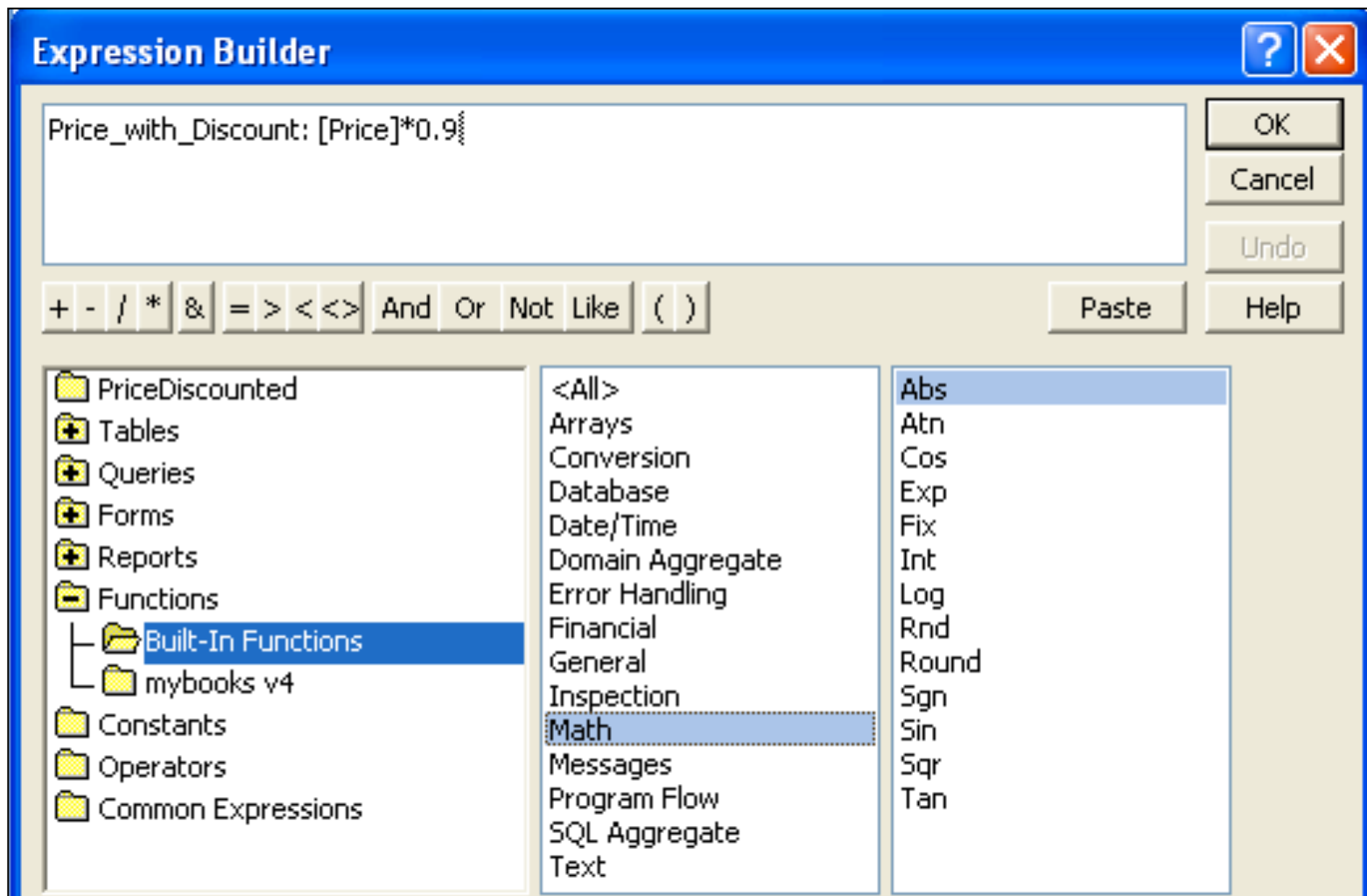
Access Calculation Expression Builder

- Build the expression as needed
- Note: here we show the previously defined expression in the calculated field



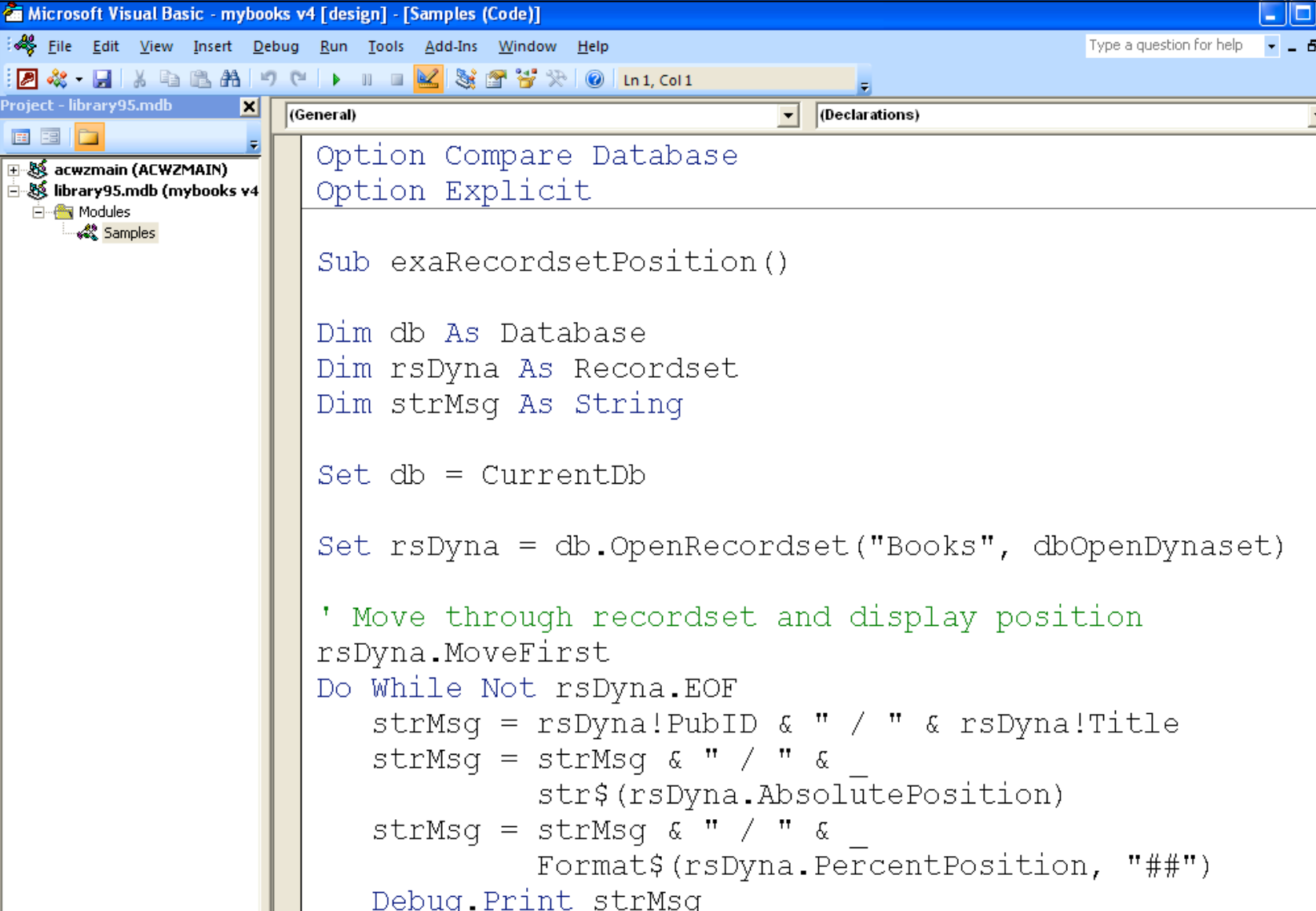
Access Calculation Expression Builder

- The usual built-in functions found in Excel can be found in the Expression Builder



If You Need More Power

- Use VBA within Access! (check Database Tools)



The screenshot shows the Microsoft Visual Basic editor window titled "Microsoft Visual Basic - mybooks v4 [design] - [Samples (Code)]". The interface includes a menu bar (File, Edit, View, Insert, Debug, Run, Tools, Add-Ins, Window, Help), a toolbar, and a project explorer on the left showing a project named "library95.mdb" with a "Samples" module. The main code window displays the following VBA code:

```
Option Compare Database
Option Explicit

Sub exaRecordsetPosition()

Dim db As Database
Dim rsDyna As Recordset
Dim strMsg As String

Set db = CurrentDb

Set rsDyna = db.OpenRecordset("Books", dbOpenDynaset)

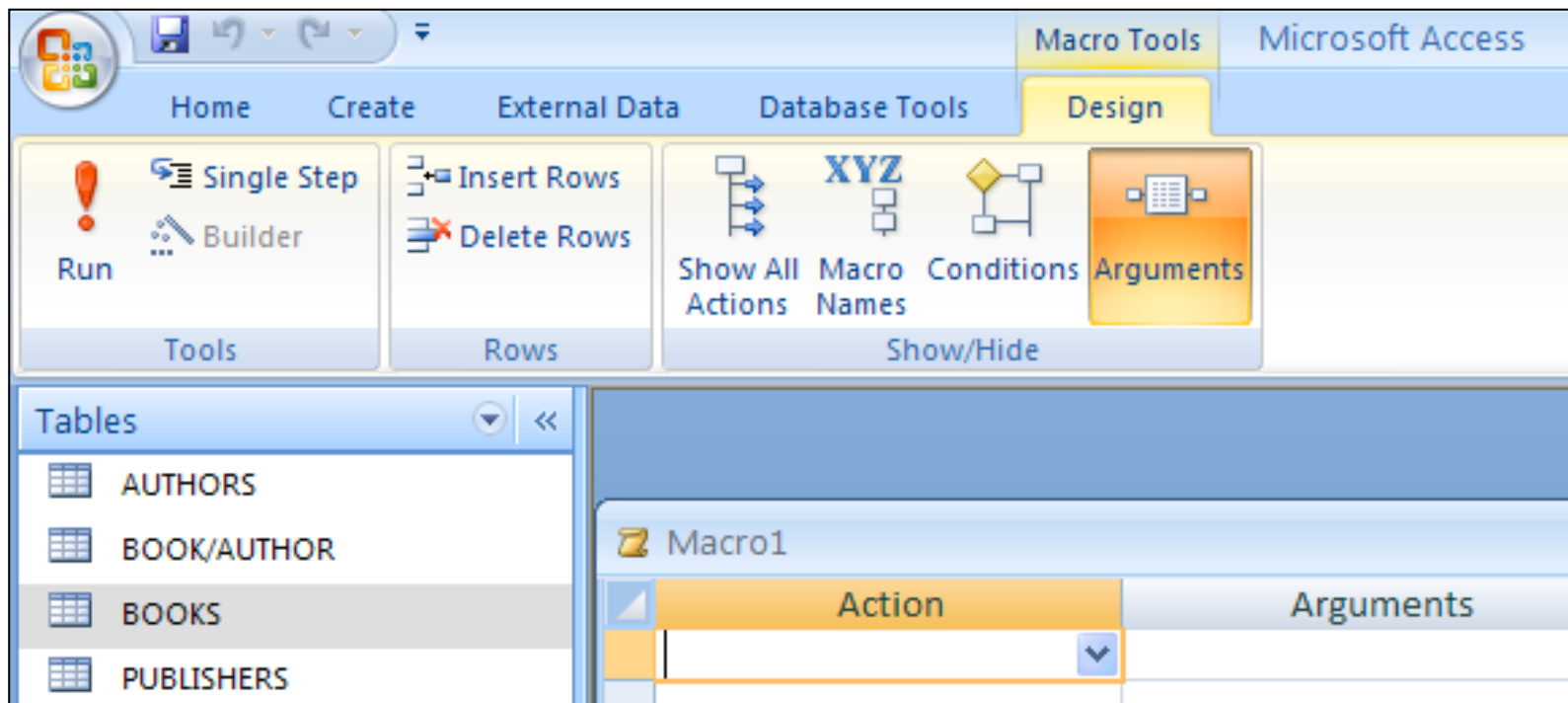
' Move through recordset and display position
rsDyna.MoveFirst
Do While Not rsDyna.EOF
    strMsg = rsDyna!PubID & " / " & rsDyna!Title
    strMsg = strMsg & " / " & _
              str$(rsDyna.AbsolutePosition)
    strMsg = strMsg & " / " & _
              Format$(rsDyna.PercentPosition, "###")
    Debug.Print strMsg
```

If You Need to Automate your Tasks

- Use Macros within Access
- Check Database Tools
- Macros function just the same as in Excel
- Automate a task
- Make conditional changes to the database analysis, etc.

Simple Macro - Open a Table and Query

- Basic Macro Interface
- Define actions and arguments for those actions



Simple Macro - Open a Table and Query Database to Apply the Query PriceDiscount

The screenshot shows the Microsoft Access Macro Tools ribbon and the Macro Editor. The ribbon includes the following groups and options:

- Tools:** Run, Single Step, Builder
- Rows:** Insert Rows, Delete Rows
- Show/Hide:** Show All Actions, Macro Names, Conditions, Arguments

The Macro Editor displays a macro named "OpenBooks_Find_GT_25" with the following actions:

Action	Arguments
OpenTable	BOOKS, Datasheet, Edit
OpenQuery	PriceDiscounted, Datasheet, E

An orange box labeled "Two Actions" has an arrow pointing to the "OpenTable" action in the Macro Editor.

Simple Macro - Open a Table and Query Database to Apply the Query Discount

Action 1
Open
Table Books

Action	Arguments
OpenTable	BOOKS, Datasheet, Edit
OpenTable	PriceDiscounted, Datasheet, Edit
OutputTo	
Quit	
RemoveAllTempVars	KS
RemoveTempVar	sheet
RepaintObject	

Action Arguments

Action 2
Apply Query
PriceDiscount

Action	Arguments
OpenTable	BOOKS, Datasheet, Edit
OpenQuery	PriceDiscounted, Datasheet, Edit

Action Arguments

Query Name	PriceDiscounted
View	Datasheet
Data Mode	Edit

Simple Macro - Open a Table and Query (Outcome of Running the Macro)

The screenshot shows the Microsoft Access interface. The ribbon includes 'Home', 'Create', 'External Data', and 'Database Tools'. The 'Database Tools' ribbon is active, showing options like 'Refresh All', 'New', 'Save', 'Delete', 'Totals', and 'Spelling'. On the left, the 'Macros' pane shows a macro named 'OpenBooks_Find_GT_25'. The main window displays a table named 'PriceDiscounted' with the following data:

Title	Price	Price_with_Discount
Iliad	\$25.00	22.5
Moby Dick	\$49.00	44.1
On Liberty	\$25.00	22.5
Ulysses	\$34.00	30.6
Jane Eyre	\$49.00	44.1
Balloon	\$34.00	30.6

Final Trick in Access - Pivot Tables

- Same idea as in Excel
- Summarizes and organizes data

Open a Table in Data View Mode
The select Pivot View

Access - Pivot Tables

- Example below using the Books Table
- To do in class: Use the construction assets file

Drop Filter Fields Here

	Title ▾								
	Balloon	C++	Emma	Fairie Queene	Hamlet	Iliad	Jane Eyre	King Le	
	+ -	+ -	+ -	+ -	+ -	+ -	+ -	+ -	+ -
PubID ▾	Price ▾	Price ▾	Price ▾	Price ▾	Price ▾	Price ▾	Price ▾	Price ▾	Price ▾
1		\$29.95	\$20.00	\$15.00		\$25.00			
2					\$20.00				\$49.00
3	\$34.00						\$49.00		
Grand Total									

PivotTable Field List
Drag items to the PivotTable list

- BOOKS
- ISBN
- Title
- PubID
- Price
- Price_with_Discount


Sample Database Applications

Developed at the Air Transportation
Systems Lab

Airport and Navaid Database for The Virginia Department of Aviation (VDOA)

- Developed by Virginia Tech and Delta Airport Consultants
- The State wanted to prioritize investments at 66 public airports in Virginia
- Developed a database to:
 - Show all assets at airports
 - Show current Navigational aids (Navaids)
 - Show future improvements to meet some performance criteria

VDOA Navaid and Airport Database

New River Valley (PSK) Dublin, Virginia											
AIRPORT INFORMATION											
ROLE / CLASSIFICATION INFORMATION											
VATSP Classification (2008):		General Aviation Regional									
NPIAS Role (2008):		General Aviation									
Study Classification:		General Aviation Regional (1/2 mile visibility)									
ACTIVITY INFORMATION											
Based Aircraft (2007):		33									
Annual Operations (2020):		9995									
Annual Enplanements (2020):		n/a									
DEVELOPMENT INFORMATION (2008)											
Critical Airport Reference Code (Existing):		B-II									
Critical Airport Reference Code (Proposed):		C-III									
Airport Layout Plan (Original):		December, 1996									
Airport Layout Plan (Revision):		n/a									
Proposed Development (from ALD):											
- Upgrade to C-III											
-											
-											
-											
-											
AERONAUTICAL SURVEY INFORMATION											
Runway End	Survey Type	Survey Date									
all	OC-PSK 5084	1986									
											
						AVAILABILITY OF COMMUNICATION / NAVIGATION / WEATHER AIDS					
						Available Weather Reporting:		AWOS-III			
						Common Traffic Advisory Frequency:		122.7			
						Clearance Delivery:		RTR			
Nearby Navigational Aids: PULASKI BLUEFIELD TECH WOODRUM ROANOKE BLUEFIELD PULASKI	VORTAC VORTAC NDB VOR VORTAC VORTAC VORTAC	116.8 110 368 114.9 109.4 110 116.8	PSK BLF TEC ODR ROA BLF PSK	035°/ 3.4 NM TO FIELD 115°/ 26.6 NM TO FIELD 258°/ 13.8 NM TO FIELD 257°/ 35.2 NM TO FIELD 251°/ 31.6 NM TO FIELD 115°/ 26.6 NM TO FIELD 035°/ 3.4 NM TO FIELD							

- Access report taken from a Virginia Airports study done at the Air Transportation Systems Lab
- Uses FAA database
- Includes Aerial photos of each airfield

VDOA Navaid and Airport Database

New River Valley (PSK)			
Dublin, Virginia			
System Benchmarks			
General Aviation Regional (1/2 mile visibility)			
Best Approach (Primary Runway End)			
BENCHMARK		RUNWAY 6	
Approach:	ILS CAT I	<input checked="" type="checkbox"/> meets	ILS RWY 6 - ILS
Ceiling:	200 AGL	<input type="checkbox"/> meets	
Visibility:	1/2 statute mile	<input type="checkbox"/> meets	
Approach:	LPV	<input type="checkbox"/> meets	no satellite-based approach available
Ceiling:	200 AGL	<input type="checkbox"/> meets	
Visibility:	1/2 statute mile	<input type="checkbox"/> meets	
Equipment:	MALSR, HIRLS, PAPI	<input type="checkbox"/> meets	existing MALSR, HIRLS
Secondary Approach (Different Runway End)			
BENCHMARK		RUNWAY 24	
Approach:	Ground-based	<input checked="" type="checkbox"/> meets	no ground-based approach available
Ceiling:	400 AGL	<input type="checkbox"/> meets	
Visibility:	1 statute mile	<input type="checkbox"/> meets	
Approach:	LPV	<input checked="" type="checkbox"/> meets	RNAV (GPS) RWY 24 - LPV
Ceiling:	250 AGL	<input checked="" type="checkbox"/> meets	
Visibility:	1 statute mile	<input checked="" type="checkbox"/> meets	
Equipment:	REILs, HIRLS, PAPI	<input checked="" type="checkbox"/> meets	
Additional Requirements			
Weather:	on-field, 24/7, data-linked	<input checked="" type="checkbox"/> meets	
Access to ATC Clearance:	RTR	<input checked="" type="checkbox"/> meets	
ADS-B Coverage:	On ground	<input type="checkbox"/> meets	

- Access report taken from a Virginia Airports study done at the Air Transportation Systems Lab
- Uses FAA database

Aircraft Accident Database for Airport Cooperative Research Project

- Developed an accident database to identify accidents where aircraft collided with approach lights
- Database used to estimate risk of collision with approach light systems in the U.S.
- Database used to communicate to the client where accidents occur and severity levels
- Application developed using Filemaker (similar to Access but works on Macs and PCs)

Approach Light Accident Database

Summary
Airport_Info
Map
Accident_Photos
Report
Narratives
Weather
Aircraft_Info

Add Record
Delete Record
AccidentTypeFlag overrun

Approach Light System Hazards Assessment and Mitigation Database (ACRP 04-03)

Aircraft	SF34
Type_of_Occurence	accident
Airport_Name	Portland International
Airport_Designation	PWM
Aircraft_Damage	Substantial
Carrier_Name	Unknown
Type_of_Operation	Commercial
ALS_System	Runway End Lights
Fatalities	0
Injuries	0
Date	7/20/2001
Time	
CrashID	
Accident_Runway	29
Is_accident_in_US	US
Source_Of_Information	AIDS
Total_Fatalities	111
Total_Injuries	269

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TRANSPORTATION RESEARCH BOARD
OF THE NATIONAL ACADEMIES

Multiple Tabs are Used to Help Navigate


Summary Airport_Info Map Accident_Photos Report Narratives Weather Aircraft_Info

Picture1




Source Transport Canada

Picture2




Source Transport Canada

Picture3



Source Transport Canada



Source Transport Canada

Multiple Tabs are Used to Help Navigate

Summary
Airport_Info
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Report
Narratives
Weather
Aircraft_Info

Accident_Narrative

Tire marks from the left and right main gear, centre main gear, and nose gear were evident on the end of Runway 24L, the blast pad, and down the grass hill. The aircraft's left main landing gear inboard tires traveled directly over the survey button at the threshold of Runway 06R, indicating that the aircraft was just right of the Runway 24L centreline when it left the runway. Tire marks left on the blast pad and the grassy area indicate that the aircraft was yawed slightly to the right. The aircraft crossed the service road, then Convair Drive, the landing gear, and two inboard engines leaving gouges in the pavement of Convair Drive. The aircraft knocked down the guard rail along the western side of Convair Drive and the fourth approach light tower. A small amount of aircraft debris was found in the field leading up to the edge of the ravine. The aircraft came to rest in a ravine alongside

The aircraft came to rest in a ravine alongside Etobicoke Creek, on the extended centreline of Runway 24L. Most of the wreckage was contained within the radius of the aircraft, but there were several small components in the field before the ravine. The aircraft struck and destroyed the fifth set of approach lights as it entered the ravine. This set of lights comprised three pairs of frangible light towers, individually mounted on poured concrete pillars and arranged perpendicular to the runway centreline.

A post-crash fire consumed most of the upper portion of the main fuselage, vertical fin, and inner wing sections. The fire was intense and mainly limited to the fuselage. Fire singed and burned some of the surrounding vegetation, but did not spread beyond the circumference of the aircraft. The top of one of the passenger oxygen bottles exploded during the post-crash fire; the top was blown approximately 84 m (276 feet) across Etobicoke Creek. Photo 4. Accident site

Accident_Additional_Narrative

Air France
 Airbus A340-313 F-GLZQ
 Toronto/Lester B. Pearson International
 Airport, Ontario
 02 August 2005
 Report Number A05H0002

Synopsis

The Air France Airbus A340-313 aircraft (registration F-GLZQ, serial number 0289) departed Paris, France, at 1153 Coordinated Universal Time (UTC) as Air France Flight 358 on a scheduled flight to Toronto, Ontario, with 297 passengers and 12 crew members on board. Before departure, the flight crew members obtained their arrival weather forecast, which included the possibility of thunderstorms. While approaching Toronto, the flight crew members were advised of weather-related delays. On final approach, they were advised that the crew of an aircraft landing ahead of them had reported poor braking action, and Air France Flight 358's aircraft weather radar was displaying heavy precipitation encroaching on the runway from the northwest. At about 200 feet above the runway threshold, while on the instrument landing system approach to Runway 24L with autopilot and autothrust disconnected, the aircraft deviated above the glideslope and the groundspeed began to increase. The aircraft crossed the runway threshold about 40 feet above the glideslope.