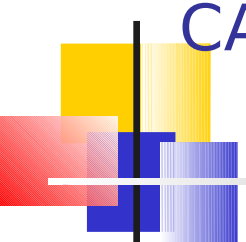
Queries that Really Count

Understanding Totals in Access

ELUNA 2010

Cathy Salika
CARLI



We're going to look at these three tables:

Microsoft Access - [PATRON : Table]

File Edit View Insert Format Records Too

PATRON_ID	LAST_NAME	FIRST_NAME
1	Brown	Charlie
2	Brown	Sally
3	Dog	Snoopy
4	Van Pelt	Linus
5	Van Pelt	Lucy
6	Van Pelt	Rerun
7	Schroeder	L.

Microsoft Access - [PATRON_BARCODE : Table]

File Edit View Insert Format Records Tools Window Help

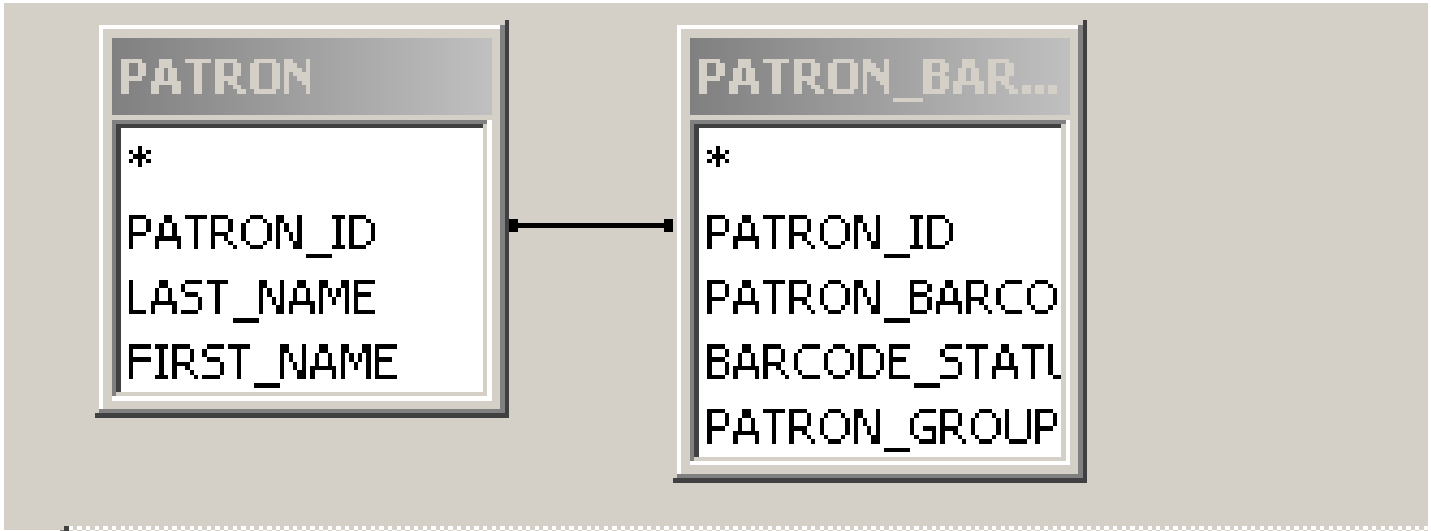
PATRON_ID	PATRON_BARCODE	BARCODE_STATUS	PATRON_GROUP_ID
1	1234	5	1
1	1234	1	2
2	2345	1	2
4	3456	5	1
4	3456	1	2
5	4567	1	2
5	4567	1	3
6	5678	1	1
7	6789	1	3

Microsoft Access - [PATRON_GROUP : Table]

File Edit View Insert Format Records To

PATRON_GROUP_ID	PATRON_GROUP_NAME
1	Preschool
2	Grade School
3	Special Priv
4	Adult

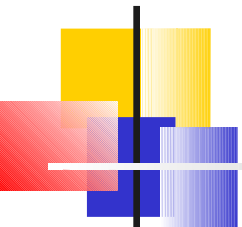
Question 1: What will this query do?



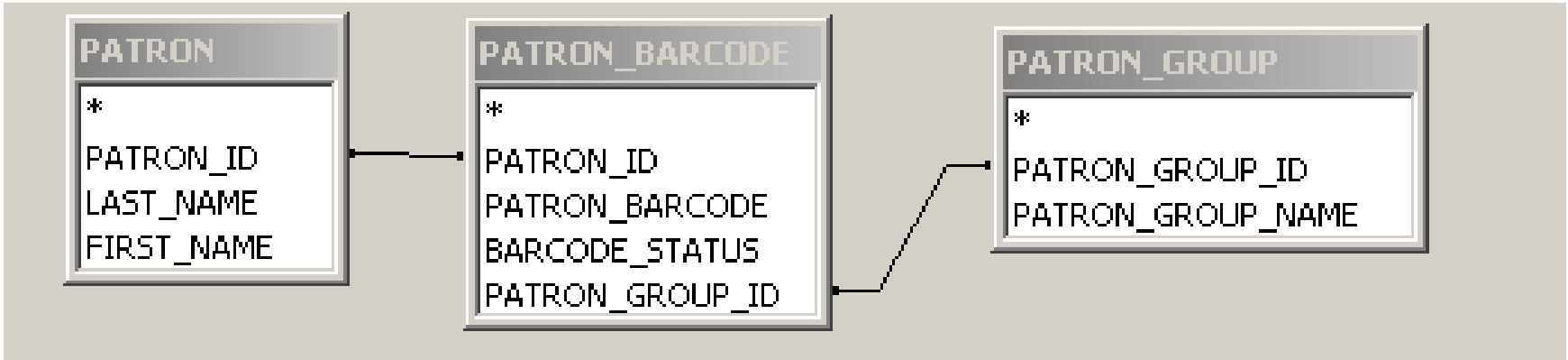
Field:	PATRON_ID	FIRST_NAME	PATRON_BARCODE
Table:	PATRON	PATRON	PATRON_BARCODE
Sort:	Ascending		
Show:	☑	☑	☑
Criteria:			

Answer 1:

PATRON_ID	FIRST_NAME	PATRON_BARCODE
1	Charlie	1234
1	Charlie	1234
2	Sally	2345
4	Linus	3456
4	Linus	3456
5	Lucy	4567
5	Lucy	4567
6	Rerun	5678
7	L.	6789



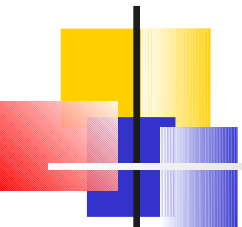
Question 2: What will this query do?



Field:	PATRON_ID	FIRST_NAME	BARCODE_STATUS	PATRON_GROUP_NAME
Table:	PATRON	PATRON	PATRON_BARCODE	PATRON_GROUP
Sort:	Ascending			
Show:	☑	☑	☑	☑
Criteria:			="1"	

Answer 2:

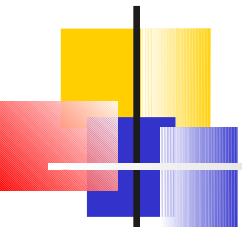
PATRON_ID	FIRST_NAME	BARCODE_STATUS	PATRON_GROUP_NAME
1	Charlie	1	Grade School
2	Sally	1	Grade School
4	Linus	1	Grade School
5	Lucy	1	Special Priv
5	Lucy	1	Grade School
6	Rerun	1	Preschool
7	L.	1	Special Priv



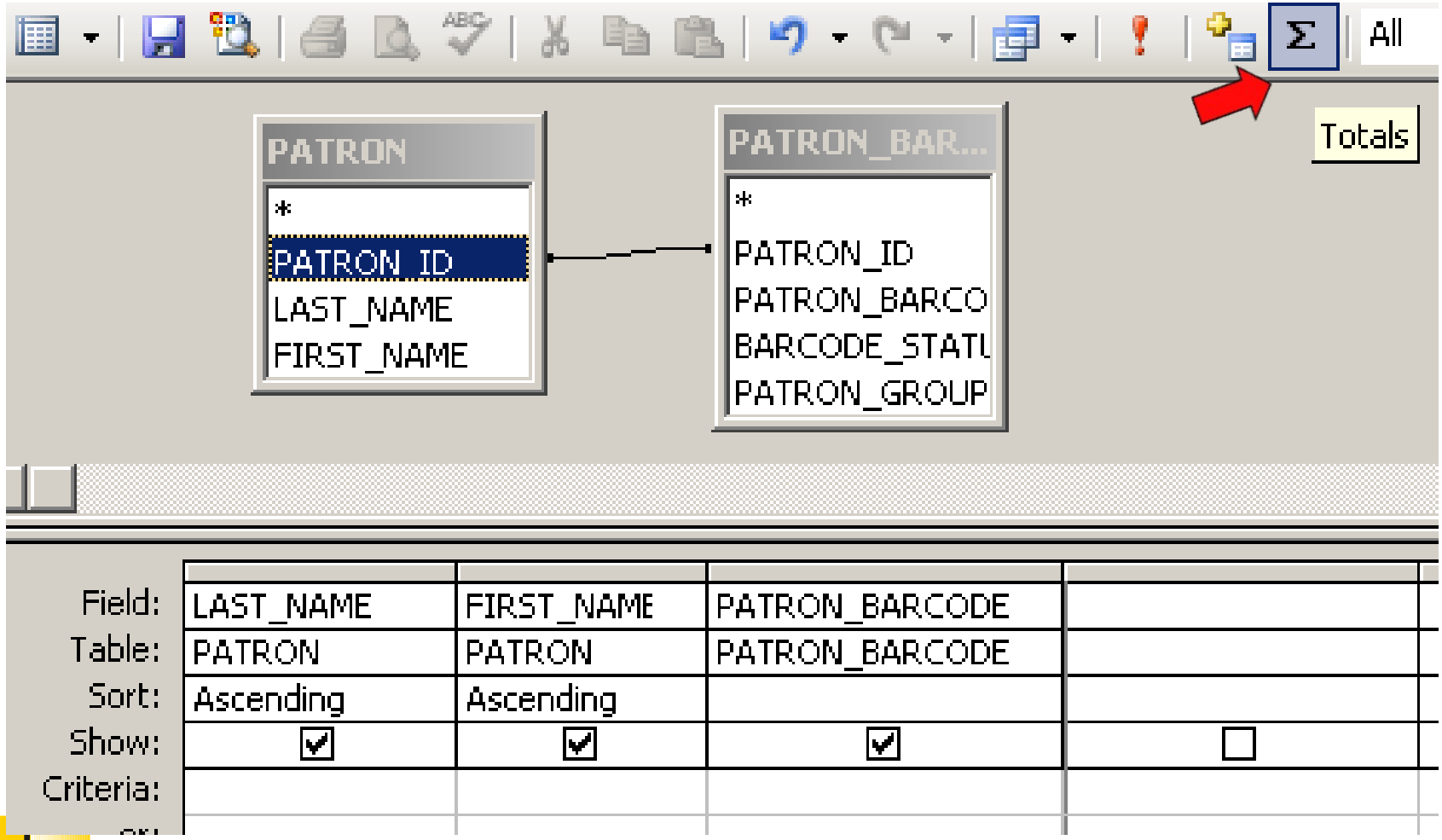
Why the Number of Rows Matters

Fundamentally, when you do counts in Access, you are counting rows…

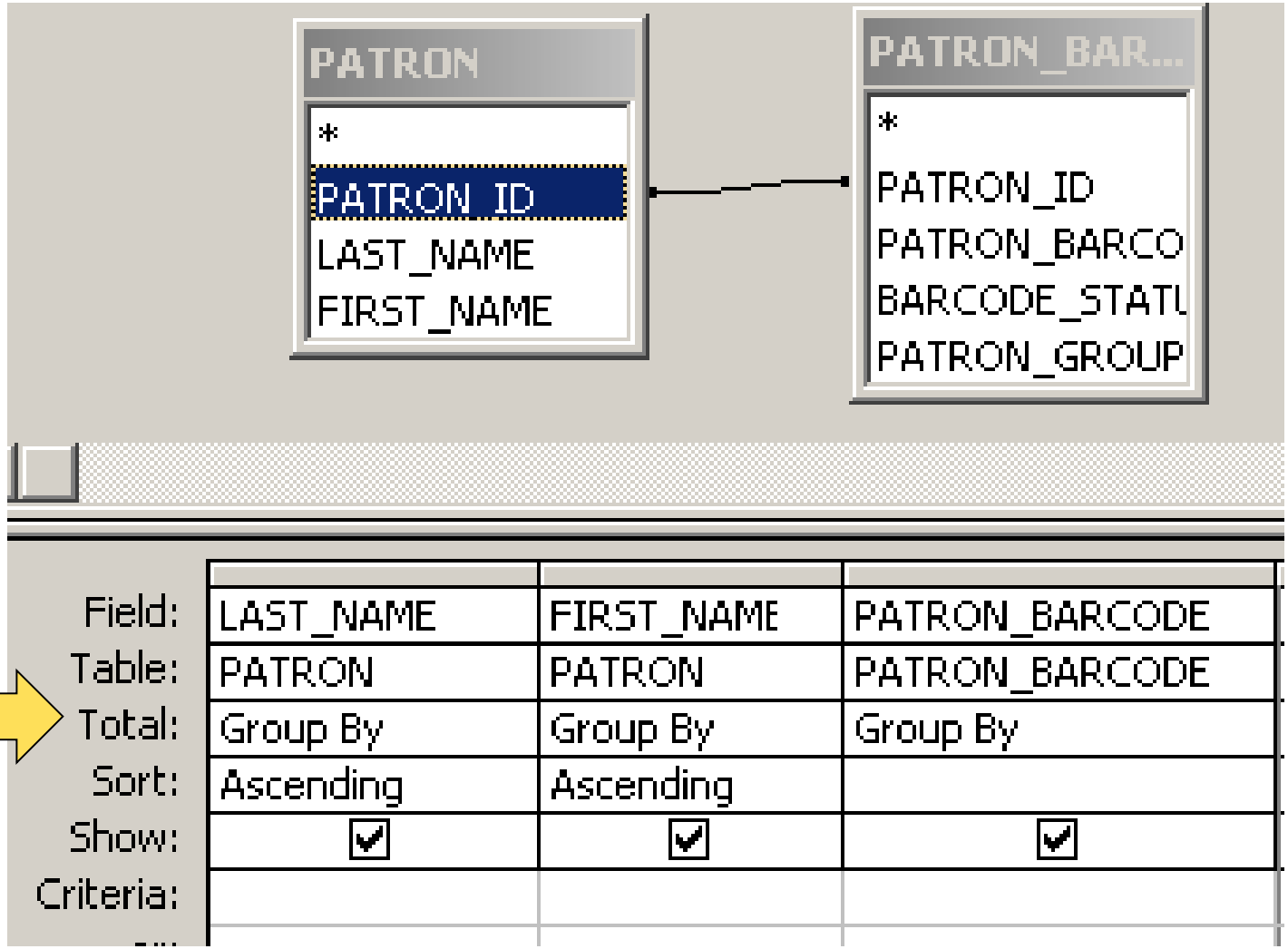
So let’s start counting things.



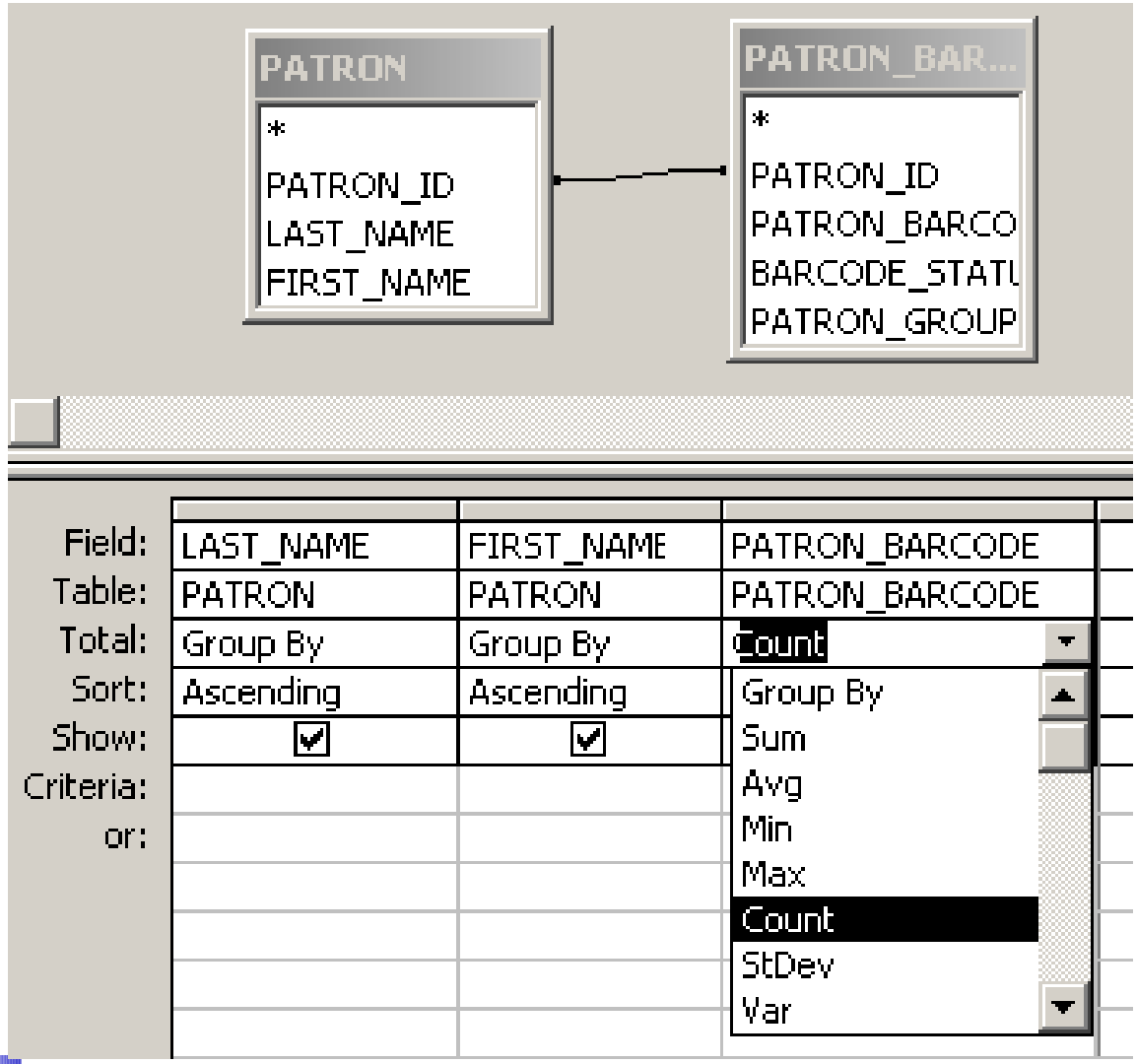
Create a Query: How many barcodes does each patron have?



Create a Query: How many barcodes does each patron have?

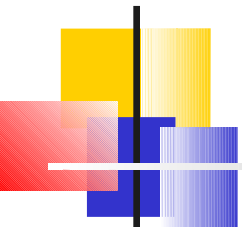


Create a Query: How many barcodes does each patron have?

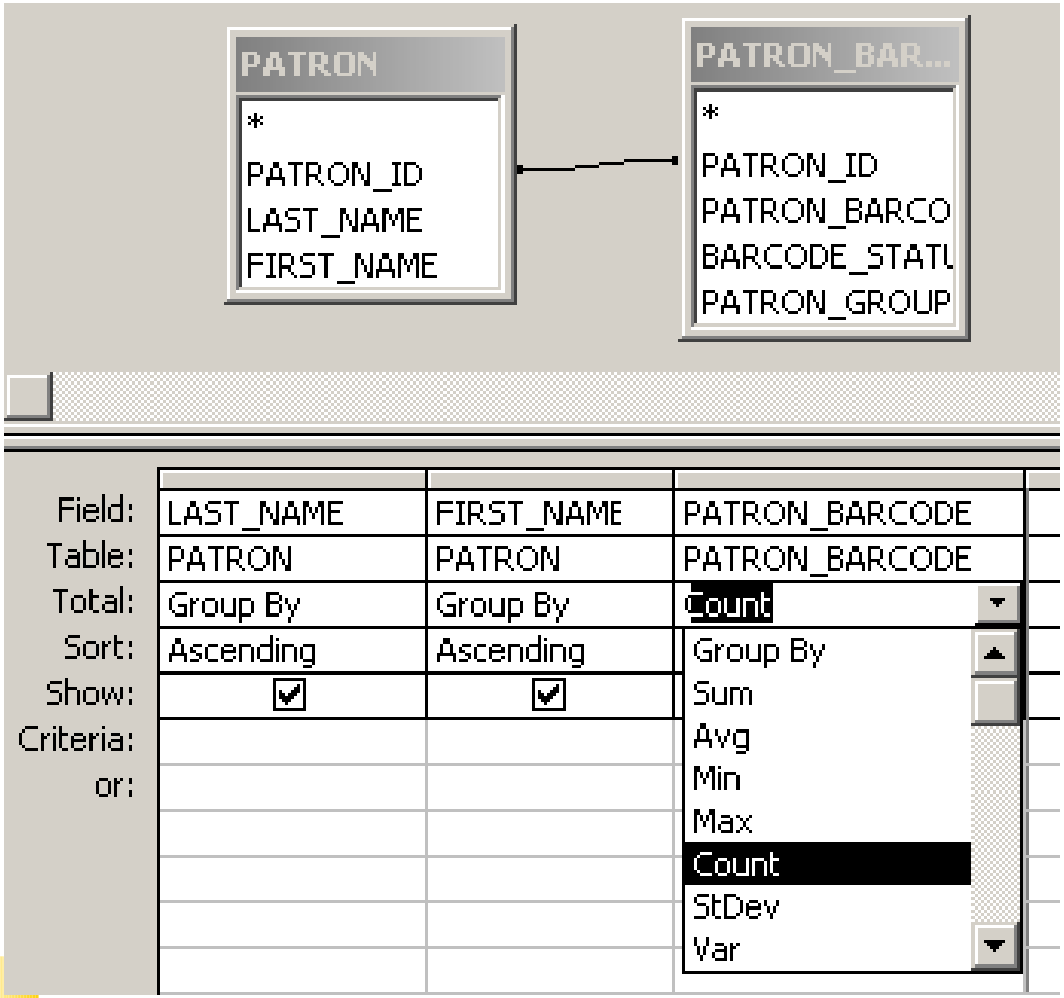


Create a Query: How many barcodes does each patron have?

LAST_NAME	FIRST_NAME	CountOfPATRON_BAF
Brown	Charlie	2
Brown	Sally	1
Schroeder	L.	1
Van Pelt	Linus	2
Van Pelt	Lucy	2
Van Pelt	Rerun	1

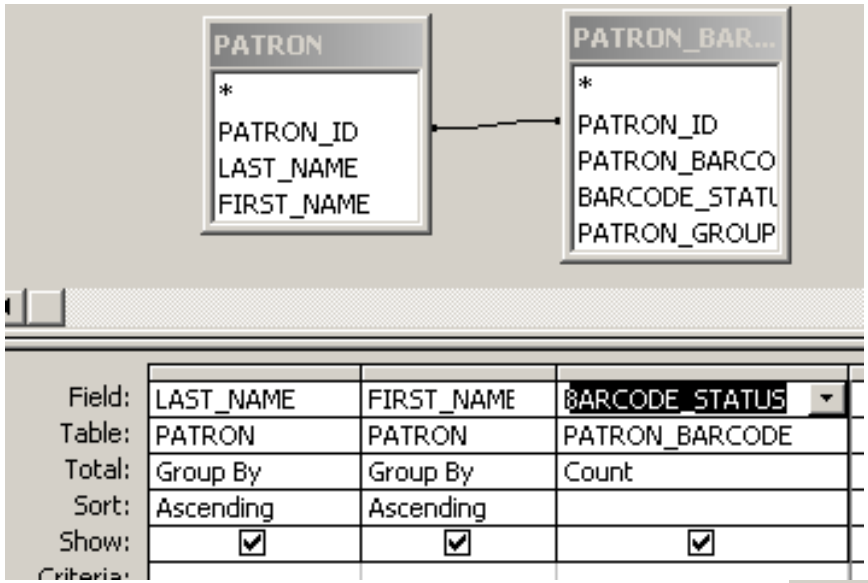


Q: Why did I choose to count the PATRON_BARCODE column?



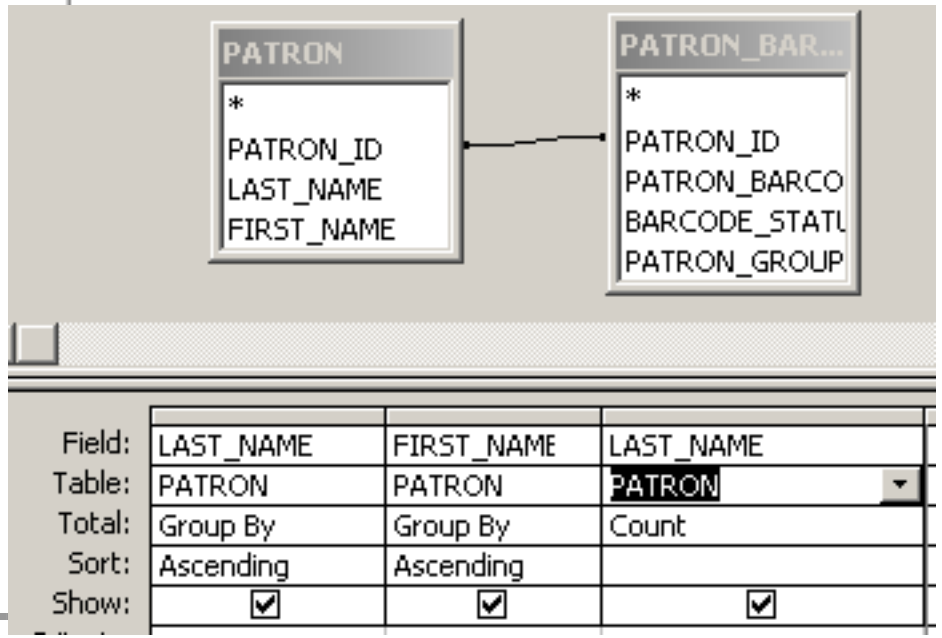
A: No particular reason.

These queries give the same results.



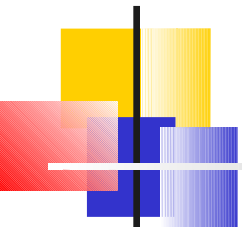
<<< A different field from the PATRON_BARCODE table

Any field from >>> the PATRON table



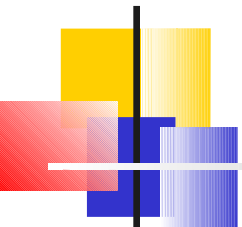
It *almost* doesn't matter which field we choose to count, because...

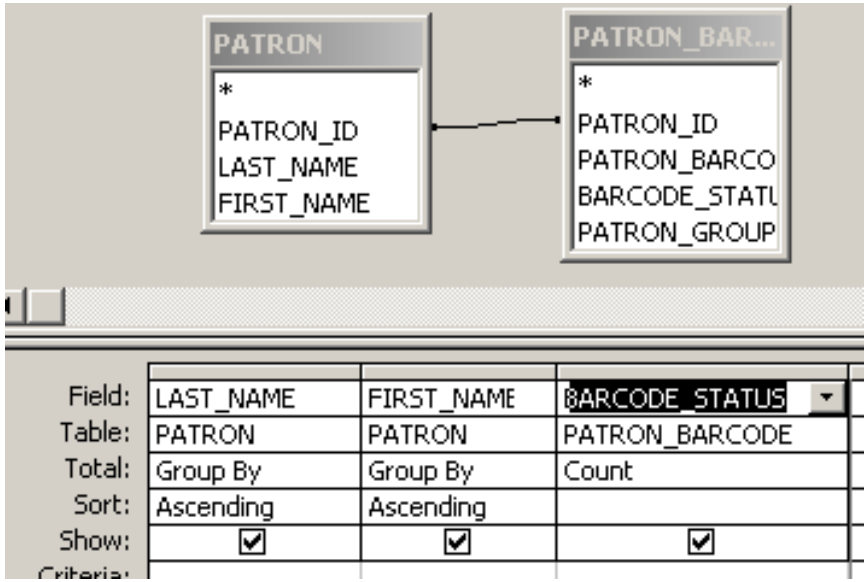
Fundamentally, when you do counts in Access, you are counting rows...



Notice the name of the counted column.

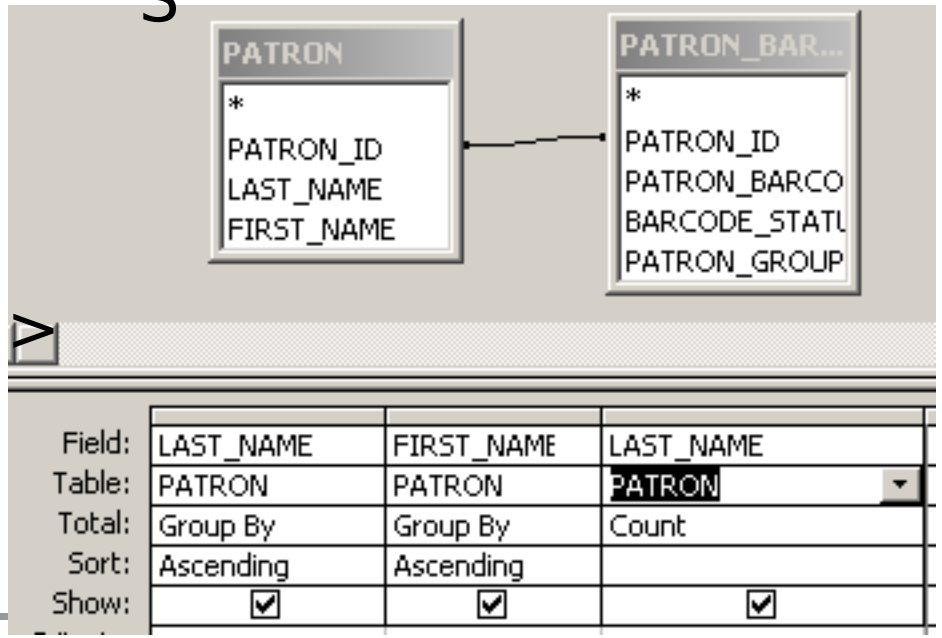
LAST_NAME	FIRST_NAME	CountOfPATRON_BAF
Brown	Charlie	2
Brown	Sally	1
Schroeder	L.	1
Van Pelt	Linus	2
Van Pelt	Lucy	2
Van Pelt	Rerun	1



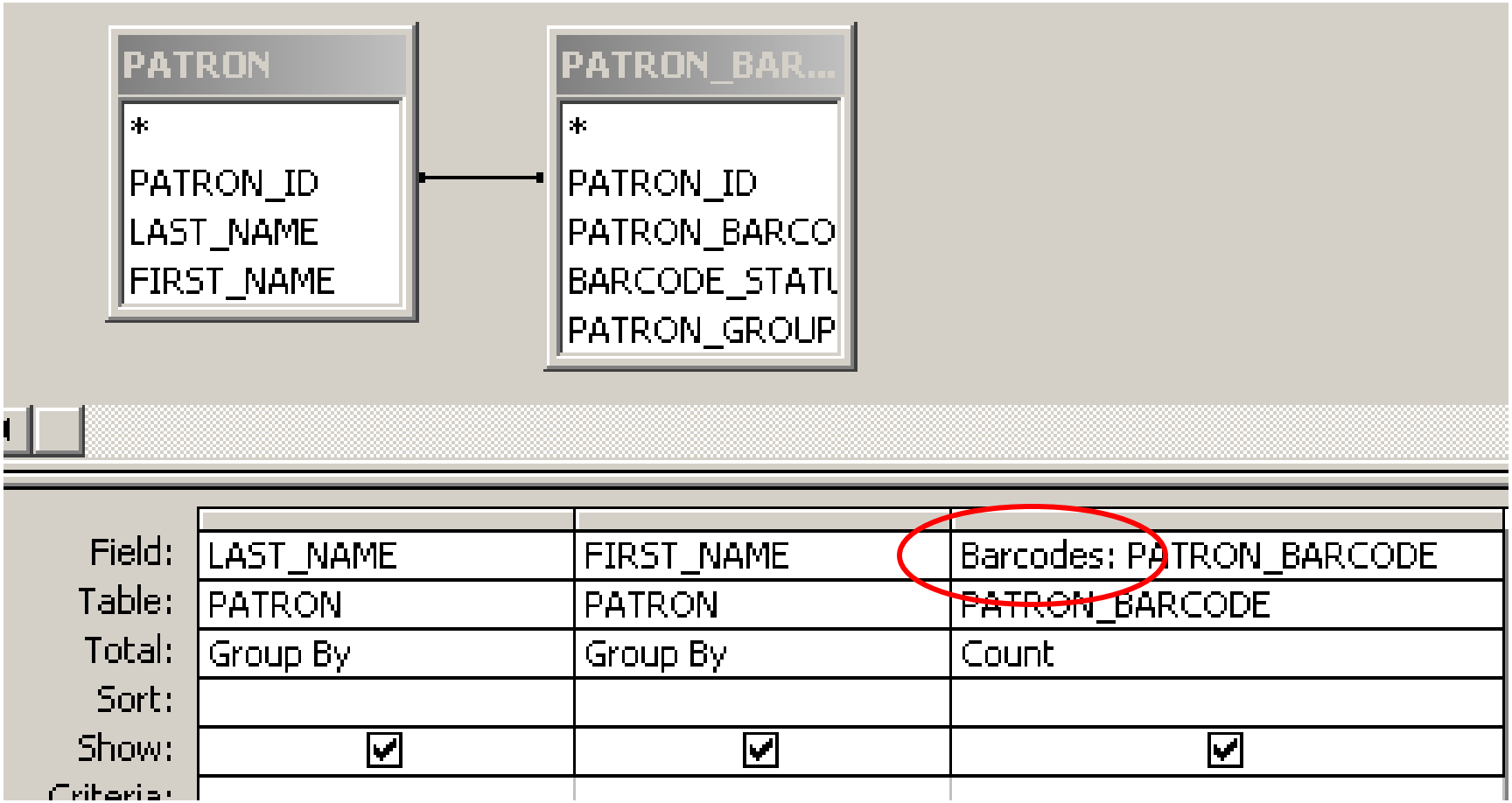


<<< Access will call this one CountOfBARCODE_STATUS

Access will call this one >>> CountOfLAST_NAME

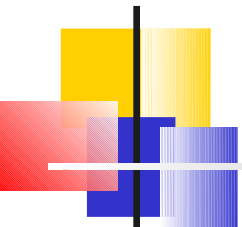


Changing the column label



That’s better.

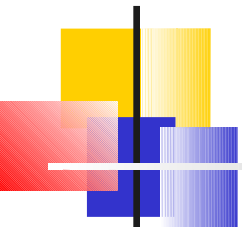
LAST_NAME	FIRST_NAME	Barcodes
Brown	Charlie	2
Brown	Sally	1
Schroeder	L.	1
Van Pelt	Linus	2
Van Pelt	Lucy	2
Van Pelt	Rerun	1



It *almost* doesn't matter which field we choose to count, because...

Fundamentally, when you do counts in Access, you are counting rows...

... except for Null.



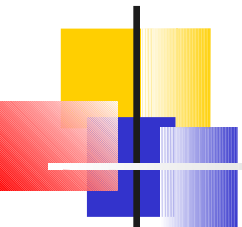
Null is a special value that a field can have.

ull means that no value has been filled in.

- For text fields, it’s different from blank.
- For numeric fields, it’s different from zero.

lank and zero are actual values.

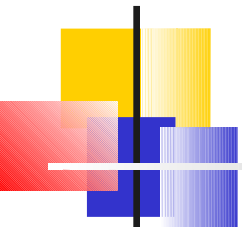
ull means that the database doesn’t know what the value is



Any field could have a value of Null.

But the fields used for joining will NEVER be Null

(unless you do a fancy outer join.)



This matters because…

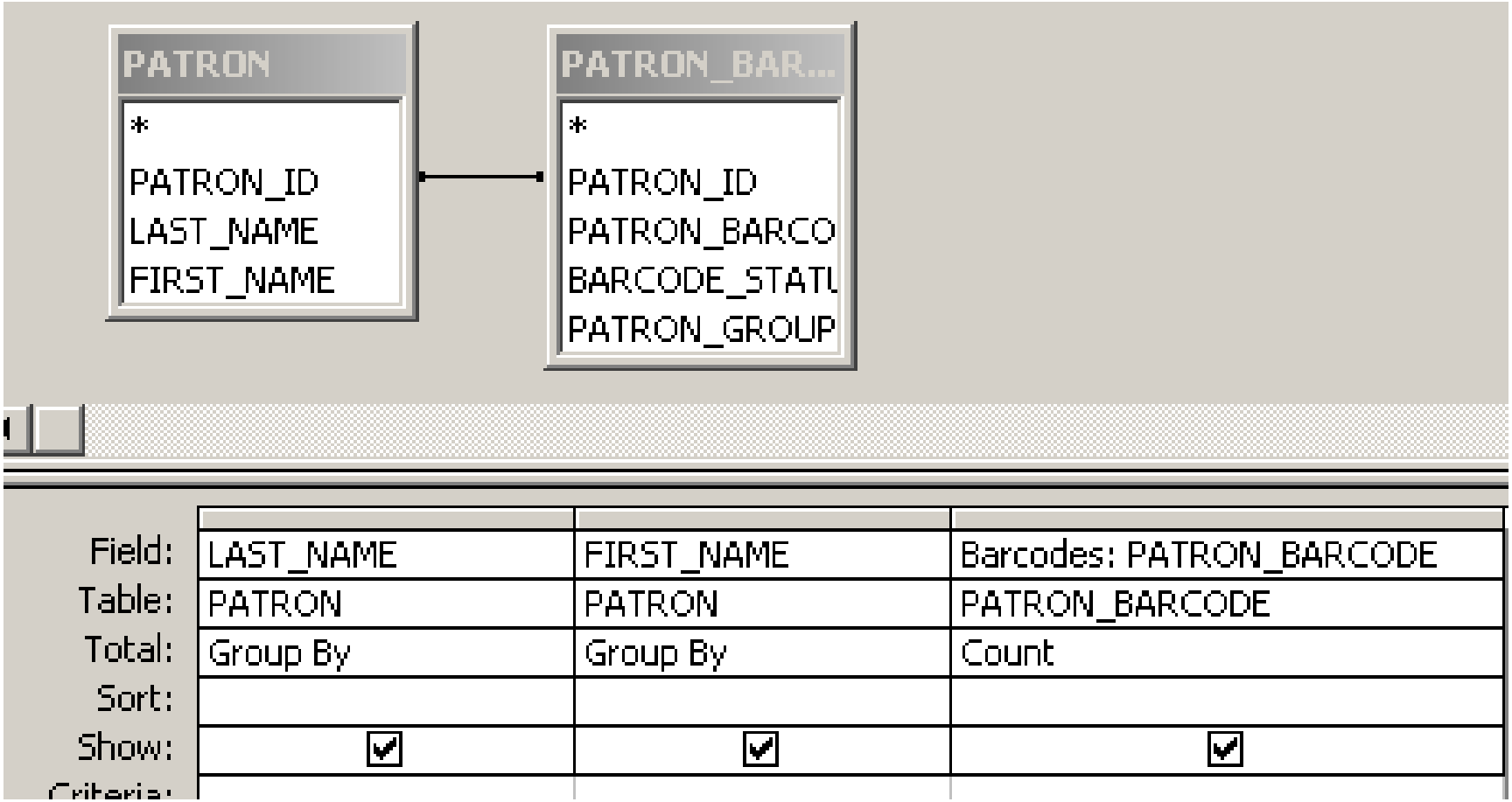
Fundamentally, when you do counts in Access, you are counting rows…

…where the column you're counting is not null.

So I always choose to Count one of the _ID fields.

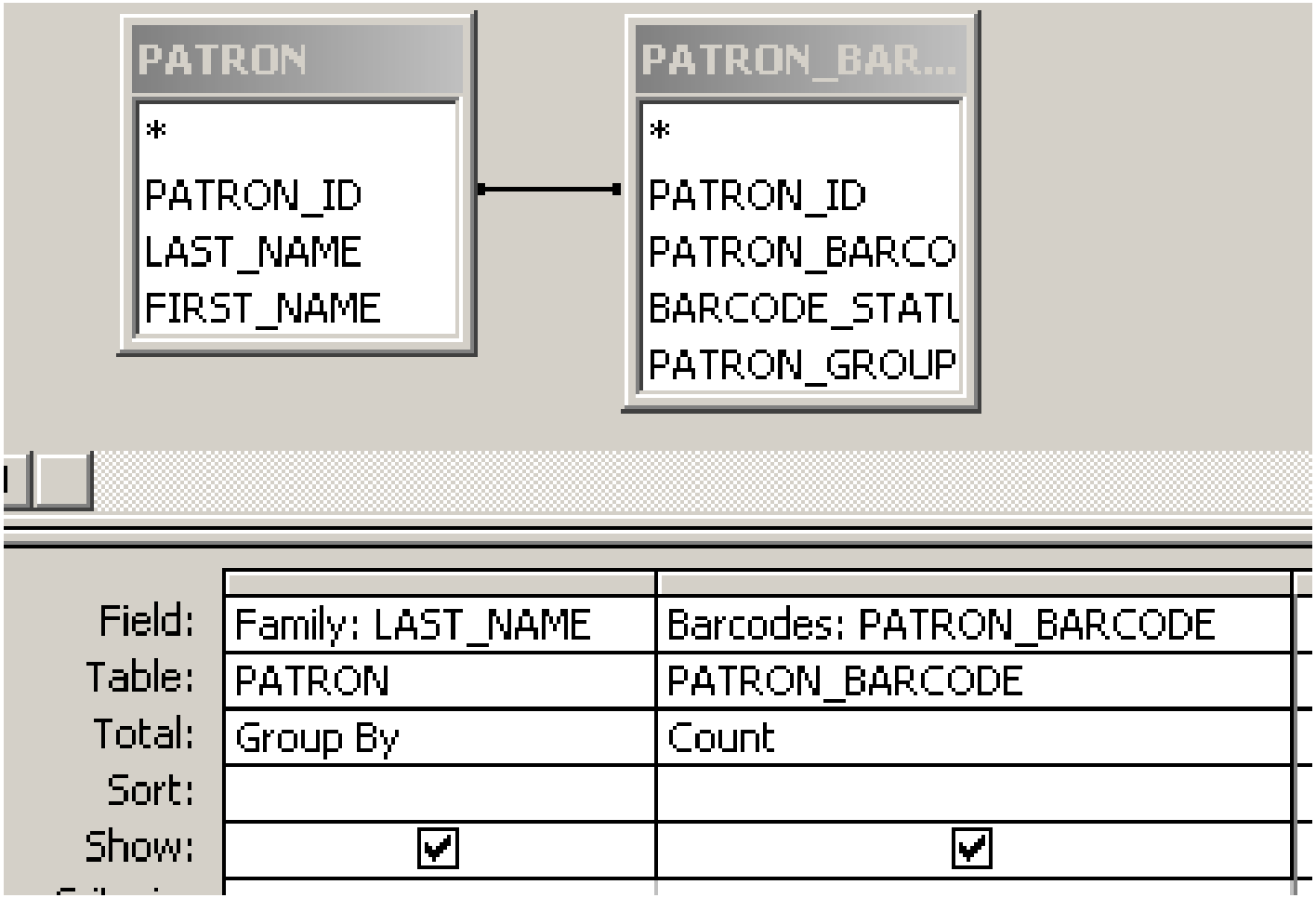
They'll NEVER be Null (unless you do a fancy outer join).

Back to This Query



What do I need to change to count barcodes by family?

Barcodes by Family

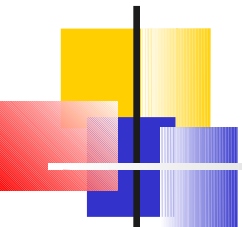


Be SURE that you Group By the right columns!

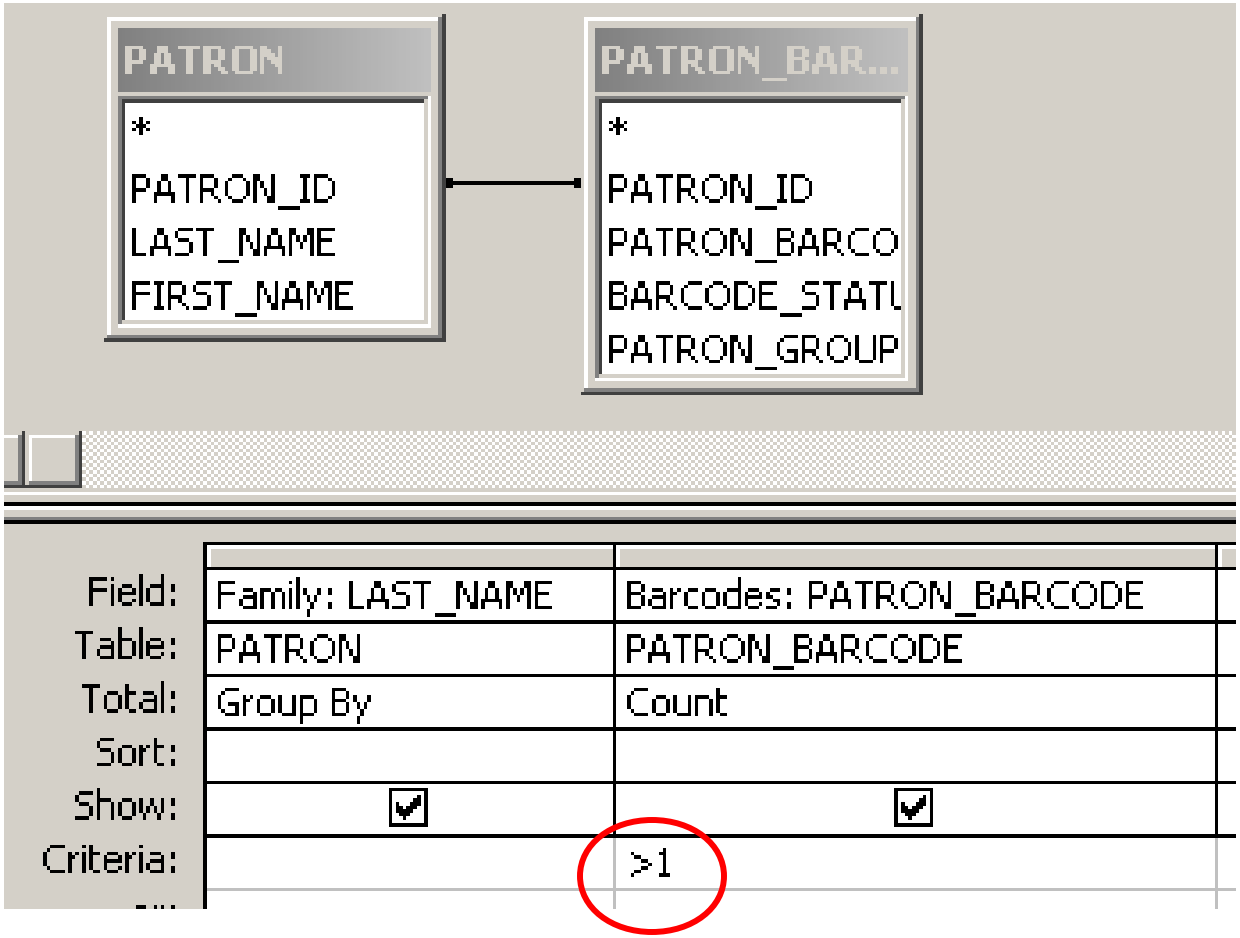
Barcodes per family results

Family	Barcodes
Brown	3
Schroeder	1
Van Pelt	5

Now, which families have more than one barcode?



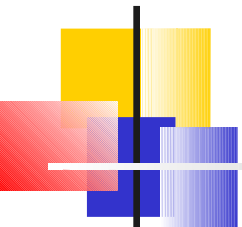
Families with more than one barcode



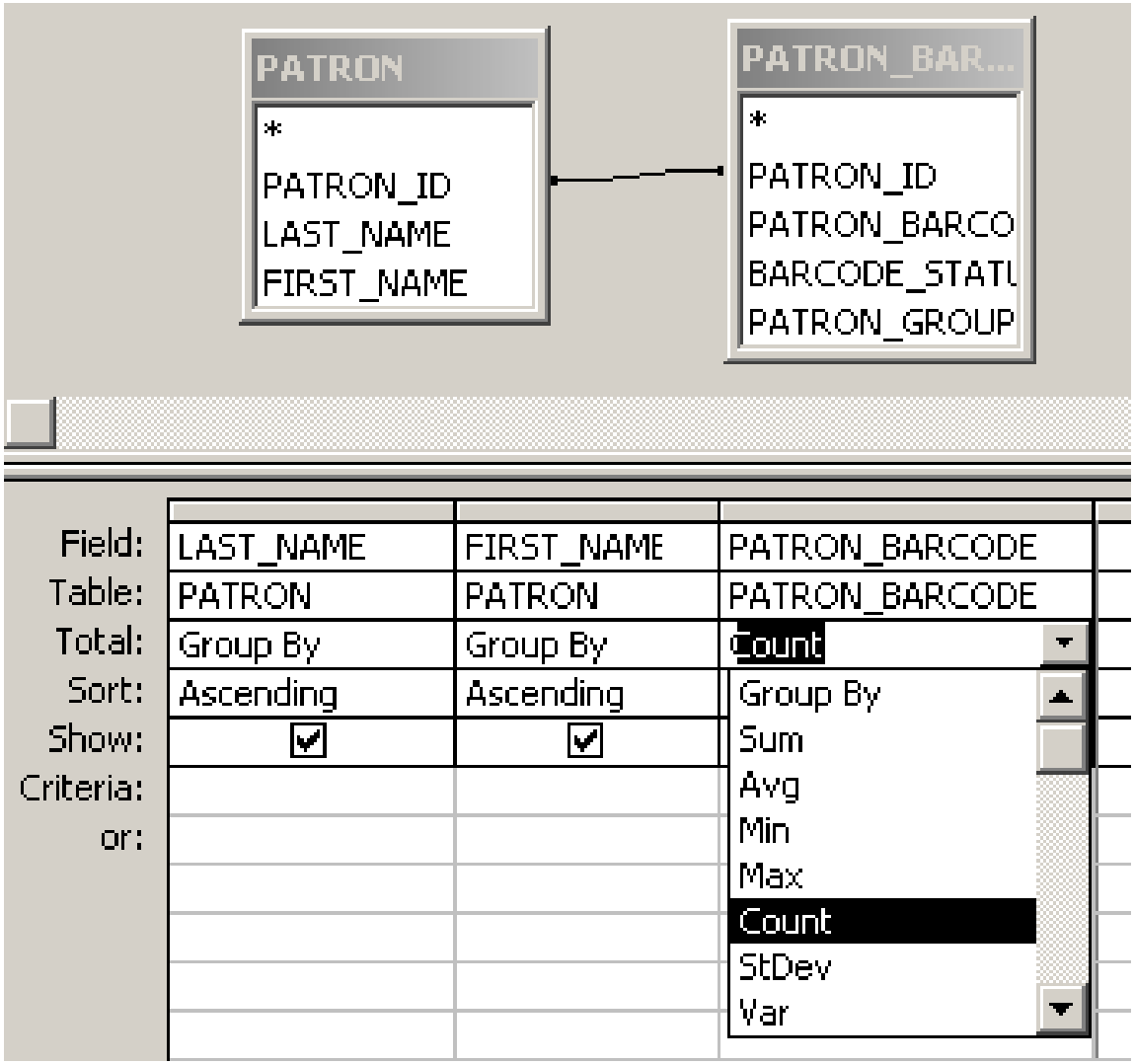
You can put a criterion on a Counted column.

Families with more than one barcode results

Family	Barcodes
Brown	3
Van Pelt	5



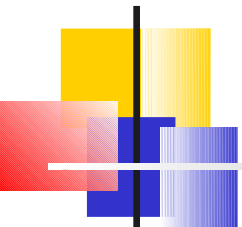
Other things you can do with Group By



Other things you can do with Group By

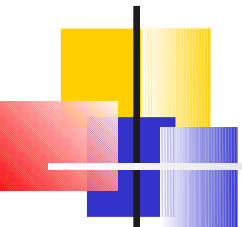
Sum	Total values in a field
Min	Lowest value in a field
Max	Highest value in a field
First	First value in a sorted list
Last	Last value in a sorted list
Avg	Average value in a field
StDev	Standard deviation
Var	Population variance

These are called “Aggregate Functions”.

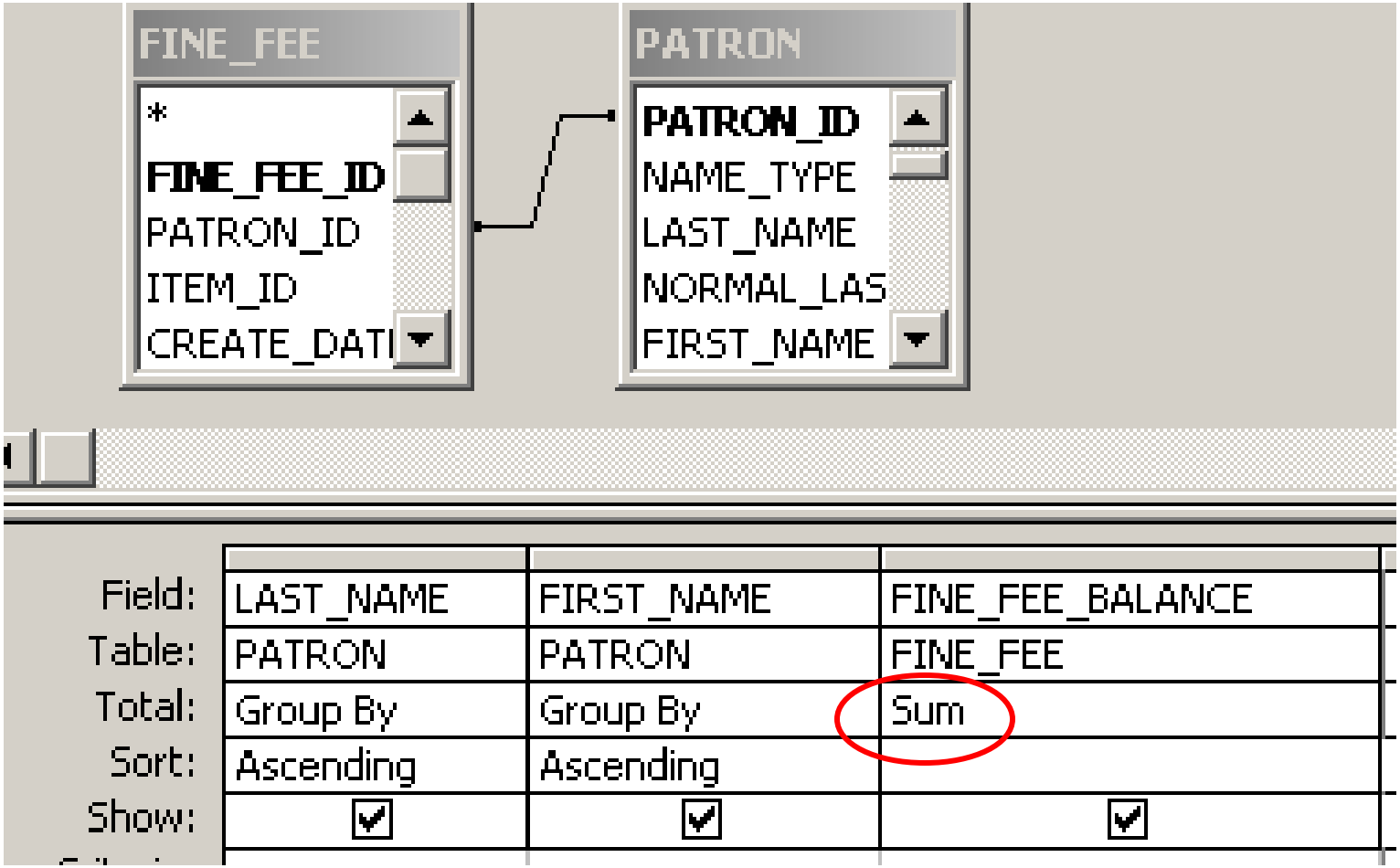


Some fields in the FINE_FEE table

patron_id	Who owes it
item_id	For what item is the fine owed
create_date	When was the fine assessed
fine_fee_amount	How much was the fine
fine_fee_balance	How much remains to be paid

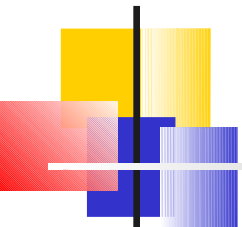


How much does each patron owe?



How much does each patron owe?

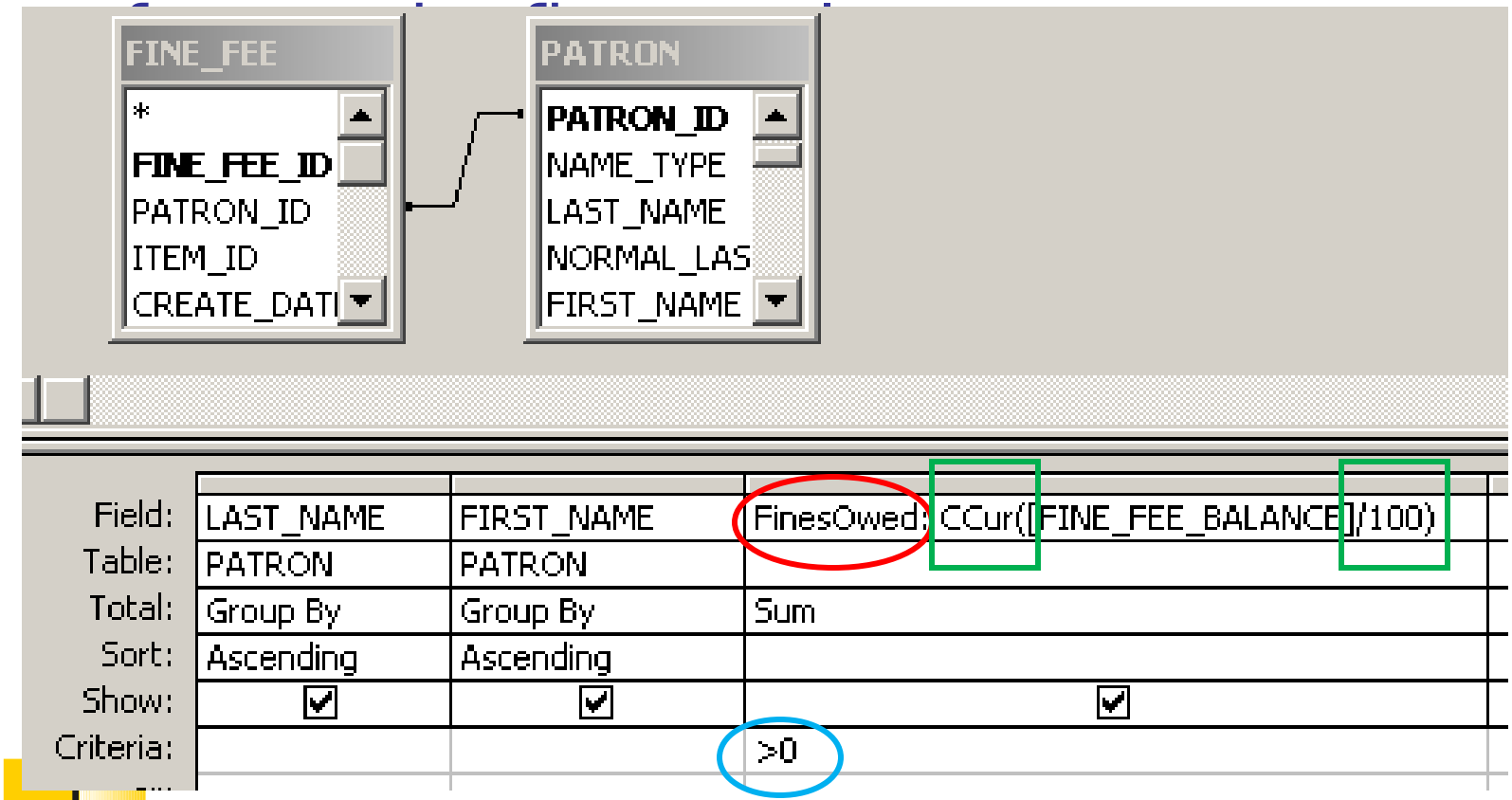
LAST_NAME	FIRST_NAME	SumOfFINE_FEE_BALANCE
Ball	Matthew	34850
Belman	Michael	0
Burke	Jane	1000
Dempsey	David	2000
Drescher	Robert	0
Ham	Jack	0
Hammond	Jeff	1000
Harnish	Kathryn	2000
Lorish	Ann	500
Marhefka	Leslie	0
Morgan	Felicity	0
Obo	Milton	1000



I want to

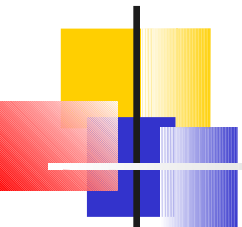
rename the SumOfFINE_FEE_BALANCE column

drop the people whose balance is zero



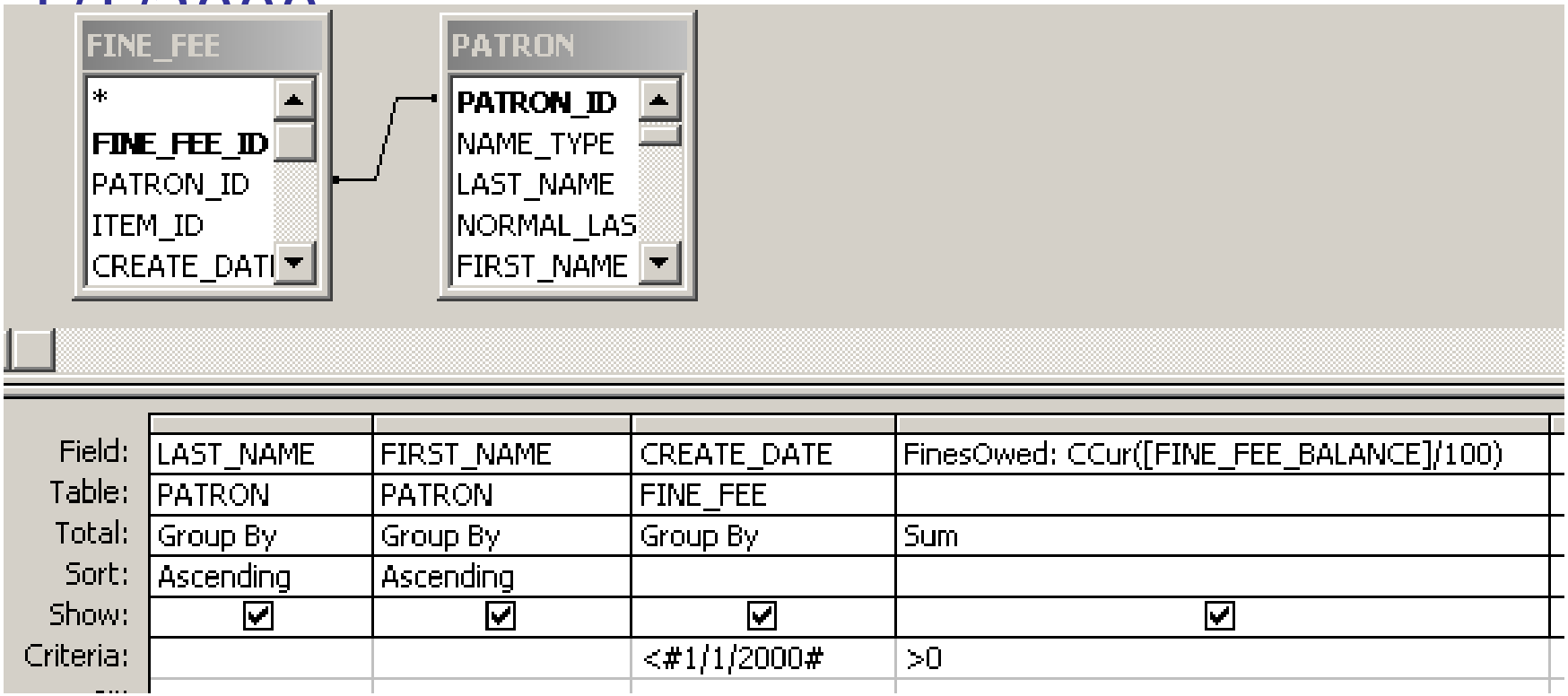
Tidier

LAST_NAME	FIRST_NAME	FinesOwed
Arms	Michele	$18.00
Ball	Matthew	$348.50
Burke	Jane	$10.00
Dempsey	David	$20.00
Hammond	Jeff	$10.00
Harnish	Kathryn	$20.00
Lorish	Ann	$5.00
Obo	Milton	$10.00
Smith	Donna	$45.00
Smith	Sandy	$25.00
Wentworth	Phillip	$10.00



LAST_NAME	FIRST_NAME	CREATE_DATE	FinesOwed
Arms	Michele	8/4/2000 3:30:58 PM	$3.00
Arms	Michele	8/4/2000 3:29:42 PM	$15.00
Ball	Matthew	12/16/1998 10:58:37 AM	$20.00
Ball	Matthew	12/8/1999 4:04:10 PM	$20.00
Ball	Matthew	12/8/1999 4:04:09 PM	$20.00
Ball	Matthew	12/8/1999 4:04:09 PM	$20.00
Ball	Matthew	12/8/1999 4:04:09 PM	$20.00
Ball	Matthew	12/16/1998 10:58:37 AM	$20.00
Ball	Matthew	12/16/1998 10:58:36 AM	$20.00
Ball	Matthew	12/8/1999 4:04:10 PM	$20.00
Ball	Matthew	12/8/1999 4:04:09 PM	$20.00
Ball	Matthew	12/8/1999 4:04:09 PM	$20.00
Ball	Matthew	12/8/1999 4:04:09 PM	$20.00
Ball	Matthew	5/18/1999 5:52:56 PM	$8.50
Ball	Matthew	12/8/1999 4:04:09 PM	$20.00
Ball	Matthew	12/8/1999 4:04:09 PM	$20.00
Ball	Matthew	12/8/1999 4:04:09 PM	$20.00
Ball	Matthew	12/16/1998 10:58:37 AM	$20.00
Ball	Matthew	12/8/1999 4:04:10 PM	$20.00
Ball	Matthew	12/8/1999 4:04:10 PM	$20.00
Burke	Jane	8/1/2000 5:24:37 PM	$10.00
Dempsey	David	12/8/1999 4:04:11 PM	$10.00
Dempsey	David	12/8/1999 4:04:11 PM	$10.00
Hammond	Jeff	12/16/1998 10:58:36 AM	$10.00
Harnish	Kathryn	12/11/1999 3:27:54 PM	$20.00

Limiting to fines that accrued before 1/1/2000

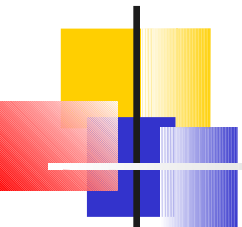


Field:	LAST_NAME	FIRST_NAME	CREATE_DATE	FinesOwed: CCur([FINE_FEE_BALANCE]/100)
Table:	PATRON	PATRON	FINE_FEE	
Total:	Group By	Group By	Group By	Sum
Sort:	Ascending	Ascending		
Show:	☑	☑	☑	☑
Criteria:			<#1/1/2000#	>0

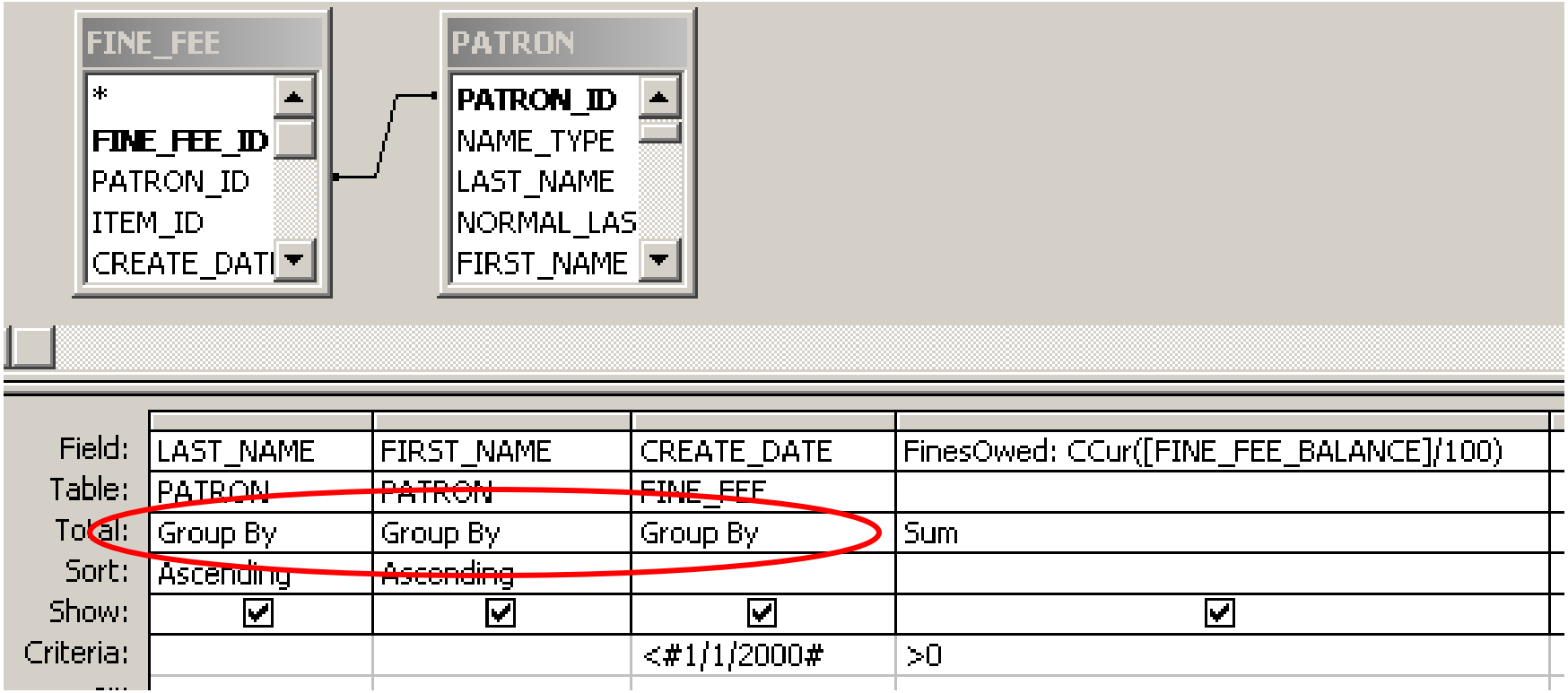
I added the CREATE_DATE column and entered the criterion.

Uh-oh! Why didn't I get totals by patron?

LAST_NAME	FIRST_NAME	CREATE_DATE	FinesOwed
Ball	Matthew	12/8/1999 4:04:10 PM	$80.00
Ball	Matthew	12/8/1999 4:04:09 PM	$180.00
Ball	Matthew	5/18/1999 5:52:56 PM	$8.50
Ball	Matthew	12/16/1998 10:58:37 AM	$60.00
Ball	Matthew	12/16/1998 10:58:36 AM	$20.00
Dempsey	David	12/8/1999 4:04:11 PM	$20.00
Hammond	Jeff	12/16/1998 10:58:36 AM	$10.00
Harnish	Kathryn	12/11/1999 3:27:54 PM	$20.00
Smith	Donna	12/10/1999 2:00:53 PM	$45.00
Smith	Sandy	12/16/1998 10:58:37 AM	$20.00
Smith	Sandy	10/16/1997 3:14:07 PM	$5.00
Wentworth	Phillip	9/26/1997 10:07:24 AM	$10.00



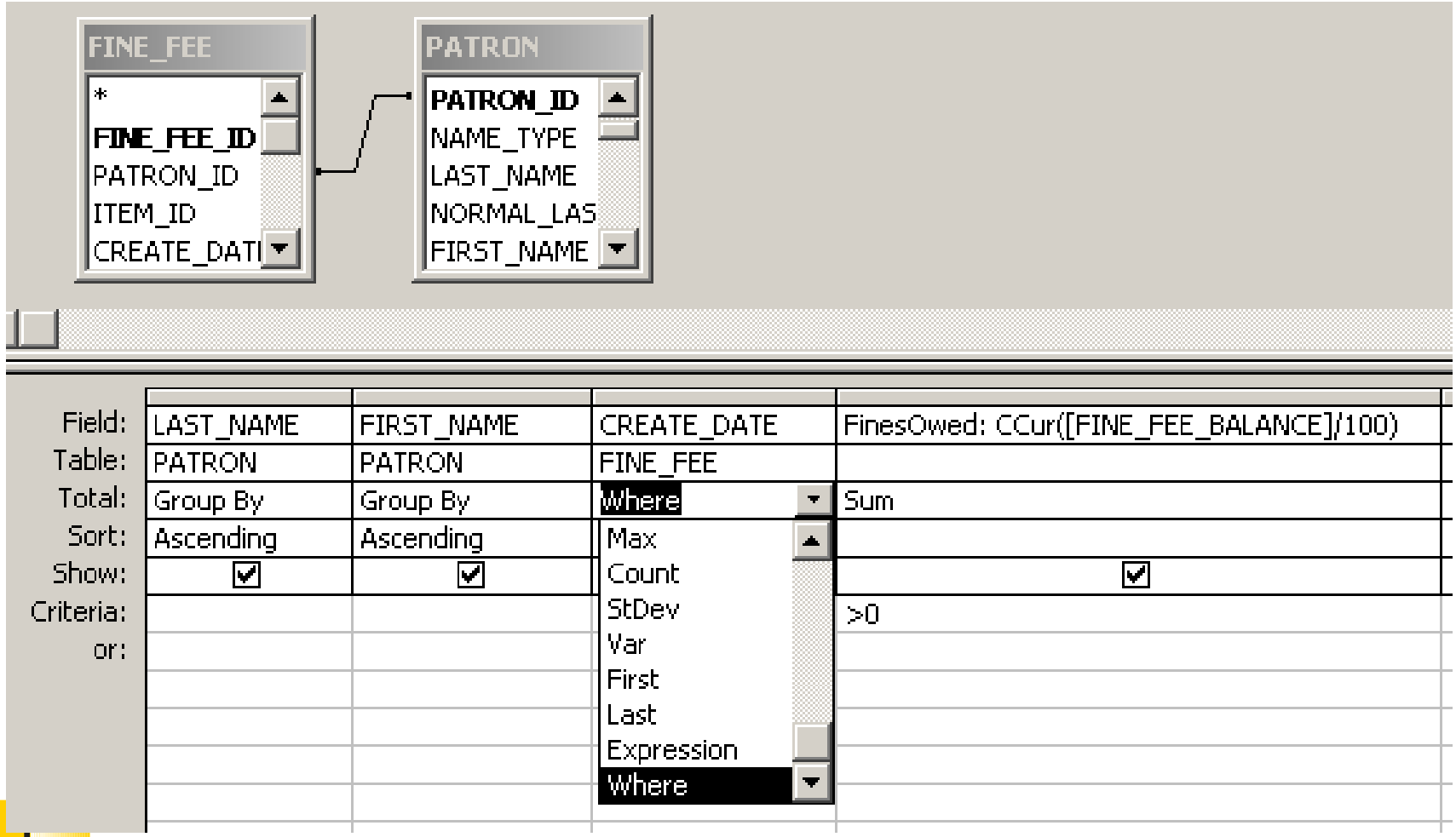
Because I didn’t ask for totals by patron.



Field:	LAST_NAME	FIRST_NAME	CREATE_DATE	FinesOwed: CCur([FINE_FEE_BALANCE]/100)
Table:	PATRON	PATRON	FINE_FEE	
Total:	Group By	Group By	Group By	Sum
Sort:	Ascending	Ascending		
Show:	☑	☑	☑	☑
Criteria:			<#1/1/2000#	>0

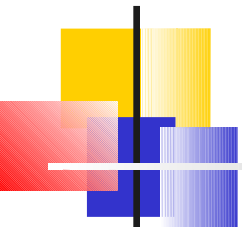
I asked for totals by patron AND create_date.

Use Where for columns that are only for criteria, not for grouping or calculating.

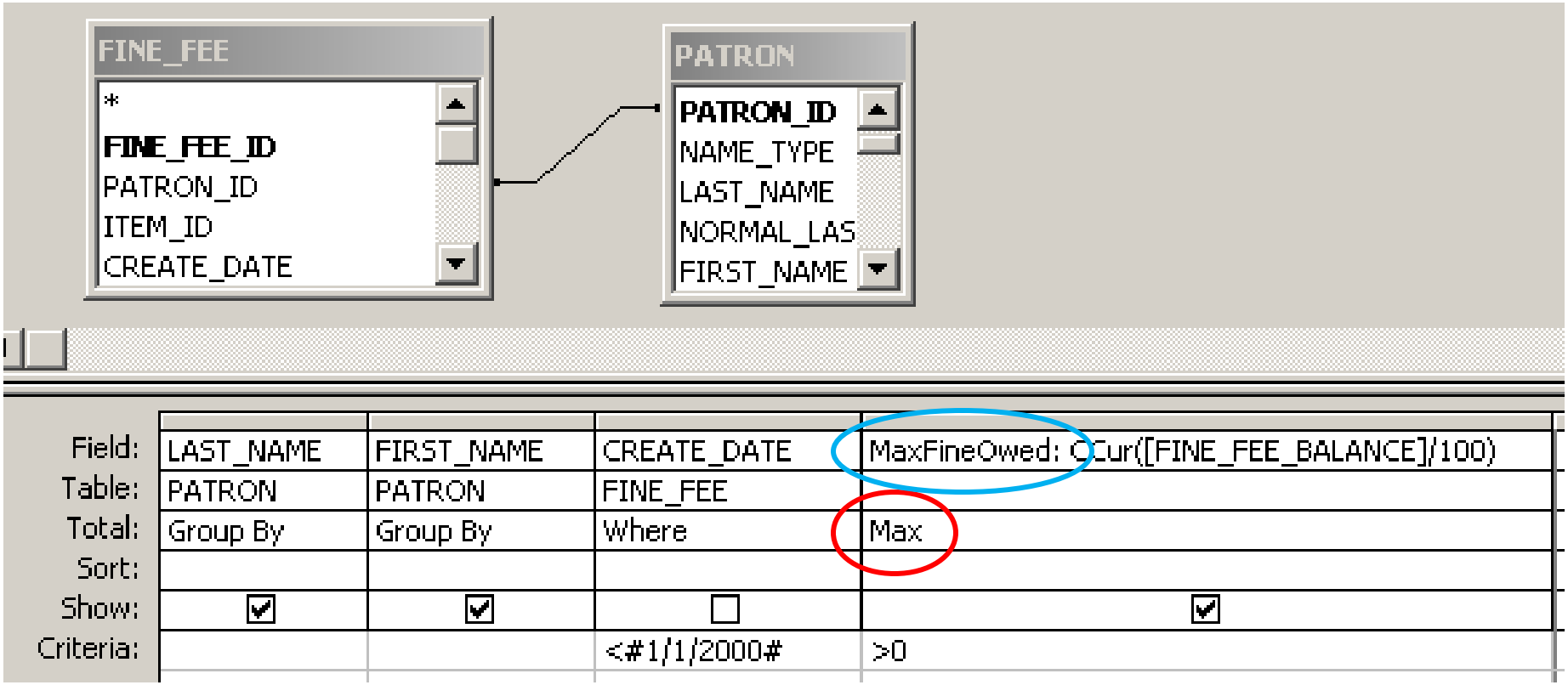


Ah!

LAST_NAME	FIRST_NAME	FinesOwed
Ball	Matthew	$348.50
Dempsey	David	$20.00
Hammond	Jeff	$10.00
Harnish	Kathryn	$20.00
Smith	Donna	$45.00
Smith	Sandy	$25.00
Wentworth	Phillip	$10.00

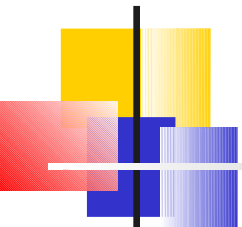


Another variation: Highest non-zero fine that accrued before 1/1/2000



Field:	LAST_NAME	FIRST_NAME	CREATE_DATE	MaxFineOwed: CCur([FINE_FEE_BALANCE]/100)
Table:	PATRON	PATRON	FINE_FEE	
Total:	Group By	Group By	Where	Max
Sort:				
Show:	☑	☑	☐	☑
Criteria:			<#1/1/2000#	>0

LAST_NAME	FIRST_NAME	MaxFineOwed
Ball	Matthew	$20.00
Dempsey	David	$10.00
Hammond	Jeff	$10.00
Harnish	Kathryn	$20.00
Smith	Donna	$10.00
Smith	Sandy	$10.00
Wentworth	Phillip	$10.00

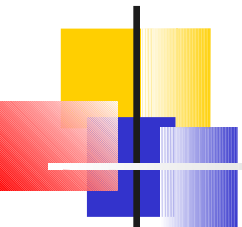


New query: How many items are currently charged to each patron group?

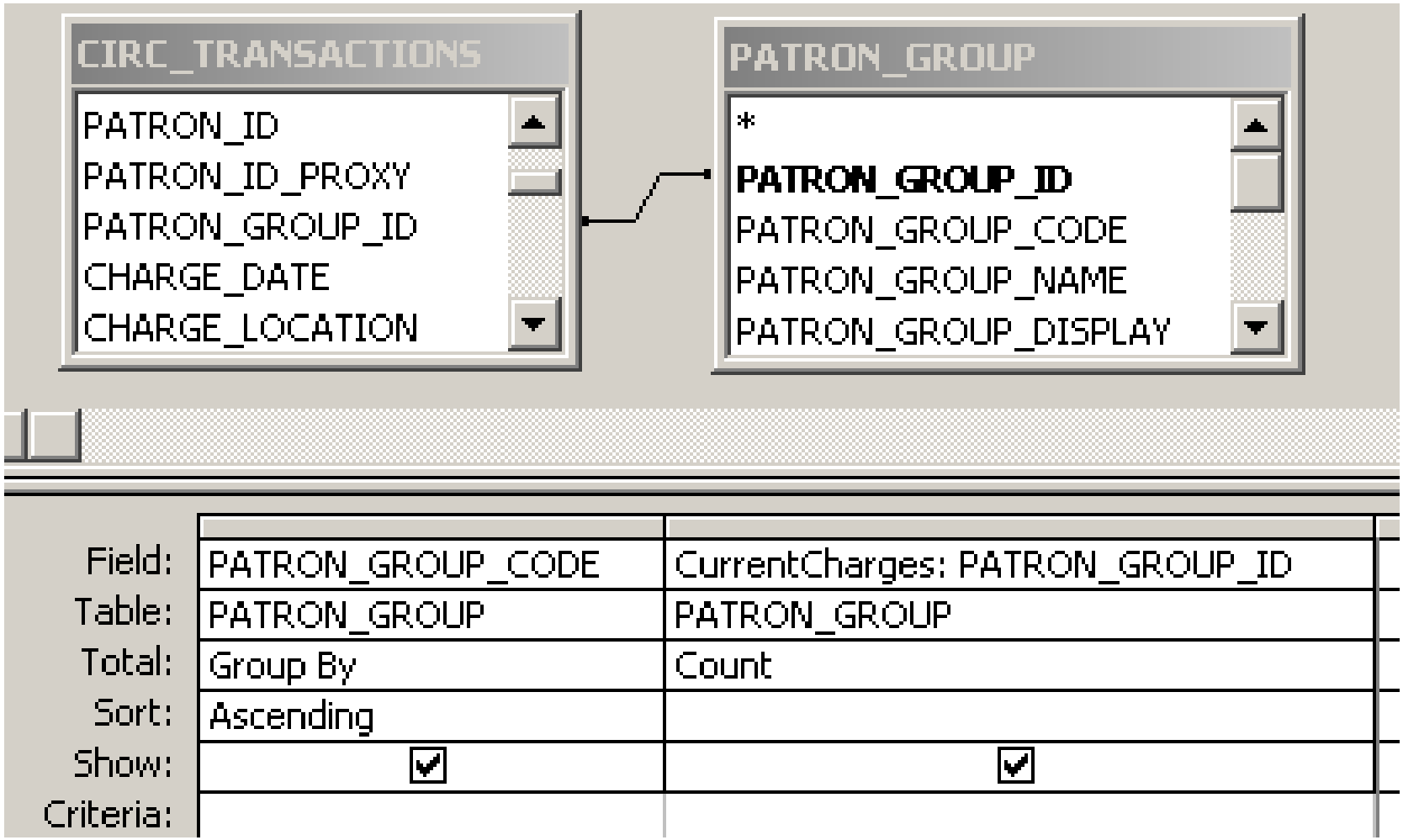
Items currently charged are in the CIRC_TRANSACTIONS table.

patron_group_id tells the patron group.

I can link to the PATRON_GROUP table to get the patron_group_code.



Current Circ Transactions, by Patron Group

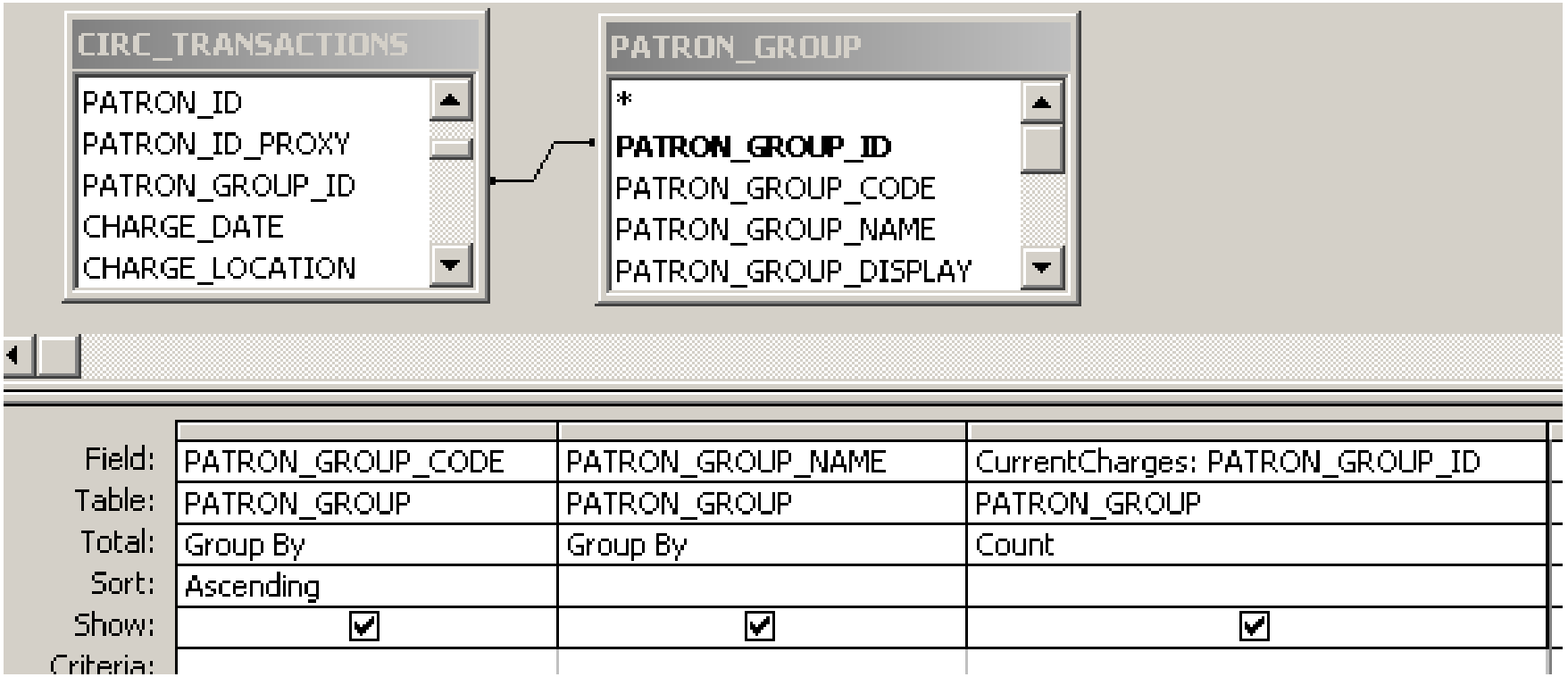


Current Circ Transactions, by Patron Group

PATRON_GROUP_CODE	CurrentCharges
AL	13
FC	317
GR	111
IL	165
LL	17
LU	227
UBIN	1
UBLong	129
UBNonCirc	1
UBReg	169
UG	299

- What do I have to do to add patron group name?

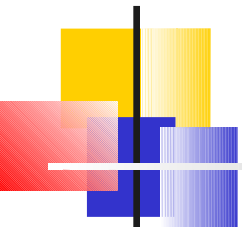
Current Circ Transactions, by Patron Group



Am I Grouping By the right columns?

Current Circ Transactions, by Patron Group

PATRON_GROUP_CODE	PATRON_GROUP_NAME	CurrentCharges
AL	ALUM	13
FC	FACULTY	317
GR	GRAD STDNT	111
IL	INTERLIB	165
LL	LOCAL LOPRV	17
LU	LIBRARYUSE	227
UBIN	UBIN	1
UBLong	UBLong	129
UBNonCirc	UBNonCirc	1
UBReg	UBReg	169
UG	UNDERGRAD	299

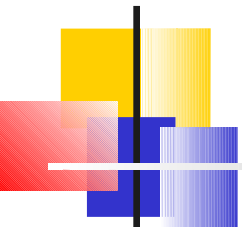


Do people renew my materials very much?

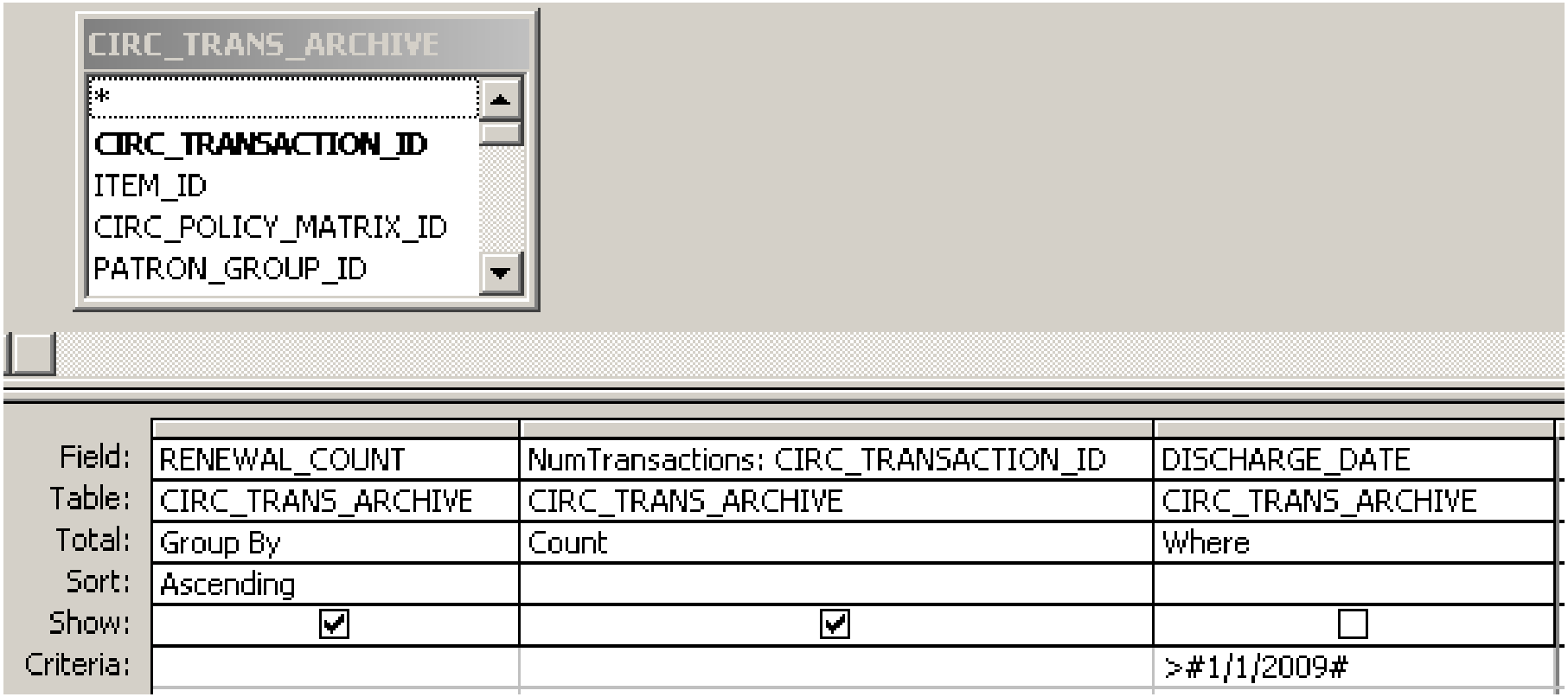
Let’s look at circ transactions that were completed in the last year and see how many renewals there are on them.

Some fields in the CIRC_TRANS_ARCHIVE table:

discharge_date
renewal_count



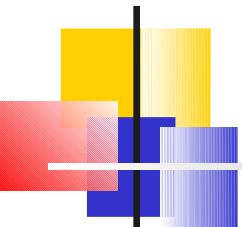
Circ Transactions by Renewal Count



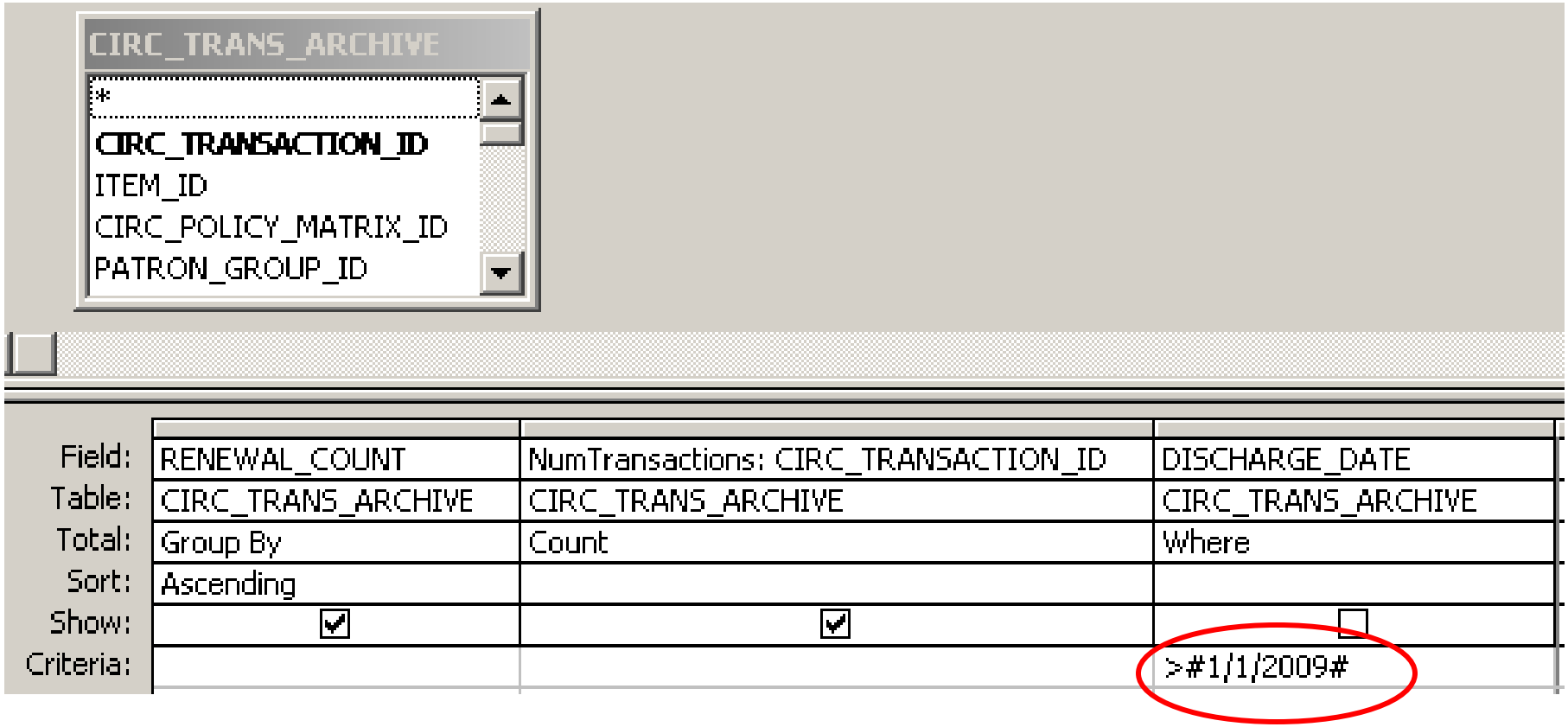
Field:	RENEWAL_COUNT	NumTransactions: CIRC_TRANSACTION_ID	DISCHARGE_DATE
Table:	CIRC_TRANS_ARCHIVE	CIRC_TRANS_ARCHIVE	CIRC_TRANS_ARCHIVE
Total:	Group By	Count	Where
Sort:	Ascending		
Show:	☑	☑	☐
Criteria:			>#1/1/2009#

Circ Transactions by Renewal Count

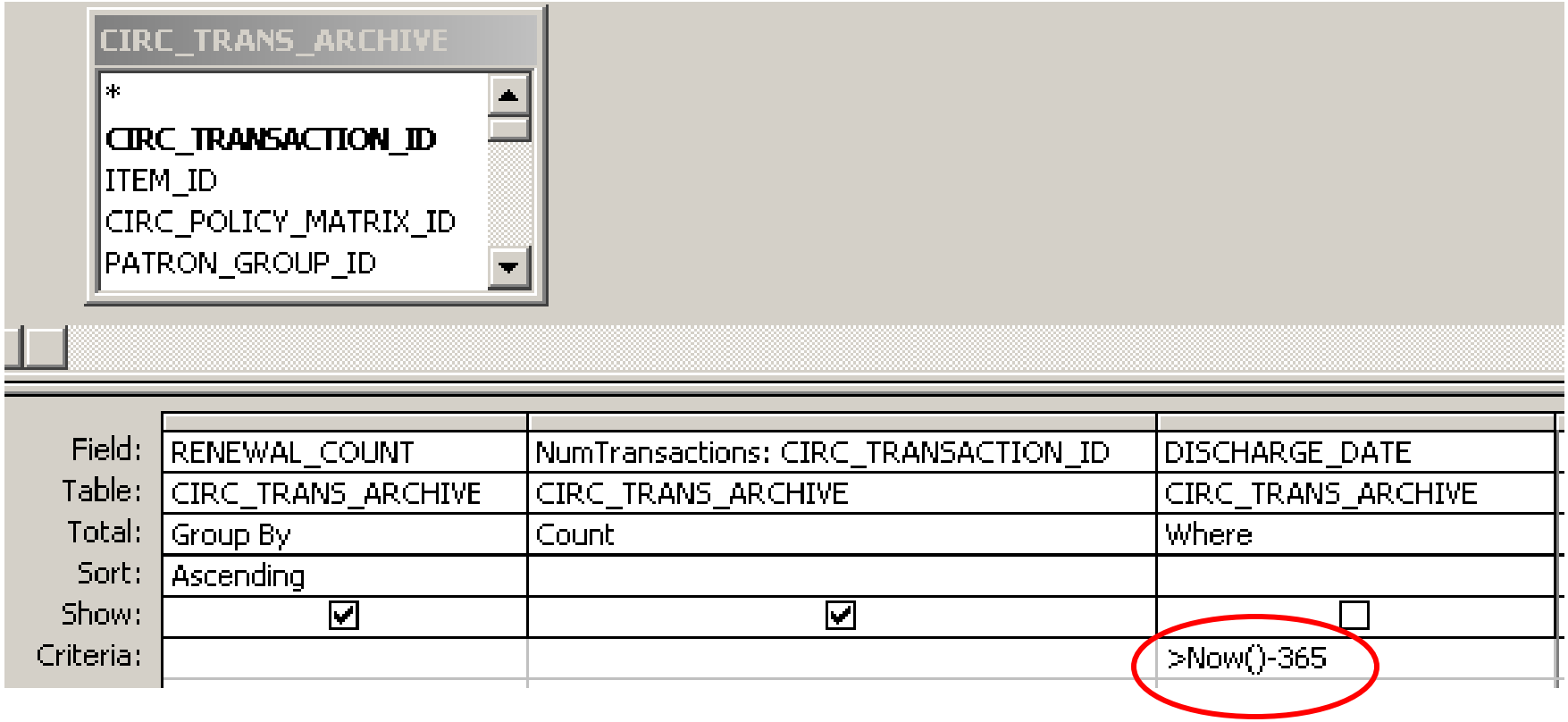
RENEWAL_COUNT	NumTransactions
0	20729
1	3106
2	693
3	376
4	412
5	26
6	4
7	6
8	1
9	1



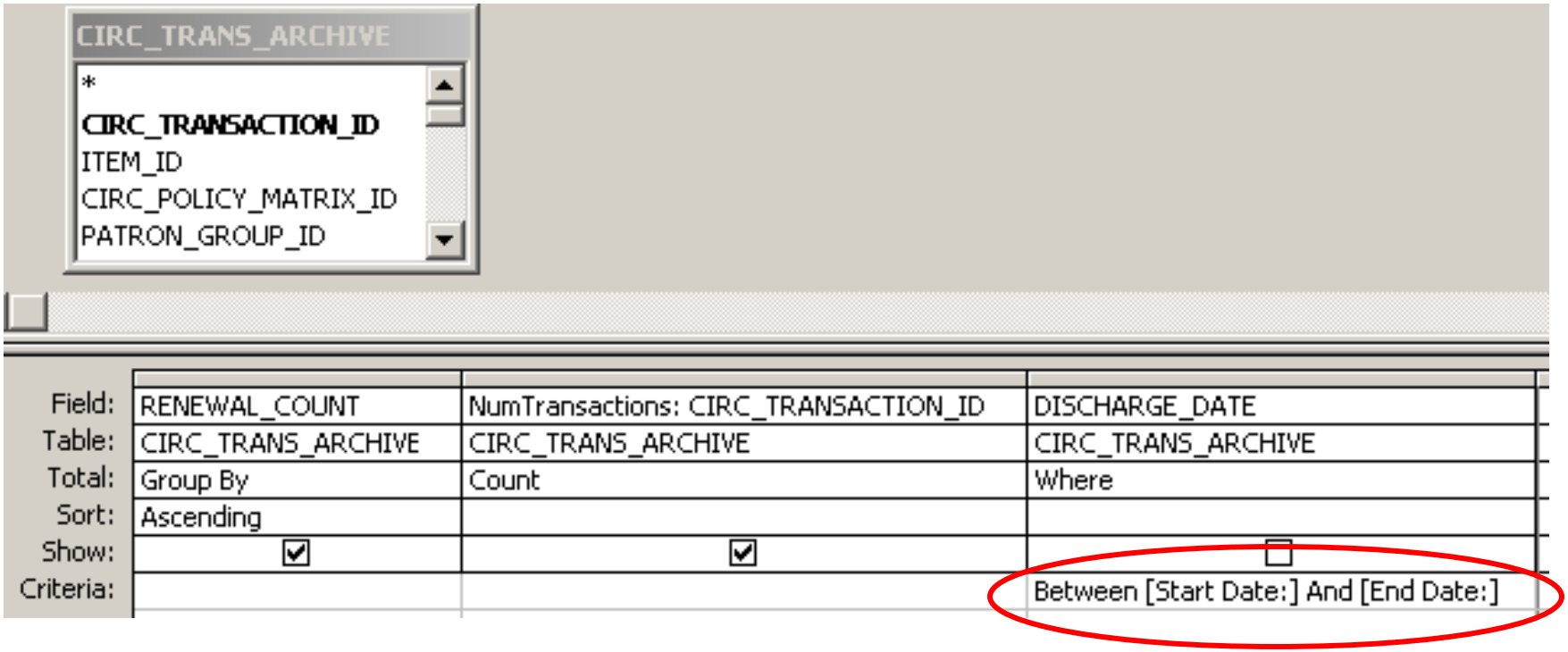
Circ Transactions Completed since 1/1/2009, by Renewal Count



Circ Transactions Completed in the Last 365 Days, by Renewal Count

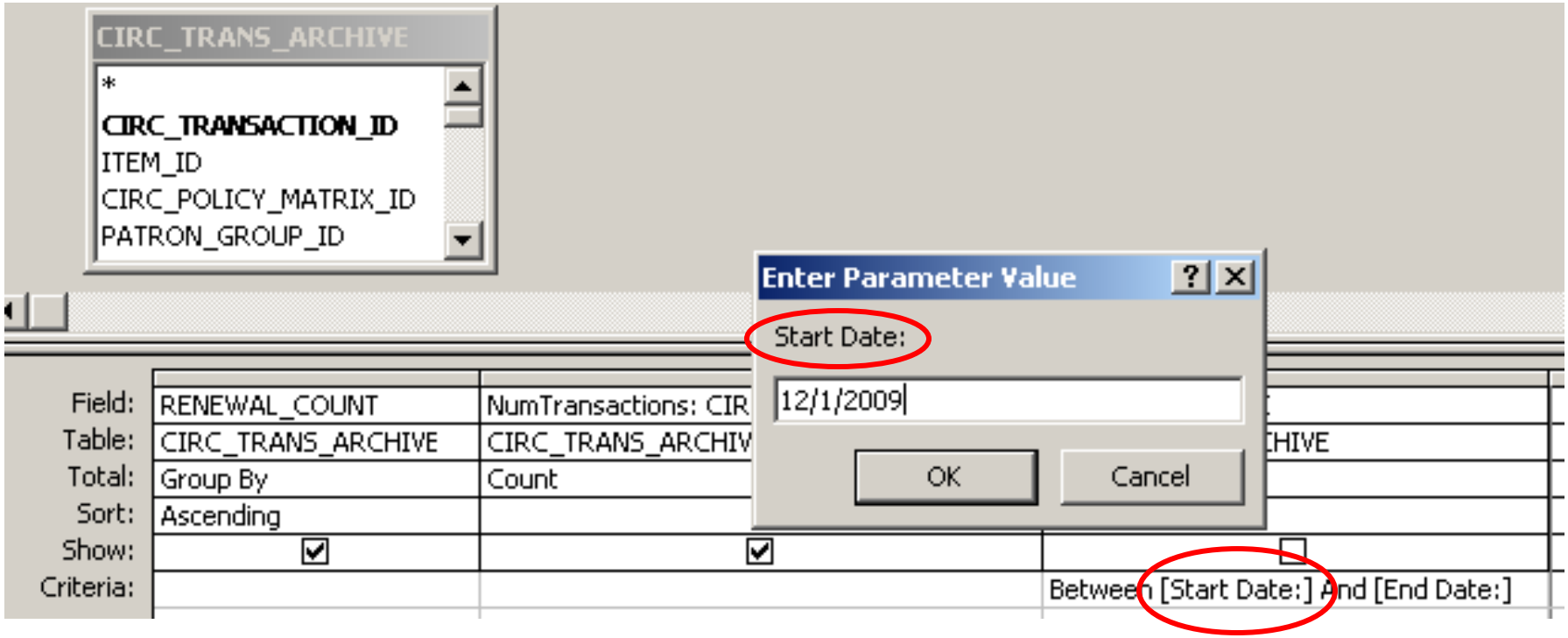


Circ Transactions Completed between Specified Dates, by Renewal Count



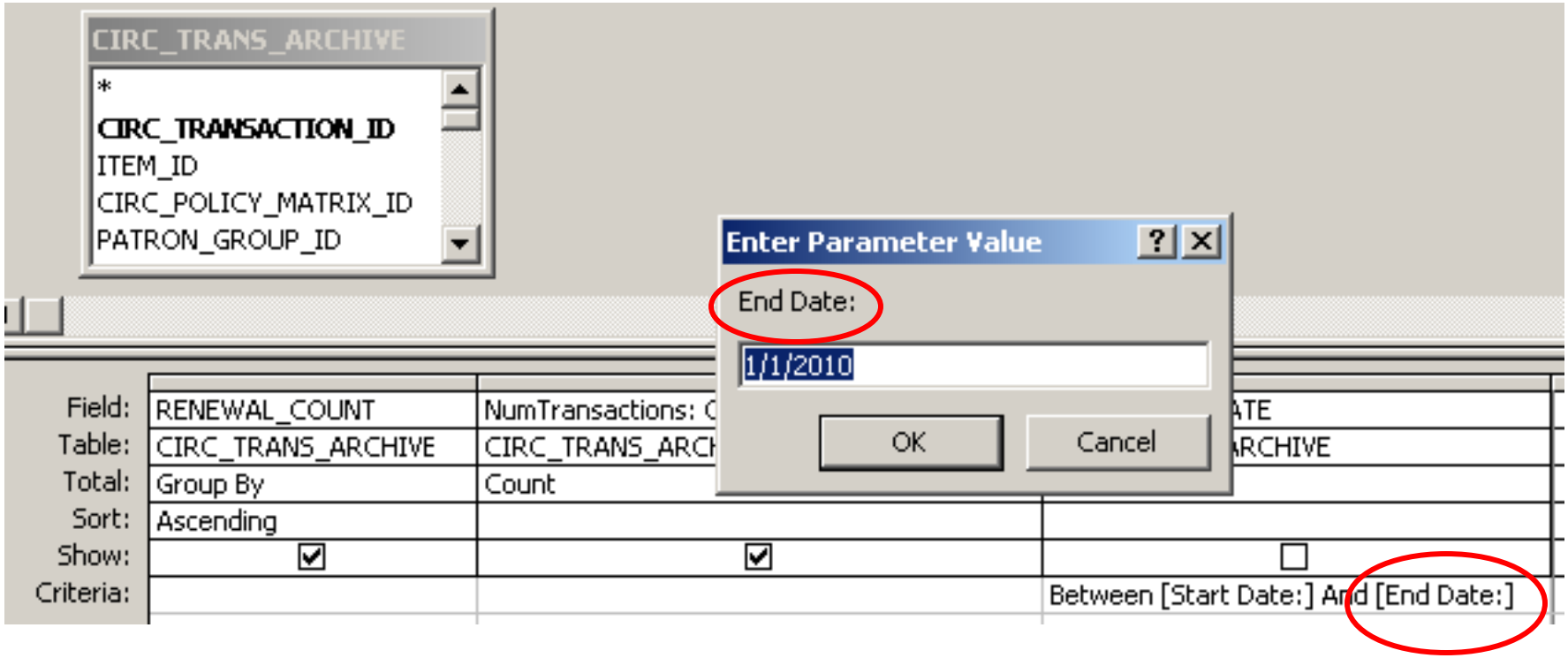
This is an example of a Parameter Query.
It has 2 parameters, “Start Date:” and “End Date:”

It prompts me for a start date.



I think I'll run this for December, 2009.

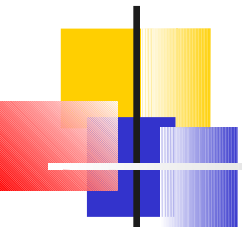
It prompts me for an end date.



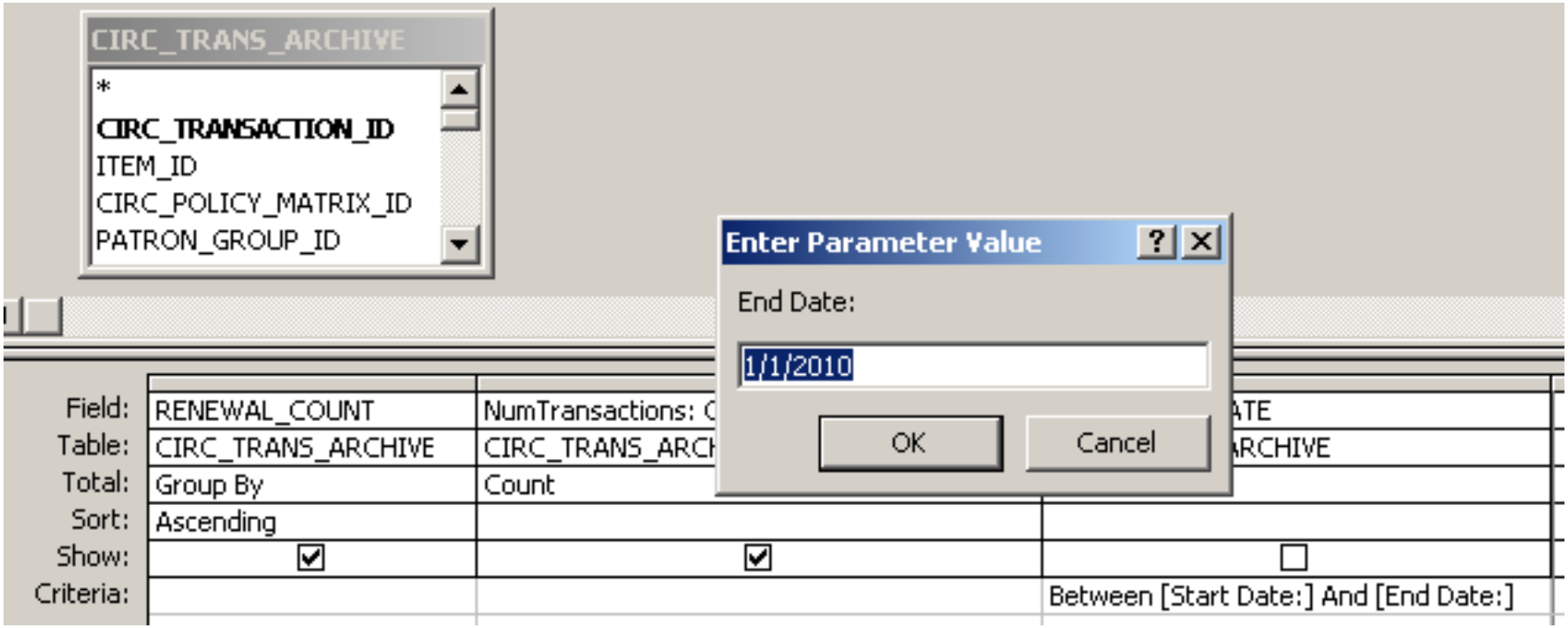
If I'm running this for December, 2009, why did I enter 1/1/2010 as the end date?

Most date fields in Voyager have the date AND the time. Remember this?

LAST_NAME	FIRST_NAME	CREATE_DATE	FinesOwed
Ball	Matthew	12/8/1999 4:04:10 PM	$80.00
Ball	Matthew	12/8/1999 4:04:09 PM	$180.00
Ball	Matthew	5/18/1999 5:52:56 PM	$8.50
Ball	Matthew	12/16/1998 10:58:37 AM	$60.00
Ball	Matthew	12/16/1998 10:58:36 AM	$20.00
Dempsey	David	12/8/1999 4:04:11 PM	$20.00
Hammond	Jeff	12/16/1998 10:58:36 AM	$10.00
Harnish	Kathryn	12/11/1999 3:27:54 PM	$20.00
Smith	Donna	12/10/1999 2:00:53 PM	$45.00
Smith	Sandy	12/16/1998 10:58:37 AM	$20.00
Smith	Sandy	10/16/1997 3:14:07 PM	$5.00
Wentworth	Phillip	9/26/1997 10:07:24 AM	$10.00



A date without a time defaults in 12:00 a.m. the morning of the date given.



If I entered 12/31/2009, I would miss transactions done on 12/31/2009 after 12:00 a.m.

New Query: How many times have items circulated in the last 5 years?

I want to include both current and completed circ transactions.

So I'll use "Circulation Transactions (Charges)"

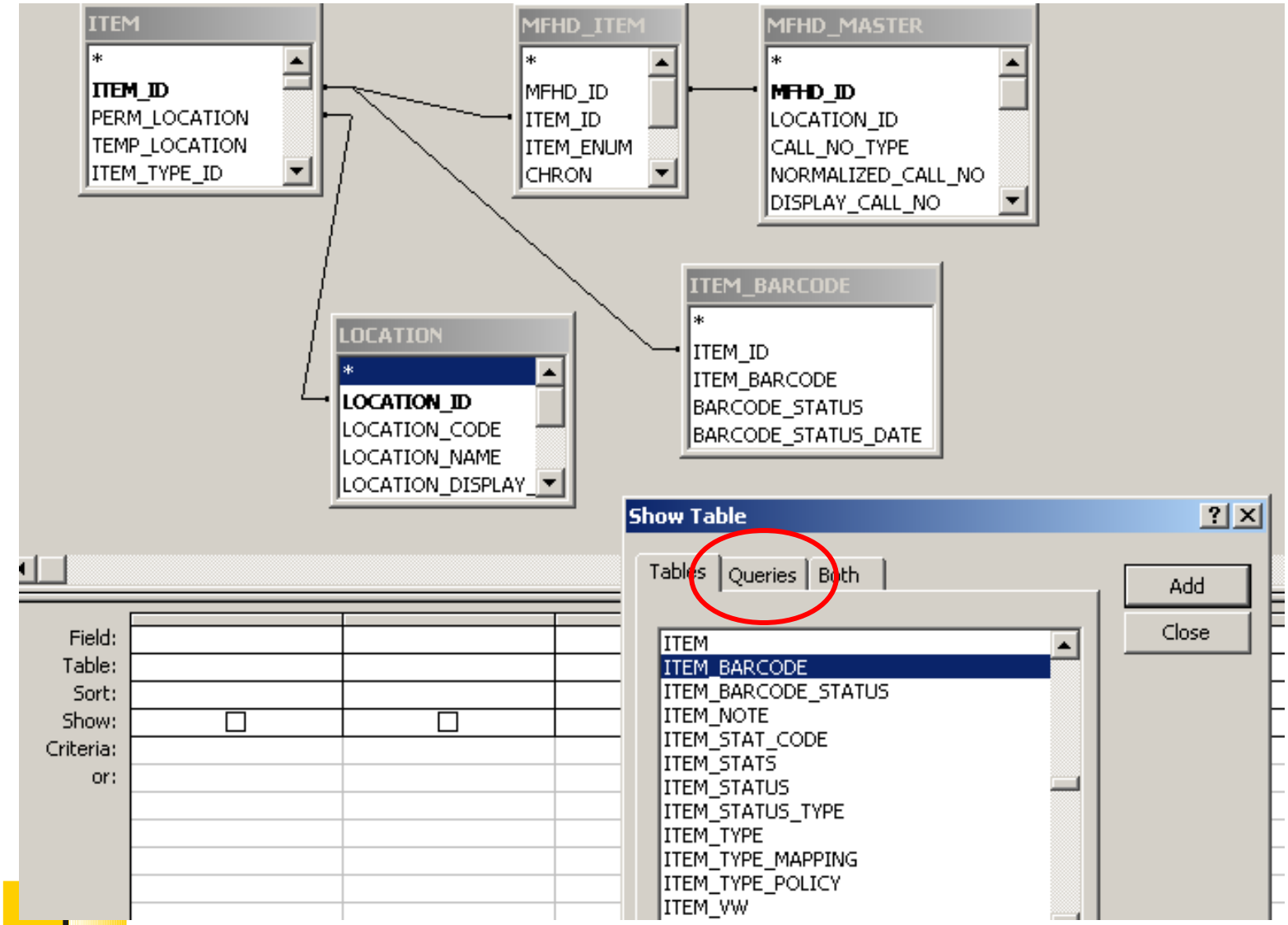
It combines CIRC_TRANSACTIONS and CIRC_TRANS_ARCHIVE

I want the results in shelf order

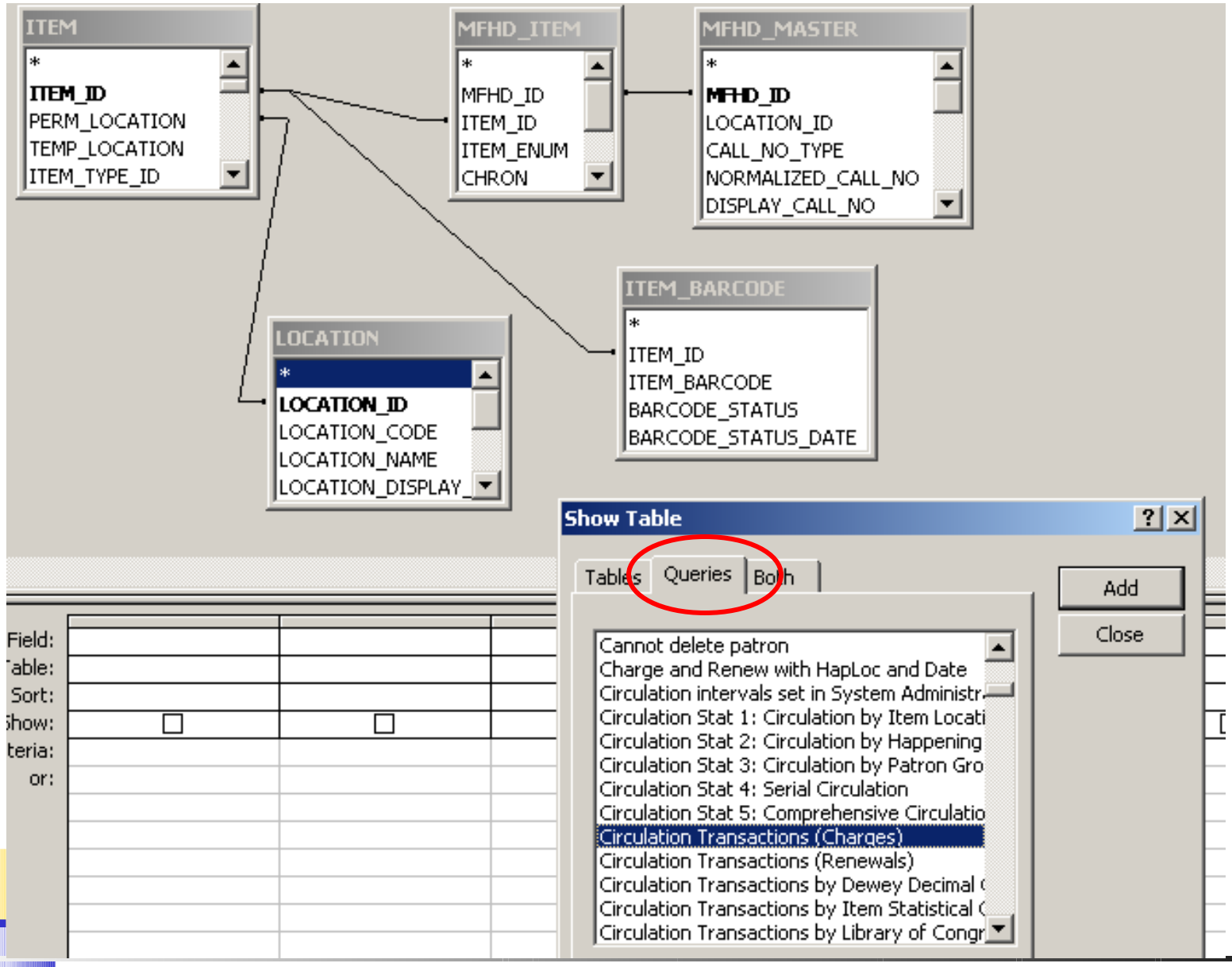
i.e., location and call#

I want the charge count and the date of the most recent charge.

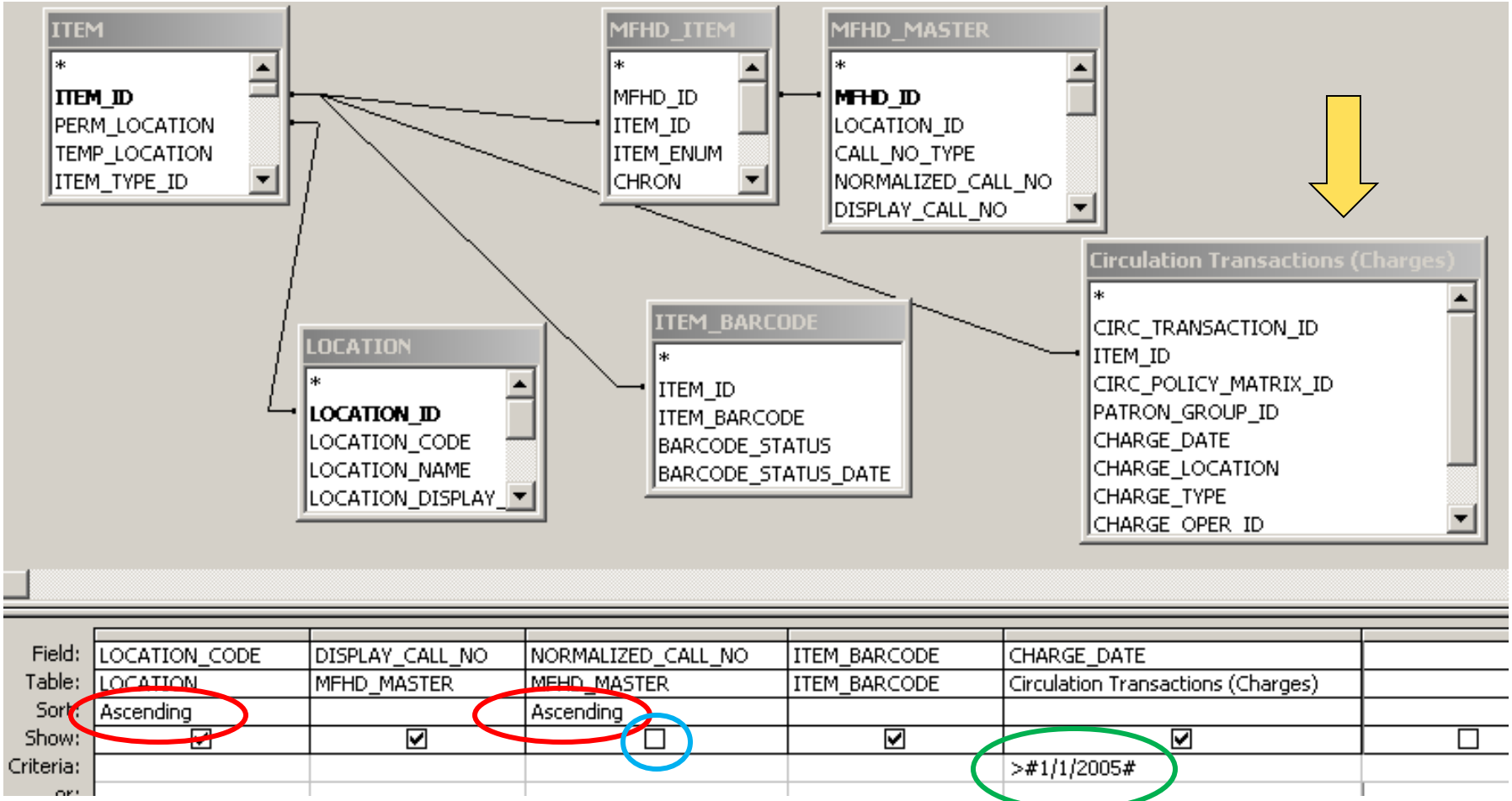
Finding Circulation Transactions (Charges)



Finding Circulation Transactions (Charges)



Finding Circulation Transactions (Charges)

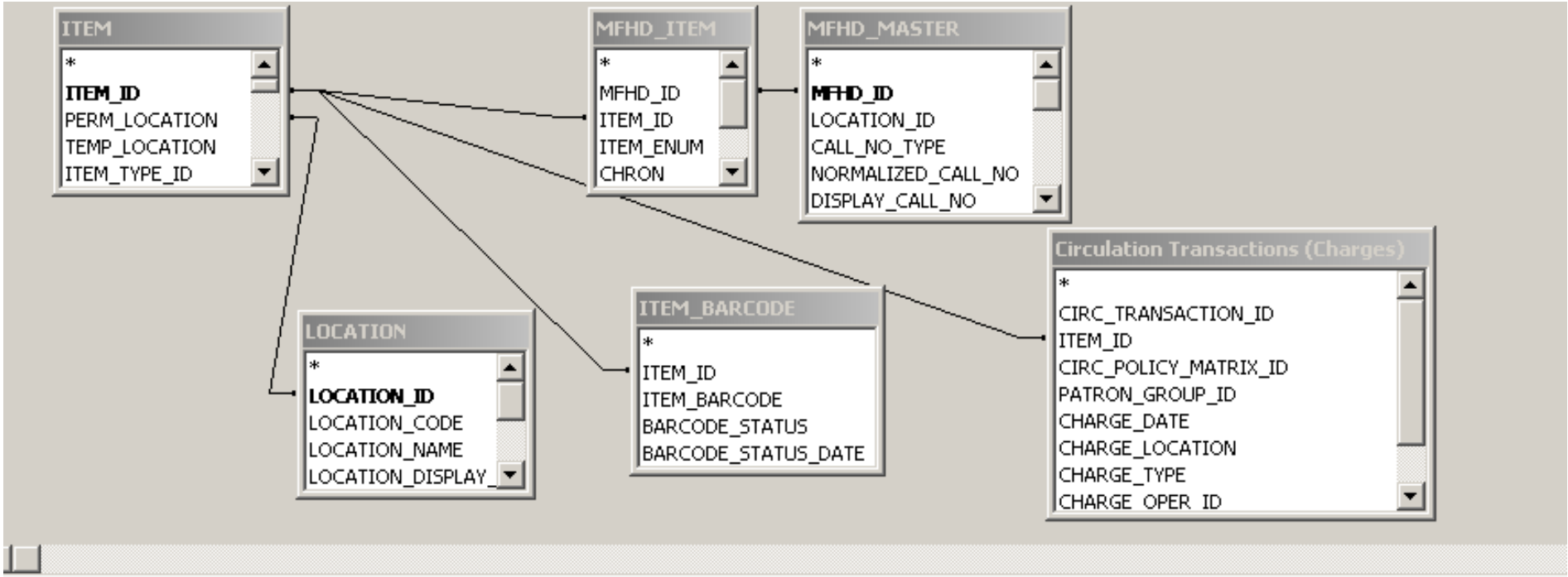


Field:	LOCATION_CODE	DISPLAY_CALL_NO	NORMALIZED_CALL_NO	ITEM_BARCODE	CHARGE_DATE	
Table:	LOCATION	MFHD_MASTER	MFHD_MASTER	ITEM_BARCODE	Circulation Transactions (Charges)	
Sort:	Ascending		Ascending			
Show:	☑	☑	☐	☑	☑	☐
Criteria:					>#1/1/2005#	

So far, so good. Now let's add the grouping.

LOCATION_CODE	DISPLAY_CALL_NO	ITEM_BARCODE	CHARGE_DATE
archiv	Archives 267.5 Wi	32511000011348	7/6/2007 12:02:35 PM
CIRC		32511000233393	3/3/2005 3:10:38 PM
CIRC		32511000233393	10/14/2009 1:34:20 PM
CIRC		32511000233393	10/4/2007 11:26:21 AM
CIRC		32511000233393	3/21/2007 1:49:13 PM
CIRC		32511000233393	5/23/2006 4:58:01 PM
CIRC		32511000233393	3/23/2005 10:49:36 AM
CIRC		32511000233393	1/12/2006 6:35:21 PM
CIRC		32511000233393	2/21/2006 8:10:48 PM
CIRC		32511000233393	9/22/2006 2:22:39 PM
CIRC		32511000233393	6/13/2005 11:01:15 AM
CIRC		32511000233393	4/25/2006 1:33:48 PM
CIRC	155.418 STR	32511000004561	7/28/2009 1:42:21 PM
CIRC	155.418 STR	32511000004561	2/20/2007 3:00:12 PM
CIRC	155.418 STR	32511000004561	3/23/2009 12:34:23 PM
CIRC	230.0924 BO-E	32511000009438	2/22/2006 3:34:25 PM
CIRC	296.02 AUS	32511000012373	3/2/2009 9:34:13 PM
CIRC	302.23 EME	32511000013375	11/17/2006 3:02:26 PM
CIRC	302.23 EME	32511000013375	4/9/2008 8:22:10 PM
CIRC	302.23 EME	32511000013375	9/7/2007 4:54:41 PM
CIRC	610.7301 NAT	32511000038689	10/10/2008 1:28:03 PM
CIRC	610.7301 NAT	32511000038689	10/6/2009 12:27:32 PM
CIRC	610.7301 NAT	32511000038689	10/10/2008 1:27:08 PM

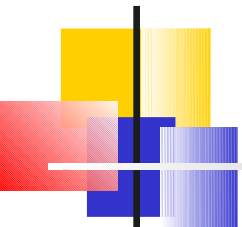
Adding the Grouping



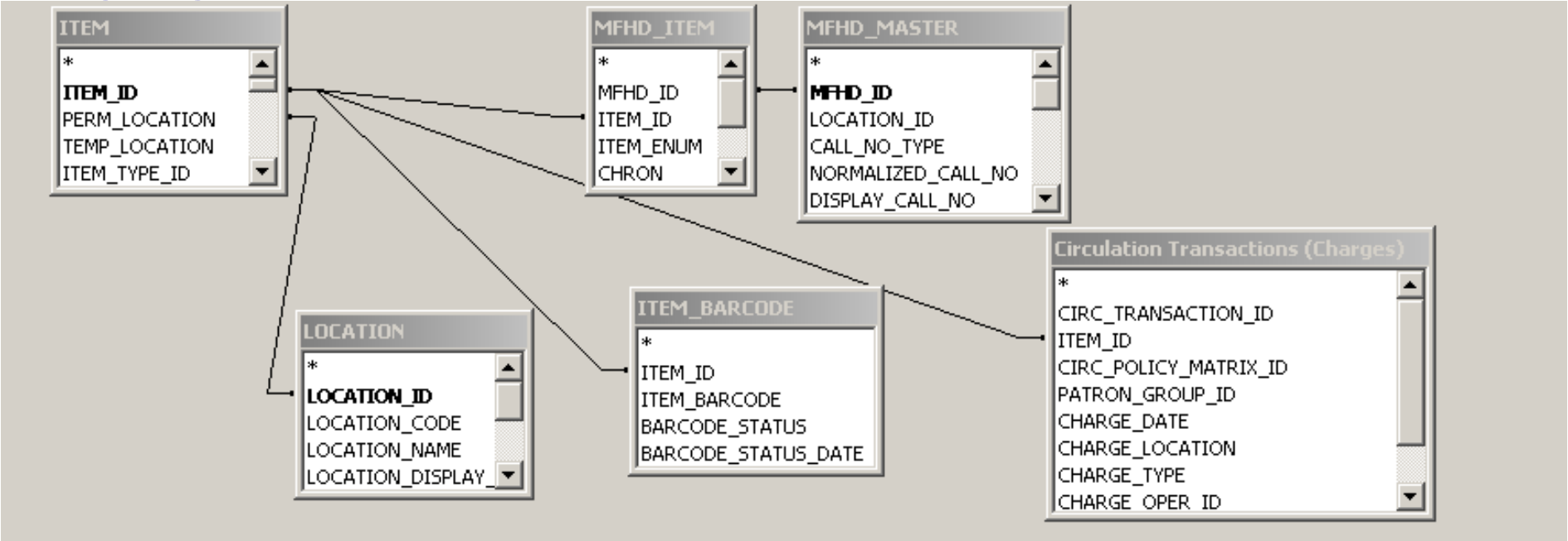
Field:	LOCATION_CODE	DISPLAY_CALL_NO	NORMALIZED_CALL_NO	ITEM_BARCODE	LastCharge: CHARGE_DATE	ChargeCount: ITEM_ID
Table:	LOCATION	MFHD_MASTER	MFHD_MASTER	ITEM_BARCODE	Circulation Transactions (Charges)	ITEM
Total:	Group By	Group By	Group By	Group By	Max	Count
Sort:	Ascending		Ascending			
Show:	☑	☑	☐	☑	☑	☑
Criteria:					>#1/1/2005#	

With the Grouping

LOCATION_CODE	DISPLAY_CALL_NO	ITEM_BARCODE	LastCharge	ChargeCount
archiv	Archives 267.5 Wi	32511000011348	7/6/2007 12:02:35 PM	1
CIRC		32511000233393	10/14/2009 1:34:20 PM	14
CIRC	155.418 STR	32511000004561	7/28/2009 1:42:21 PM	4
CIRC	230.0924 BO-E	32511000009438	2/22/2006 3:34:25 PM	1
CIRC	296.02 AUS	32511000012373	3/2/2009 9:34:13 PM	1
CIRC	302.23 EME	32511000013375	4/9/2008 8:22:10 PM	3
CIRC	610.7301 NAT	32511000038689	10/6/2009 12:27:32 PM	6
CIRC	940.5481 LEC	32511000065266	10/14/2009 3:31:57 PM	5
CIRC	946 Wil	32511000242104	4/22/2009 3:31:08 PM	3
CIRC	970 BAN	32511000067450	11/11/2009 4:21:39 PM	1
CIRC	977.02 ROO	32511000070659	10/7/2009 11:43:33 AM	1

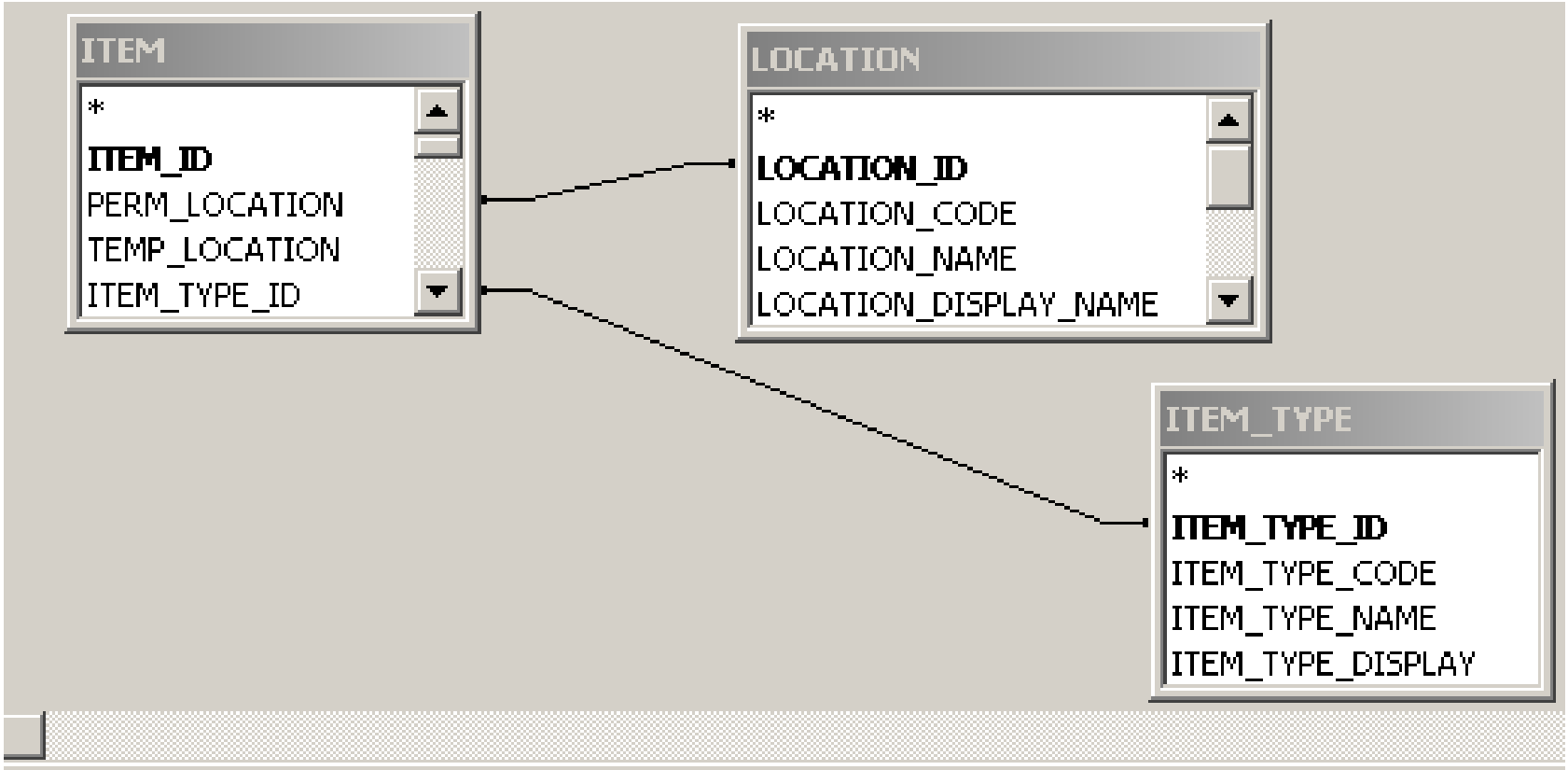


Is this a shelf list? Does it list all my items?



Field:	LOCATION_CODE	DISPLAY_CALL_NO	NORMALIZED_CALL_NO	ITEM_BARCODE	LastCharge: CHARGE_DATE	ChargeCount: ITEM_ID
Table:	LOCATION	MFHD_MASTER	MFHD_MASTER	ITEM_BARCODE	Circulation Transactions (Charges)	ITEM
Total:	Group By	Group By	Group By	Group By	Max	Count
Sort:	Ascending		Ascending			
Show:	☑	☑	☐	☑	☑	☑
Criteria:					>#1/1/2005#	

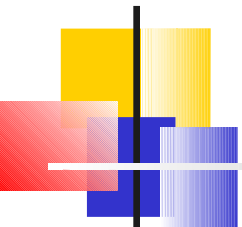
Items by Permanent Location and Item Type



Field:	LOCATION_CODE	ITEM_TYPE_CODE	ITEM_ID	
Table:	LOCATION	ITEM_TYPE	ITEM	
Sort:	Ascending	Ascending		
Show:	☑	☑	☑	☐
Criteria:				
or:				

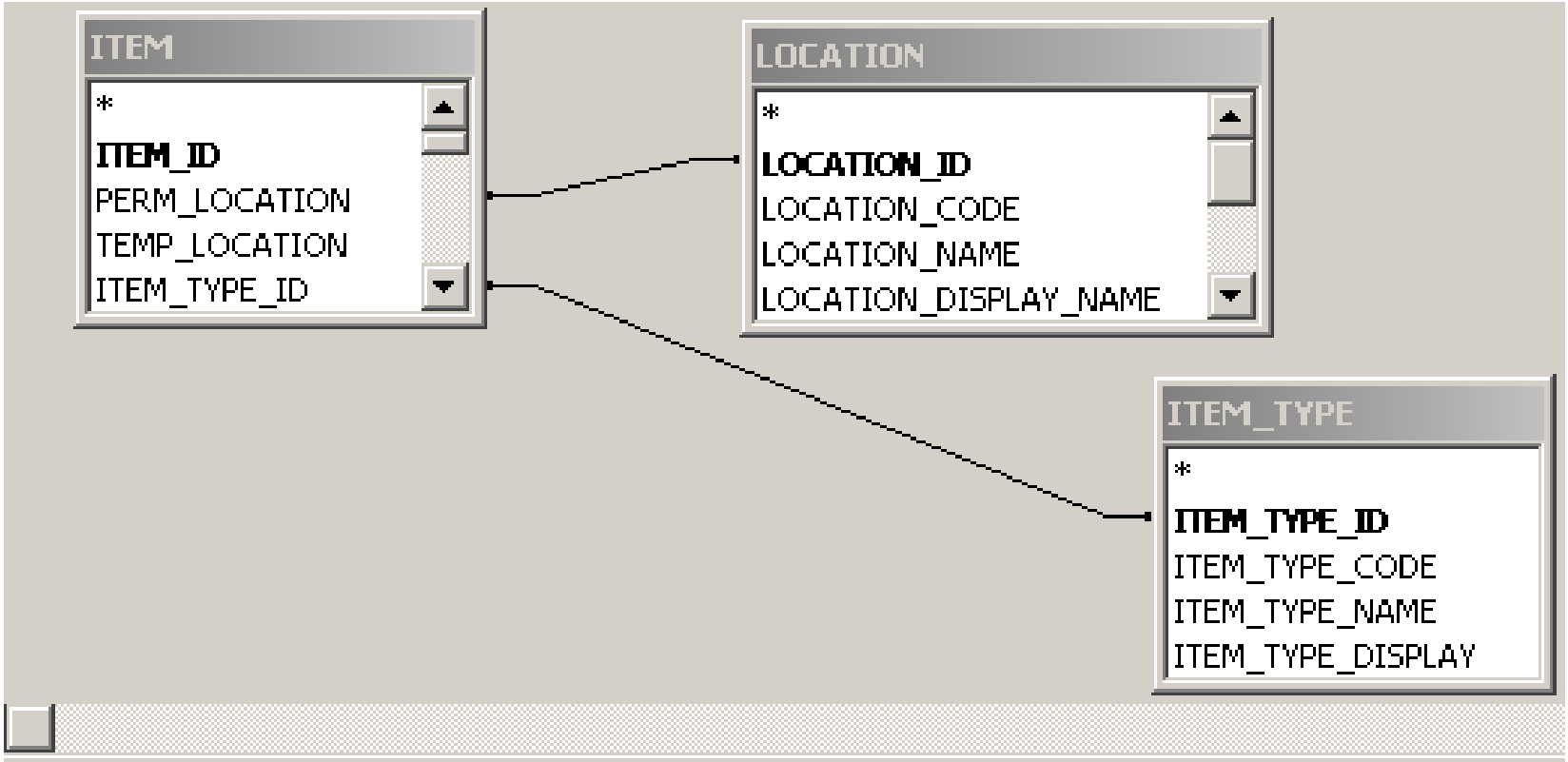
Items by Permanent Location and Item Type

LOCATION_CODE	ITEM_TYPE_CODE	ITEM_ID
CIRC	AV1	124569
CIRC	Book1	146875
CIRC	Book1	146993
CIRC	Book1	146252
CIRC	Book1	138200
CIRC	Book1	146686
CIRC	Book1	73856
CIRC	Book1	1565
CIRC	Book1	15196
CIRC	Book1	28174
CIRC	Book1	75344
CIRC	Book1	40100
CIRC	Book1	55708
CIRC	Book1	51222
CIRC	Book1	25427
RESER	Book1	148008
RESER	Book1	137294
RESER	Book1	146295
RESER	Book1	138233
RESER	Recording1	148001
RESER	Reserve1	143119



So far, so good. Let's do the grouping.

Items by Perm Loc and Item Type: Totals

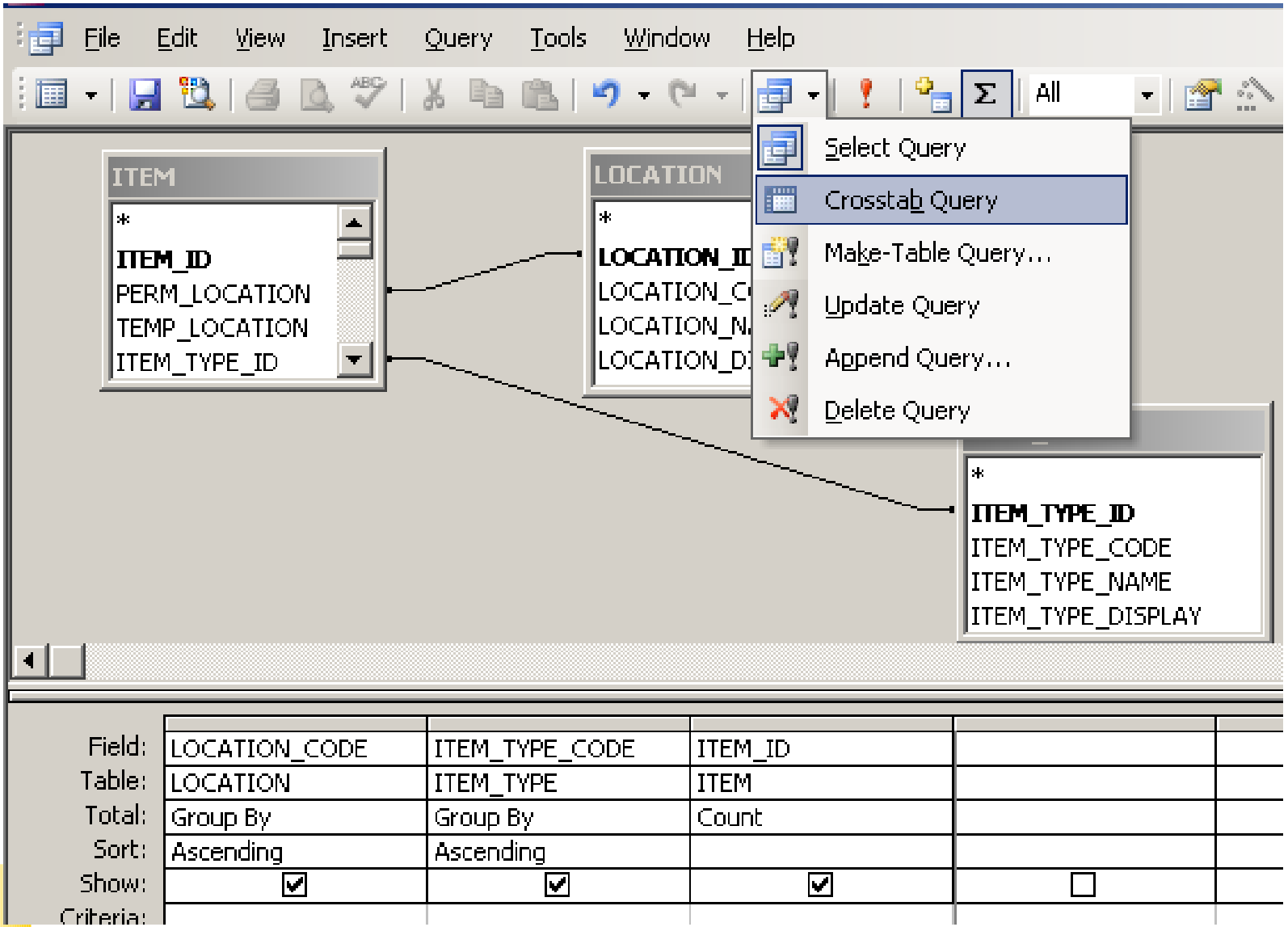


Field:	LOCATION_CODE	ITEM_TYPE_CODE	ITEM_ID	
Table:	LOCATION	ITEM_TYPE	ITEM	
Total:	Group By	Group By	Count	
Sort:	Ascending	Ascending		
Show:	☑	☑	☑	☐
Criteria:				

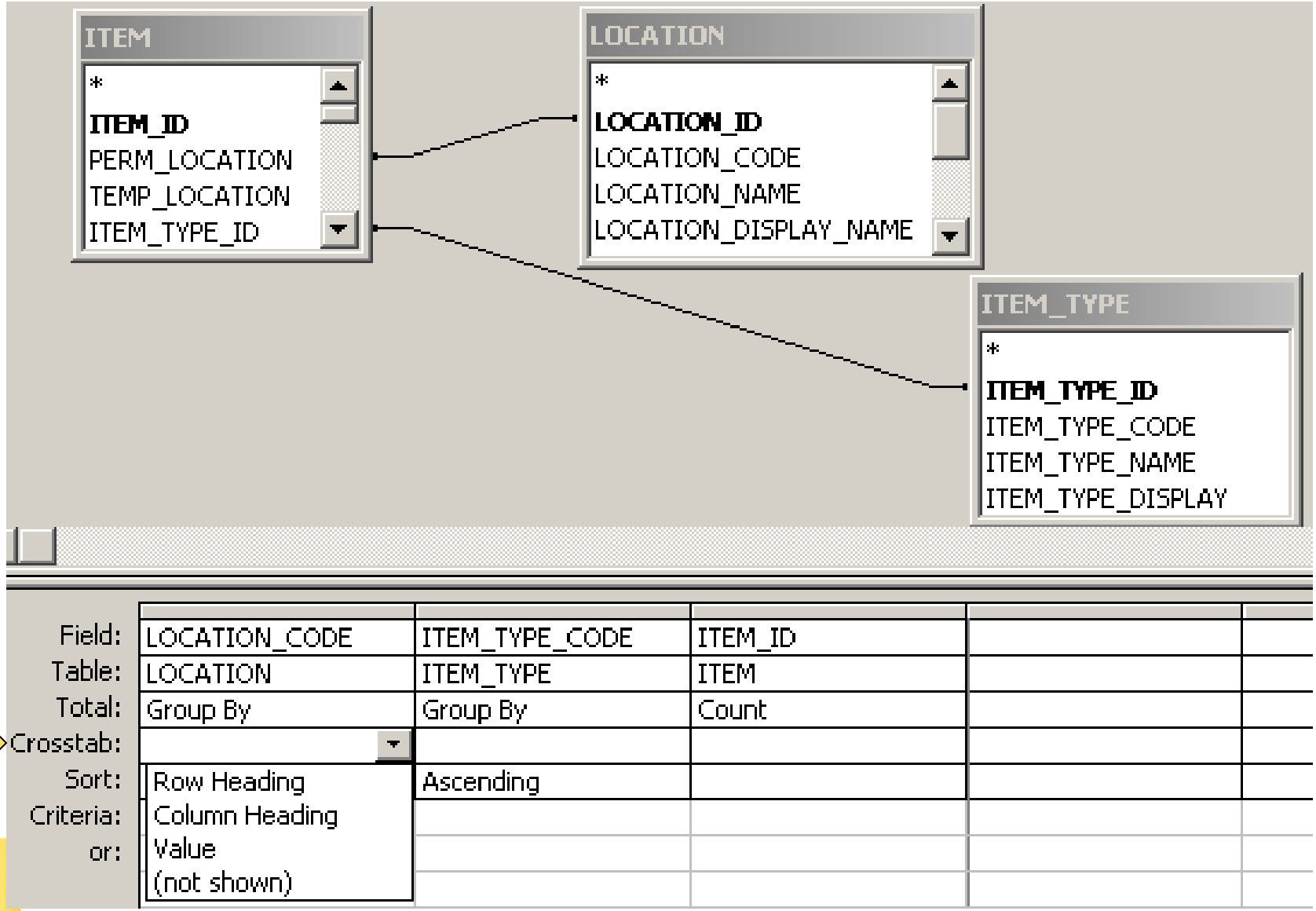
Items by Perm Loc and Item Type: Totals

LOCATION_CODE	ITEM_TYPE_CODE	CountOfITEM_ID
CIRC	AV1	1
CIRC	Book1	14
RESER	Book1	4
RESER	Recording1	1
RESER	Reserve1	109
RESER	Reserve3	20
SCCIRC	BookLR	2
SCCIRC	BookN	1
archiv	AVN	1
archiv	ArchiveN	102
archiv	Book1	1
archiv	BookN	45
error	Book1	1
error	Error	107
imc	AV1	108
imc	Book1	56
imc	BookLR	1229
imc	BookN	7
imc	Video1	218
imcref	BookN	9
jenks	Book1	1
jenks	BookN	6955
jenks	RecordingN	42
jenks	SerialN	3
jenks	Video1	1

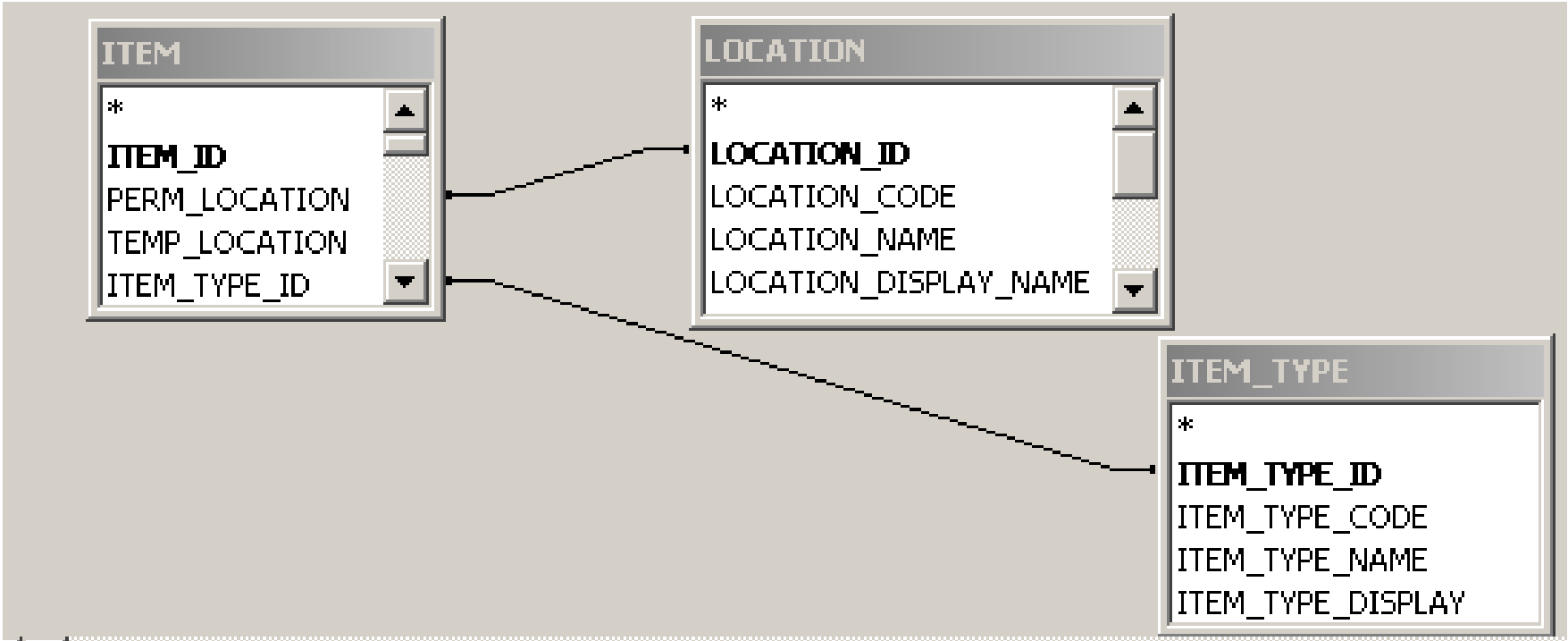
Items by Perm Loc and Item Type: Crosstab



Items by Perm Loc and Item Type: Crosstab



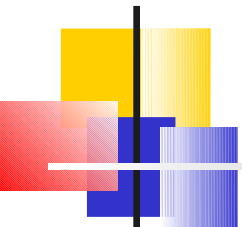
Items by Perm Loc and Item Type: Crosstab



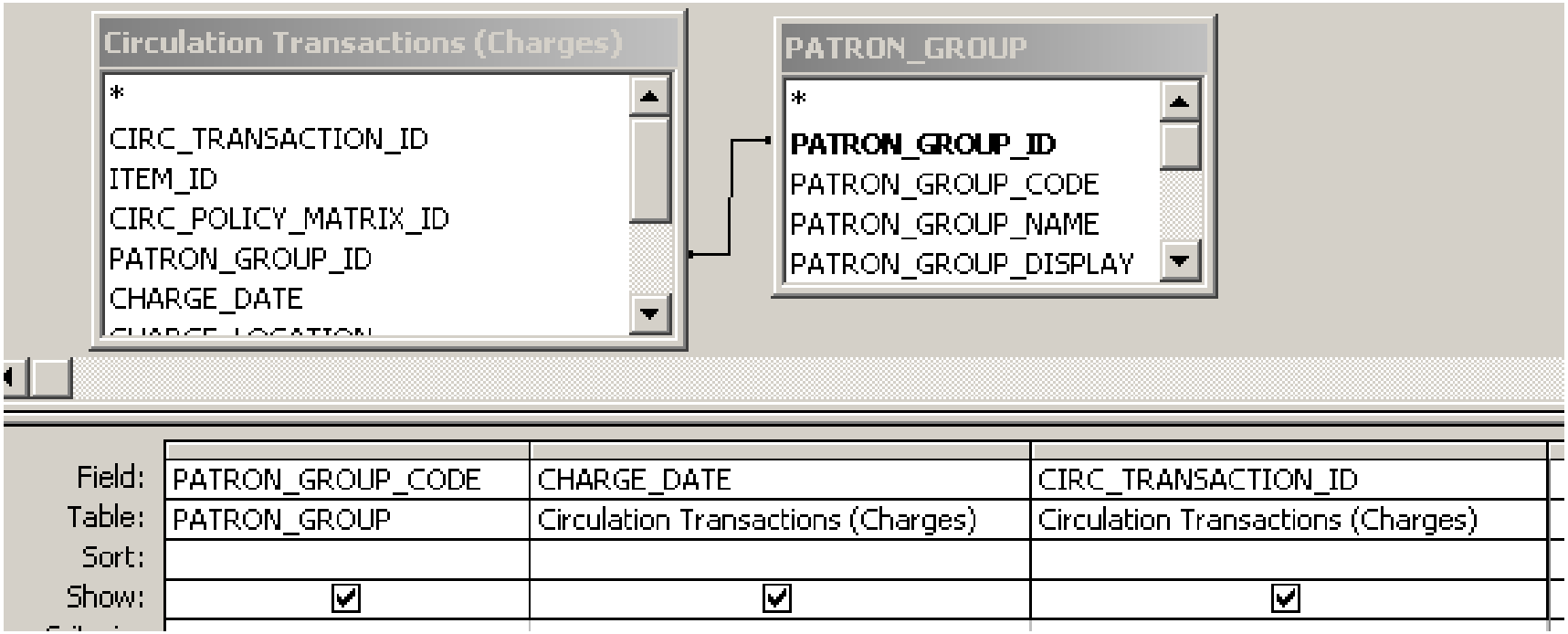
Field:	LOCATION_CODE	ITEM_TYPE_CODE	ITEM_ID		
Table:	LOCATION	ITEM_TYPE	ITEM		
Total:	Group By	Group By	Count		
Crosstab:	Row Heading	Column Heading	Value		
Sort:	Ascending	Ascending			

Items by Perm Loc and Item Type: Crosstab

LOCATION_CODE	ArchiveN	AV1	AVN	Book1	BookLR	BookN	Err
archiv	102		1	1		45	
CIRC		1		14			
error				1			
imc		108		56	1229	7	
imcref						9	
jenks				1		6955	
juv				36	1715	2	
laptop							
linc				1352		1	
lrare						1	
lref						126	
main			1	67134	208	11	
med1		79	4	35	6		
med2				4	6		

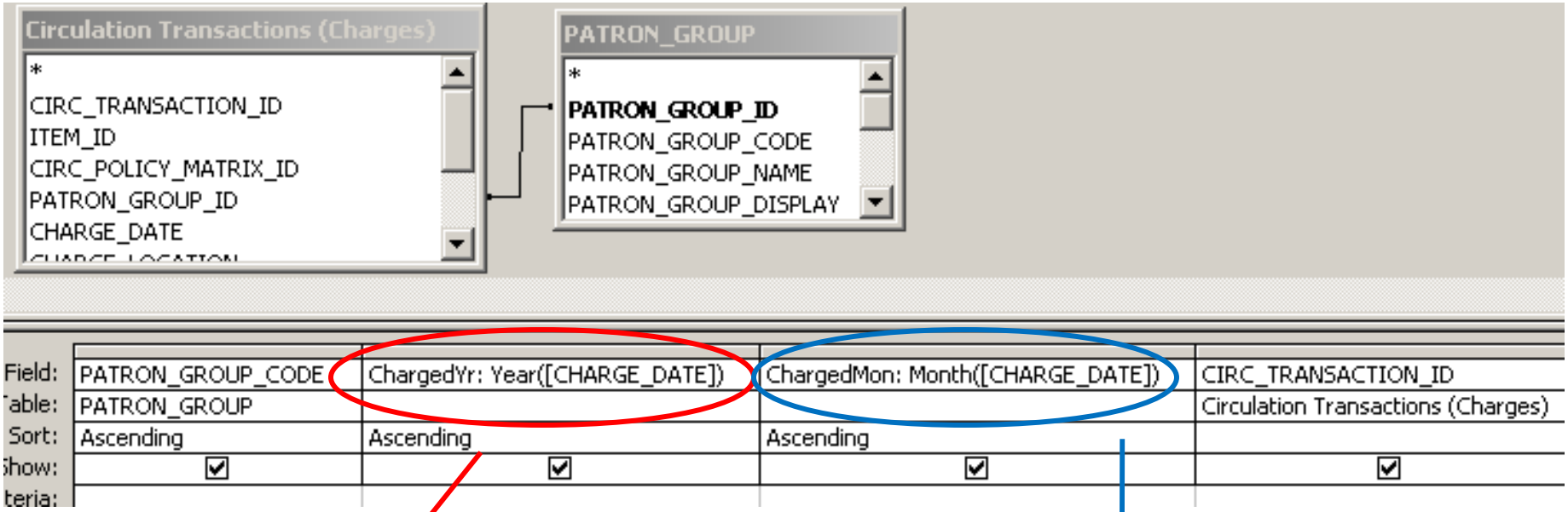


Circ by Patron Group and Month



These tables are both familiar by now.

I need to get the month and year out of charge_date.



ChargedYr: Year(CHARGE_DATE)

ChargedMon:
Month(CHARGE_DATE)

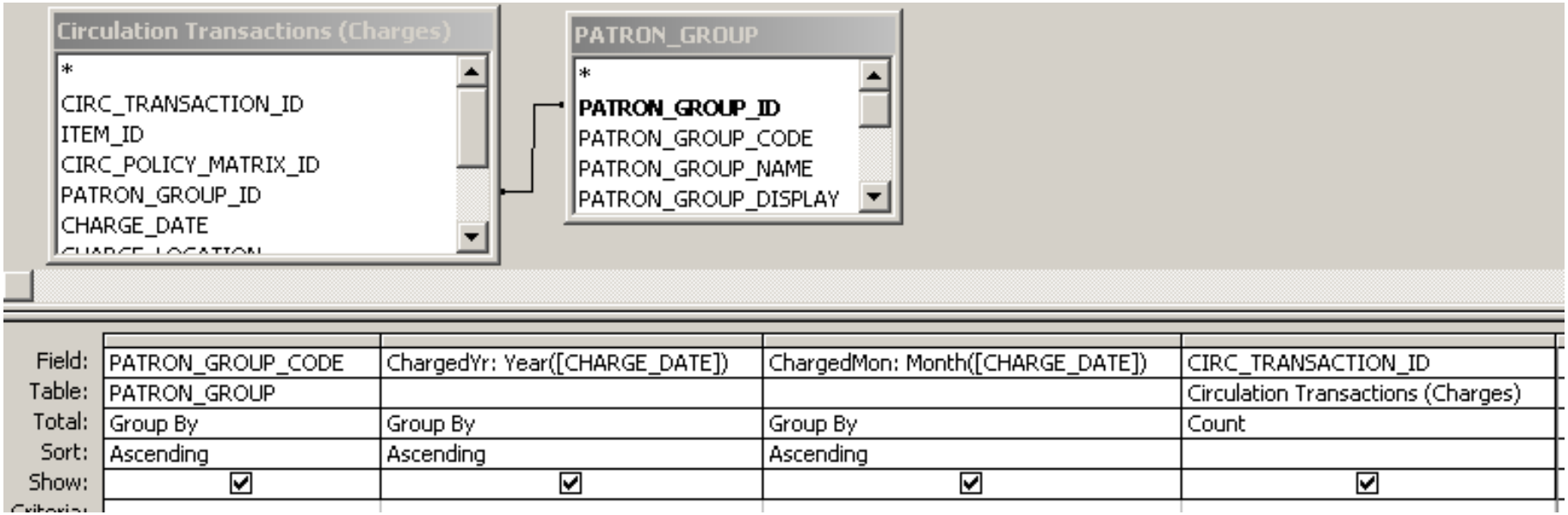
Circ by Patron Group and Month

PATRON_GROUP_CODE	ChargedYr	ChargedMon	CIRC_TRANSACTION_ID
AL	2000	6	36360
AL	2002	6	4
AL	2002	6	23
AL	2002	6	19
AL	2002	7	351
AL	2002	7	355
AL	2002	7	353
AL	2002	7	660
AL	2002	7	656
AL	2002	7	354
AL	2002	8	1392
AL	2002	8	1383
AL	2002	8	1384
AL	2002	8	1390
AL	2002	8	1207
AL	2002	8	778
AL	2002	8	1389

Some Date Functions

For the date	1/8/2010 3:38:24 PM
Year	2010
Month	1
Day	8
Weekday	6 (1=Sunday, 2=Monday, etc
DateValue	1/8/2010
Hour	15 (note 24 hour clock)
Minute	38
Second	24
TimeValue	3:38:24 PM
MonthName(Month)	January
WeekdayName(Weekday)	Friday

Circ by Patron Group and Month: Totals

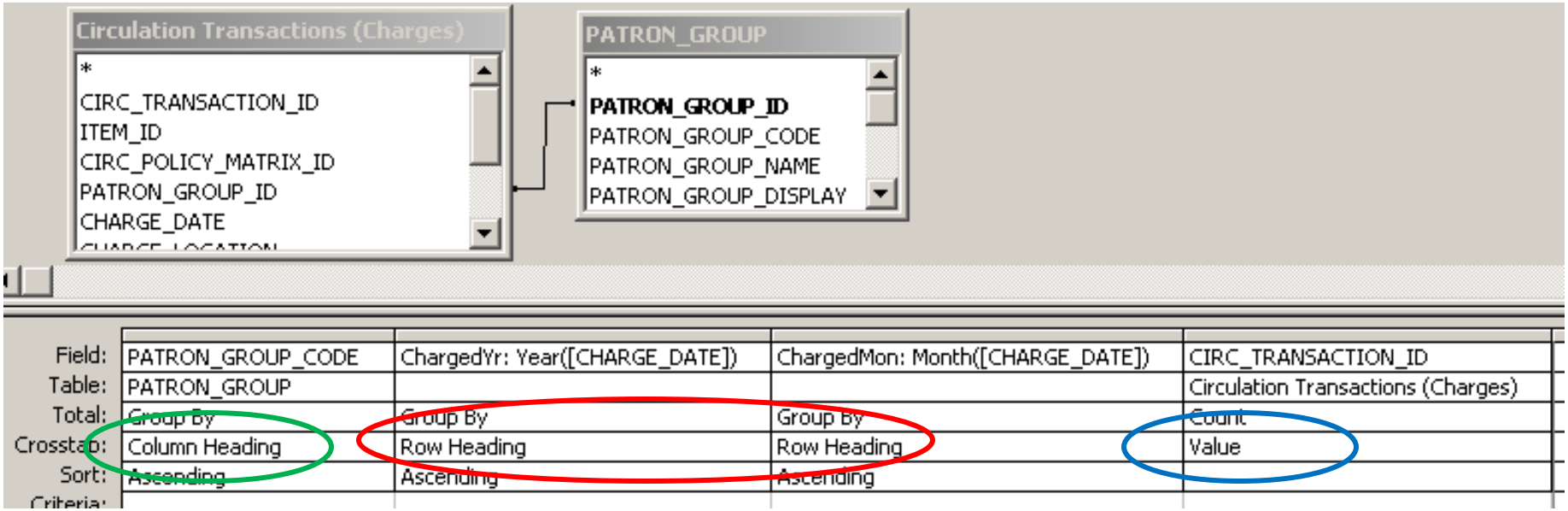


Field:	PATRON_GROUP_CODE	ChargedYr: Year([CHARGE_DATE])	ChargedMon: Month([CHARGE_DATE])	CIRC_TRANSACTION_ID
Table:	PATRON_GROUP			Circulation Transactions (Charges)
Total:	Group By	Group By	Group By	Count
Sort:	Ascending	Ascending	Ascending	
Show:	☑	☑	☑	☑

Circ by Patron Group and Month: Totals

PATRON_GROUP_CODE	ChargedYr	ChargedMon	CountOfCIRC_TRANSACTION_
AL	2000	6	1
AL	2002	6	3
AL	2002	7	6
AL	2002	8	7
AL	2002	9	7
AL	2002	10	15
AL	2002	11	6
AL	2002	12	1
AL	2003	1	9
AL	2003	2	1
AL	2003	3	2
AL	2003	4	6
AL	2003	5	5
AL	2003	6	2
AL	2003	7	11
AL	2003	8	6
AL	2003	9	10

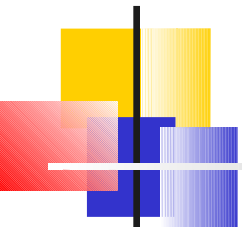
Circ by Patron Group and Month: Crosstab



You can have up to 3 fields as row headings.

I’m using both ChargedYr and ChargedMon.

Circ by Patron Group and Month: Crosstab

ChargedYr	ChargedMon	AL	EF	FC	GR	IL	LL
2002	11	6		181	109	83	
2002	12	1		90	55	51	
2003	1	9		197	187	112	
2003	2	1		246	267	96	
2003	3	2		177	173	48	1
2003	4	6		225	99	42	
2003	5	5		148	138	58	
2003	6	2		125	100	72	
2003	7	11		135	104	64	
2003	8	6		68	13	35	
2003	9	10		260	260	60	
2003	10	10		280	384	92	2
2003	11	5		221	113	54	
2003	12	4		74	59	17	
2004	1	15		249	303	81	
2004	2	13		288	390	73	1
2004	3	8		218	155	71	
2004	4	4		226	231	84	1
2004	5	15		169	107	46	1
2004	6	9		221	143	29	
2004	7	3		174	61	40	

Thank you!