

EXPLICIT CONTENT

Getting what you want out of
Evergreen with minimum* cursing.

*Well, less cursing. Maybe.

- ▶ Data Types Refresher
- ▶ Dred Nullability
- ▶ A real-life sample report using nullability and aggregate functions

WE ARE GATHERED HERE TODAY...



A WHIRLWIND TOUR OF DATA TYPES

Love them if you can, hate them if you must, but ignore them at your peril.



BOOL

To be or not to be, that is the Boolean.

Displayed Fields	Base Filters	Aggregate Filters
Filter Field		Data Type
Is Deleted		bool
Is Holdable		bool
Is Reference		bool
OPAC Visible		bool

	A	B	C	D
1	Is Deleted	Is Holdable	Is Reference	OPAC Visible
2	0	1	0	1

ID

Often imitated, but never duplicated.

I mean *never*.

Displayed Fields	Base Filters	Aggregate Filters
Filter Field		Data Type
Copy ID		id
Record ID		id
Organizational Unit ID		org_unit
Code		id

	A	B	C	D
1	Copy ID	Record ID	Organizational Unit ID	Code
2	3023699	10117737		18 dvd

INT AND FLOAT

Floats are only fractionally more complicated than ints.

Displayed Fields	Base Filters	Aggregate Filters
Display Name		Data Type
Remaining Renewals		int
Percent		float

	A	B
1	Remaining Renewals	Percent
2	1	0.25

INTERVAL

Wait for it...

Boom, 3 seconds.

Displayed Fields	Base Filters	Aggregate Filters
Display Name		Data Type
Item Age		interval
Average Wait Time		interval
Circulation Duration		interval

	A	B	C
1	Item Age	Average Wait Time	Circulation Duration
2	6 mons		21 days

MONEY

It's all \$ ¢ ¥ £ ₩ Rs £ F € to me.

Displayed Fields	Base Filters	Aggregate Filters
Filter Field		Data Type
Price		money
Cost		money
balance_owed		money
total_owed		money
total_paid		money

	A	B	C	D	E
1	Price	Cost	balance_owed	total_owed	tota_paid
2	20	17.5	35	37.5	2.5

ORG_UNIT

Consortia, systems, and branches,
oh my!

Not ideal in Displayed Fields.

Displayed Fields	Base Filters	Aggregate Filters
Filter Field		Data Type
Circulating Library		org_unit
Owning Library		org_unit
Owning Org Unit		org_unit

	A	B	C
1	Circulating Library	Owning Library	Owning Org Unit
2	18	18	17

TEXT

Words, words, words!

Displayed Fields	Base Filters	Aggregate Filters
Display Name		Data Type
Shelving Location		text
Call Number		text
Title		text
Author		text
Barcode		text

	A	B	C	D	E
1	Shelving Location	Call Number	Title	Author	Barcode
2	Adult Fiction	FIC SMI	The Wayward Booksmith	Arron Smith	37500123456789

TIMESTAMP

At the time, the time will be
2013-05-09 15:07:00-04

Displayed Fields	Base Filters	Aggregate Filters
Display Name		Data Type
Check Out Date/Time		timestamp
Fine Stop Date/Time		timestamp
Date of Birth		timestamp
Privilege Expiration Date		timestamp

	A	B	C	D
1	Check Out Date/Time	Fine Stop Date/Time	Date of Birth	Privilege Expiration Date
2	2013-05-01 13:37:51-04	2013-05-07 14:21:16-04	1979-12-15 21:57:15-05	2050-01-01 23:59:59-05

LINK

Chicanery!

Display Name	Data Type
Call Number	link
Call Number ID	id
Bib Record	link
Record ID	id
Age Hold Protection	link
Rule ID	id

	A	B	C	D	E	F
1	Call Number	Call Number ID	Bib Record	Record ID	Age Hold Protection	Rule ID
2	2533620	2533620	10117737	10117737	2	2

LINK

Put an end to this treachery.

Database Source Browser

Sources

Nullable	Source Name
	Item
Default	Age Hold Protection
Default	Call Number/Volume
Default	Circulating Library
Default	Circulation Modifier
Default	Circulations
Default	Copy Notes
Default	Copy Status
Default	Creating User
Default	Last Captured Hold
Default	Last Circulation Date
Default	Last Editing User

Enable nullability selection

Source Specifier: Item

Field Name	Data Type
Active Date/Time	timesta...
Age Hold Protection	link
Alert Message	text
Barcode	text
Call Number/Volume	link
Can Circulate	bool
Circulating Library	org_unit
Circulation Modifier	link
Circulation Type (MARC)	text
Circulations	link
Copy ID	id
Copy Notes	link

A BRIEF INTERLUDE

Wherein a report is written and hopes are dashed



PRESENTING PATRONS A “UNIQUE” OPPORTUNITY

Template Configuration

Name:

Description:

Displayed Fields | Base Filters | Aggregate Filters

Display Name	Data Type	Field Transform	
Short (Policy) Name	text	Raw Data	
User ID	id	Raw Data	
balance_owed	money	Raw Data	

Our tale begins with the ILS User Source. Displayed are Short (Policy) Name from the Home Library Link, User Id, and balance_owed from the Open Billable Transactions link.

THE OLD COLLEGE TRY

Home Library and balance_owed play the part of base filters. The report is scheduled, and then...

Template Configuration

Name:

Description:

Displayed Fields **Base Filters** Aggregate Filters

Filter Field	Field Transform	Operator	Value	
Home Library	Raw Data	Equals	"18"	
balance_owed	Raw Data	Greater than	"20.00"	

	A	B	C
1	Short (Policy) Name	User ID	balance_owed
2	JCPLS	69010	
3	JCPLS	69013	
4	JCPLS	69014	
5	JCPLS	69015	
6	JCPLS	69016	
7	JCPLS	69017	
8	JCPLS	69018	
9	JCPLS	69019	
10	JCPLS	69020	
18348	JCPLS	3995081	
18349	JCPLS	3995105	
18350	JCPLS	3995138	
18351	JCPLS	3995170	
18352	JCPLS	3995290	
18353	JCPLS	3995588	
18354	JCPLS	3995601	
18355	JCPLS	3995848	
18356	JCPLS	3995930	

RUIN

18355 results, 4493 with balances.

Mistakes were made.

NULLABILITY

When a database gives you a blank stare



User Id	Barcode	Birthdate	First Name	Last Name
1	1234		Lou	Anderson
2	5678	1982-09-07	Sue	Smith

A DATABASE IS LIKE A BOX OF CHOCOLATES

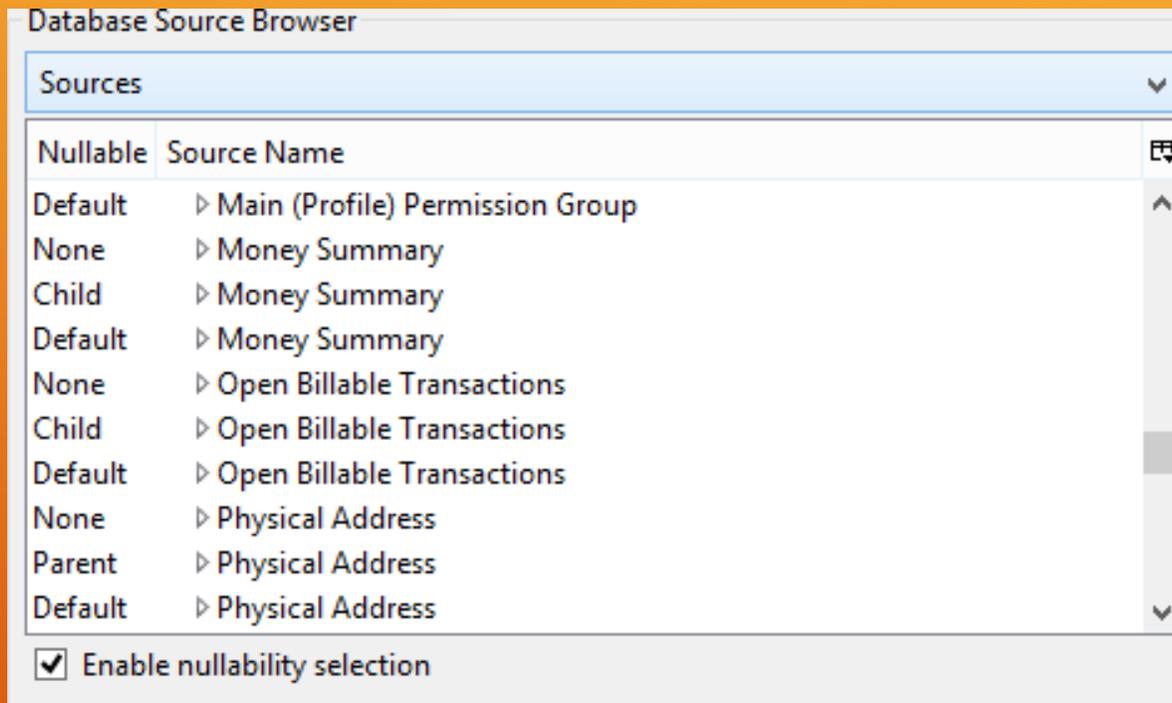
Sometimes pieces are missing

If a filter field is accessed through a link and that link is null, reports may include erroneous results. Such as *every single patron*.



THERE'S ALWAYS ANOTHER CHECKBOX

3 times the links, 3 times the fun?



THE ROAD TO VICTORY

Follow the link with None in the nullable column to banish blanks.

The screenshot shows the 'Database Source Browser' window. On the left, a tree view lists various data sources. The 'None' nullable column for 'Open Billable Transactions' is highlighted with a blue selection bar, and a red arrow points to it. The right pane shows the 'Source Specifier' as 'ILS User :: Open Billable Transactions (inner)' and a table of fields with their data types.

Field Name	Data Type
balance_owed	money
billing_location	link
circulation	link
grocery	link
id	id
last_billing_note	text
last_billing_ts	timesta...
last_billing_type	text
last_payment_note	text
last_payment_ts	timesta...
last_payment_type	text
reservation	link

	A	B	C
1	Short (Policy) Name	User ID	balance_owed
2	JCPLS	833950	23
3	JCPLS	833987	45.49
4	JCPLS	833990	20.05
5	JCPLS	833990	22.27
6	JCPLS	833990	29.95
7	JCPLS	833990	36.99
8	JCPLS	834001	30
9	JCPLS	834009	21.99
10	JCPLS	834009	23.99
4486	JCPLS	3980004	30.99
4487	JCPLS	3982957	34.99
4488	JCPLS	3982957	41
4489	JCPLS	3983086	26.99
4490	JCPLS	3983086	30.99
4491	JCPLS	3983086	37.95
4492	JCPLS	3983086	39.99
4493	JCPLS	3983086	59.99
4494	JCPLS	3984065	48.96

LESS REALLY IS MORE

Less filler, more flavor

But I see see see a problem...

YOU AGGREGATED, BRO?

Math saves the day



	A	B	C
1	Short (Policy) Name	User ID	balance_owed
2	JCPLS	5	5.5
3	JCPLS	5	2
4	JCPLS	5	0.75
5	JCPLS	3	1
6	JCPLS	3	3.5
7	JCPLS	2	10

Average

	A	B	C
1	Short (Policy) Name	User ID	balance_owed
2	JCPLS	5	2.75
3	JCPLS	3	2.25
4	JCPLS	2	10

Max

	A	B	C
1	Short (Policy) Name	User ID	balance_owed
2	JCPLS	5	5.5
3	JCPLS	3	3.5
4	JCPLS	2	10

Sum

	A	B	C
1	Short (Policy) Name	User ID	balance_owed
2	JCPLS	5	8.25
3	JCPLS	3	4.5
4	JCPLS	2	10

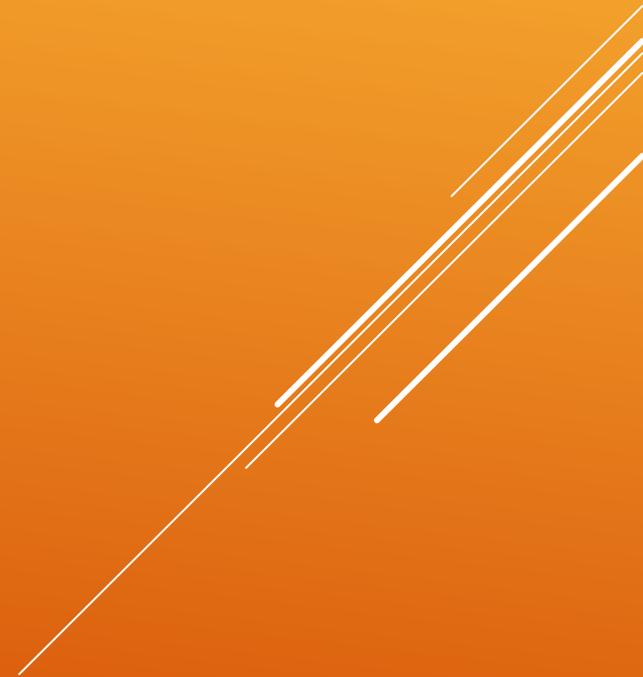
HYPOTHETICALLY SPEAKING...

Aggregate functions are special transforms that use mathemagics to collapse nearly identical results.

They can be applied to displayed fields, aggregate filters, or both.

REWRITING HISTORY

Mind what you have learned; remind you of a movie, it can



Database Source Browser

Sources

Nullable	Source Name
None	Open Billable Transactions
Child	Open Billable Transactions
Default	Open Billable Transactions
None	Physical Address
Parent	Physical Address
Default	Physical Address
None	Primary Identification Type
Parent	Primary Identification Type
Default	Primary Identification Type
None	Reservations
Child	Reservations
Default	Reservations
None	Secondary Identification Type

Source Specifier: ILS User :: Open Billable Transactions (inner)

Field Name	Data Type
balance_owed	money
billing_location	link
circulation	link
grocery	link
id	id
last_billing_note	text
last_billing_ts	timesta...
last_billing_type	text
last_payment_note	text
last_payment_ts	timesta...
last_payment_type	text
reservation	link
total_owed	money

Enable nullability selection

Template Configuration

Name: Patrons that owe over 20.00 3

Description: Nullability, transform and roll out.

Save

Displayed Fields | Base Filters | Aggregate Filters

Display Name	Data Type	Field Transform
Short (Policy) Name	text	Raw Data
User ID	id	Raw Data

Alter Display Header | Change Transform ▾ | Move Up | Move Down | Remove Selected Field

ONCE MORE INTO THE
TEMPLATE EDITOR...

I have a good feeling about this

Database Source Browser

Sources

Nullable	Source Name
None	Open Billable Transactions
Child	Open Billable Transactions
Default	Open Billable Transactions
None	Physical Address
Parent	Physical Address
Default	Physical Address
None	Primary Identification Type
Parent	Primary Identification Type
Default	Primary Identification Type
None	Reservations
Child	Reservations
Default	Reservations
None	Secondary Identification Type

Source Specifier: ILS User :: Open Billable Transactions (inner)

Field Name	Data Type
balance_owed	money
billing_location	link
circulation	link
grocery	link
id	id
last_billing_note	text
last_billing_ts	timesta...
last_billing_type	text
last_payment_note	text
last_payment_ts	timesta...
last_payment_type	text
reservation	link
total_owed	money

Enable nullability selection

ONCE MORE INTO THE TEMPLATE EDITOR...

I have a good feeling about this

Template Configuration

Name: Patrons that owe over 20.00 3

Description: Nullability, transform and roll out. Save

Displayed Fields

Display Name	Data Type	Field Transform
Short (Policy) Name	text	Raw Data
User ID	id	Raw Data
balance_owed	money	Raw Data

BASE FILTERS, SIMPLIFIED

One is the loneliest number

Template Configuration

Name:

Description:

Displayed Fields | **Base Filters** | Aggregate Filters

Filter Field	Field Transform	Operator	Value	
Home Library	Raw Data	Equals	"18"	

Source Specifier: ILS User :: Money Summary (inner)

Field Name	Data Type	Field Transform	Output Type
balance_owed	money	Average	Aggregate
total_owed	money	Count	Aggregate
total_paid	money	Count Distinct	Aggregate
usr	link	First Value	Non-Aggregate
		Last Value	Non-Aggregate
		Max	Aggregate
		Min	Aggregate
		Raw Data	Non-Aggregate
		Sum	Aggregate

Add Selected Fields

YOU LOOK FAMILIAR

Do you filter this field often?

Template Configuration

Name: Patrons that owe over 20.00 3

Description: Nullability, transform and roll out.

Save

Displayed Fields | Base Filters | **Aggregate Filters**

Filter Field	Field Transform	Operator	Value
balance_owed	Sum	Greater than	"20.00"

Change Transform ▾ | Change Operator ▾ | Change value | Remove value | Remove Selected Fields

	A	B	C
1	Short (Policy) Name	User ID	balance_owed
2	JCPLS	833945	38.25
3	JCPLS	833950	33
4	JCPLS	833976	39.8
5	JCPLS	833987	76.09
6	JCPLS	833990	203.58
7	JCPLS	833995	110
8	JCPLS	834001	70
9	JCPLS	834005	35
10	JCPLS	834009	105.70
3852	JCPLS	3980004	65
3853	JCPLS	3980349	23.25
3854	JCPLS	3982913	31
3855	JCPLS	3982957	91.95
3856	JCPLS	3983086	235.9
3857	JCPLS	3983450	31
3858	JCPLS	3983742	20.25
3859	JCPLS	3984065	48.96
3860	JCPLS	3988063	22

SUCCESS

This cake is great

No Sum Filter = 161,551.62

	A	B	C
1	Short (Policy) Name	User ID	balance_owed
2	JCPLS	833950	23
3	JCPLS	833987	45.49
4	JCPLS	833990	20.05
5	JCPLS	833990	22.27
6	JCPLS	833990	29.95
7	JCPLS	833990	36.99
8	JCPLS	834001	30
9	JCPLS	834003	21.99
10	JCPLS	834003	23.33
11	JCPLS	3980004	30.33
4467	JCPLS	3982957	34.95
4488	JCPLS	3982957	47
4489	JCPLS	3983086	26.99
4490	JCPLS	3983086	30.99
4491	JCPLS	3983086	37.95
4492	JCPLS	3983086	39.99
4493	JCPLS	3983086	59.99
4494	JCPLS	3984065	48.96
4495	Total	=	161551.62

Sum filter = 373,470.43

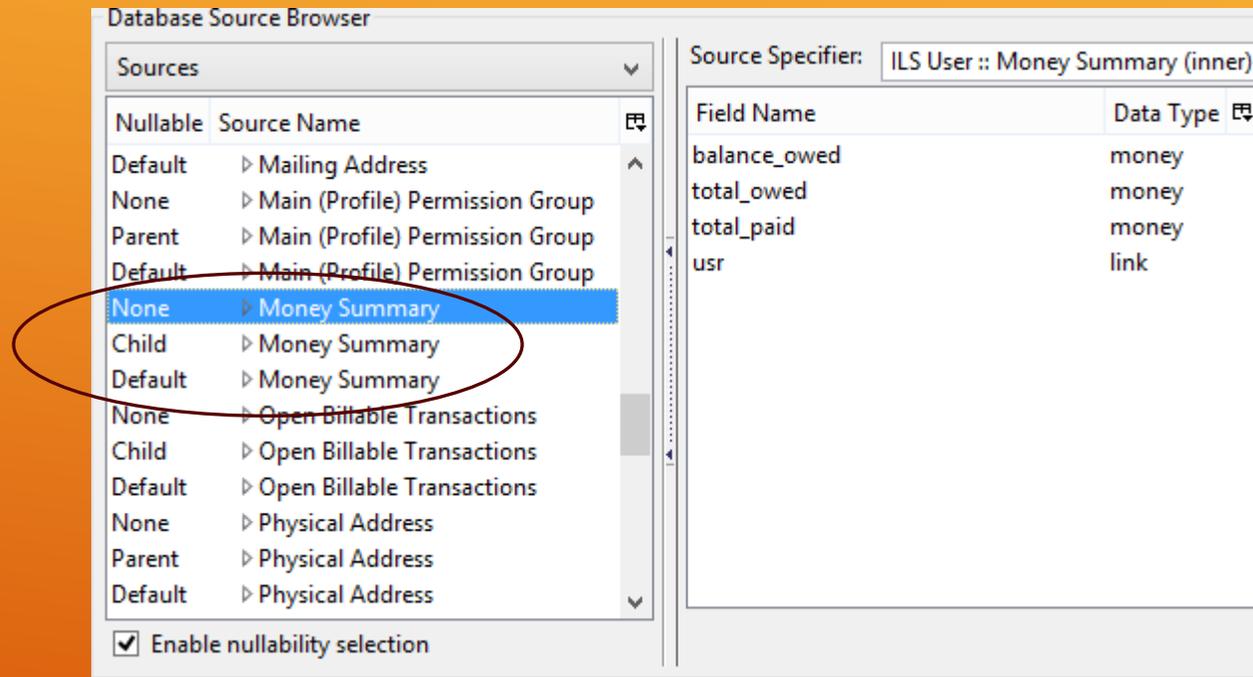
	A	B	C
1	Short (Policy) Name	User ID	balance_owed
2	JCPLS	833945	38.25
3	JCPLS	833950	33
4	JCPLS	833976	39.8
5	JCPLS	833987	76.09
6	JCPLS	833990	203.58
7	JCPLS	833995	110
8	JCPLS	834001	70
9	JCPLS	834003	33
10	JCPLS	834003	103.78
3852	JCPLS	3980004	83
3853	JCPLS	3983349	23.25
3854	JCPLS	3982913	31
3855	JCPLS	3982957	91.95
3856	JCPLS	3983086	235.9
3857	JCPLS	3983450	31
3858	JCPLS	3983742	20.25
3859	JCPLS	3984065	48.96
3860	JCPLS	3988063	22
3861	Total	=	373470.43

BUT THE NUMBER OF ROWS WENT DOWN?

BITE SIZED IDEAS

But wait, there's more





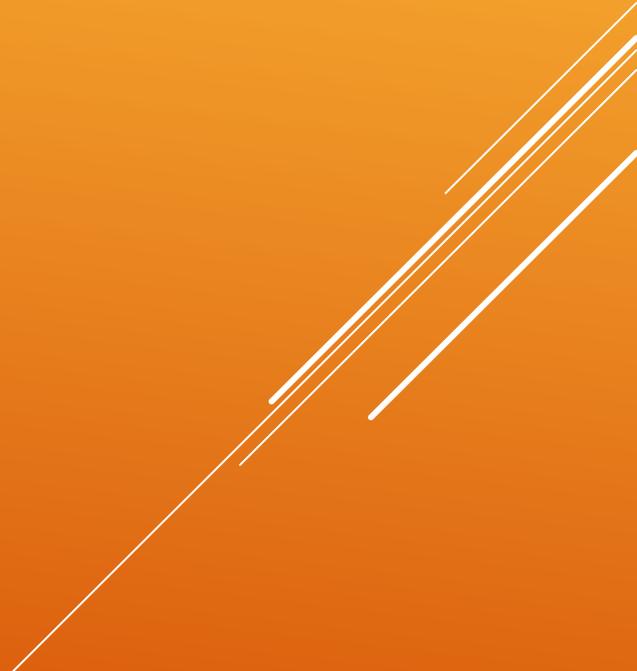
ALL OF THAT, AND FOR WHAT?

A recent Evergreen addition: the Money Summary link.

- ▶ Circulations? Count Circ Ids.
- ▶ Patrons? Count User Ids.
- ▶ Counting something? Just reach for an Id.

COUNT WHO?

Count Distinct is just so...
distinctive.

A decorative graphic consisting of several parallel white lines of varying lengths, slanted diagonally from the bottom right towards the top right, set against the orange gradient background.

- ▶ Org_unit or Id? In List is lovely
- ▶ Dates? Between is best (and a transform!)
- ▶ Text? Contains Matching Substring (ignore case) conquerors all
- ▶ Bool? Well, I hear Equals is available...

OPERATORS: EQUALS IS AWFUL

Equality is great for folks, but folly for filters. Choose an operator, any operator...

A decorative graphic consisting of several parallel white lines of varying lengths and orientations, located in the bottom right corner of the slide.

QUESTIONS?

I can't promise answers, just more words



THANK YOU

I read email at Boyer.Jason@gmail.com

I write (poorly and irregularly) at LoquaciousThesis.blogspot.com

