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## Tips and Tricks for Alma Analytics

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Rogers: Tips and Tricks for Alma Analytics

# Tips and Tricks for Alma Analytics



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**eBUG 2016 – Lexington, KY**

# For today's talk:

- Random tips on organizing & formatting
- Helpful functions for extraction & display
- Data sorting tricks
- MINUS & UNION queries



# Random tips on organizing & formatting



# Tip #1 – Create folders for different library functional areas (Acquisitions, Fulfillment, Resource Management, Assessment, etc.) and “In process” folders for individuals

The screenshot displays the ExLibris Analytics interface. On the left, a 'Catalog' sidebar shows a tree view of folders. The 'Reports' folder is expanded, and a red box highlights the following sub-folders: Accreditation Reports, Acquisitions, Administration, ARL Stats, Assessment, Book Feeds, Business Office, Cataloging, Collections, Ex Libris Examples, Fulfillment, Gail - In process, Joe - in process, Keila, LERS, Mike - in process, Monica - IP, Music, Preston, Special Collections, Year-End, and zSupport. The main pane shows a list of reports under the path '/Shared Folders/University of Tennessee, Knoxville/Reports/Acquisitions'. The reports listed include:

- Active Orders Older Than 3 Months** | Last Modified 11/19/2015 11:19:55 AM | Owner 1763216990002311\_2311\_D  
This report finds all active orders, with or without invoices, that are older than 3 months. Requested by Gail Williams. (Mike, 2015/09/17)  
Open | Edit | More
- Active Orders Older Than 3 Months (With Invoices)** | Last Modified 11/19/2015 11:19:54 AM | Owner 1763216990002311\_2311\_D  
This report finds all active 463101 orders with invoices, that are older than 3 months. Requested by Gail Williams. (Mike, 2015/09/17)  
Open | Edit | More
- Active Orders Older Than 3 Months (Without Invoices)** | Last Modified 11/19/2015 11:19:55 AM | Owner 1763216990002311\_2311\_D  
This report finds all active 463101 orders without invoices, that are older than 3 months. Requested by Gail Williams. (Mike, 2015/09/17)  
Open | Edit | More
- Funds Hierarchy** | Last Modified 11/19/2015 11:19:55 AM | Owner 1968583420002311\_2311\_D  
Displays fund balances in hierarchical format (Monica 07/08/2015)  
Open | Edit | More
- German Language Films - Order Status** | Last Modified 12/6/2015 7:10:25 AM | Owner 1763216990002311\_2311\_D  
This report finds German language films ordered by Alan Wallace on behalf of Dr. Stehle. Alan wishes to know the status of these orders. (Mike, 2015/11/25)  
Open | Edit | More
- Invoice Transactions - Monographs** | Last Modified 2/11/2016 3:50:29 PM | Owner 1763216990002311\_2311\_D  
This report lists all the 463101 invoices for a given time period. It is intended to facilitate the process of balancing Alma with Iris each month. Requested by Teresa De  
Open | Edit | More
- Invoice Transactions - Monographs - OLD** | Last Modified 2/11/2016 3:08:48 PM | Owner 1763216990002311\_2311\_D  
(Monica 06/02/2015)  
Open | Edit | More
- Invoice Transactions - Monographs Totals** | Last Modified 2/11/2016 3:49:30 PM | Owner 1763216990002311\_2311\_D  
This report totals the invoice lines for Monographs for a given month (specified by the date range prompts). It is in a format that Teresa uses to balance Iris with Alma  
Open | Edit | More
- Invoices by IRIS Budget Code (MII)** | Last Modified 11/19/2015 11:19:55 AM | Owner 1968583420002311\_2311\_D  
Open | Edit | More
- Invoices Not Paid** | Last Modified 11/19/2015 11:19:55 AM | Owner 1968583420002311\_2311\_D  
List of invoices that filters out paid status, and limits to FY-2015 or FY-2016(Monica 6/16/2015)  
Open | Edit | More



# Tip #2 – Give reports meaningful names

- Easier to identify when scanning a list
- Helps distinguish similar reports









The screenshot shows the ExLibris Analytics interface. The left sidebar displays a folder tree under 'Reports' with sub-folders like 'Accreditation Reports', 'Acquisitions', 'Administration', 'ARL Stats', 'Assessment', 'Book Feeds', 'Business Office', 'Cataloging', 'Collections', 'Ex Libris Examples', 'Fulfillment', 'Gail - In process', 'Joe - in process', 'Keila', 'LERS', 'Mike - in process', 'Monica - IP', 'Music', 'Preston', and 'Special Collections'. The main pane shows a list of reports sorted by name (A-Z). The report 'Leisure reading - monthly circ stats' is highlighted with a red box. Below is a table of the visible reports:

Report Name	Last Modified	Owner
Electronic Availability of Pendergrass Serials	4/12/2016 8:36:24 PM	3753276540002311_2311_D
Encumbrances greater than a nickel - all funds	11/19/2015 11:19:56 AM	1763216990002311_2311_D
Fund Balances	11/19/2015 11:19:56 AM	1763216990002311_2311_D
Government Documents in Hodges - Titles	4/8/2016 2:59:17 PM	1763216990002311_2311_D
<b>Leisure reading - monthly circ stats</b>	2/16/2016 7:43:56 PM	1763216990002311_2311_D
Leisure Reading - Titles added within the past 4 months	2/17/2016 6:45:33 PM	1763216990002311_2311_D
Leisure Reading - top ranked titles according to # loans	2/17/2016 6:15:27 PM	1763216990002311_2311_D
Loan count for 'Notizie Degli Scavi Di Antichita'	12/15/2015 6:21:26 PM	1763216990002311_2311_D

## Tip #3 – Use the “Description” field to explain the purpose of the report

- If applicable, state who requested the report
- Add your name in parentheses, along with the date you created the report

Type **All** Sort **Name A-Z**  Show More Details

	<b>Electronic Availability of Pendergrass Serials</b>   Last Modified 4/12/2016 8:36:24 PM   Owner 3753276540002311_2311_D This report lists Electronic portfolios for serials with print issues in Pendergrass. Requested by Peter Fernandez. (Louis 4/8/16)  Open   Edit   More ▾
	<b>Encumbrances greater than a nickel - all funds</b>   Last Modified 4/29/2016 12:51:03 PM   Owner 1763216990002311_2311_D This report lists all active encumbrances greater than \$0.05 (a nickel). It is used primarily towards year-end to determine the larger unpaid items. (Mike, 2015/04/02)  Open   Edit   More ▾
	<b>Fund Balances</b>   Last Modified 11/19/2015 11:19:56 AM   Owner 1763216990002311_2311_D This report lists all funds and balances for currently active, allocated funds. (Monica 6/1/2015)  Open   Edit   More ▾
	<b>Government Documents in Hodges - Titles</b>   Last Modified 4/8/2016 2:59:17 PM   Owner 1763216990002311_2311_D This report finds all government documents in Hodges. It is a title-level report. I used a criteria on publisher to locate titles published by the GPO. Requested by Greg March. 16/04/06) Open   Edit   More ▾
	<b>Leisure reading - monthly circ stats</b>   Last Modified 2/16/2016 7:43:56 PM   Owner 1763216990002311_2311_D This report finds Circ/usage stats for items in the Leisure reading collection. It is used as a means of gauging which titles receive the heaviest usage and facilitates the decision either or not to keep items, move them to Stacks, etc. Requested by Teresa Berry. (Mike, 2016/02/16) Open   Edit   More ▾
	<b>Leisure Reading - Titles added within the past 4 months</b>   Last Modified 2/17/2016 6:45:33 PM   Owner 1763216990002311_2311_D This report lists all the Hodges Leisure Reading titles added within the past 4 months. It was created for Cathy Jenkins. (Mike, 2016/02/17) Open   Edit   More ▾

**Tip #4** – If/when creating a folder in the Community area, please consider that the purpose is to share with other institutions, not within your own. Use helpful descriptions, report names, etc.

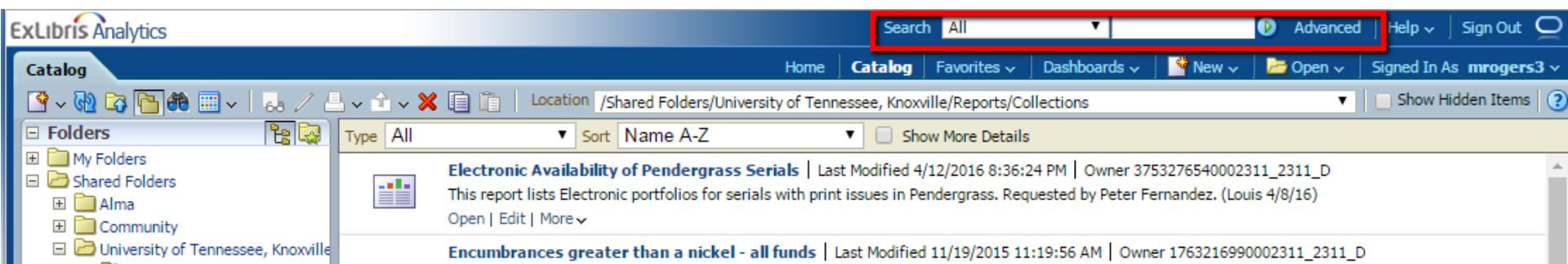
The screenshot displays the Alma Analytics interface. The left pane shows a folder structure under 'Shared Folders' with 'Community' highlighted in red. The main pane shows a list of reports with the following details:

Report Title	Last Modified	Owner
<b>UTennessee - Count of both historical Aleph loans and Alma loans</b>	5/2/2016 3:16:57 PM	Owner 1763216990002311_2311_D
<b>UTennessee - ELUNA 2016, MINUS example</b>	5/2/2016 3:20:26 PM	Owner 1763216990002311_2311_D
<b>UTennessee - ELUNA 2016, UNION example</b>	5/2/2016 3:42:10 PM	Owner 1763216990002311_2311_D
<b>UTennessee - ELUNA 2016, UNION example pt.2</b>	5/2/2016 3:44:16 PM	Owner 1763216990002311_2311_D
<b>UTennessee - Example of a library fund report with various columns</b>	5/2/2016 3:16:44 PM	Owner 1763216990002311_2311_D
<b>UTennessee - Example of a report to find users having 2 or more barcodes PT. 2</b>	5/2/2016 3:16:35 PM	Owner 1763216990002311_2311_D
<b>UTennessee - Example of a report to find users having 2 or more barcodes PT.1</b>	5/2/2016 3:16:25 PM	Owner 1763216990002311_2311_D
<b>UTennessee - Report for finding bad diacritics in bibliographic records</b>	5/2/2016 3:16:15 PM	Owner 1763216990002311_2311_D

The bottom of the left pane shows a folder named 'UTennessee' highlighted in red.

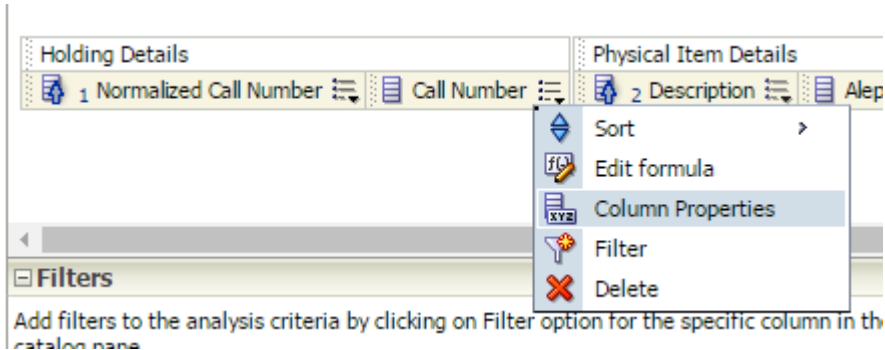


## Tip #5 – For locating reports you’ve already created, use the Oracle BI Search feature

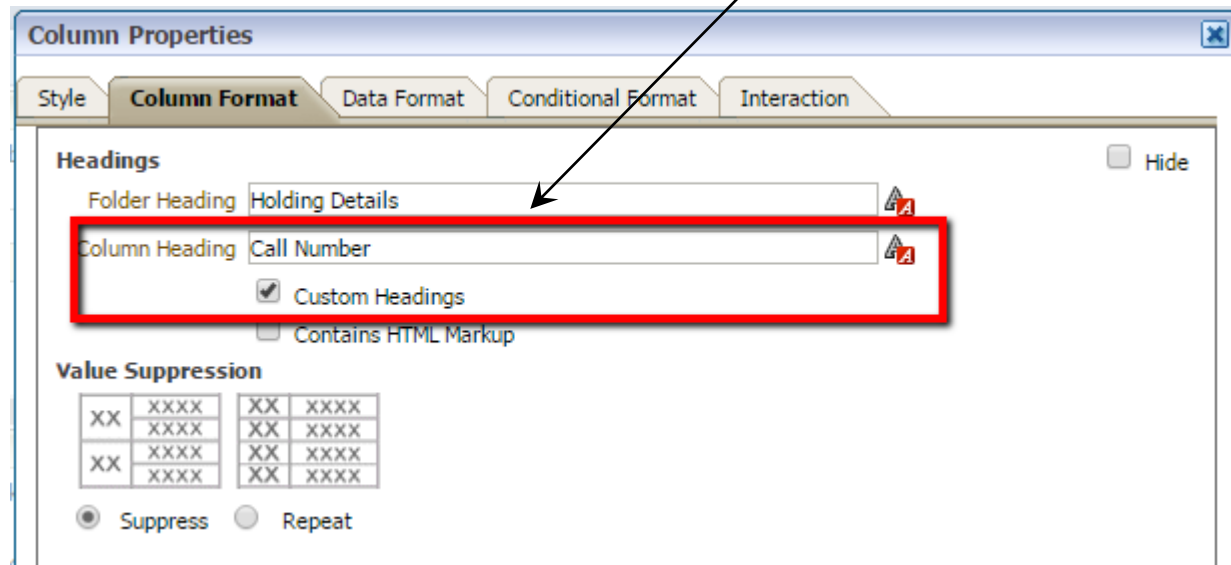


*The better, more descriptive content you add to these reports (via the name, description, etc.) the easier it will be to re-locate them in the future.*

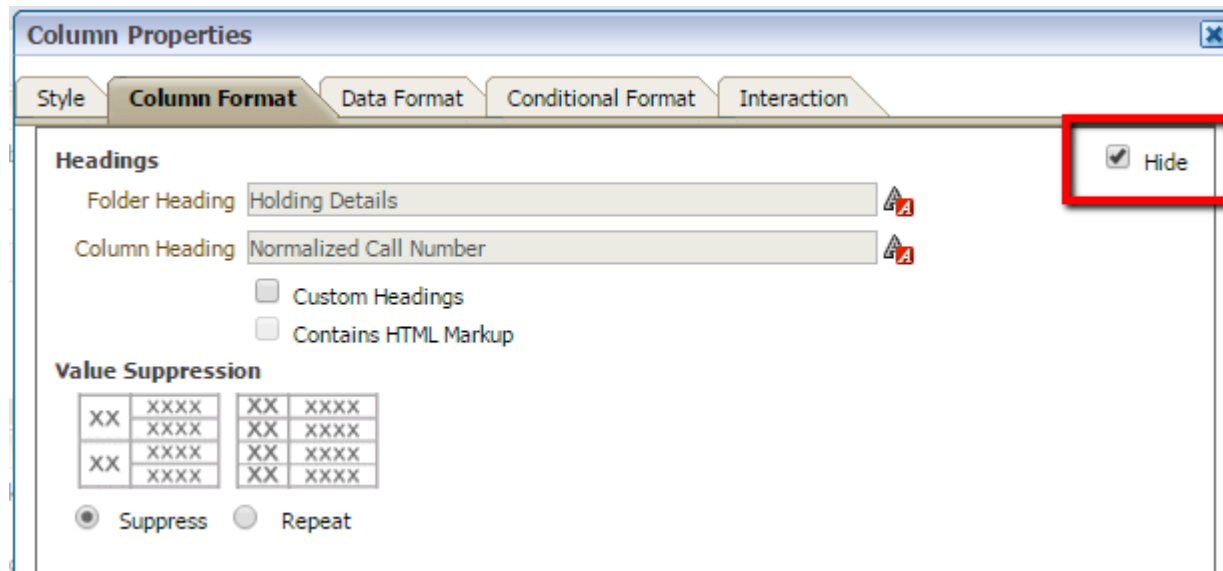
# Tip #6 – Rename a column using “Column Properties – Column Format” tab



Check the “Custom Headings” box, then change “Column Heading” text to be whatever you want



# Tip #7 – Hide a column using “Column Properties – Column Format”



## Tip #8 – Use % and \_ as wildcard characters with “Is LIKE” and “Is NOT LIKE” filters

% = multiple characters

\_ = single character

```
OR Permanent Call Number is LIKE (pattern match) PA352_ .%
OR Permanent Call Number is LIKE (pattern match) PA352_ .%
OR Permanent Call Number is LIKE (pattern match) PA353_ .%
OR Permanent Call Number is LIKE (pattern match) PA353_ .%
OR Permanent Call Number is LIKE (pattern match) PA354_ .%
OR Permanent Call Number is LIKE (pattern match) PA354_ .%
```

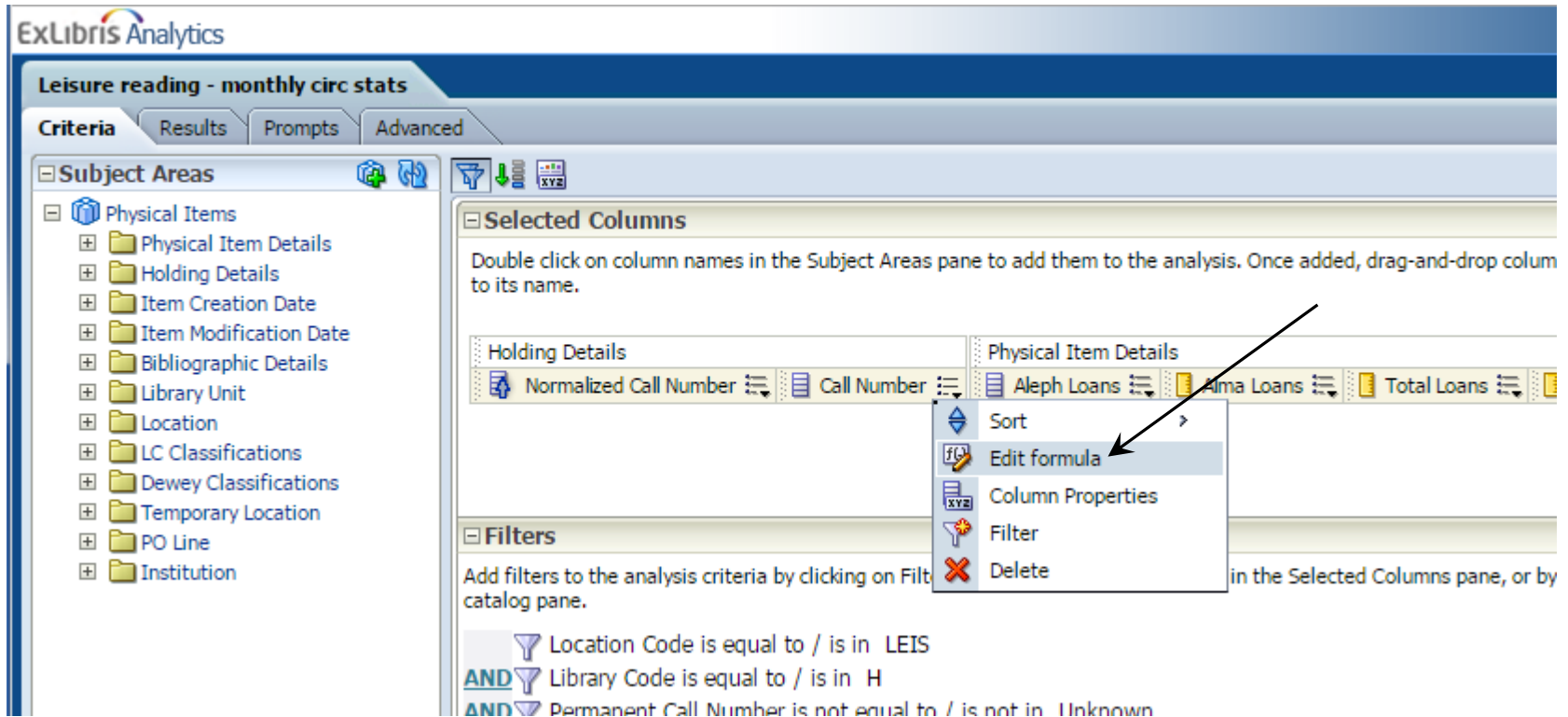
\*For call number range PA3520 – PA3549

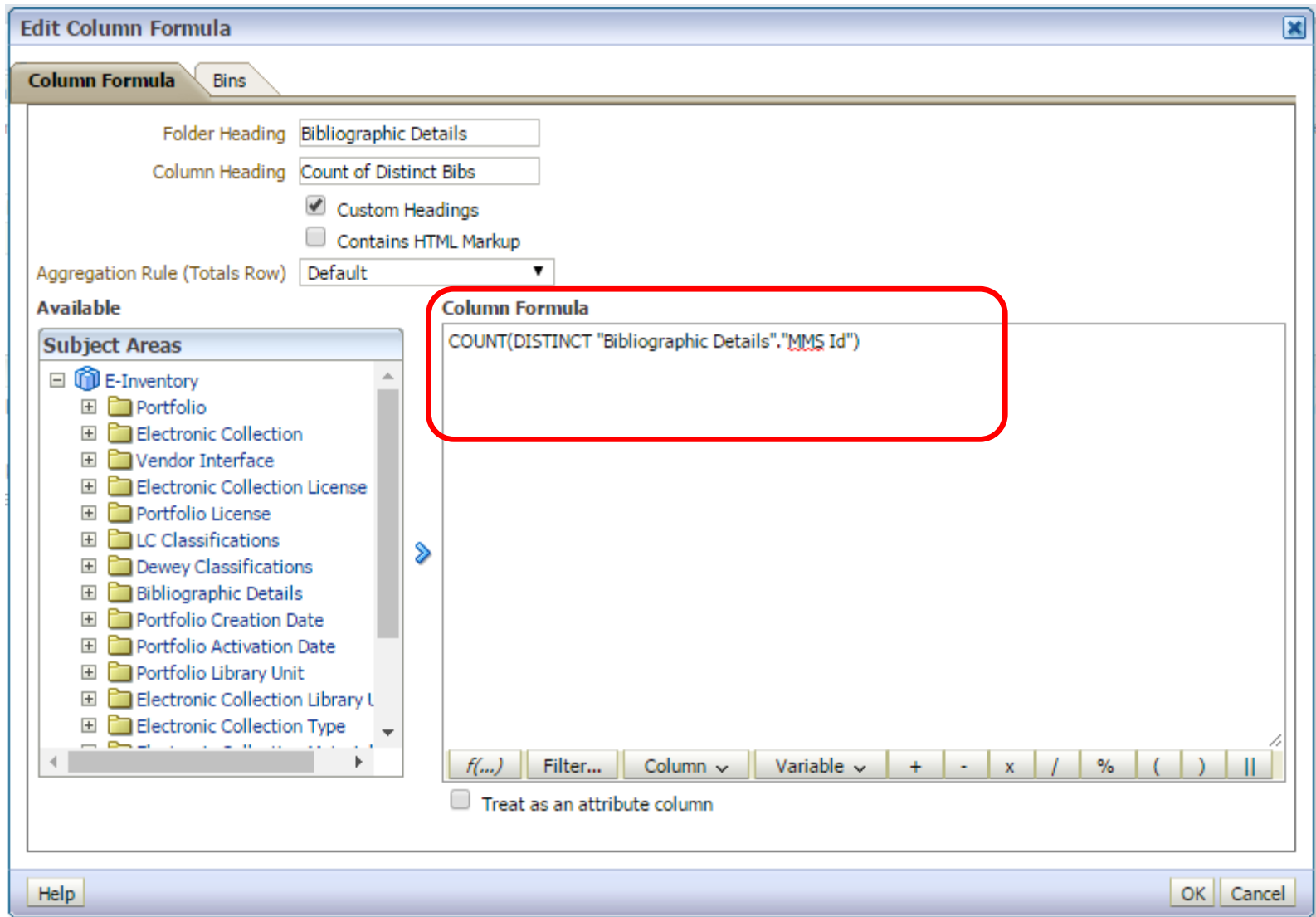
# Helpful Functions





# Functions are added to formulas, and provide more control over the query logic and data output





# SUBSTRING – extracts a portion of a string

```
SUBSTRING("dimension"."field" FROM n FOR n)
```

Example: Let's say we want to shorten the title field to the first 45 characters

*Laws related to Securities Commission, exchanges and holdings companies*

```
SUBSTRING("Bibliographic Details"."Title" FROM 1 FOR 45)
```

Result:

*Laws related to Securities Commission, exchan*

# COUNT – extracts a portion of a string

```
COUNT("dimension"."field")
```

```
COUNT(DISTINCT "dimension"."field")
```

Example: In certain cases (perhaps when there is not a measure field available), you might need to produce a count. We needed to produce a count of unique bib records for all our E-books. There was no measurement field available for this, so ...

```
COUNT(DISTINCT "Bibliographic Details"."MMS Id")
```

Result: Counts the distinct number of Bib records

# CONCATENATION – combine two or more strings into one

```
"dimension"."field" || "dimension"."field"
```

Example: Rather than have a column with User last name and a column with user first name, let's say we want to combine the two into one column in the format "lastname, firstname"

```
"User Details"."Last Name" || ', ' || "User Details"."First Name"
```

Result: Creates a single column with Lastname, Firstname



## TRIM – removes leading and trailing data from a string

```
TRIM(LEADING "trim_text" FROM "dimension"."field")  
TRIM(TRAILING "trim_text" FROM "dimension"."field")
```

Example: Let's say we want to remove the trailing forward slash from the title field

*Handbook of environmental sociology /*

```
TRIM(TRAILING '/' FROM "Bibliographic Details"."Title")
```

Result:

*Handbook of environmental sociology*

# REPLACE – replace some text with something else

```
REPLACE("dimension"."field",'some text','something else')
```

Example: We want to remove the subfields from this call number

*\$\$hPN1005.B5\$\$iH45 2006*

```
REPLACE(REPLACE("Loan Details"."Call Number",'$$h',''),'$$i','')
```

Result:

*PN1005.B5H45 2006*

## **LOCATE with SUBSTRING** – facilitates the extraction of data within a string

```
SUBSTRING("dimension"."field" FROM LOCATE('string to locate', "dimension"."field")+n FOR n)
```

Example: We have a data string, and want to extract only the 8-character date

*No. Loans: 003 | LastDateReturn: 20090915*

```
SUBSTRING("Physical Item Details"."Statistics Note 2" FROM LOCATE('LastDateReturn: ', "Physical Item Details"."Statistics Note 2")+16 FOR 8)
```

```
LOCATE('LastDateReturn: ', "Physical Item Details"."Statistics Note 2")+16
```

Result:

*20090915*

## LOCATE *with* SUBSTRING – cont.

How do we return that date in MM/DD/YYYY format?  
 Need to use three functions: SUBSTRING, LOCATE,  
 and CONCATENATION

```
SUBSTRING("Physical Item Details"."Statistics Note 2" FROM
LOCATE('LastDateReturn: ', "Physical Item Details"."Statistics Note
2")+20 FOR 2) || '/' ||
SUBSTRING("Physical Item Details"."Statistics Note 2" FROM
LOCATE('LastDateReturn: ', "Physical Item Details"."Statistics Note
2")+22 FOR 2) || '/' ||
SUBSTRING("Physical Item Details"."Statistics Note 2" FROM
LOCATE('LastDateReturn: ', "Physical Item Details"."Statistics Note
2")+16 FOR 4)
```

Result:

*09/15/2009*

**CASE** – uses when/then/else logic to perform data extraction

Example: We have a text string and only want to extract the number of loans from the string. If the field is null, then we want to extract “0”

*No. Loans: 003 | LastDateReturn: 20090915*

**CASE**

```
WHEN "Physical Item Details"."Statistics Note 2" IS NOT NULL
THEN CAST(SUBSTRING("Physical Item Details"."Statistics Note
2" FROM 12 FOR 3) as INT)
ELSE CAST('0' as INT)
END
```

Result:

3



**FILTER** – uses similar logic to CASE for performing data extraction, *but* requires a measurement value

```
FILTER("dimension"."measurement field" USING ("dimension"
."field" = 'value'))
```

Example: We want to extract the transaction amounts for all expenditure (spent) transactions, but if the field is null, then we want to extract “0”

```
IFNULL(FILTER("Fund Transactions"."Transaction Amount" USING
("Fund Transaction Details"."Transaction Item Type" =
'EXPENDITURE')), 0)
```

## ***Allocated Amount***

```
IFNULL(FILTER("Fund Transactions"."Transaction Amount" USING ("Fund Transaction  
Details"."Transaction Item Type" = 'ALLOCATION')), 0)
```

## ***Adjusted Allocation (includes allocations + transfers)***

```
IFNULL(FILTER("Fund Transactions"."Transaction Amount" USING ("Fund Transaction  
Details"."Transaction Item Type" = 'ALLOCATION')), 0) + IFNULL(FILTER("Fund  
Transactions"."Transaction Amount" USING ("Fund Transaction  
Details"."Transaction Item Type" = 'TRANSFER')), 0)
```

## ***Encumbered Amount***

```
IFNULL(FILTER("Fund Transactions"."Transaction Amount" USING ("Fund Transaction  
Details"."Transaction Item Type" = 'ENCUMBRANCE')), 0)
```

## ***Cash Balance***

```
IFNULL(FILTER("Fund Transactions"."Transaction Amount" USING ("Fund Transaction  
Details"."Transaction Item Type" = 'ALLOCATION')), 0) - IFNULL(FILTER("Fund  
Transactions"."Transaction Amount" USING ("Fund Transaction  
Details"."Transaction Item Type" = 'EXPENDITURE')), 0)
```

## ***Available Amount***

```
IFNULL(FILTER("Fund Transactions"."Transaction Amount" USING ("Fund Transaction  
Details"."Transaction Item Type" = 'ALLOCATION')), 0) - (IFNULL(FILTER("Fund  
Transactions"."Transaction Amount" USING ("Fund Transaction  
Details"."Transaction Item Type" = 'EXPENDITURE')), 0) + IFNULL(FILTER("Fund  
Transactions"."Transaction Amount" USING ("Fund Transaction  
Details"."Transaction Item Type" = 'ENCUMBRANCE')), 0))
```

Parent Fund Ledger Name	Root Fund	Fund Ledger Code	Allocated	Adjust. Alloc.	Spent	Encumbered	Cash Balance	Available	% Remaining
Approvals	AUSAPPR	AUSAPPR	\$616,300.00	\$616,300.00	\$545,855.08	\$2,349.32	\$70,444.92	\$68,095.60	11.4
	<b>AUSAPPR Total</b>		<b>\$616,300.00</b>	<b>\$616,300.00</b>	<b>\$545,855.08</b>	<b>\$2,349.32</b>	<b>\$70,444.92</b>	<b>\$68,095.60</b>	<b>11.4</b>
	AUSAPPR(JUVN)	AUSAPPR(JUVN)	\$9,500.00	\$9,500.00	\$5,618.35	\$0.00	\$3,881.65	\$3,881.65	40.9
	<b>AUSAPPR(JUVN) Total</b>		<b>\$9,500.00</b>	<b>\$9,500.00</b>	<b>\$5,618.35</b>	<b>\$0.00</b>	<b>\$3,881.65</b>	<b>\$3,881.65</b>	<b>40.9</b>
	AUSAPPR(OSCAT)	AUSAPPR(OSCAT)	\$50,000.00	\$50,000.00	\$31,499.80	\$8,099.36	\$18,500.20	\$10,400.84	37.0
	<b>AUSAPPR(OSCAT) Total</b>		<b>\$50,000.00</b>	<b>\$50,000.00</b>	<b>\$31,499.80</b>	<b>\$8,099.36</b>	<b>\$18,500.20</b>	<b>\$10,400.84</b>	<b>37.0</b>
<b>Approvals Total</b>			<b>\$675,800.00</b>	<b>\$675,800.00</b>	<b>\$582,973.23</b>	<b>\$10,448.68</b>	<b>\$92,826.77</b>	<b>\$82,378.09</b>	<b>13.7</b>
Humanities	AFAM	FAFAM	\$2,000.00	\$2,000.00	\$51.91	\$0.00	\$1,948.09	\$1,948.09	97.4
		PAFAM	\$961.16	\$961.16	\$668.59	\$292.57	\$292.57	\$0.00	30.4
	<b>AFAM Total</b>		<b>\$2,961.16</b>	<b>\$2,961.16</b>	<b>\$720.50</b>	<b>\$292.57</b>	<b>\$2,240.66</b>	<b>\$1,948.09</b>	<b>75.7</b>
	ARCH	FARCH	\$3,700.00	\$3,700.00	\$2,871.68	\$65.00	\$828.32	\$763.32	22.4
		PARCH	\$12,440.94	\$12,440.94	\$11,369.16	\$1,071.78	\$1,071.78	\$0.00	8.6
	<b>ARCH Total</b>		<b>\$16,140.94</b>	<b>\$16,140.94</b>	<b>\$14,240.84</b>	<b>\$1,136.78</b>	<b>\$1,900.10</b>	<b>\$763.32</b>	<b>11.8</b>
	ART	FART	\$4,500.00	\$4,500.00	\$3,012.35	\$1,051.35	\$1,487.65	\$436.30	33.1
		PART	\$5,762.20	\$5,762.20	\$4,247.78	\$1,514.42	\$1,514.42	\$0.00	26.3
	<b>ART Total</b>		<b>\$10,262.20</b>	<b>\$10,262.20</b>	<b>\$7,260.13</b>	<b>\$2,565.77</b>	<b>\$3,002.07</b>	<b>\$436.30</b>	<b>29.3</b>
	ASLL	FASLL	\$1,300.00	\$1,300.00	\$233.35	\$280.25	\$1,066.65	\$786.40	82.1
		PASLL	\$5,512.19	\$5,512.19	\$4,622.33	\$889.86	\$889.86	\$0.00	16.1
	<b>ASLL Total</b>		<b>\$6,812.19</b>	<b>\$6,812.19</b>	<b>\$4,855.68</b>	<b>\$1,170.11</b>	<b>\$1,956.51</b>	<b>\$786.40</b>	<b>28.7</b>
	CINE	FCINE	\$1,000.00	\$1,000.00	\$709.11	\$371.60	\$290.89	-\$80.71	29.1
		PCINE	\$895.62	\$895.62	\$748.72	\$146.90	\$146.90	\$0.00	16.4
	<b>CINE Total</b>		<b>\$1,895.62</b>	<b>\$1,895.62</b>	<b>\$1,457.83</b>	<b>\$518.50</b>	<b>\$437.79</b>	<b>-\$80.71</b>	<b>23.1</b>
	CLAS	FCLAS	\$3,000.00	\$3,000.00	\$3,007.83	\$0.00	-\$7.83	-\$7.83	-0.3
		PCLAS	\$9,111.80	\$9,111.80	\$7,315.55	\$1,796.25	\$1,796.25	\$0.00	19.7

## % Remaining

```

(IFNULL(FILTER("Fund Transactions"."Transaction Amount" USING ("Fund
Transaction Details"."Transaction Item Type" = 'ALLOCATION')), 0) -
IFNULL(FILTER("Fund Transactions"."Transaction Amount" USING ("Fund
Transaction Details"."Transaction Item Type" = 'EXPENDITURE')), 0)) /
IFNULL(FILTER("Fund Transactions"."Transaction Amount" USING ("Fund
Transaction Details"."Transaction Item Type" = 'ALLOCATION')), 0) * 100
    
```

## CASE vs. FILTER?

- Both functions are extremely helpful and have their place in Analytics reporting
- CASE can sometimes be notoriously slow for Oracle response time
- FILTER can be a better option than CASE in terms of response time, *but* FILTER requires a measurement value whereas CASE does not



# Trivia Time!

**Man 'O War won every race he was in except for one. What was the name of the horse he lost to?**

***Answer:* Upset**





A photograph of a beach with waves crashing onto the shore. The foreground is filled with dark sand and scattered rocks of various colors and sizes. The text "Data Sorting Tricks" is overlaid in the center of the image in a white, sans-serif font.

# Data Sorting Tricks

## Example #1

This dashboard report was created in the Fulfillment subject area. It shows # of loans by month and uses the following filter:

 Loan Date is between 07/01/2015 and 06/30/2016

We want the output to sort by chronological month. How do we accomplish this?

Loan Month	Loans
April	27,683
August	17,582
December	21,147
February	28,390
January	21,963
July	15,208
March	27,592
November	27,992
October	26,070
September	24,692

# Solution

Add a 3<sup>rd</sup> column to the report for “Loan.Date”. “Loan Fiscal Month Key”, do a “Sort Ascending” on the new column, and then hide the column

The screenshot shows a software interface with several panes and a dialog box. The 'Selected Columns' pane contains a table with the following columns:

Loan Date	Loan
Loan Month	Loan Fiscal Month Key

A context menu is open over the 'Loan Fiscal Month Key' column, with the 'Sort Ascending' option highlighted. The 'Column Properties' dialog box is open, showing the 'Hide' checkbox checked.

**Column Properties**

Style | **Column Format** | Data Format | Conditional Format | Interaction

**Headings**

Folder Heading: Loan Date

Column Heading: Loan Fiscal Month Key

Custom Headings

Contains HTML Markup

**Value Suppression**

XX	XXXX	XX	XXXX
XX	XXXX	XX	XXXX
XX	XXXX	XX	XXXX
XX	XXXX	XX	XXXX

Suppress  Repeat

Hide

## Example #1 (cont.)

The final results are sorted by chronological month according to the fiscal year.

Loan Month	Loans
July	15,208
August	17,582
September	24,692
October	26,070
November	27,992
December	21,147
January	21,963
February	28,390
March	27,592
April	27,683

# What if the fiscal year is not July – June, but rather October – September?

🔹 Loan Date is between 10/01/2015 and 09/30/2016

## Solution

Instead of Loan Fiscal Month Key, add a third column for “Loan Date”. “Loan Date”, use the formula below, then hide the column:

```
EVALUATE ('TO_CHAR (%1, %2)' AS CHARACTER (30), "Loan Date". "Loan Date", 'YYYY-MM')
```

Loan Month	Loans
October	26,070
November	27,992
December	21,147
January	21,963
February	28,390
March	27,592
April	30,464

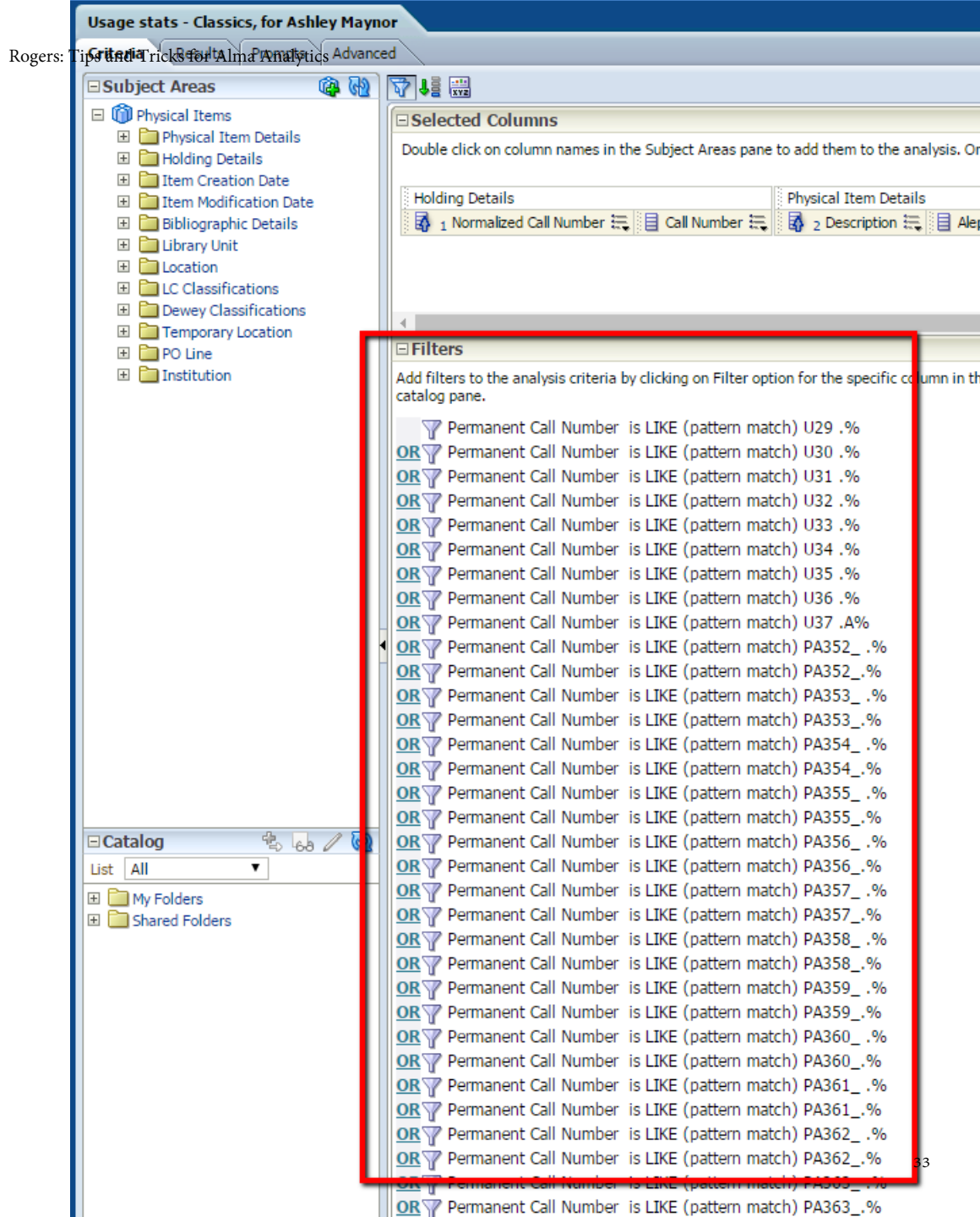


# Example #2

We need a report for a certain LC call number range, and sorted by call number. How do we accomplish this?

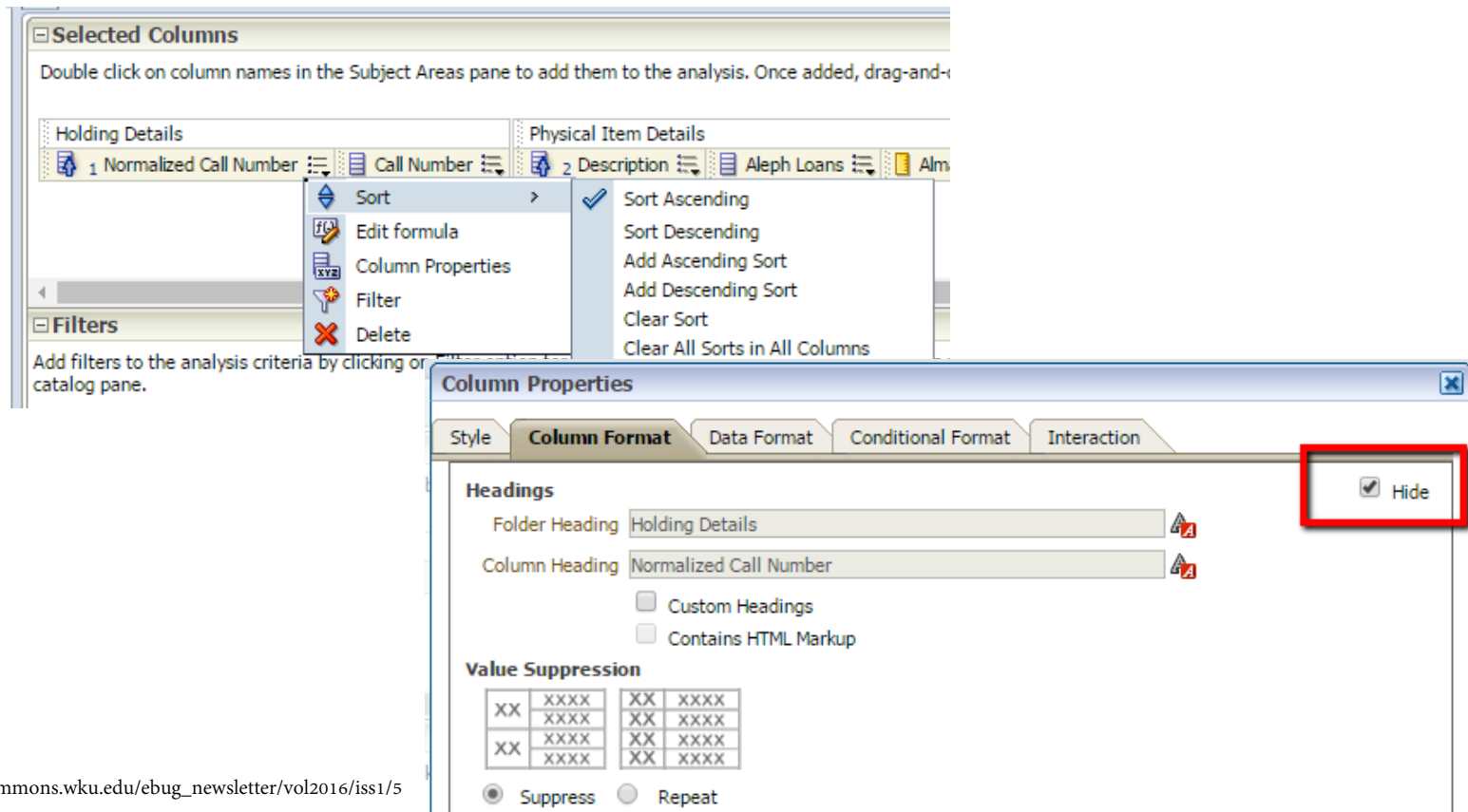
# Solution

To identify call number range, use Filter(s) on Permanent Call Number



## Example #2 (cont.)

Solution (cont.) – To sort the results by LC Call Number, add a column for Normalized Call Number, do a ‘Sort Ascending’ on the column, then Hide the column



## Example #2 (cont.)

Now the results appear in correct LC Call Number order. I'd also recommend doing a secondary 'Sort Ascending' on Description:

Call Number	Description	Barcode	Aleph Loans	Alma Loans	Total Loans	Num of Loans (In House + Not In House)	Num of Loans (In House)	Title
DG62 .B73		39029013111863	0	0	0	0	0	Breviarium urbis Romae antiquae /
DG62 .C53 1998		39029024535225	7	2	9	2	1	Rome : an Oxford archaeological guide to Rome /
DG62 .C6 1989		39029019312028	3	0	3	0	0	Guida archeologica di Roma /
DG62 .C623 2007		39029032532933	9	0	9	0	0	Rome and environs : an archaeological guide /
DG62 .J65		39029010510240	0	0	0	0	0	Classical Rome,
DG62 .K4		39029005239201	0	0	0	0	0	Formae urbis Romae antiquae.
DG62 .T68		39029005233451	1	0	1	0	0	Qui Roma,
DG62.5 .D97 2010		39029033212055	1	0	1	0	0	Rome : a living portrait of an ancient city /
DG62.5 .F477 1996		39029022599215	0	0	0	0	0	Onofrio Panvinio et les antiquités romaines /
DG62.5.L23 Z673 2008		39029033068937	4	0	4	0	0	The virtual tourist in Renaissance Rome : printing and collecting the Speculum romanae magnificentiae /
DG62.5 .R657 1725a		39029019142565	0	0	0	0	0	Roma ampliata, e rinovata : o sia, nuova descrizione della moderna città di Roma, e di tutti gli edifizj notabili, che sono in essa ...
DG63 .A57 2000		39029028925919	13	0	13	0	0	Ancient Rome : the archaeology of the eternal city /
DG63 .A75 1972	vol. 1	39029005241744	1	0	1	0	0	Roma subterranea novissima, in qua post Antonium Bosium antesignanum, Jo: Severanum Congreg. Oratorii presbyterum, et celebriores antiqua Christianorum et praecipue martyrum coemeteria, tituli, monimenta, epitaphia, inscriptiones, ac nobiliora sancti sex libris distincta illustrantur et quamplurimae res ecclesiasticae iconibus graphice describuntur, ac multiplici tum sacra, tum profana declarantur.
DG63 .A75 1972	vol. 2	39029005241751	1	0	1	0	0	Roma subterranea novissima, in qua post Antonium Bosium antesignanum, Jo: Severanum Congreg. Oratorii presbyterum, et celebriores antiqua Christianorum et praecipue martyrum coemeteria, tituli, monimenta, epitaphia, inscriptiones, ac nobiliora sancti sex libris distincta illustrantur et quamplurimae res ecclesiasticae iconibus graphice describuntur, ac multiplici tum sacra, tum profana declarantur.
DG63 .A85 2012	v.1	39029038865782	1	2	3	2	1	Atlante di Roma antica : biografia e ritratti della città /
DG63 .A85 2012	v.2	39029038865881	1	2	3	2	1	Atlante di Roma antica : biografia e ritratti della città /
DG63 .A93 2000		39029029728189	6	1	7	1	0	Aurea Roma : dalla città pagana alla città cristiana /



# MINUS and UNION Queries



## **MINUS queries ...**

- Subtract the results of one query from another
- Require that the columns selected in both queries must be identical

## **UNION queries ...**

- Combine the results of two separate queries into one results set
- Require that the columns selected in both queries must be identical
- Exclude duplicate rows (although, a UNION ALL query does include duplicate rows)

A note of caution ... MINUS and UNION are powerful operators, but it can be tricky to build these queries. Experiment with a known subset of data first in order to get the syntax correct.



## Example of MINUS query

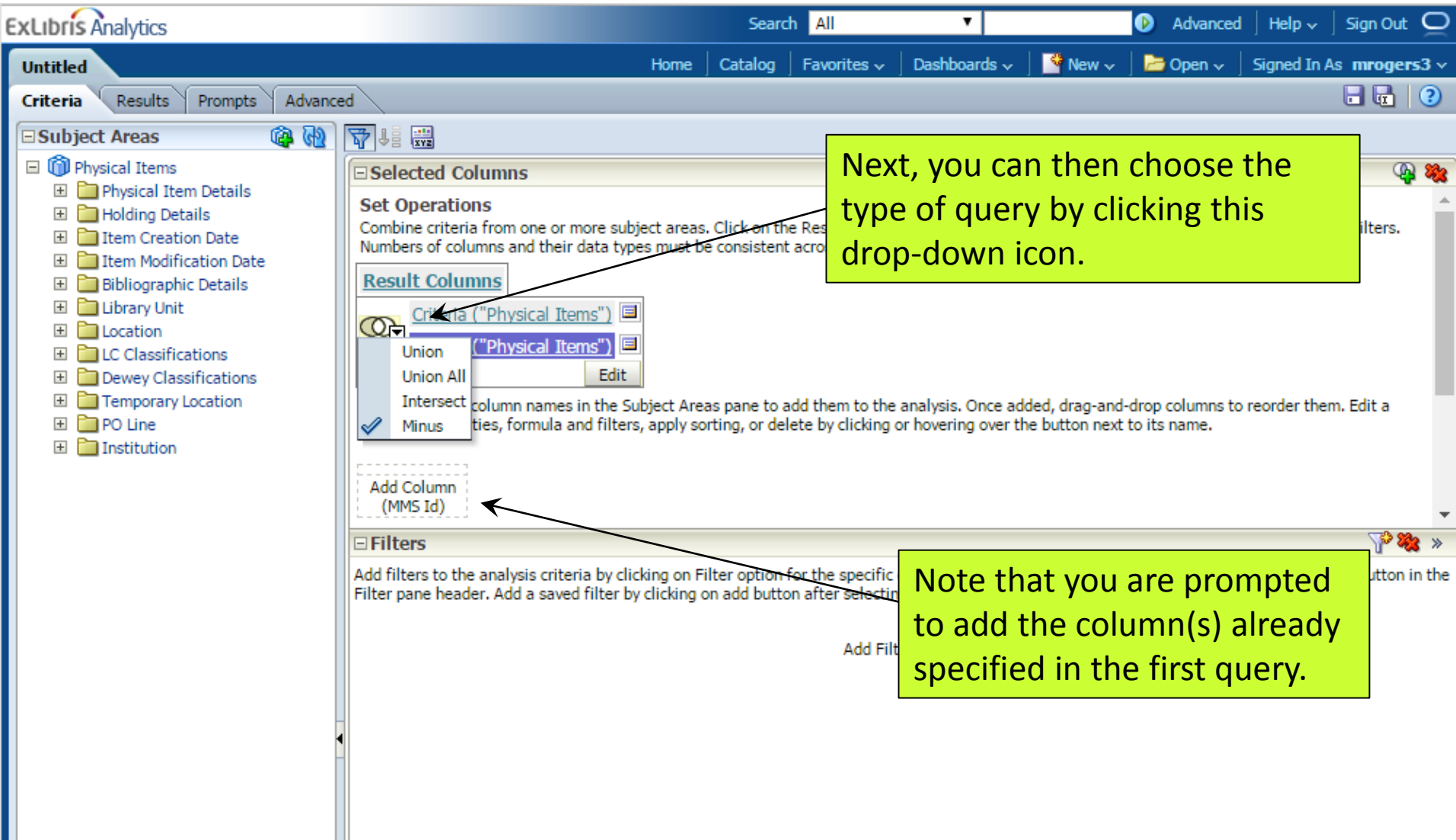
We have Leisure reading books held at both Main and Ag-VetMed, with some titles having copies at both locations. We want a report of those titles held *only* at AgVetMed.

We can accomplish this with a MINUS query.

The screenshot shows the ExLibris Analytics interface. The top navigation bar includes a search field, 'Advanced' button, 'Help' dropdown, and 'Sign Out' button. Below this is a menu bar with 'Home', 'Catalog', 'Favorites', 'Dashboards', 'New', 'Open', and 'Signed In As mrogers3'. The main workspace is divided into three panels: 'Subject Areas' on the left, 'Selected Columns' in the center, and 'Filters' at the bottom. The 'Subject Areas' panel shows a tree view with 'Physical Items' and 'Bibliographic Details' expanded. The 'Selected Columns' panel contains a table with 'Bibliographic Details' and 'MMS Id' columns. The 'Filters' panel is currently empty. A red arrow points from the right side of the 'Selected Columns' panel to a green '+' icon in the top right corner of the panel, which is circled in red. A yellow text box with black text is overlaid on the bottom right of the interface, stating: 'Both MINUS and UNION queries are created by clicking the green “+” icon. Click the icon after you have started your first query'.

The screenshot shows the ExLibris Analytics interface. The 'Criteria' pane is active, displaying a tree view of 'Subject Areas' on the left. Under 'Bibliographic Details', 'MMS Id' is selected. The 'Selected Columns' pane shows 'Bibliographic Details' and 'MMS Id'. The 'Filters' pane is empty. A 'Select Subject Area' dialog box is open on the right, listing various subject areas like 'Borrowing Requests', 'Cost Usage', etc. A yellow callout box contains the following text:

You will be prompted to select a subject area for the second query. Note that you can use a different subject area, but the column(s) **must** be the same as the first query.



Next, you can then choose the type of query by clicking this drop-down icon.

Note that you are prompted to add the column(s) already specified in the first query.



1<sup>st</sup> Query Rogers: Tips and Tricks for Alma Analytics

**Result Columns**

Criteria ("Physical Items")

Criteria ("Physical Items")

Edit

Double click on column names in the Subject Areas pane to add them to the analysis. Once added, drag-and-drop columns to reorder them. Edit a column's properties, formula and filters, apply sorting, or delete by clicking or hovering over the button next to its name.

**Bibliographic Details**

MMS Id

**Filters**

Add filters to the analysis criteria by clicking on Filter option for the specific column in the Selected Columns pane, or by clicking on the filter button in the Filter pane header. Add a saved filter by clicking on add button after selecting its name in the catalog pane.

Material Type is equal to / is in Book

AND Location Code is equal to / is in LEIS

AND Library Code is equal to / is in AGVET

Add filters to each query. Note how you can structure the filters in the second query to exclude everything needed in order to only retrieve the results you want (Leisure Reading Books from AGVET only)

# MINUS

2<sup>nd</sup> Query

**Result Columns**

Criteria ("Physical Items")

Criteria ("Physical Items")

Edit

Double click on column names in the Subject Areas pane to add them to the analysis. Once added, drag-and-drop columns to reorder them. Edit a column's properties, formula and filters, apply sorting, or delete by clicking or hovering over the button next to its name.

**Bibliographic Details**

MMS Id

**Filters**

Add filters to the analysis criteria by clicking on Filter option for the specific column in the Selected Columns pane, or by clicking on the filter button in the Filter pane header. Add a saved filter by clicking on add button after selecting its name in the catalog pane.

Material Type is equal to / is in Book

AND Location Code is equal to / is in LEIS

AND Library Code is equal to / is in H

## **Results:**

- 319 Bib records contain an Ag-VetMed Leisure reading book
- 103 of these Bib records also contain a Leisure reading book for the Main Library
- So, the MINUS query returns a total of 216 Bib records containing only a Leisure reading book at Ag-VetMed

## Example of UNION query

Our Library Administration wants a report of the top 10 encumbrances, ranked from highest to lowest, along with a total of all the remaining encumbrances.

How do we accomplish this?

Two separate queries  
combined into one  
results set, with Grand  
Total at bottom

Top 10 Encumbrances (E016010) ▼

Open in a new window

**Top 10 encumbrances (E016010) plus everything else**

Item Description	Encumbered
Springer, Wiley, Elsevier, Academic Press, Springer	\$146,193.00
Scientific American, Chemical Society, Chemical Abstracts Service	\$116,490.00
Springer, Wiley, Elsevier, Academic Press, Springer	\$65,000.00
CRUISE FOR OPERATIONAL SUPPORT - UNIVERSITY	\$53,776.00
Faculty, Electric	\$41,839.00
Faculty, Emeritus International	\$31,005.00
International University, USA	\$27,891.40
Donor Club, University of Kentucky	\$23,200.00
ARTS, ARTS	\$22,590.00
CONTRACTS, UNIVERSITY OF KY, UNIVERSITY OF KY, UNIVERSITY OF KY	\$20,446.11
***Everything Else	\$730,554.90
<b>Grand Total</b>	<b>\$1,278,985.41</b>

## Same steps as creating a MINUS query...

- Create the 1<sup>st</sup> query
- Use '+' symbol to add another query/subject area
- Use drop-down to define that the query is a UNION query
- Add the appropriate columns to each query (remember – they must be the same columns in both queries)
- Add the appropriate filters to both queries

- ⊕ Fiscal Period
- ⊕ Library Unit
- ⊕ Reporting Code
- ⊕ LC Classifications
- ⊕ Dewey Classifications
- ⊕ Fund Ledger
- ⊕ Vendor
- ⊕ PO Line Type
- ⊕ PO Line
- ⊕ Invoice Line
- ⊕ Bibliographic Details
- ⊕ Periods Outer
- ⊕ Institution

**Result Columns**

Criteria ("Funds Expenditure")

Criteria ("Funds Expenditure")

Edit

1st query

Double click on column names in the Subject Areas pane to add them to the analysis. Once added, drag-and-drop columns to reorder them. Edit a column's properties, formula and filters, apply sorting, or delete by clicking or hovering over the button next to its name.

PO Line      Fund Transactions

Item Description      Encumbered      Rank

**Filters**

Add filters to the analysis criteria by clicking on Filter option for the specific column in the Selected Columns pane, or by clicking on the filter button in the Filter pane header. Add a saved filter by clicking on add button after selecting its name in the catalog pane.

▼ Fiscal Period Description is equal to / is in FY-2016

AND ▼ External Id is equal to / is in E016010

AND ▼ IFNULL( FILTER(Transaction Amou... is in top 10

AND ▼ Fund Type is equal to / is in Allocated fund

# UNION

- ⊕ Fiscal Period
- ⊕ Library Unit
- ⊕ Reporting Code
- ⊕ LC Classifications
- ⊕ Dewey Classifications
- ⊕ Fund Ledger
- ⊕ Vendor
- ⊕ PO Line Type
- ⊕ PO Line
- ⊕ Invoice Line
- ⊕ Bibliographic Details
- ⊕ Periods Outer
- ⊕ Institution

**Result Columns**

Criteria ("Funds Expenditure")

Criteria ("Funds Expenditure")

Edit

2nd query

Double click on column names in the Subject Areas pane to add them to the analysis. Once added, drag-and-drop columns to reorder them. Edit a column's properties, formula and filters, apply sorting, or delete by clicking or hovering over the button next to its name.

PO Line      Fund Transactions

Case WHEN NOT Item Description IS N...      Encumbered      Rank

**Filters**

Add filters to the analysis criteria by clicking on Filter option for the specific column in the Selected Columns pane, or by clicking on the filter button in the Filter pane header. Add a saved filter by clicking on add button after selecting its name in the catalog pane.

▼ Fiscal Period Description is equal to / is in FY-2016

AND ▼ External Id is equal to / is in E016010

AND ▼ Fund Type is equal to / is in Allocated fund

AND ▼ IFNULL( FILTER(Transaction Amou... is not equal to / is not in 0

AND ▼ PO Line Reference is not equal to any PO Line Reference in Top 10 encumbrances (E016010) - POLS



# Both of these queries can be found here:

## Shared folders / Community / Reports / UTennessee

The screenshot shows the Alma Analytics Catalog interface. The left sidebar displays a folder structure under 'Shared Folders' > 'Community' > 'Reports'. The main area shows a list of reports, with three reports highlighted by a red box:

- UTennessee - Count of both historical Aleph loans and Alma loans** | Last Modified 5/2/2016 3:16:57 PM | Owner 1763216990002311\_2311\_D  
This report counts both the historical loans from Aleph (stored in Statistics Note 2) and the more current Alma loans. Note that there is a filter specifying at least one Alma loan, indicating recent use since December 2014. A third column is added which totals both Aleph and Alma loans. To customize for your site, change the filter on Library, and also tweak the call numbers if necessary. (Mike Rogers, 2015/09/21)  
Open | Edit | More ▾
- UTennessee - ELUNA 2016, MINUS example** | Last Modified 5/2/2016 3:20:26 PM | Owner 1763216990002311\_2311\_D  
This query extracts books in our Leisure reading collection uniquely held by AgVetMed. It utilizes the MINUS operator to subtract the results of one query from another query. (Mike Rogers, 2016/05/02)  
Open | Edit | More ▾
- UTennessee - ELUNA 2016, UNION example** | Last Modified 5/2/2016 3:42:10 PM | Owner 1763216990002311\_2311\_D  
This report lists the top 10 encumbrances (based on a ranking of the encumbrance transaction amount) for everything with a Fund External ID of E016010. It also uses the results from another report in order to identify the "Everything Else" component of the query. (Mike, 2015/10/27)  
Open | Edit | More ▾
- UTennessee - ELUNA 2016, UNION example pt.2** | Last Modified 5/2/2016 3:44:16 PM | Owner 1763216990002311\_2311\_D  
This report finds the top 10 POL encumbrances paid from funds having an External ID of E016010. The output of this query is used by the main "UNION example" report. (Mike, 2015/10/27)  
Open | Edit | More ▾

Other reports visible in the list include:

- UTennessee - Example of a library fund report with various columns** | Last Modified 5/2/2016 3:16:44 PM | Owner 1763216990002311\_2311\_D  
This report is an example of how you can configure a library fund report. We use this type of report as a means of monitoring certain ledger items throughout the year. To customize for your site, you can change the filters as needed. The report provides a breakdown by ledger and fund and also displays these columns: allocation, adjusted allocation, encumbered, spent, cash balance, available, and percent remaining. You can view the formulas for each column to see how they are being created. (Mike Rogers, 2015/12/03)  
Open | Edit | More ▾
- UTennessee - Example of a report to find users having 2 or more barcodes PT. 2** | Last Modified 5/2/2016 3:16:35 PM | Owner 1763216990002311\_2311\_D  
This report finds Alma users having two or more barcodes. It uses another report (PT. 1) as the basis for identifying these patrons. This second report shows the actual barcodes of the patrons, while the first report only shows a count of the number of barcodes per patron if that

*Thank you for your attention!  
Any questions?*



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