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Finance Activity Hub Training
<u>Intermediate</u> Level

UC San Diego

IBM Cognos Analytics 11.1 R7

Trainer: Shannon Brancard, Consulting Manager
Shannon.brancard@plantemoran.com

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These materials were customized for the University of California San Diego on IBM Cognos Analytics V 11.1 R7 (LTS).

Table of Contents

Chapter 1—Advanced Filters

In Chapter 1 we move away from adding Custom based filters to our reports and learn how to write expressions for Advanced filters. We also learn about Combined filters.

Basic / combined filters
- Uses the Cognos wizard and can only be based on fields that exist in the query.
- Once created, can only be edited via the Cognos wizard.
- Cannot be used on calculated fields.

Advanced filters
- Uses hand coding
- Can be used on calculated fields

- Can be based on any field in the **source (the package)**
  Use a field from the package to reduce the size and complexity of your query or when you don't want to use an edited field.

Expression Definition:

[UCSDGeneralLedger].[Accounting Period].[Fiscal Accounting Period] = 202007

- Or, based on any data items in the **query**
  Use a field from the query when you defined the expression for the field.

Expression Definition:

[Debit] > 0

- Or, based on any field in any **query in the report** --or a **Sub-query**.
  Use a field from another query in the report when you want to filter the current query based on the results of the second query. This topic is covered in Advanced training

Expression Definition:

[Account Chartstring] in ([POETAF Lookup sub-query].[Account Chartstring])

- Or, based on any Global Parameter or other parameter in the report 〔(x)〕
  - ○ Use a Global Parameter when you want selections made by the user to drive filters across multiple reports.
  - ○ Use a parameter from the report when you want selections made by the user to drive the filter.

Advanced filters utilize Expressions:

Tips & tricks for understanding the detail filter expression window:

- Click the **Functions** [icon] tab for a wide variety of functions you can use in expressions
- When you click a Function or other item under Available components, Tips for the functions you are using appear in the **Information** pane:

ⓘ Information:

expression1 in (expression_list)
Determines if "expression1" exists in a given list of expressions.

Tips   Errors
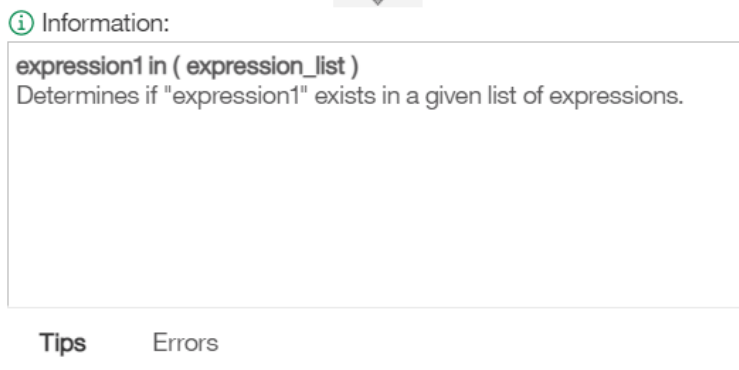
- **Always click Validate** to check your syntax

- Lookup **single values** for the field you have selected from the package—helpful when you don't remember the capitalization or data type of the field

- Lookup **multiple values** for the fields you have selected from the package

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Common syntax "cheat sheet" for advanced filter expressions

The syntax used in a filter depends on the type of data in the field.

STRING	DATE	NUMBER
=	=	=
<>	<>	<>
in ( )	<=	<=
not in ( )	>=	>=
Like %	between	between

Basic (Custom based) filters and Combined filters can be recreated as Advanced filters.

However, please note that the filter wizard (for Custom based filters) uses *includes* and *contains* and trying to replicate that by hand typing *includes* and *contains* into an advanced filter expression may cause errors.

Advanced Filters

1. In the **Navigation Panel** click **New** ➕ and **Report** 📋 .
2. Double-click to select the **1 column** template option.
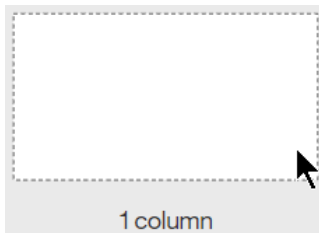
1 column

3. In the Insertable objects pane click **Select a source**.
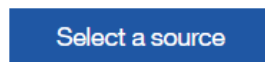
Select a source

4. Navigate to **Team content** > **Financial Activity Hub** folder > **Financial Activity Hub Analytics Packages** folder > click the 🗔 **FINAH-UCSDGeneralLedger-View** package—it opens like an empty folder.
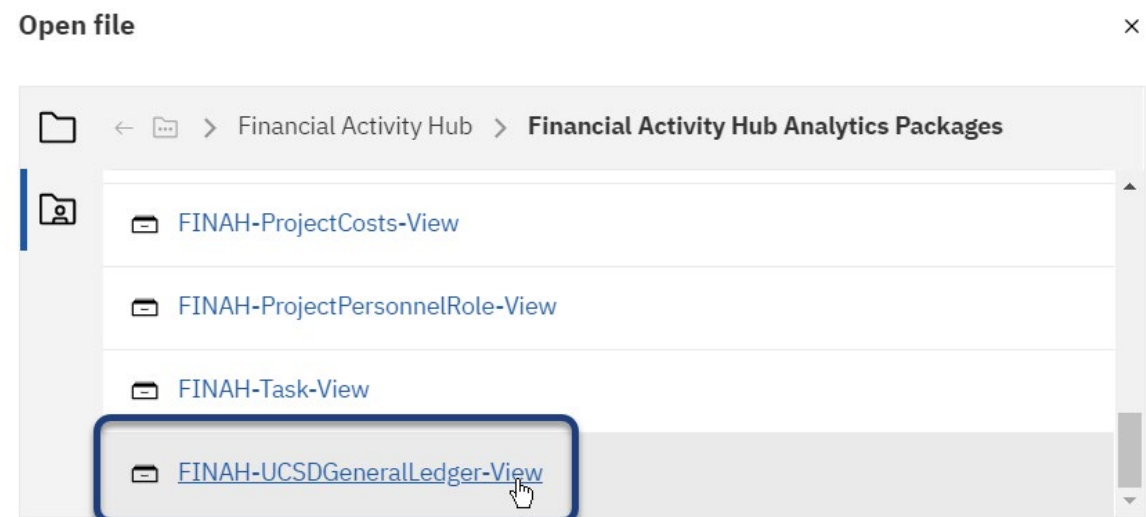
5. Click **Open**.

6. In the middle of the canvas click **Add** ⊕ and in the circle menu click **List**.

List 🖑
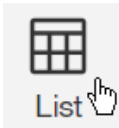
7. On the Object and query name window click OK.

Object and query name   ✕

Name:

List1

Query Name:

Query1   ⌄

☑ Show this dialog in the future

OK 🖑   Cancel

8. In the Application toolbar click **Save**. Click **My content** ▢ > **Cognos Training-FINAH** folder and save the report specification as **Advanced filters**. Click Save.

Add data items to the report:

9. Under Insertable Objects expand the **UCSD General Ledger** namespace ⛁ >
   Dimensions 🗀 folder > **Accounting Period** ⊞ query subject double-click **Fiscal
   Accounting Period** to add it to the List report.

Insertable objects

⌕ Find

∨ FINAH-UCSDGeneralLedger-View
   ∨ UCSDGeneralLedger
     ∨ 🗀 Dimensions
       > ⊞ Account
       ∨ ⊞ Accounting Period
           # Calendar Day (DDD)
           abc Calendar Month
           # Calendar Month (MM)
           # Calendar Quarter (Q)
           # Calendar Week (WW)
           abc Calendar Year
           # Calendar Year (YYYY)
           # Fiscal Accounting Period
           abc Fiscal Day (DDD)
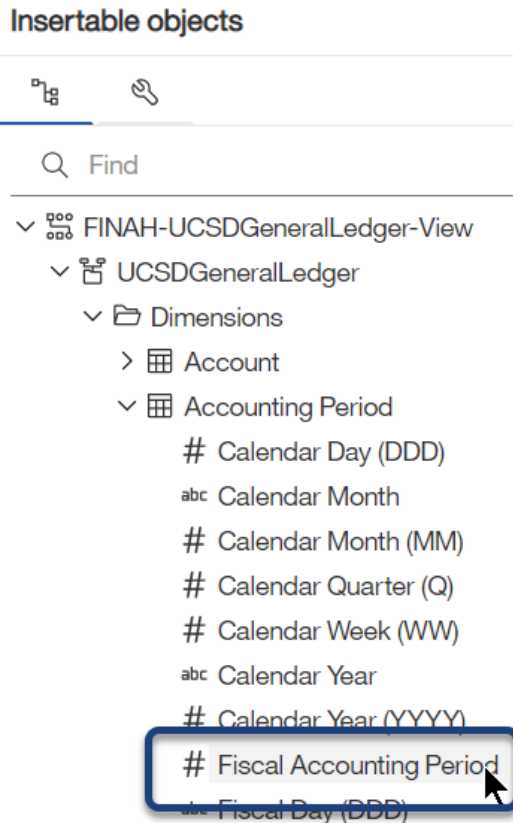
10. From the **Entity** query subject double-click **Entity**.
11. From the **Fund** query subject double-click **Fund**.
12. From the **Account** query subject double-click **Account**.
13. From the **Journal** query subject Ctrl-click **Journal Source**, **Journal Category** and
    Journal Header.

14. Right-click one of the selections and click **Insert**.
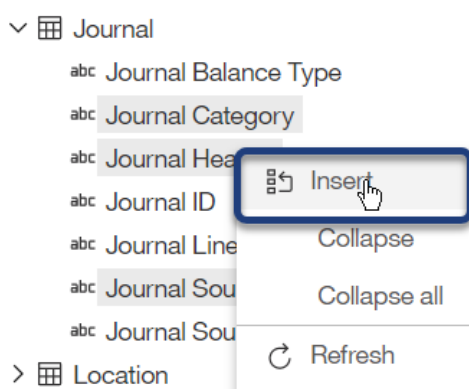
15. From the **General Ledger** query subject double-click **Transaction Description** and **Transaction Entry (C/D)**.
16. From the **General Ledger Dates** query subject drag **Transaction Date** into the List and *drop it between* Transaction Description and Transaction Entry (C/D).

17. Scroll to the bottom of the package, expand the **Measures** folder and the **General Ledger Measures** query subject and double-click **Transaction Amount** to add it the end of the List report.

The List report looks like this:

18. In the Application toolbar click **Save** (Advanced filters).

In the next steps we add Advanced filters on Fiscal Accounting Period, Entity Code, Fund Code and Account Code.

19. Click inside any column in the List report and in the OnDemand toolbar click **Filters** ▽ and **Edit filters**:

20. In the Filters – Query 1 window click **Add** ⊕.

▽ Filters - Query1

Detail Filters   Summary Filters

⊕ ⊖ ✎
Add
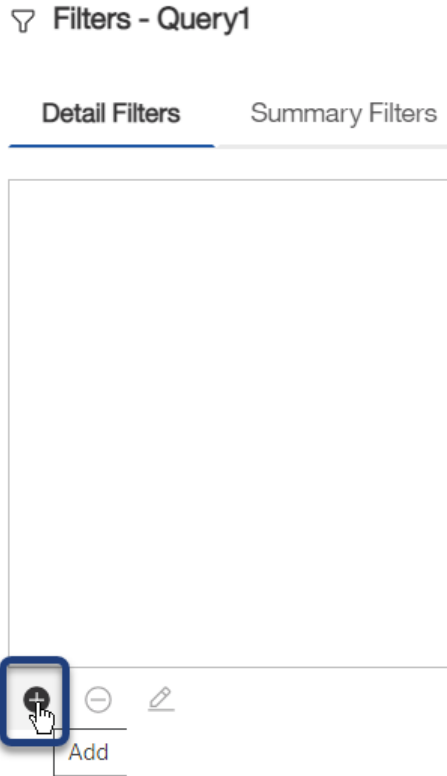
21. In the Create filter window click **Advanced**. Click OK.

Create filter   ✕

◯ Custom based on data item

⌄

◯ Combined

◉ Advanced

OK   Cancel
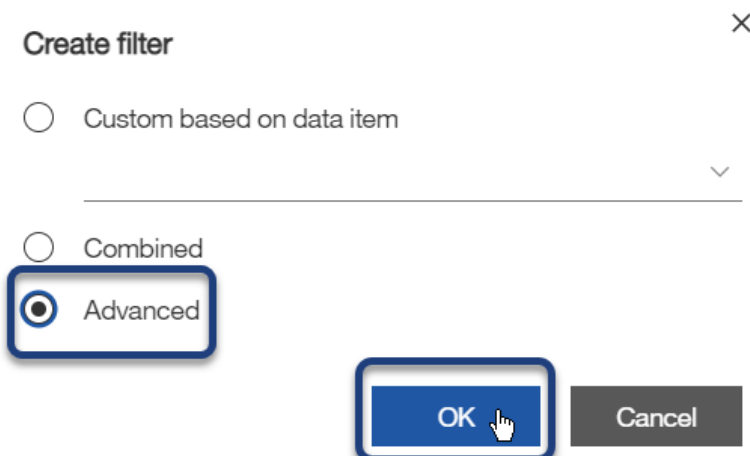
The Detail filter expression – Query 1 window opens. We use expressions throughout Cognos—and this training.
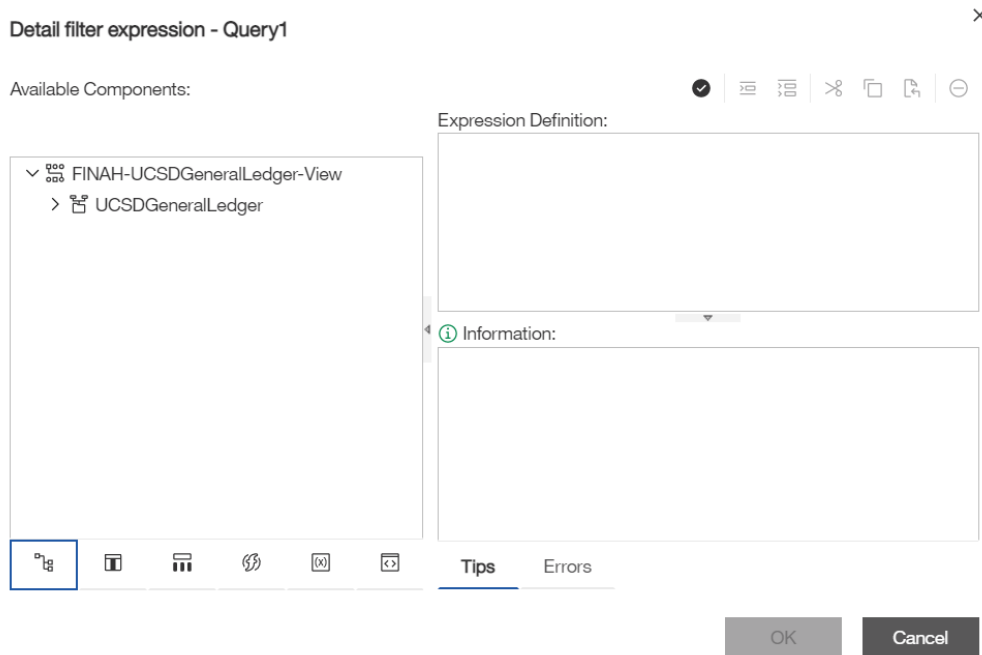
22. From the **Source** ⌘ tab expand the **UCSD General Ledger** ⛁ namespace > **Dimensions** 🗀 folder > **Accounting Period** ⊞ query subject.
23. *Double-click* **Fiscal Accounting Period** and define the following expression— *as your instructor demonstrates you only type the information that appears after the last bracket!*

Expression Definition:

[UCSDGeneralLedger].[Accounting Period].[Fiscal Accounting Period] = 202009

24. Click **Validate** ✓ .

Your instructor explains why, when we validate expressions, we must select a data connection.

25. Click the radio button to select **HANA-QA**. Click OK.

26. Review the Information pane—you want to see No errors. Click OK.

ⓘ Information:

No errors.

Tips   **Errors**

But, you 100% will at some point see Errors—and at the end of this lesson your instructor spends time talking about reading and resolving error messages.

The filter expression appears in the list of Detail Filters.

Detail Filters   Summary Filters

▽ [UCSDGeneralLedger].[Accounting Period].[Fiscal Accounti
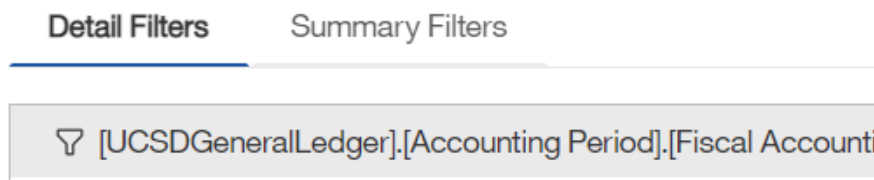
27. Click **Add** ⊕ and in the Create filter window click the radio button for **Advanced**. Click OK.

28. From the **Source** ⬚ tab expand the **UCSD General Ledger** ⬚ namespace > **Dimensions** ◻ folder > **Entity** ⊞ query subject, double-click **Entity Code** and type =:

Expression Definition:
[UCSDGeneralLedger].[Entity].[Entity Code] =
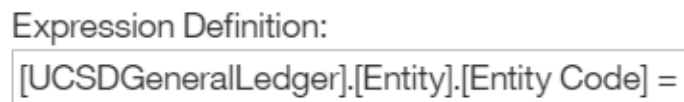
Assume you are not sure how to write the required filter syntax for a data item.

29. With the **Entity Code** data item selected click **Select value** ⊡ .

Detail filter expression - Query1

Available Components:

✓ ⊞ Entity

abc Entity

abc Entity Code

abc Entity Code and Name
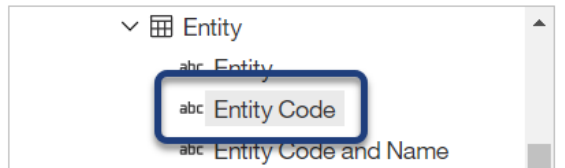
Expression Definition:

[UCSDGeneralLedger].[Entity].[Entity Code] =

Select value

30. From the list of values click **16110**. Click **Insert**.

Select value   ✕

Find   Search   ⌄

Values: ⟃

00000

16110

16120

16130

16143

16144

16150

Insert   Close
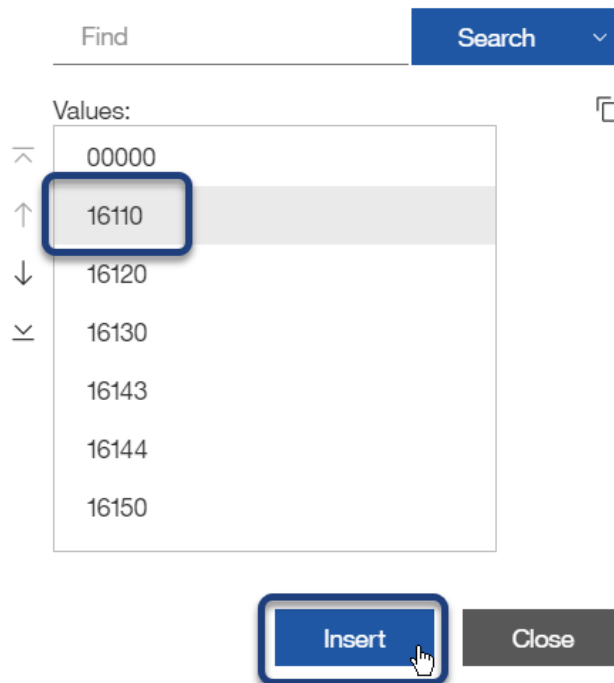
Notice this action inserts the value we need, and in the correct syntax that Cognos requires. The single quotes used here are key to ensure the report returns the data we expect to see.

Expression Definition:

[UCSDGeneralLedger].[Entity].[Entity Code] = '16110'

Recall that Entity Code 16110 = Academic Affairs.

31. Click **Validate** ✔ and review the Information pane. Click OK.

32. Click **Add** ⊕ and in the Create filter window click the radio button for **Advanced**. Click OK.

33. From Available Components and the **Source** ⧉ tab expand the **UCSD General Ledger** ⧉ namespace > **Dimensions** ⧉ folder > **Fund** ⊞ query subject double-click **Fund Code** and define the following expression:

Expression Definition:
[UCSDGeneralLedger].[Fund].[Fund Code] = '20000'

Recall that Fund Code 20000 = Federal Contracts and Grants.

34. Click **Validate** ✔ and review the Information pane. Click OK.

In the next example we add a filter on multiple Account Codes.

35. Click **Add** ⊕ and in the Create filter window click the radio button for **Advanced**. Click OK.

36. From the **Source** ⧉ tab expand the **UCSD General Ledger** ⧉ namespace > **Dimensions** ⧉ folder > **Account** ⊞ query subject double-click **Account Code** and type: in.

Expression Definition:
[UCSDGeneralLedger].[Account].[Account Code] in

37. With the **Account Code** data item selected click **Select multiple values**:

38. In the Find field type (or copy and paste from this book): 238899 522201 522400 and click **Search**.

Select multiple values

238899 522201 522400	Search ⌄

39. Under the Values pane click **Select all** and click → to add them to the Selected values pane. Click **Insert**.
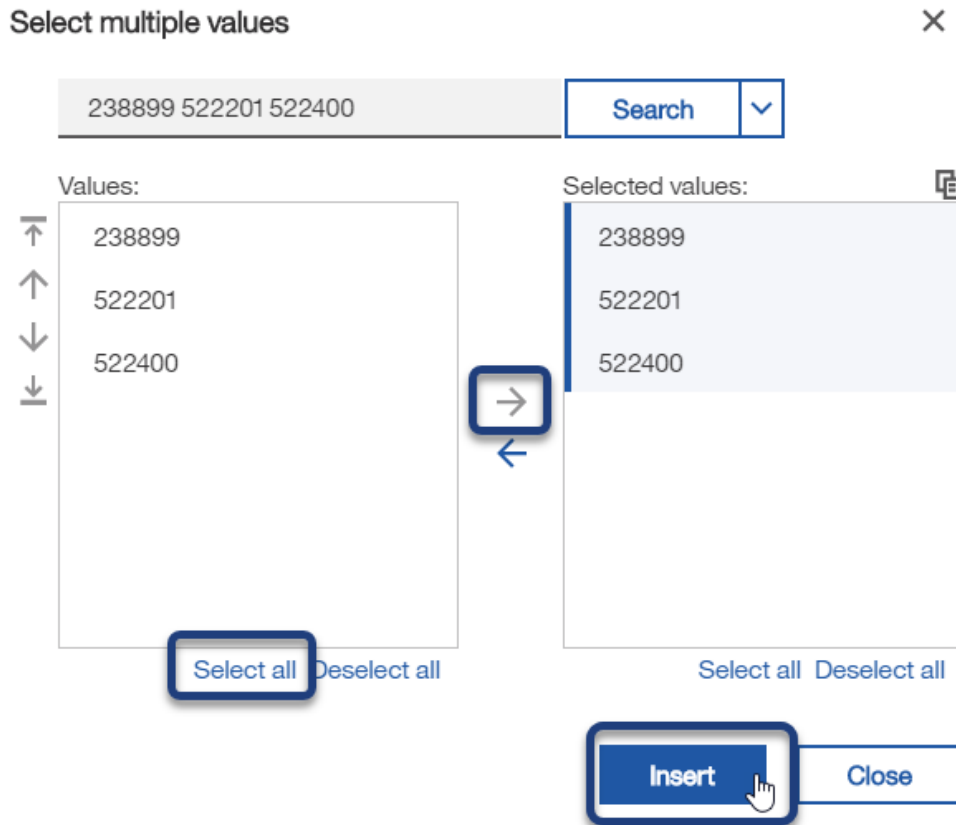
The expression looks like this:

Expression Definition:

[UCSDGeneralLedger].[Account].[Account Code] in ('238899', '522201', '522400')

40. Click **Validate** ✓ and review the Information pane. Click OK.

We have four filters on the report.

Detail Filters   Summary Filters

▽ [UCSDGeneralLedger].[Accounting Period].[Fiscal Accounti

▽ [UCSDGeneralLedger].[Entity].[Entity Code] = '16110'

▽ [UCSDGeneralLedger].[Fund].[Fund Code] = '20000'

▽ [UCSDGeneralLedger].[Account].[Account Code] in ('23889
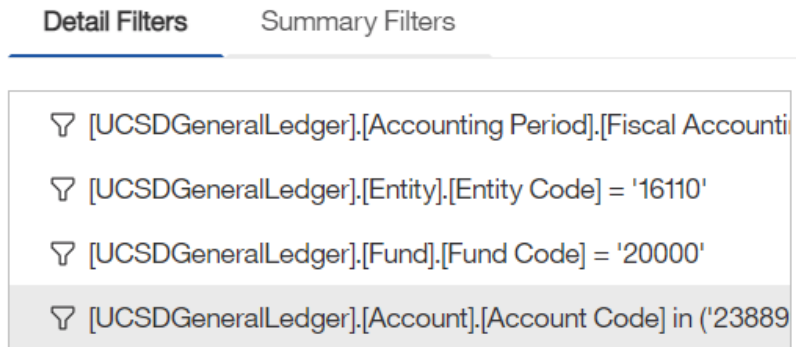
41. Click OK.
42. In the Application toolbar click **Save** (Advanced filters).
43. In the Application toolbar click Page design and select **Page preview**.
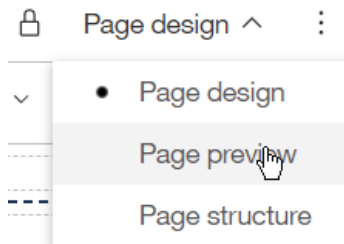
🔒 Page design ︿   ⋮

⌄   • Page design

         Page preview

         Page structure

Fiscal Accounting Period	Entity	Fund	Account	Account Code	Journal Source	Journal Category	Journal Header	Transaction Description	Transaction Date	Transaction Entry (C/D)	Transaction Amount
202009	Academic Affairs	Federal Contracts and Grants	Encumbrance Reserve	238899	Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	C	230.39
202009	Academic Affairs	Federal Contracts and Grants	Encumbrance Reserve	238899	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	C	473.35
202009	Academic Affairs	Federal Contracts and Grants	Office Supplies	522201	Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	D	230.39
202009	Academic Affairs	Federal Contracts and Grants	Chemicals	522400	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	D	453.35

44. In the Application toolbar click Page preview and select **Page design**.

🔒 Page preview ︿   ⋮

⌄   Page design

         • Page preview

         Page structure
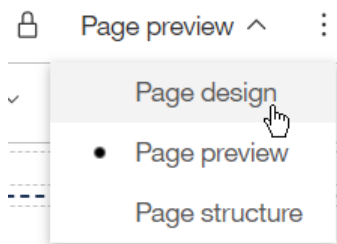
Tips & tricks for pasting a long list of values into an Advanced Filter

If you have a long list in Excel you can copy and paste it into an Advanced Filter after a little formatting.

In Excel, create a formula for =""&[Cell]&"', "

Equal, double quote, single quote, double quote, &, click on the cell with the value you want, &, double quote, single quote, comma, space, double quote.

	A	B
1	Award Fund Number	
2	19919A	'19919A',
3	18081A	'18081A',
4	18090A	'18090A',
5	19900A	'19900A',
6	18586A	'18586A',
7		

Copy the values from the formula into the Advanced Filter and delete the last comma

Expression Definition:

[Business Layer].[Award].[Award Fund Number] in ('19919A',
'18081A',
'18090A',
'19900A',
'18586A')

Instructor Demo: Troubleshooting expression errors

Often when errors are made in expressions, they are syntax errors—or typos—and they are very common! Here are a few tips to help you troubleshoot these errors yourself.
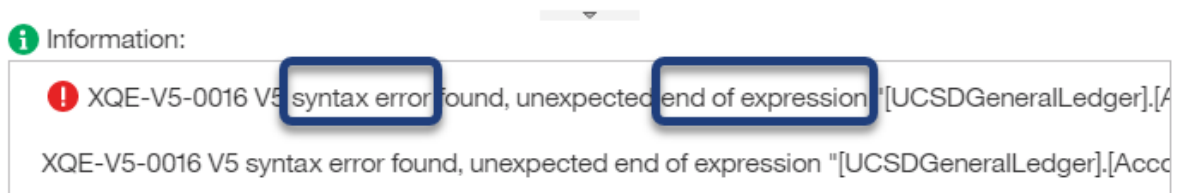
1) Click inside any column in the List report and in the OnDemand toolbar click **Filters** ▽ and **Edit Filters**.
2) Double-click the **Account Code** filter.
3) On your keyboard hit Backspace and remove the closing parenthesis on the expression.

Expression Definition:

[UCSDGeneralLedger].[Account].[Account Code] in ('522201', '522401'

4) Click **Validate** ✓ .

In the Information pane read the error message, and notice the words "syntax error", and it also indicates an "unexpected end of expression".
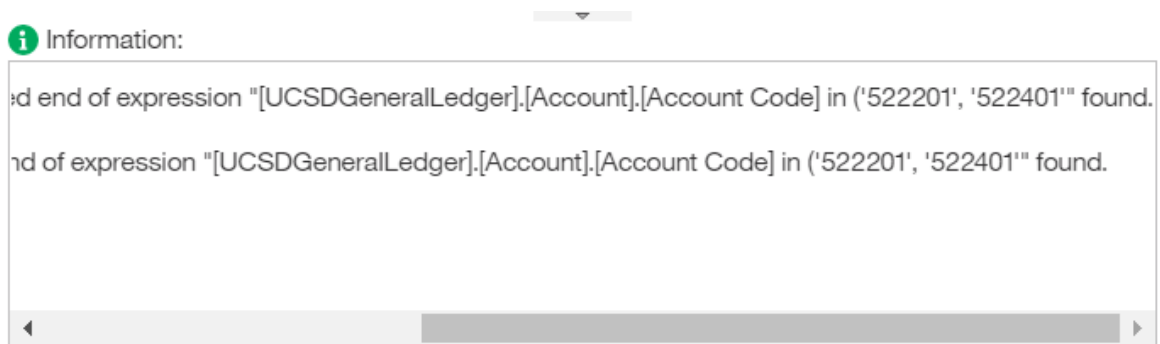
ℹ Information:

⚠ XQE-V5-0016 V5 syntax error found, unexpected end of expression "[UCSDGeneralLedger].[A

XQE-V5-0016 V5 syntax error found, unexpected end of expression "[UCSDGeneralLedger].[Acc

Scroll to the right for more detail . . .

ℹ Information:

:d end of expression "[UCSDGeneralLedger].[Account].[Account Code] in ('522201', '522401'" found.

nd of expression "[UCSDGeneralLedger].[Account].[Account Code] in ('522201', '522401'" found.

This indicates to me I should look at the end of the expression for the error.

5) Replace the closing parenthesis and click **Validate** ✓ again to ensure No errors.

Expression Definition:

[UCSDGeneralLedger].[Account].[Account Code] in ('522201', '522401')

6) Click Cancel—this ensures we do not save any changes from this experiment.
7) Double-click the **Fund Code** filter.
8) In the expression remove the first single quote and click **Validate** ✓.

Expression Definition:

[UCSDGeneralLedger].[Fund].[Fund Code] = 20000'

9) Scroll and read the error message and look for the clues!

This message tells us exactly where the error is:

ⓘ Information:

❗ XQE-V5-0011 V5 syntax error found in expression "[UCSDGeneralLedger].[Fund].[Fund Code]

XQE-V5-0011 V5 syntax error found in expression "[UCSDGeneralLedger].[Fund].[Fund Code] = 20

ⓘ Information:

I Code] = 20000'", invalid token "'" found after "[UCSDGeneralLedger].[Fund].[Fund Code] = 20000'"

de] = 20000'", invalid token "'" found after "[UCSDGeneralLedger].[Fund].[Fund Code] = 20000'".

These are just a sample of the error messages you may encounter. Understanding how to read error messages now will empower you in the future when you're working at your desk on your own—they can be intimidating for users at first so be patient.

If/when you receive an error message in class, you are encouraged to share it with the group so we can all learn how to troubleshoot as we go!

10) Click **Cancel** twice to exit out of the existing filter windows.

Blended or Combined filters

In the next lesson we learn about Blended or Combined filters. Combined filters, such as AND/OR filters allow flexibility in your basic filters.

By default, Cognos combines all filters on the report with an AND statement.

<u>In the diagram:</u>

X **AND** Y = Z only

X **OR** Y = X+Y+Z

Step by Step
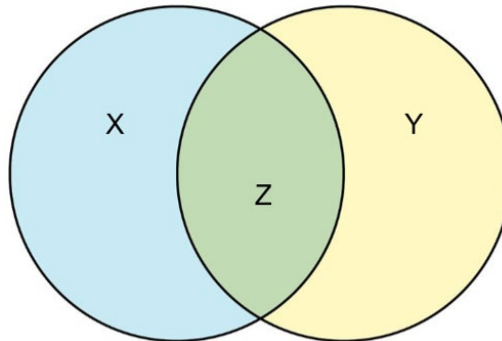
Combined Filters

1. Continue in the **Advanced filters** report.
2. In the **Application** toolbar click the **Save** dropdown and select **Save as**.
3. Save the report as **Combined filters**. Click OK.
4. Click inside the **Transaction Entry (C/D)** column and on your keyboard hit **Delete**.

In the next steps we delete the filters on Fund Code and Account Code and add a new Combined filter to look for Transactions when Fund includes Federal Contracts and Grants OR Account includes Office Supplies.

5. Click inside any column in the List report and in the OnDemand toolbar click **Filters** ▽ and **Edit Filters**.

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6. Ctrl-click the **Account Code** and **Fund Code** filters and click **Delete**.
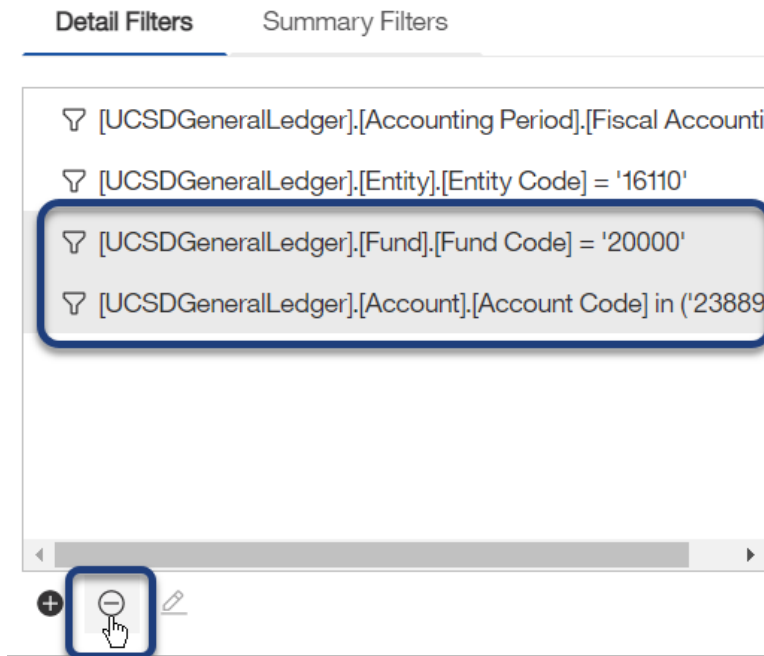
Note, you *may* receive a "HAL" error that slides down from the top of the window. This is not a critical error.

7. Click OK if you receive this error.

8. In the Filters window click **Add** ⊕ and in the Create filter window select **Combined**. Click OK.

Create filter   ✕

○   Custom based on data item
                                                      ⌄

● Combined

○ Advanced

        OK 🖑   Cancel
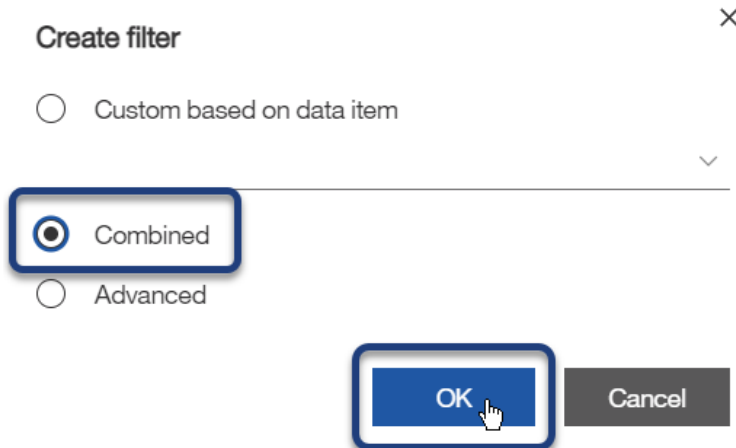
9. In the Create filter dialog box select **Fund**. Click OK.

Create filter   ✕

Ⓣ Fund   ⌄

        OK 🖑   Cancel
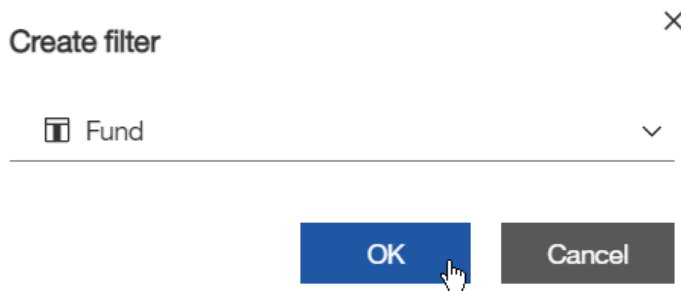
10. In the Filter condition – Fund window:
   a) Use the Find field to search for: Federal Contracts and Grants.
   b) In the Available items pane click **Federal Contracts and Grants** to add it to the Selected values pane.
   c) Click OK.

Filter condition - Fund   ✕

| Individual | Condition | ⚏ |

Available items   **Selected items**

🔍 Federal Contracts and Grants   ⌄   Manually input items

☐ Select all   Keep these values   ⌄

☐ Federal - DHHS   Federal Contracts and Grants   ⊖

☐ Federal Contracs and Grants ICR

☑ Federal Contracts and Grants

☐ Federal ICR (General Fund Portion)

☐ Federal Loan Prog-Cap Contrib

☐ Federal Work Study

                ⤒ ↑ ↓ ⤓   Remove all

⌄ Advanced settings

| OK | Cancel |

11. In the Combined filter window click **New Condition (Add)** ⊕.
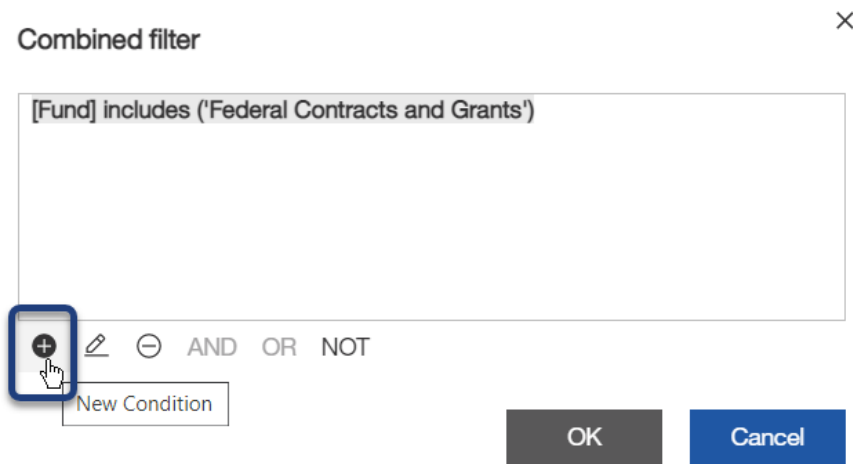
12. In the Create filter dialog box select **Account**. Click OK.
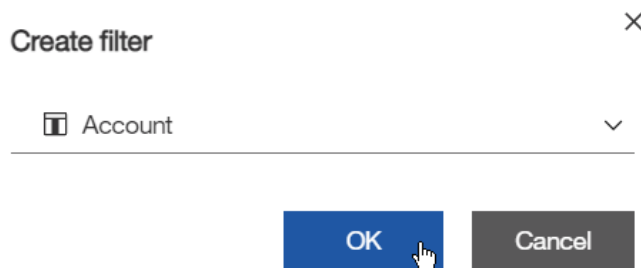
13. In the Filter condition - Account window use the Find field to search for and select: **Office Supplies**. Click OK.
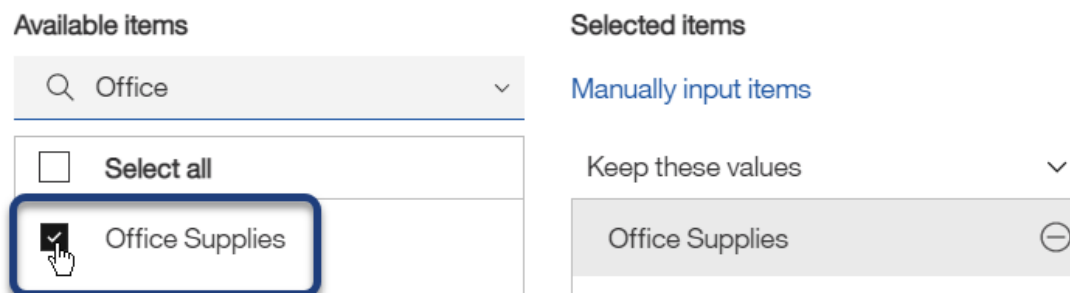
In the Combined filter window we leave the Combined filter set to AND.

Combined filter

[Fund] includes ('Federal Contracts and Grants') AND
[Account] includes ('Office Supplies')

14. Click OK twice to close the filter windows.
15. In the Application toolbar click **Save** (Combined filters).
16. In the Application toolbar click Page design and select **Page preview**.

Fiscal Accounting Period	Entity	Fund	Account	Account Code	Journal Source	Journal Category	Journal Header	Transaction Description	Transaction Date	Transaction Amount
202009	Academic Affairs	Federal Contracts and Grants	Office Supplies	522201	Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	230.39

With the Combined filter set to AND just one row of data is returned in the report.

17. Click inside any column in the List report and in the OnDemand toolbar click **Filters** ▽ and **Edit Filters**.
18. Double-click the Combined filter to edit it.

Detail Filters   Summary Filters

▽ [UCSDGeneralLedger].[Accounting Period].[Fiscal Accounti

▽ [UCSDGeneralLedger].[Entity].[Entity Code] = '16110'

▽ ([Fund] includes ('Federal Contracts and Grants')) AND ([Ac

19. In the Combined filter window double-click **AND** to toggle to **OR**. Click OK twice.

Combined filter

[Fund] includes ('Federal Contracts and Grants') OR
[Account] includes ('Office Supplies')

The report refreshes to show a longer list of Transactions that match all the filter criteria:

Fiscal Accounting Period	Entity	Fund	Account	Account Code	Journal Source	Journal Category	Journal Header	Transaction Description	Transaction Date	Transaction Amount
202009	Academic Affairs	Federal Contracts and Grants	Encumbrance Reserve	238899	Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	230.39
202009	Academic Affairs	Federal Contracts and Grants	Encumbrance Reserve	238899	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	473.35
202009	Academic Affairs	Federal Contracts and Grants	Laboratory/Research Animals	522402	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	20
202009	Academic Affairs	Private Contracts and Grants	Office Supplies	522201	Purchasing	Purchase Order	02-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	1.75
202009	Academic Affairs	Federal Contracts and Grants	Office Supplies	522201	Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	230.39
202009	Academic Affairs	Federal Contracts and Grants	Chemicals	522400	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	453.35

20. In the Application toolbar click **Save** (Combined filters).
21. In the Application toolbar click Page preview and select **Page design**.

Note we are not limited to the Combined filter "wizard" when creating flexible filter expressions. We can use an Advanced filter expression to get the same results:

Expression Definition:

[UCSDGeneralLedger].[Fund].[Fund] = 'Federal Contracts and Grants'
OR
[UCSDGeneralLedger].[Account].[Account] = 'Office Supplies'

Though in this example we use the Fund and Account descriptions, the best practice (especially when using Advanced filter expressions) is to use Code fields when available.

Can you think of other applications of a Combined Filter?

Chapter 2—Advanced Calculations

In this chapter we discuss the use of Query calculations to define advanced calculation expressions.

We also learn about the Page vs. Query and understanding the relationship between the two, and how to view tabular data to "test" queries.

We conclude the chapter with notes on the importance of understanding aggregation concepts in Cognos.

Advanced Calculations

Next, we learn about calculated fields and advanced calculations. We find the following two calculation tools under Insertable Objects in the TEXTUAL section of the **Toolbox** 🔧:
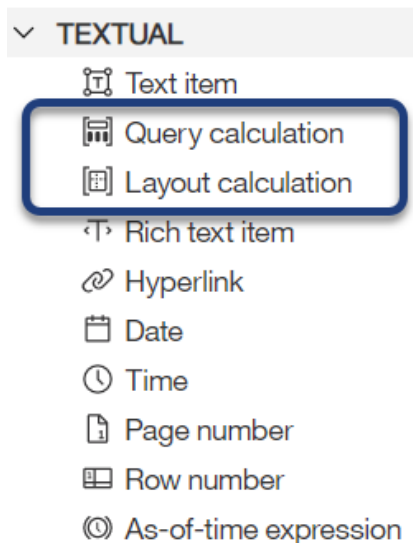
Query Calculation:
- Inserts a new row or column whose values are based on a calculation
- Use to create a new field in the report/query
- Can be based on fields from the package and/or fields from the query

Layout Calculation:
- Inserts a calculation into the report layout
- User to add runtime information to the report, such as current date or username
- Use to create a new object for display purposes, such as rendering the values the report user selects in prompts

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We continue in the Combined filters report and learn how to recreate a few basic calculations from Beginner training as Advanced calculations.

Step by Step

Advanced Calculations

1. Continue in the **Combined filters** report.
2. In the **Application** toolbar click the **Save** dropdown and select **Save as**.
3. Save the report as **Advanced calculations**. Click OK.
4. Click inside any column in the List and in the OnDemand toolbar click **Filters** ▽ and **Edit filters**.
5. Click the **Combined filter** (starts with Fund) and click **Delete** ⊖. Click OK to close the Filters window.

▽ ([Fund] includes ('Federal Contracts and Grants')) OR ([Acc.

⊕ ⊖ ✎
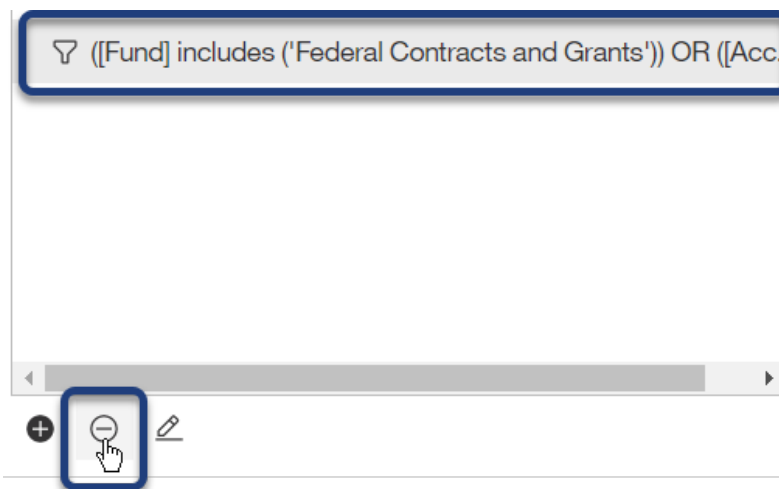
Recall in Beginner training we created a custom calculation to forecast future transactions based on Transaction Amounts returned in the report.

In this scenario we've noticed a downward trend in transactions, and we want to simulate Transaction Amounts if there is a decrease of 25%. We use a query calculation and an expression for this forecast.

6. Click the **3 dots** in the upper left corner of the Fiscal Accounting Period column header to select the **List** object—the entire is highlighted in blue.
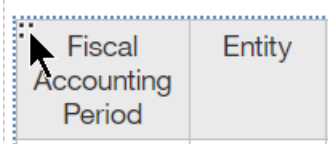
7. Under Insertable objects click **Toolbox** ✎.
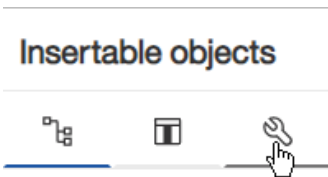
Your instructor takes a few minutes to show off the features of the Toolbox, including the Find field!
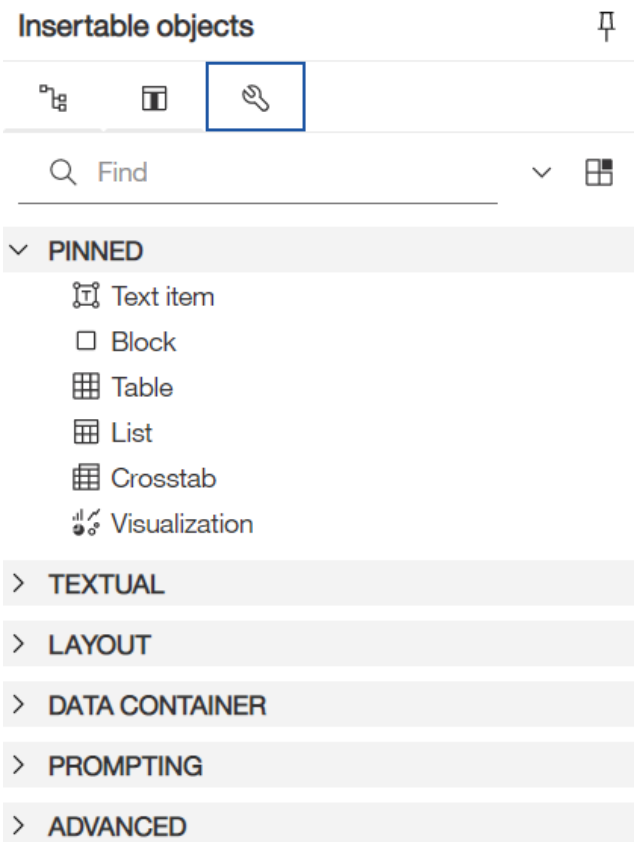
8. Expand the TEXTUAL section and double-click **Query calculation** 🖩 to add it to the List report:

```
∨  TEXTUAL
      ⟦I⟧ Text item
      🖩 Query calculation
      ▣ Layout calculation
```
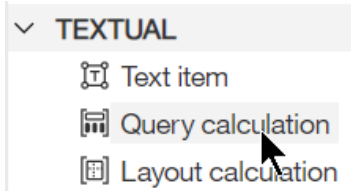
The Data item expression window opens—when we complete the calculation expression the new column will appear on the end of the List report.

9. In the Name field type: Transaction Amount Forecast.

10. From the **Source** ⌗ tab expand the **UCSD General Ledger** namespace > **Measures** folder > **General Ledger Measures** query subject, double-click **Transaction Amount** and type: * 0.75:

Expression Definition:

[UCSDGeneralLedger].[General Ledger Measures].[Transaction Amount]*0.75

11. Click **Validate** ✓ . If prompted select **HANA-QA**. Click OK twice to close the Filters windows.
12. In the Application toolbar click **Save** (Advanced calculations).
13. In the Application toolbar click Page design and **Page preview**. If prompted select **HANA-QA**.

Fiscal Accounting Period	Entity	Fund	Account	Account Code	Journal Source	Journal Category	Journal Header	Transaction Description	Transaction Date	Transaction Amount	Transaction Amount Forecast
202009	Academic Affairs	Private Contracts and Grants	Encumbrance Reserve	238899	Purchasing	Purchase Order	02-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	1.75	1.3125
202009	Academic Affairs	Federal Contracts and Grants	Encumbrance Reserve	238899	Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	230.39	172.7925
202009	Academic Affairs	Federal Contracts and Grants	Encumbrance Reserve	238899	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	473.35	355.0125
202009	Academic Affairs	Federal Contracts and Grants	Laboratory/Research Animals	522402	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	20	15
202009	Academic Affairs	Private Contracts and Grants	Office Supplies	522201	Purchasing	Purchase Order	02-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	1.75	1.3125
202009	Academic Affairs	Federal Contracts and Grants	Office Supplies	522201	Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	230.39	172.7925
202009	Academic Affairs	Federal Contracts and Grants	Chemicals	522400	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	453.35	340.0125

In the next steps we create a calculated field based on query fields.

14. Click the 3 dots ⋮ to select the **List** object.
15. From the **Toolbox** 🔧 TEXTUAL section double-click **Query calculation** 🖩 to add it to the List report.

The Data item expression window opens.

16. In the Name field type: Difference.
17. Under the Available Components click the **Data Items** ⊞ tab:
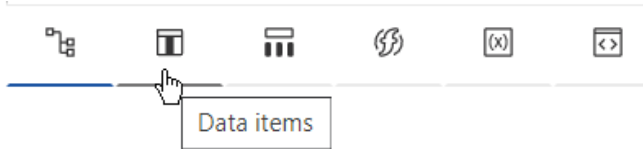
18. Double-click to add **Transaction Amount** to the expression, type a subtraction sign and double-click to add **Transaction Amount Forecast**:

Expression Definition:

[Transaction Amount] - [Transaction Amount Forecast]

19. Click **Validate** ✓. Click OK.

The page is in preview mode and refreshes with the addition of the calculation.

Fiscal Accounting Period	Entity	Fund	Account	Account Code	Journal Source	Journal Category	Journal Header	Transaction Description	Transaction Date	Transaction Amount	Transaction Amount Forecast	Difference
202009	Academic Affairs	Private Contracts and Grants	Encumbrance Reserve	238899	Purchasing	Purchase Order	02-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	1.75	1.3125	0.4375
202009	Academic Affairs	Federal Contracts and Grants	Encumbrance Reserve	238899	Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	230.39	172.7925	57.5975
202009	Academic Affairs	Federal Contracts and Grants	Encumbrance Reserve	238899	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	473.35	355.0125	118.3375
202009	Academic Affairs	Federal Contracts and Grants	Laboratory/Research Animals	522402	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	20	15	5
202009	Academic Affairs	Private Contracts and Grants	Office Supplies	522201	Purchasing	Purchase Order	02-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	1.75	1.3125	0.4375
202009	Academic Affairs	Federal Contracts and Grants	Office Supplies	522201	Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	230.39	172.7925	57.5975
202009	Academic Affairs	Federal Contracts and Grants	Chemicals	522400	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	453.35	340.0125	113.3375

20. In the Application toolbar click **Save** (Advanced calculations).

IF / THEN / ELSE

IF / THEN / ELSE calculations can be used to group field values, check field values and more; it can also be used with strings, dates and numbers.

IF (condition) THEN (expression A) ELSE (expression B)

- When the condition is true then expression A will be displayed, if the condition is false then expression B will be displayed.
- Expression A and Expression B must be the same data type; they can be different from the field type in the condition.
- Capitalization of IF / THEN / ELSE is optional

In the next lesson we learn how to use a Query calculation and an If/Then Else statement to break the Transaction Amount column into Debit and Credit columns.

We continue in the Advanced calculations report from the previous lesson.

If Then Else Calculations

1. Continue in the **Advanced calculations** report.
2. In the Application toolbar click Page preview and **Page design**.
3. In the Application toolbar click the **Save** dropdown and select **Save as**.
4. Save the report as **If Then Else**. Click OK.
5. Ctrl-click inside the following columns:
   - **Fiscal Accounting Period**
   - **Account**
   - **Transaction Amount**
   - **Transaction Forecast Amount**
   - **Difference**

Fiscal Accounting Period	Entity	Fund	Account	Journal Source	Journal Category	Journal Header	Transaction Description	Transaction Date	Transaction Amount	Transaction Amount Forecast	Difference
<Fiscal Accounting Period>	<Entity>	<Fund>	<Account>	<Journal Source>	<Journal Category>	<Journal Header>	<Transaction Description>	<Transaction Date>	<Transaction Amount>	<Transaction Amount Forecast>	<Difference>
<Fiscal Accounting Period>	<Entity>	<Fund>	<Account>	<Journal Source>	<Journal Category>	<Journal Header>	<Transaction Description>	<Transaction Date>	<Transaction Amount>	<Transaction Amount Forecast>	<Difference>
<Fiscal Accounting Period>	<Entity>	<Fund>	<Account>	<Journal Source>	<Journal Category>	<Journal Header>	<Transaction Description>	<Transaction Date>	<Transaction Amount>	<Transaction Amount Forecast>	<Difference>

6. In the OnDemand toolbar click **Cut** ✂.

7. In the **Toolbox** 🔧 double-click **Query calculation** 🎚 to add it to the List report.

The Data item expression window opens

8. In the Name field type: Debit.
9. Under Available components click the **Functions** 🔅 tab.

Functions

10. Expand the **Constructs** folder, and double-click **if then else**:

> 📁 Constants
> 📂 Constructs
>> if then else
>> in_range
>> search case
>> simple case
> 📁 Business Date/Time Functions

This action adds a "template" for the if then else construct to the expression, and provides Information about the selection:

Expression Definition:

IF (<condition>) THEN   (<expression>) ELSE   (<expression>)

ⓘ Information:

IF ([Country] = 'Canada') THEN ([List Price] * 0.60) ELSE ([List Price])
This construct is the template for an if...then...else statement. This construct appears in the Top 10 Retailers for 2005 sample report in the GO Data Warehouse (analysis) package.

Tips   Errors

This template is optional—you can also type the if, then, else and the parenthesis into the expression.

11. In the expression:
    a. Put each part of the statement on its own line and with a line between:

Expression Definition:

IF (<condition>)

THEN   (<expression>)

ELSE   (<expression>)

    b. Highlight the <condition> text inside the parenthesis next to IF:

IF (<condition>)

THEN   (<expression>)

ELSE   (<expression>)

    c. From the Source tab expand the **UCSD General Ledger** namespace >
       Dimensions folder > **General Ledger** query subject, double-click
       Transaction Entry (C/D)
    d. On your keyboard type: = 'D') to define the following expression:

Expression Definition:

IF ([UCSDGeneralLedger].[General Ledger].[Transaction Entry (C/D)] = 'D')

    e. Highlight the < expression > text inside the parenthesis next to THEN.
    f. From the Source tab expand the **UCSD General Ledger** namespace >
       Measures folder > **General Ledger Measures** query subject, double-click
       Transaction Amount:

Expression Definition:

IF ([UCSDGeneralLedger].[General Ledger].[Transaction Entry (C/D)] = 'D')

THEN ([UCSDGeneralLedger].[General Ledger Measures].[Transaction Amount])

g. Highlight the <expression> text inside the parenthesis next to ELSE and on your keyboard type: 0.

Expression Definition:

IF ([UCSDGeneralLedger].[General Ledger].[Transaction Entry (C/D)] = 'D')

THEN ([UCSDGeneralLedger].[General Ledger Measures].[Transaction Amount])

ELSE (0)

Note: that's a zero in the else parenthesis.

12. Click **Validate** ✓ .

The new Debit column is added to the report.

13. In the Application toolbar click **Save** (If Then Else).
14. In the Application toolbar click Page design and select **Page preview**.

Entity	Fund	Journal Source	Journal Category	Journal Header	Transaction Description	Transaction Date	Debit
Academic Affairs	Private Contracts and Grants	Purchasing	Purchase Order	02-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	1.75
Academic Affairs	Federal Contracts and Grants	Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	230.39
Academic Affairs	Federal Contracts and Grants	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	473.35

15. In the Application toolbar click Page preview and select **Page design**.

Let's take a shortcut to create the Credit column!

16. Double-click the **Debit** column.
17. Highlight the expression definition (Ctrl+A) and click **Copy** (Ctrl+C).
18. Click **Cancel**.
19. From the Toolbox 🔧 TEXTUAL section click and drag a **Query calculation** ⊞ into the List and drop it after the Debit column:

Entity	Fund	Journal Source	Journal Category	Journal Header	Transaction Description	Transaction Date	Debit
<Entity>	<Fund>	<Journal Source>	<Journal Category>	<Journal Header>	<Transaction Description>	<Transaction Date>	<Debit>
<Entity>	<Fund>	<Journal Source>	<Journal Category>	<Journal Header>	<Transaction Description>	<Transaction Date>	<Deb
<Entity>	<Fund>	<Journal Source>	<Journal Category>	<Journal Header>	<Transaction Description>	<Transaction Date>	<Debit>

The Data item expression window opens.

20. Click inside the Expression definition and **Paste** (Ctrl+V).
21. In the newly pasted expression highlight the D and type C:

Expression Definition:

IF ([UCSDGeneralLedger].[General Ledger].[Transaction Entry (C/D)] = 'C')

THEN ([UCSDGeneralLedger].[General Ledger Measures].[Transaction Amount])

ELSE (0)

22. In the Name field type: Credit.
23. Click **Validate** ✓. Click OK.
24. In the Application toolbar click **Save** (If Then Else).
25. In the Application toolbar click Page design and select **Page preview**.

Entity	Fund	Journal Source	Journal Category	Journal Header	Transaction Description	Transaction Date	Debit	Credit
Academic Affairs	Private Contracts and Grants	Purchasing	Purchase Order	02-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	1.75	1.75
Academic Affairs	Federal Contracts and Grants	Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	230.39	230.39
Academic Affairs	Federal Contracts and Grants	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	473.35	473.35

26. From the Toolbox 🔧 TEXTUAL section click and drag a **Query calculation** 🖩 into the List report and *drop it after the Credit column*.

The Data item expression window opens

27. In the Name field type: Ending Balance.
28. Under the Available Components click the **Data Items** ⊤ tab:

29. Double-click to add **Debit** to the expression, type a subtraction sign and double-click to add **Credit**:

Expression Definition:

[Debit] - [Credit]

30. Click **Validate** ✓. Click OK.

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The report is in Preview mode and refreshes with the addition of the new column.

Entity	Fund	Journal Source	Journal Category	Journal Header	Transaction Description	Transaction Date	Debit	Credit	Ending Balance
Academic Affairs	Private Contracts and Grants	Purchasing	Purchase Order	02-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	1.75	1.75	0
Academic Affairs	Federal Contracts and Grants	Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	230.39	230.39	0
Academic Affairs	Federal Contracts and Grants	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	473.35	473.35	0

Creating your own flags can help you:

- Double check the logic you want to use,
- Build complex filters, or
- Build multi-field logic calculations

Your Flags live at the lowest level of data in your query.

Flags can be used as Advanced filters if they are applied After auto aggregation. We discuss the use of before or after aggregation application on the filter.

Next, we add another query calculation and use an If Then Else statement to create a flag to indicate when the Transaction Date = Batch Posting Date.

31. From the **Toolbox** ✎ TEXTUAL section drag a **Query calculation** 🔢 into the List and drop it after the Ending Balance column.

Debit	Credit	Ending Balance
<Debit>	<Credit>	<Ending Balance>
<Debit>	<Credit>	<Ending Balance>
<Debit>	<Credit>	<Ending Balance>

32. In the Name field type: Transaction Date = Batch Posting Date.

33. Define the following expression—remember to bring the Transaction Date data item into the expression from the **Source** ⊟ tab and the **General Ledger Dates** query subject:

Expression Definition:

IF ([UCSDGeneralLedger].[General Ledger Dates].[Transaction Date] =
[UCSDGeneralLedger].[General Ledger Dates].[Batch Posting Date])

THEN ('Y')

ELSE ('N')

34. Click **Validate** ✓. Click OK.

The report refreshes to display the new column.

Entity	Fund	Journal Source	Journal Category	Journal Header	Transaction Description	Transaction Date	Debit	Credit	Ending Balance	Transaction Date = Batch Posting Date
Academic Affairs	Private Contracts and Grants	Purchasing	Purchase Order	02-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	1.75	1.75	0	Y
Academic Affairs	Federal Contracts and Grants	Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	230.39	230.39	0	Y
Academic Affairs	Federal Contracts and Grants	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	07/14/2020	473.35	473.35	0	Y

When we see Y in the column, we know the Dates match. We could also filter on the flag.

35. In the Application toolbar click **Save** (If Then Else).

Case Statements: CASE / WHEN / ELSE / END

Function the same as IF / THEN / ELSE but run faster and are more efficient

CASE {condition A} WHEN condition B THEN expression A ELSE expression B END

- where expression A and expression B are the same data type
- CASE/WHEN/ELSE/END statement process from top down
- Use fewer ( ) than IF / THEN / ELSE

In the next steps we learn how to use a Query calculation and a CASE / WHEN / ELSE / END to create a Custom Grouping of Accounts.

Case Statement Calculations

1. Continue in the **If Then Else** report from the previous lesson.
2. In the Application toolbar click Page preview and select **Page design**.
3. In the Application toolbar click the **Save** dropdown, click **Save as**, and save the report specification as **Case statement**.
4. Ctrl-click inside the following columns:
    - **Entity**
    - **Fund**
    - **Transaction Date**
    - **Transaction Date = Batch Posting Date**

Entity	Fund	Journal Source	Journal Category	Journal Header	Transaction Description	Transaction Date	Debit	Credit	Ending Balance	Transaction Date = Batch Posting Date
<Entity>	<Fund>	<Journal Source>	<Journal Category>	<Journal Header>	<Transaction Description>	<Transaction Date>	<Debit>	<Credit>	<Ending Balance>	<Transaction Date = Batch Posting Date>
<Entity>	<Fund>	<Journal Source>	<Journal Category>	<Journal Header>	<Transaction Description>	<Transaction Date>	<Debit>	<Credit>	<Ending Balance>	<Transaction Date = Batch Posting Date>
<Entity>	<Fund>	<Journal Source>	<Journal Category>	<Journal Header>	<Transaction Description>	<Transaction Date>	<Debit>	<Credit>	<Ending Balance>	<Transaction Date = Batch Posting Date>

5. On your keyboard hit **Delete**.
6. Click inside the **Journal Source** column.

7. Under Insertable Objects click the **Data Items** ⊓ tab:

Insertable objects

⌐⌐   ⊓   ⚒

🔍 Find   Data items
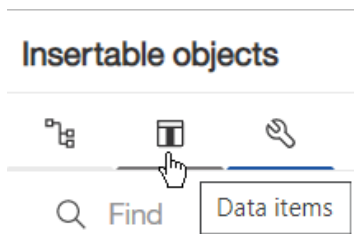
8. From **Query1** double-click **Account** to add it to the List report in front of the Journal Source column.

Insertable objects

⌐⌐   ⊓   ⚒

∨ ⊞ Query1
   ⊓ Fiscal Accounting Period
   ⊓ Account
   ⊓ Journal Source

Account	Journal Source	Journal Category	Journal Header	Transaction Description	Debit	Credit	Ending Balance
<Account>	<Journal Source>	<Journal Category>	<Journal Header>	<Transaction Description>	<Debit>	<Credit>	<Ending Balance>
<Account>	<Journal Source>	<Journal Category>	<Journal Header>	<Transaction Description>	<Debit>	<Credit>	<Ending Balance>
<Account>	<Journal Source>	<Journal Category>	<Journal Header>	<Transaction Description>	<Debit>	<Credit>	<Ending Balance>

9. Click inside the **Account** column.

10. Under Insertable objects click the **Sources** ⌐⌐ tab, expand **UCSD General Ledger** namespace, the **Dimensions** folder, and from the **Account** query subject double-click **Account Code** to add it to the front of the List:

Account Code	Account	Journal Source	Journal Category	Journal Header	Transaction Description	Debit	Credit	Ending Balance
<Account Code>	<Account>	<Journal Source>	<Journal Category>	<Journal Header>	<Transaction Description>	<Debit>	<Credit>	<Ending Balance>
<Account Code>	<Account>	<Journal Source>	<Journal Category>	<Journal Header>	<Transaction Description>	<Debit>	<Credit>	<Ending Balance>
<Account Code>	<Account>	<Journal Source>	<Journal Category>	<Journal Header>	<Transaction Description>	<Debit>	<Credit>	<Ending Balance>

11. Click inside any column in the List report and in the OnDemand toolbar click **Filters** ▽ and **Edit filters**.

12. Double-click the **Entity Code** filter and edit as follows:

Expression Definition:

[UCSDGeneralLedger].[Entity].[Entity Code]='16130'

13. Click **Validate** ✓. Click OK twice to close the Filters windows.

Entity Code 16130 is for Health Science.

14. In the Application toolbar click Page design and **Page preview**.

Account Code	Account	Journal Source	Journal Category	Journal Header	Transaction Description	Debit	Credit	Ending Balance
238899	Encumbrance Reserve	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	0	166,923.66	-166,923.66
238899	Encumbrance Reserve	Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	0	12.4	-12.4
522401	Lab Supplies	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	47,884.69	1,814.26	46,070.43
238899	Encumbrance Reserve	Purchasing	Requisition	31-03-2020 Requisition 300000000242233	Journal Import Created	0	26,319.08	-26,319.08
535104	Other Purchased Services	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	33,967.13	16,350	17,617.13
530106	Lab - Test and Diagnostic Services	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	35,727	1,796.74	33,930.26
522400	Chemicals	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	9,310.86	0	9,310.86
522201	Office Supplies	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	14,904.95	0	14,904.95
522900	Maintenance and Cleaning Supplies	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	244.51	0	244.51
520250	Oxygen Med Gas	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	3,990.61	0	3,990.61
530101	Professional Services	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	18,581	0	18,581
522308	Safety and Fire and Environmental Supply	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	369.05	0	369.05
238899	Encumbrance Reserve	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	26,319.08	0	26,319.08
530106	Lab - Test and Diagnostic Services	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242233	Journal Import Created	0	26,319.08	-26,319.08
532301	Equipment Repairs and Maintenance	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	11,841.91	0	11,841.91
522300	Repair Materials and Parts	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	191	0	191
522301	Equipment <$5K	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	781.87	0	781.87
522400	Chemicals	Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	12.4	0	12.4
539000	Printing and Reproduction Services	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	1,726.65	0	1,726.65
520500	Medical Care Materials and Supplies	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	2,308.13	0	2,308.13

Notice the values in the Account Code column—we use these to create a custom grouping of Supplies, Liabilities and Operating Expenses.

We could us the Account descriptions, but it is much easier leaves less room for error if we base our calculation on the Account Code column as follows:

- For Supplies we want to see all Account Codes that start with 52
- For Liabilities we want to see all Account Codes that start with 23
- For Operating Expenses, we want to see all Account Codes that start with 53

15. In the Application toolbar click Page preview and **Page design**.
16. Click inside the **Account Code** column.
17. From the **Toolbox** ✎ TEXTUAL section double-click **Query calculation** ▥.

The Data item expression window opens.

18. In the Name field type: Custom Group of Accounts.

19. In the expression definition:
    a. In the expression type the following:

Expression Definition:

CASE

WHEN

    b. From the **Source** tab expand **UCSD General Ledger** namespace > **Dimensions** folder > **Account** query subject and double-click **Account Code** to add it to the expression:

Expression Definition:

CASE

WHEN [UCSDGeneralLedger].[Account].[Account Code]

    c. Type the following text in the image below:

Expression Definition:

CASE

WHEN [UCSDGeneralLedger].[Account].[Account Code] starts with '52'
THEN 'Supplies'

    d. Complete the expression as follows—you can copy and paste chunks of the expression and edit as needed to save time:
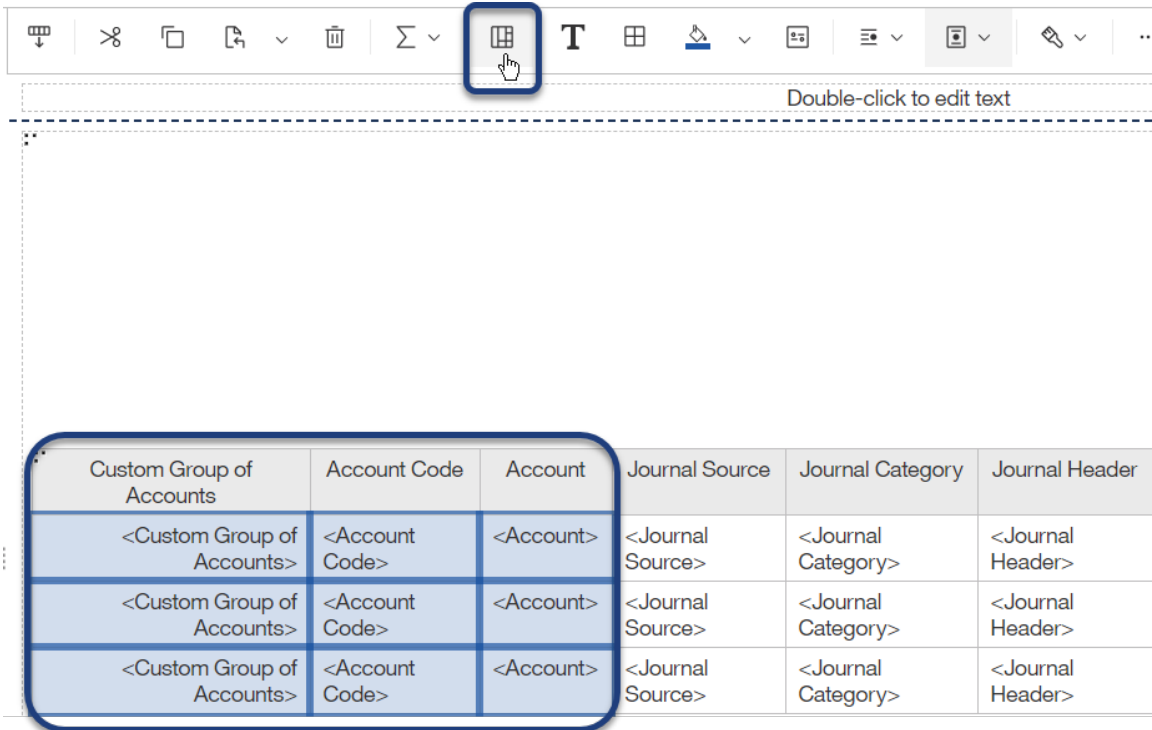
Expression Definition:

CASE

WHEN [UCSDGeneralLedger].[Account].[Account Code] starts with '52'
THEN 'Supplies'

WHEN [UCSDGeneralLedger].[Account].[Account Code] starts with '23'
THEN 'Liabilities'

WHEN [UCSDGeneralLedger].[Account].[Account Code] starts with '53'
THEN 'Operating Expenses'

ELSE 'Other'

END

20. Click **Validate** ✓. Click OK.

21. Ctrl-click inside the **Custom Group of Accounts**, **Account Code** and **Account** columns and in the OnDemand toolbar click **Group** ⊞.

Notice the Group icons added to the columns indicating the columns are Grouped.

22. In the Application toolbar click **Save** (Case Statement).
23. In the Application toolbar click Page design and **Page preview.**

Custom Group of Accounts	Account Code	Account	Journal Source	Journal Category	Journal Header	Transaction Description	Debit	Credit	Ending Balance
Liabilities	238899	Encumbrance Reserve	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	0	166,923.66	-166,923.66
			Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	0	12.4	-12.4
			Purchasing	Requisition	31-03-2020 Requisition 300000000242233	Journal Import Created	0	26,319.08	-26,319.08
			Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242233	Journal Import Created	26,319.08	0	26,319.08
Operating Expenses	530101	Professional Services	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	18,581	0	18,581
	530106	Lab - Test and Diagnostic Services	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	35,727	1,796.74	33,930.26
			Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242233	Journal Import Created	0	26,319.08	-26,319.08
			Purchasing	Requisition	31-03-2020 Requisition 300000000242233	Journal Import Created	26,319.08	0	26,319.08
	530110	Installation of Equipment	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	5,052	0	5,052
	532301	Equipment Repairs and Maintenance	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	11,841.91	0	11,841.91
	535104	Other Purchased Services	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	33,967.13	16,350	17,617.13
	539000	Printing and Reproduction Services	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	1,726.65	0	1,726.65
Supplies	520250	Oxygen Med Gas	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	3,990.61	0	3,990.61
	520500	Medical Care Materials and Supplies	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	2,308.13	0	2,308.13
	522001	Food and Beverage Supplies	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	3.3	0	3.3
	522201	Office Supplies	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	14,904.95	0	14,904.95
	522200	Repair Materials and Parts	Purchasing	Purchase Order	31-03-2020 Purchase Order	Journal Import	101	0	101

24. Ctrl-click inside the **Debit**, **Credit** and **Ending Balance** columns and in the OnDemand Toolbar click **Summarize** Σ and select **Total**.
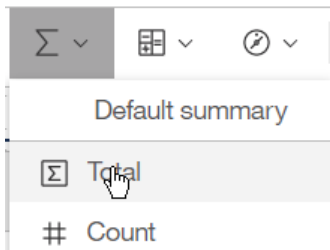
The report refreshes:

Custom Group of Accounts	Account Code	Account	Journal Source	Journal Category	Journal Header	Transaction Description	Debit	Credit	Ending Balance
Liabilities	238899	Encumbrance Reserve	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	66	166,923.66	-166,857.66
			Purchasing	Requisition	31-03-2020 Requisition 300000000242233	Journal Import Created	0	26,319.08	-26,319.08
			Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	0	12.4	-12.4
			Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242233	Journal Import Created	26,319.08	0	26,319.08
		Encumbrance Reserve - Total					26,385.08	193,255.14	-166,870.06
	238899 - Total						26,385.08	193,255.14	-166,870.06
Liabilities - Total							26,385.08	193,255.14	-166,870.06
Operating Expenses	530101	Professional Services	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	18,581	0	18,581
		Professional Services - Total					18,581	0	18,581
	530101 - Total						18,581	0	18,581
	530106	Lab - Test and Diagnostic Services	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	35,727	1,796.74	33,930.26
			Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242233	Journal Import Created	0	26,319.08	-26,319.08
			Purchasing	Requisition	31-03-2020 Requisition 300000000242233	Journal Import Created	26,319.08	0	26,319.08
		Lab - Test and Diagnostic Services - Total					62,046.08	28,115.82	33,930.26
	530106 - Total						62,046.08	28,115.82	33,930.26
	530110	Installation of Equipment	Purchasing	Purchase Order	31-03-2020 Purchase Order	Journal Import Created	5,052	0	5,052

25. Ctrl-click inside the first two green Total rows and on your keyboard hit **Delete**:

Custom Group of Accounts	Account Code	Account	Journal Source	Journal Category	Journal Header	Transaction Description	Debit	Credit	Ending Balance
Liabilities	238899	Encumbrance Reserve	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	66	166,923.66	-166,857.66
			Purchasing	Requisition	31-03-2020 Requisition 300000000242233	Journal Import Created	0	26,319.08	-26,319.08
			Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	0	12.4	-12.4
			Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242233	Journal Import Created	26,319.08	0	26,319.08
		Encumbrance Reserve - Total					26,385.08	193,255.14	-166,870.06
	238899 - Total						26,385.08	193,255.14	-166,870.06
Liabilities - Total							26,385.08	193,255.14	-166,870.06

The report refreshes. Scroll down to see the impact removing the redundant summary rows had on the report:

| Custom Group of Accounts	Account Code	Account	Journal Source	Journal Category	Journal Header	Transaction Description	Debit	Credit	Ending Balance
Liabilities	238899	Encumbrance Reserve	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	66	166,923.66	-166,857.66
			Purchasing	Requisition	31-03-2020 Requisition 300000000242233	Journal Import Created	0	26,319.08	-26,319.08
			Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	0	12.4	-12.4
			Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242233	Journal Import Created	26,319.08	0	26,319.08
Liabilities - Total							**26,385.08**	**193,255.14**	**-166,870.06**
Operating Expenses	530101	Professional Services	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	18,581	0	18,581
	530106	Lab - Test and Diagnostic Services	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	35,727	1,796.74	33,930.26
			Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242233	Journal Import Created	0	26,319.08	-26,319.08
			Purchasing	Requisition	31-03-2020 Requisition 300000000242233	Journal Import Created	26,319.08	0	26,319.08
	530110	Installation of Equipment	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	5,052	0	5,052
	532301	Equipment Repairs and Maintenance	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	11,841.91	0	11,841.91
	535104	Other Purchased Services	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	33,967.13	16,350	17,617.13
	539000	Printing and Reproduction Services	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	1,726.65	0	1,726.65
Operating Expenses - Total							**133,214.77**	**44,465.82**	**88,748.95**
Supplies	520250	Oxygen Med Gas	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	3,990.61	0	3,990.61
	520500	Medical Care Materials and Supplies	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	2,308.13	0	2,308.13
	522001	Food and Beverage Supplies	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	3.3	0	3.3
	522201	Office Supplies	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	14,904.95	0	14,904.95

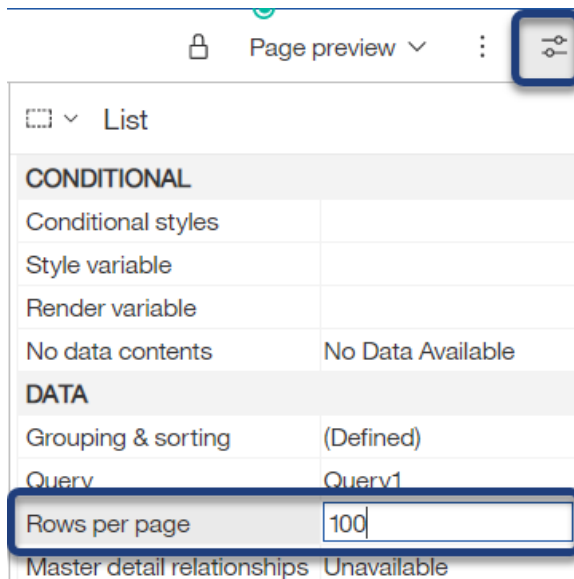26. Click **Page down** and notice there are just a few more rows on the 2nd page.
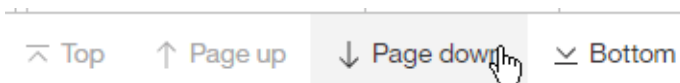
Rows per page

By default Cognos only displays 20 rows per page in reports. We can override that setting.

27. Click the **3 dots** ⠐⠂ to select the List.
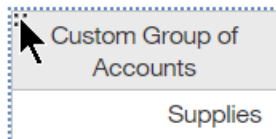
28. In Properties ⚏ pane under DATA for **Rows per page** type 100.

The report refreshes and now we can see all the rows by scrolling down and without Paging down.

Tips!
- *For complicated logic, build separate steps as separate calculated fields to verify each step*
- *To leave the steps separate or combine them after verification is a developer's choice*
- *Run the report often to confirm each step is providing the results you expect*

Tip! In the Data Item expression window, click the **Functions** 〽 tab, expand the **Constructs** folder and double-click **search case**:
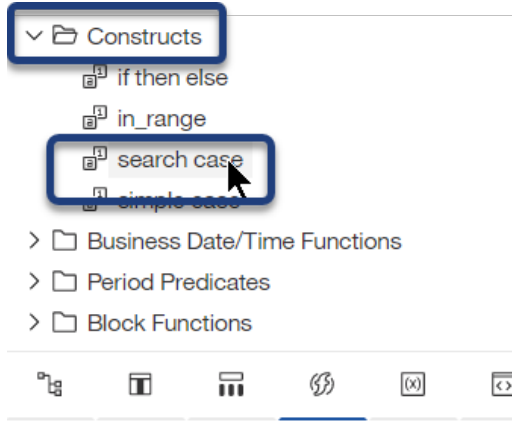
This action adds a "template" to the expression and provides Information/Tips:

Expression Definition:

CASE WHEN <condition> THEN <expression> ... [ELSE <expression>] END

ⓘ Information:

CASE WHEN [Country] = 'Canada' THEN ([List Price] * 0.60) WHEN [CountryCode] > 100 THEN [List Price] * 0.80
ELSE [List Price] END
This construct is the template for a search case, including the CASE, WHEN, ELSE, and END functions.

More on aggregation

Detail aggregation specifies how a data item is totaled at the lowest level in a query.
- In lists, detail aggregation specifies how the values that appear in the rows are totaled.
- In crosstabs, detail aggregation specifies how the values in the cells are totaled.

The default detail aggregation setting is determined at the package level by data modeler. Whether this is set to Total or Count depends on whether that data element is tied to a $ amount or a transaction. Please work with the data source owners to learn more about aggregation for specific fields.

Summaries specify how data items are totaled in the headers and footers of a list and in the total rows and columns of a crosstab.

Custom Group of Accounts	Account Code	Account	Journal Source	Journal Category	Debit	Credit	Ending Balance
Operating Expenses	530101	Professional Services	Purchasing	Purchase Order	18,581	0	18,581
	530106	Lab - Test and Diagnostic Services	Purchasing	Purchase Order	35,727	28,115.82	7,611.18
			Purchasing	Requisition	26,319.08	0	26,319.08
	530110	Installation of Equipment	Purchasing	Purchase			5,052
	532301	Equipment Repairs and Maintenance	Purchasing	Purchase		0	11,841.91
	535104	Other Purchased Services	Purchasing	Purchase Order	33,967.13	16,350	17,617.13
	539000	Printing and Reproduction Services	Purchasing	Purchase Order	1,726.65	0	1,726.65
Operating Expenses - Total					**133,214.77**	**44,465.82**	**88,748.95**
Supplies	520250	Oxygen Med Gas	Purchasing	Purchase Order	3,990.61		3,990.61
	520500	Medical Care Materials and Supplies	Purchasing	Purchase Order		0	2,308.13
	522001	Food and Beverage Supplies	Purchasing	Purchase		0	3.3
	522201	Office Supplies	Purchasing	Purchase Order	14,904.95	0	14,904.95
	522300	Repair Materials and Parts	Purchasing	Purchase Order	191	0	191
	522301	Equipment <$5K	Purchasing	Purchase Order	781.87	0	781.87
	522308	Safety and Fire and Environmental Supply	Purchasing	Purchase Order	369.05	0	369.05
	522400	Chemicals	Purchasing	Purchase		0	9,323.26
	522401	Lab Supplies	Purchasing	Purchase		.26	46,004.43
	522900	Maintenance and Cleaning Supplies	Purchasing	Purchase Order	244.51	0	244.51
Supplies - Total					**80,001.37**	**1,8__.__**	**78,121.11**
Overall - Total					**213,216.14**	**46,346.08**	**166,870.06**

- Detail = Total for lowest level in report [Course Level]
- Summary = Grouping and Overall (Total) for all rows being grouped

String fields & Date fields

- Any fields you do not want Cognos to try to add up
- You can use Count and Count Distinct on these fields

Number fields

- Are pre-set by BIA team to match most frequent use
- Can be changed as needed

Transaction Amount	Detail aggregation	Total
	Summary aggregation	Default

- By default, Cognos adds calculated fields with an aggregation of Default.

Transaction Amount Forecast
Difference
Debit

Credit	Detail aggregation	Default
Ending Balance	Summary aggregation	Default

- Setting the aggregation on your Flags to Detail = None, Summary = Default to allow the flags to show 1 or 0 per row and run most efficiently

Change in Major Flag	Detail aggregation	None
	Summary aggregation	Default

- Setting the Detail aggregation on calculated fields to Calculated is recommended when using calculations as measures in Crosstabs or Visualizations.

  Note! Unless you can determine exactly what Cognos is doing with the 'Calculated' setting it's best to be explicit and use a different aggregation.

Passed Count	Detail aggregation	Calculated
	Summary aggregation	Default

Aggregation grouping

- Overall Summary aggregation is for the entire list (bottom row)
- Additional Summary aggregation occurs for every field you have grouped

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Page vs. Query

Before we move on, let's take a few minutes to discuss and explore the differences between development in the Page vs the Query areas of the report. Cognos allows you to access multiple layers of your report.

So far, we learned that on **The PAGE**:
- *Page design* shows you the names of the fields without the data. Preferred by most developers.
- *Page preview* shows you the data and reloads the page for every change you make to the report. Preferred by users new to Cognos or to the data.
- *Page structure* displays the object by object organization of your report, including hidden objects.

Now, we discuss **The QUERY**:
- Container that holds the logic for the display object.
- Often referred to as the back-end of a report or report objects.
- Can contain far more fields than the display object.
- Reports can contain many queries.
- Objects can contain many queries.
- Queries can be used together via joins, unions or more.

1. Continue in the **Case Statement** report and in the **Navigation menu** click **Report** . . .
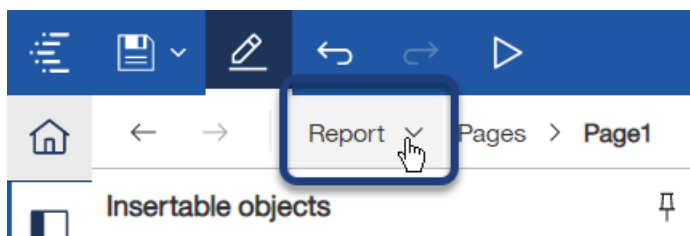
2. . . . and click **Queries**:
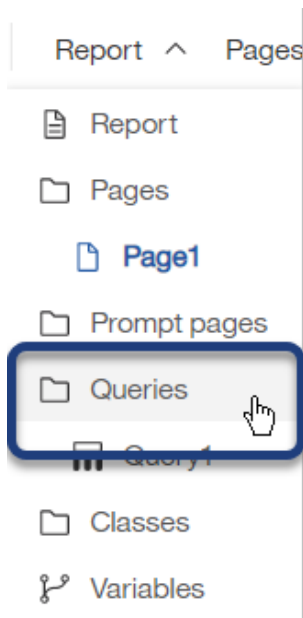
The Query Explorer pane opens. This area allows you to see all the queries in the report and connect them via Joins, Unions, etc..

3. Double-click **Query1**.
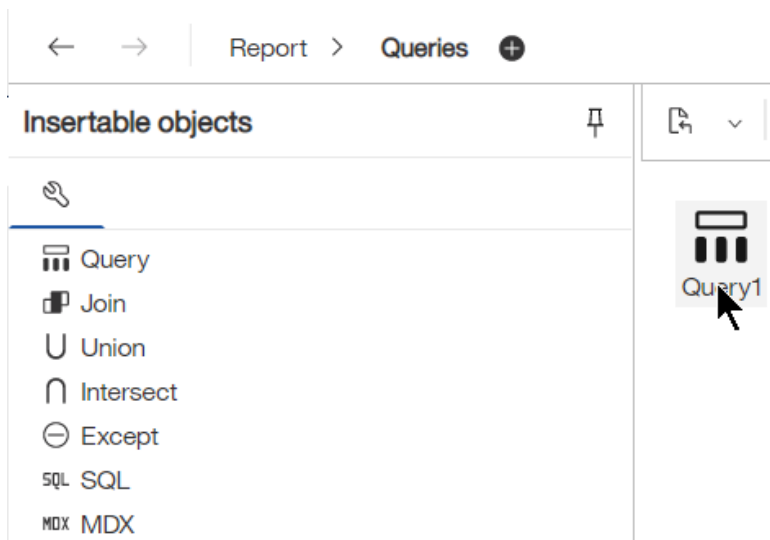
The query opens. Take a few minutes to better acquaint yourself with the Query Explorer interface.
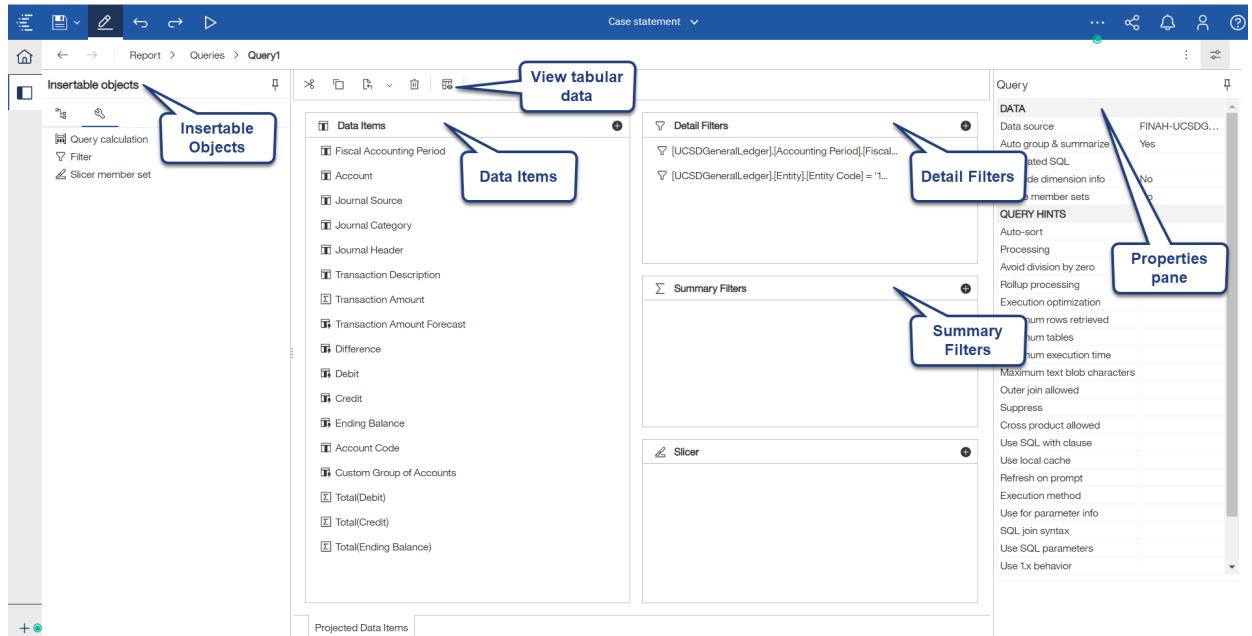
In the query you can continue to add and edit fields and calculations in the Data Items pane or modify or add filters to the Detail Filters pane . . . and more.

Drag & Drop, Left-click Right-click and Ctrl+C Ctrl+X Ctrl+V also work here.

View tabular data

Cognos provides the option to run just the query you have selected—this is very helpful for testing the query, especially if you have not yet designed the report to view it in.

4. At the top of the query click **View tabular data** :
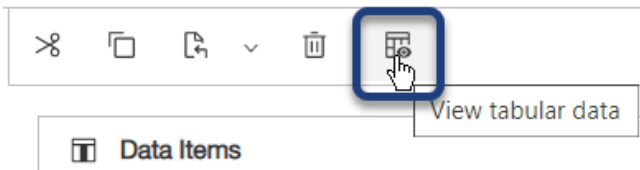
5. Click OK to acknowledge the alert.

IBM Cognos Analytics - Reporting ✕

⚠ All of the query data items will be displayed in a single list. This list may not contain the same items as the query submitted to the server when the report is run. This query may return errors if the query is executed against a multi-dimensional data source or contains calculations that reference grouped items.

OK

A new tab opens and runs the report—notice the columns are in the order of the Data Items in the query, rather than the order of the columns in the Report we built—and you may see columns in this view that we did not have in the report:

Fiscal Accounting Period	Account	Journal Source	Journal Category	Journal Header	Transaction Description	Transaction Amount	Transaction Amount Forecast	Difference	Debit	Credit	Ending Balance	Account Code	Custom Group of Accounts	Total(Debit)	Total(Credit)	Total(Ending Balance)
202009	Encumbrance Reserve	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	166,923.66	125,192.745	41,730.915	0	166,923.66	-166,923.66	238899	Liabilities	0	166,923.66	-166,923.66
202009	Encumbrance Reserve	Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	12.4	9.3	3.1	0	12.4	-12.4	238899	Liabilities	0	12.4	-12.4
202009	Lab Supplies	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	49,698.95	37,274.2125	12,424.7375	47,884.69	1,814.26	46,070.43	522401	Supplies	47,884.69	1,814.26	46,070.43
202009	Encumbrance Reserve	Purchasing	Requisition	31-03-2020 Requisition 300000000242233	Journal Import Created	26,319.08	19,739.31	6,579.77	0	26,319.08	-26,319.08	238899	Liabilities	0	26,319.08	-26,319.08
202009	Other Purchased Services	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	50,317.13	37,737.8475	12,579.2825	33,967.13	16,350	17,617.13	535104	Operating Expenses	33,967.13	16,350	17,617.13
202009	Lab - Test and Diagnostic Services	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	37,523.74	28,142.805	9,380.935	35,727	1,796.74	33,930.26	530106	Operating Expenses	35,727	1,796.74	33,930.26
202009	Chemicals	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	9,310.86	6,983.145	2,327.715	9,310.86	0	9,310.86	522400	Supplies	9,310.86	0	9,310.86
202009	Office Supplies	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	14,904.95	11,178.7125	3,726.2375	14,904.95	0	14,904.95	522201	Supplies	14,904.95	0	14,904.95
202009	Maintenance and Cleaning Supplies	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	244.51	183.3825	61.1275	244.51	0	244.51	522900	Supplies	244.51	0	244.51
202009	Oxygen Med Gas	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	3,990.61	2,992.9575	997.6525	3,990.61	0	3,990.61	520250	Supplies	3,990.61	0	3,990.61
202009	Professional Services	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	18,581	13,935.75	4,645.25	18,581	0	18,581	530101	Operating Expenses	18,581	0	18,581
202009	Safety and Fire and Environmental Supply	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	369.05	276.7875	92.2625	369.05	0	369.05	522308	Supplies	369.05	0	369.05
202009	Encumbrance Reserve	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242233	Journal Import Created	26,319.08	19,739.31	6,579.77	26,319.08	0	26,319.08	238899	Liabilities	26,319.08	0	26,319.08
202009	Lab - Test and Diagnostic Services	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242233	Journal Import Created	26,319.08	19,739.31	6,579.77	0	26,319.08	-26,319.08	530106	Operating Expenses	0	26,319.08	-26,319.08
202009	Equipment Repairs and Maintenance	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	11,841.91	8,881.4325	2,960.4775	11,841.91	0	11,841.91	532301	Operating Expenses	11,841.91	0	11,841.91
202009	Repair Materials and Parts	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	191	143.25	47.75	191	0	191	522300	Supplies	191	0	191
202009	Equipment <$5K	Purchasing	Purchase Order	31-03-2020 Purchase Order 300000000242232	Journal Import Created	781.87	586.4025	195.4675	781.87	0	781.87	522301	Supplies	781.87	0	781.87
202009	Chemicals	Purchasing	Purchase Order	13-03-2020 Purchase Order 300000000242232	Journal Import Created	12.4	9.3	3.1	12.4	0	12.4	522400	Supplies	12.4	0	12.4

6. Close the New report browser tab.
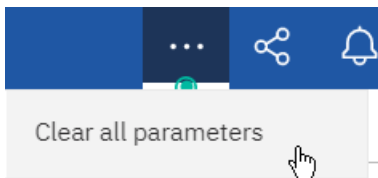
⋮≡ Case statement ✕   ⋮≡ New report ✕

Instructor Demo: To switch server connection:

1) In the Application Toolbar click the ellipsis –the screen tip says **More:**
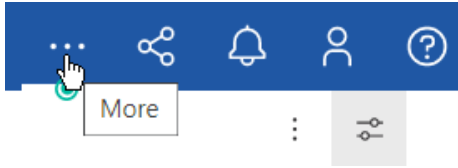
2) Select **Clear all parameters**

Instructor Demo: Validate the report to "lock in" server connection choice

When you work in Cognos DEV you re prompted for a server connection multiple times in the same report session. To "lock in" the server of your choice you can Validate the report:

1) In the Application toolbar (next to the Properties ⚏ button) click **More** ⋮ and **Validate report**:
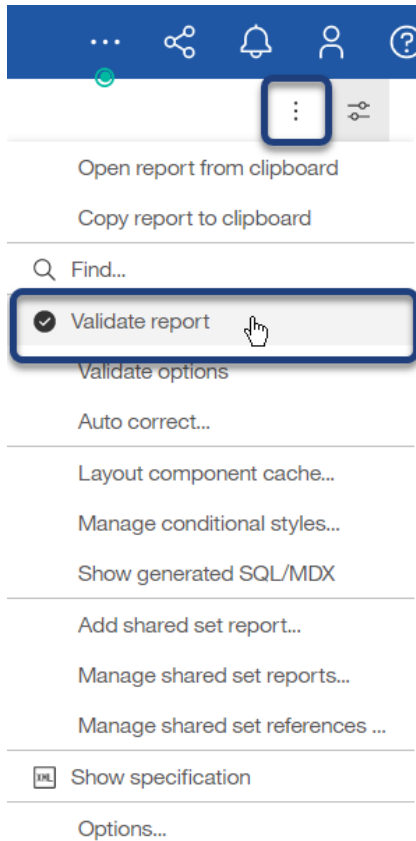
2) If prompted select the server of your choice. Click OK.
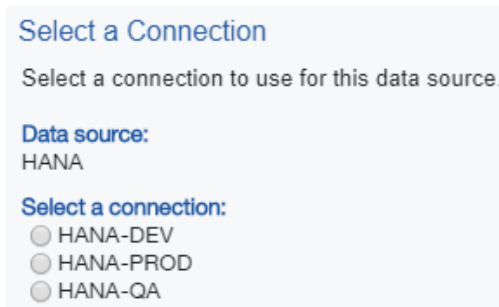
If the report is valid, you receive the following message:

IBM Cognos Analytics - Reporting   ✕

(i)   The report specification is valid.

OK

Chapter 3–Report Layout

In this chapter we learn how to control the layout of a report in various ways, including:

- Using Tables
- Explore the features of the Header and Footer and how to manage these areas of the report
- Crosstabs
- Conditional Formatting
- Report visualizations
- Singletons

In the next lesson we begin a New report. We start with a blank template, add a Header & footer, add Tables to organize items on the page, and learn basic formatting techniques.

Report Layout Techniques

1. In the **Navigation Panel** click **New** ➕ and **Report** 📋 .
2. *ATTENTION* – on the Templates and themes menu *scroll down* and double-click the **Blank** template option. *(Please <u>do not select</u> the Blank active report.)*
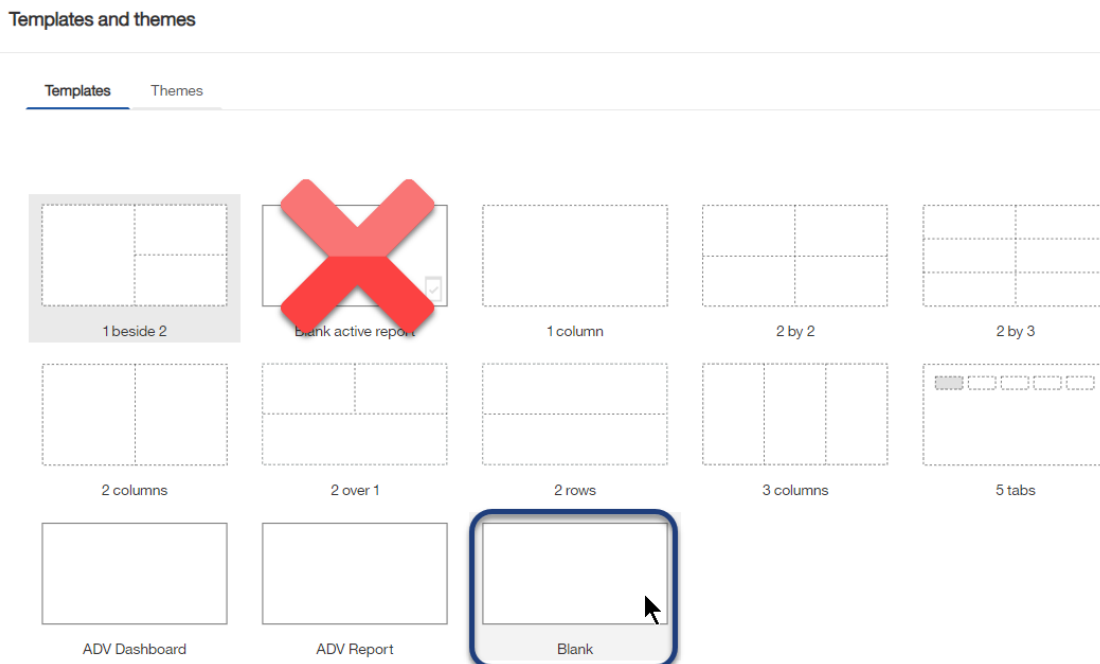
3. In the Insertable objects pane click **Select a Source**:

4. Navigate to **Team content** 📷 > **Financial Activity Hub** folder > **Financial Activity Hub Analytics Packages** folder > click the ▭ **FINAH-UCSDGeneralLedger-View** package. Click Open.

5. In the Application toolbar click **Save**, click **My content** 📁, open the **Cognos Training-FINAH** folder, and save the report specification as **Report layout**. Click Save.

Before we add data to the report, we take time to layout the report page. Notice the Blank template is truly that.

6. In the middle of the canvas click **Add** ⊕.

In the circle menu *notice the option to* add a **Table** to the page.
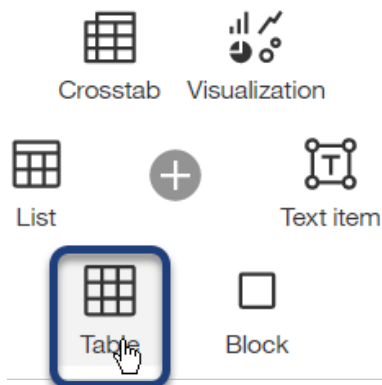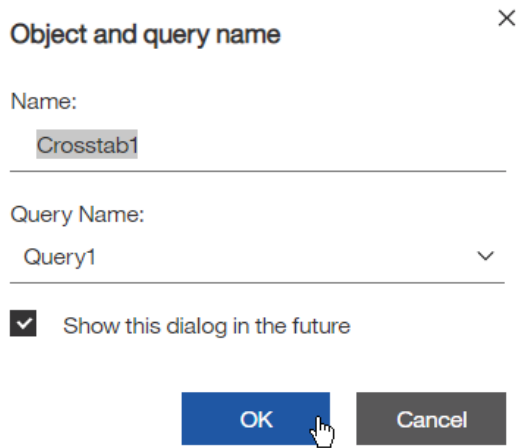
We can use tables to create a grid layout on the page. We use Tables and Blocks throughout Cognos to help organize the report page. We can also drag and drop items from the Circle menu and the Toolbox into the page and Cognos creates a grid layout for us.

7. In the circle menu click **Crosstab**.

8. On the Object and query name window click OK.

Object and query name   ×

Name:

Crosstab1

Query Name:

Query1   ∨

☑ Show this dialog in the future

OK   Cancel

The Crosstab appears on the page.

↷ Columns

↷ Rows   ↷ Measures
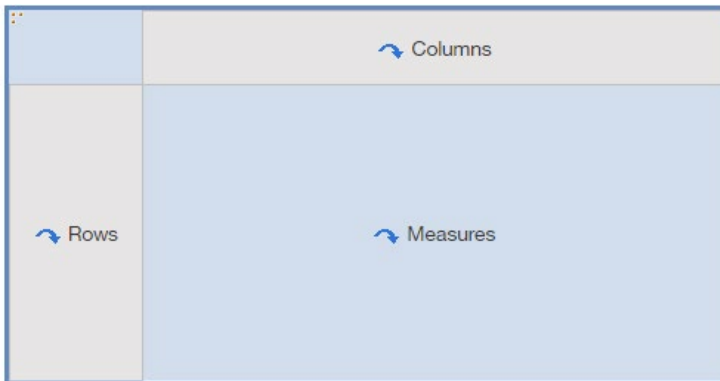
Headers & footers

You may have noticed the Blank report template does not include headers or footers—no dotted lines at the top and bottom of the canvas.

9. Click in the white space of the canvas somewhere below the Crosstab—the entire page turns blue.

10. In the OnDemand toolbar click **More** ⋯ > mouse over **Headers & footers** > click **Page header & footer**.
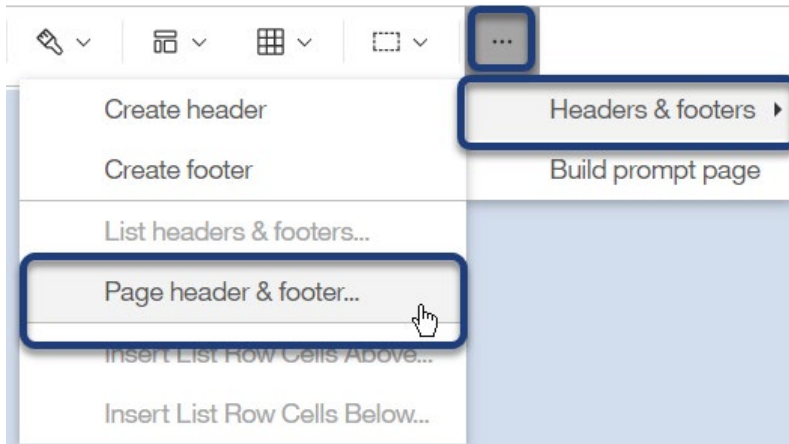
11. In the Page header & footer window place checkmarks next to **Header** and **Footer**. Click OK.
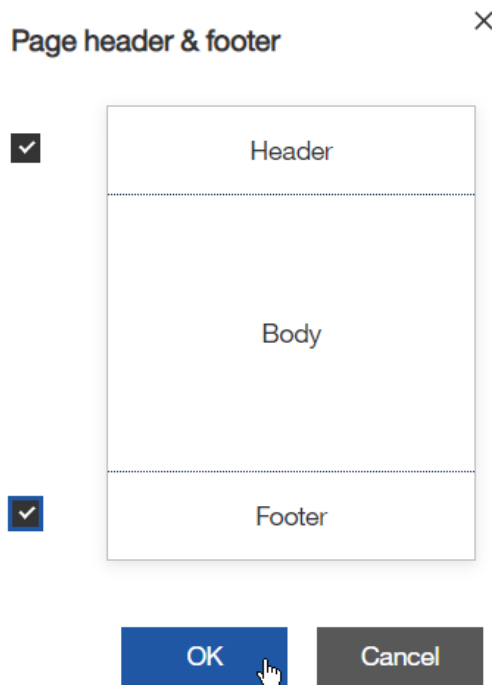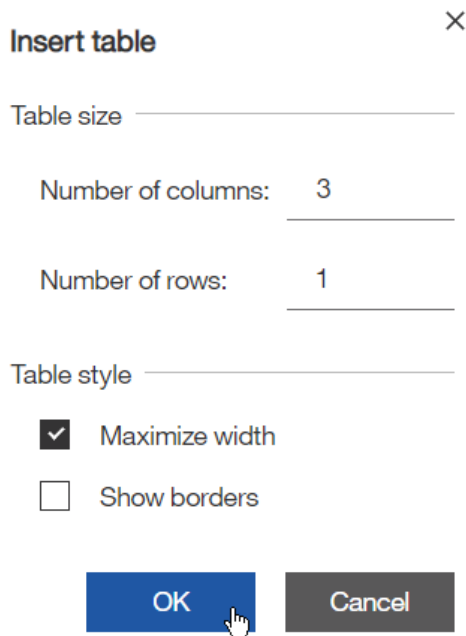
A Header and Footer appear on the page. In the next steps we add a 1 row x 3 column Table in the Footer, and bring in the run date, run time and page numbers.

12. In the Footer click **Add** ⊕ and from the circle menu select **Table**.

Table

13. In the Insert table window specific **3 columns** x **1 row**. Click OK.

Insert table ✕

Table size

Number of columns: 3

Number of rows: 1

Table style

☑ Maximize width

☐ Show borders

OK   Cancel

14. From the **Toolbox** 🔧 TEXTUAL section:
    a. Drag **Date** 🗓 Date into the 1st column
    b. Drag **Page number** 📄 Page number into the 2nd column
    c. Drag **Time** 🕐 Time into the 3rd column.

| 🗓 Date | 📄 1 | 🕐 Time |

15. Click inside the Table cell that contains the Page number and in the OnDemand toolbar click **Horizontal alignment** ⊒° and select **Center**.
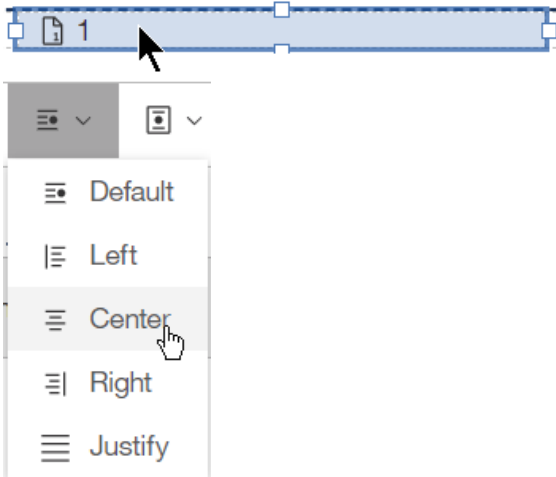
16. Repeat the previous step for the cell that contains the Time value and align the data in the cell to the **Right** .
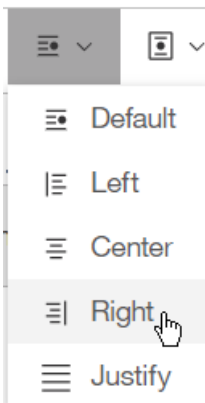
17. In the Report Header click **Add** ⊕ and from the circle menu select **Table**.
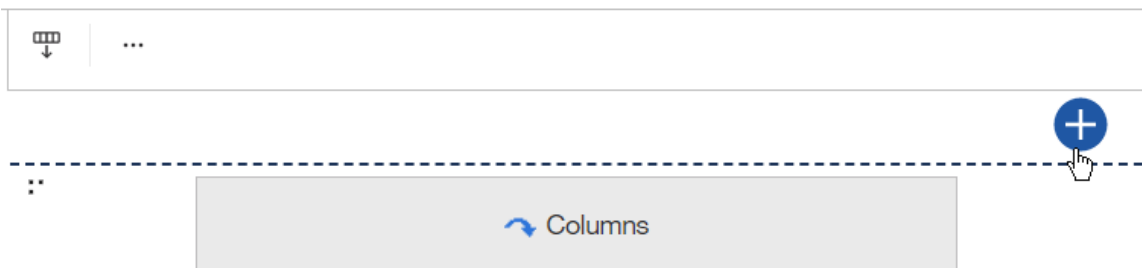
18. In the Insert table window specific **1 columns** x **4 rows**. Click OK.

Insert table   ✕

Table size

    Number of columns: 1

    Number of rows: 4

Table style

   ☑   Maximize width

   ☐   Show borders

    OK   Cancel

This Table provides us with a place for a Report Title and later, key details about the filters on the report.

19. In the 1st row of the Table click **Add** ⊕ and **Text item**.

[T]

Text item

20. In the Text field type: General Ledger Account Details.
21. Click inside the top row of the Table—outside the Text item.

General Ledger Account Details

⊕
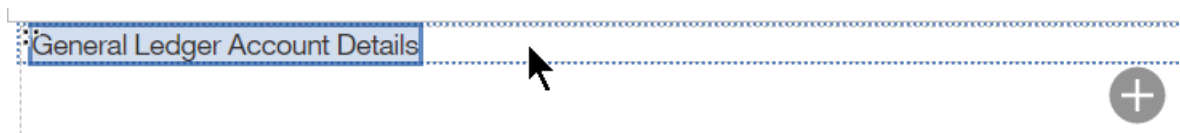
22. In the OnDemand toolbar:
    a. Click **Horizontal alignment** ☰ and select **Center**
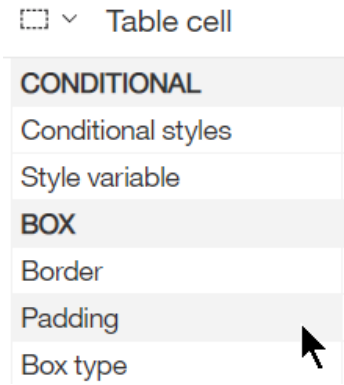   b. Click **Font** T and in the Font window for Size select **12pt** and for Weight select **Bold**. Click OK.
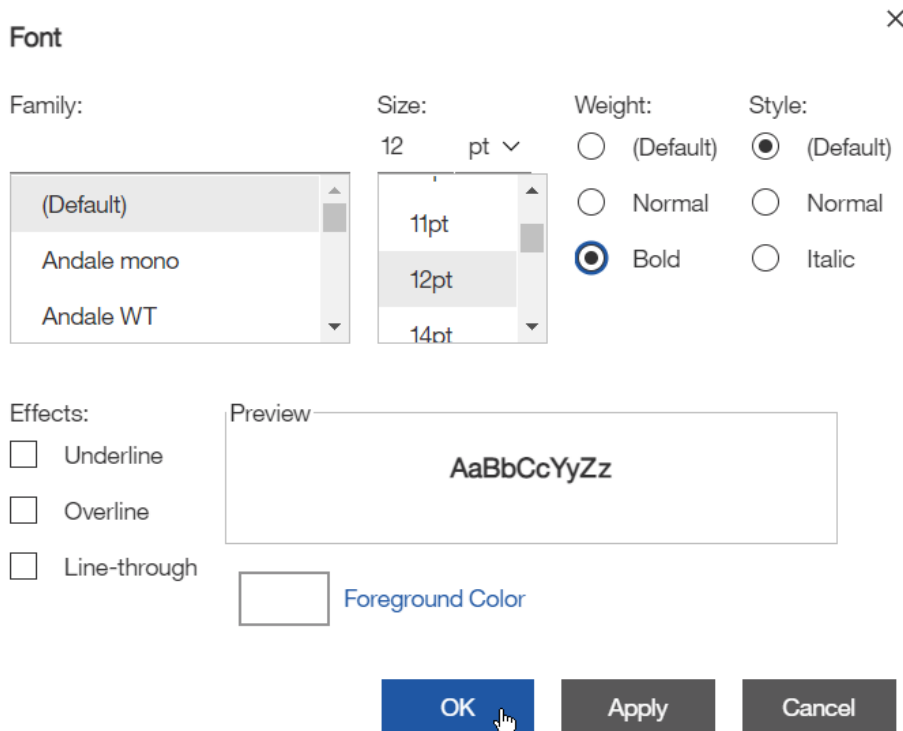
Now any Text added to the Table row will inherit this formatting. But notice how the text looks "smooshed" in the Table rows.
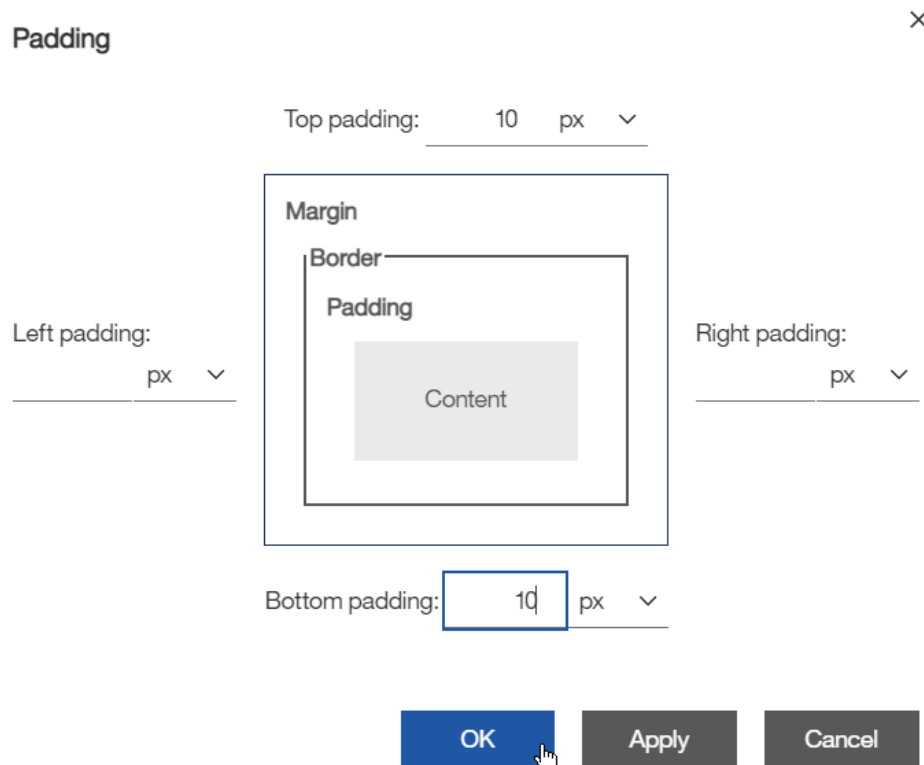
23. With the table row still selected, in the **Properties** ⌁ pane under BOX double-click **Padding**.

Table cell

CONDITIONAL
Conditional styles
Style variable
BOX
Border
Padding
Box type

24. Specify 10px of **Top** and **Bottom** padding. Click OK.

Padding   ✕

Top padding: 10   px   ⌄

Margin
  Border
   Padding

        Content

Left padding: Right padding:
              px   ⌄   px   ⌄

Bottom padding: 10   px   ⌄

OK   Apply   Cancel

Your instructor explains the best practice of applying formatting to the Table rows, rather than directly to the items in the row!

25. In the Application toolbar click **Save** (Report Layout).

plante moran

UC San Diego

The header looks like this:

Crosstab report

In the next lesson we continue in the Report Layout report and add data to the Crosstab. Rather than drag items directly from the Data source (package) into the Crosstab we first create the query that contains all the data items and the filters we need.


Crosstab

1. Continue in the **Report Layout** report.
2. In the Application toolbar click the **Save** dropdown, select **Save as**, and save the report specification as **Crosstab.** Click Save.
3. In the Navigation menu click **Report** and click **Query1**:
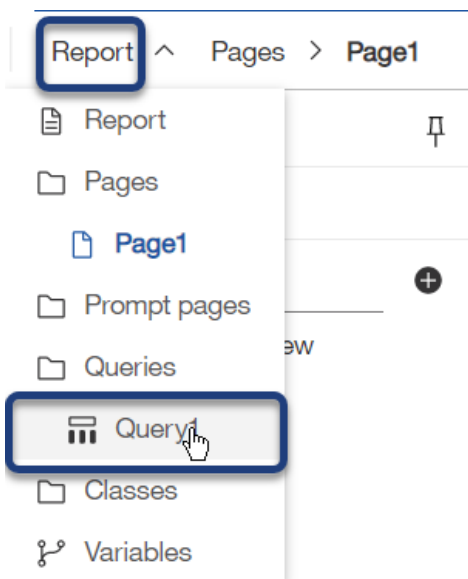
In the next steps we add data items, calculations and detail filters to the Crosstab.

4. Under Insertable objects and the **Sources** 🖧 tab expand the **UCSD GeneralLedger** namespace > **Dimensions** folder > **Account** query subject and drag **Account L1** and **Account L2** into the Data Items pane.
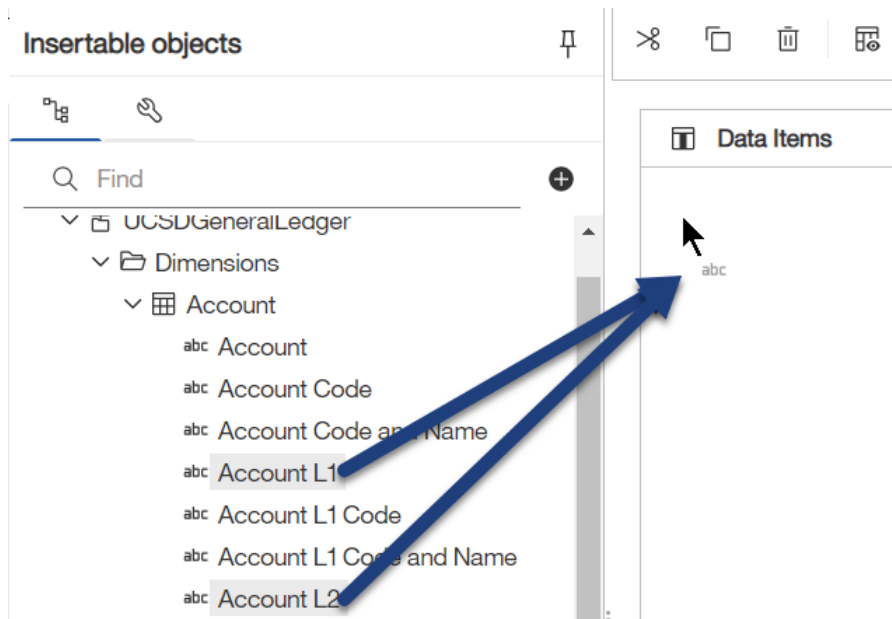
5. From the **Function** query subject add **Function** to the query.
6. From the **Measures** folder and the **General Ledger Measures** query subject add **Transaction Amount** to the query.
7. From the **Accounting Period** query subject add **Fiscal Accounting Period** to the query.

The Data Items pane looks like this—note that your data items may be in a different order:
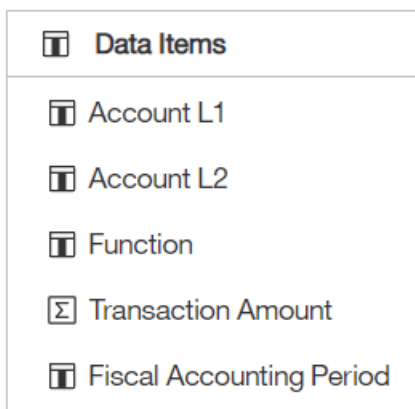
Next, we add Detail Filters to the query.

8. From the **Accounting Period** query subject drag **Fiscal Year (YYYY)** into the Detail Filters pane.
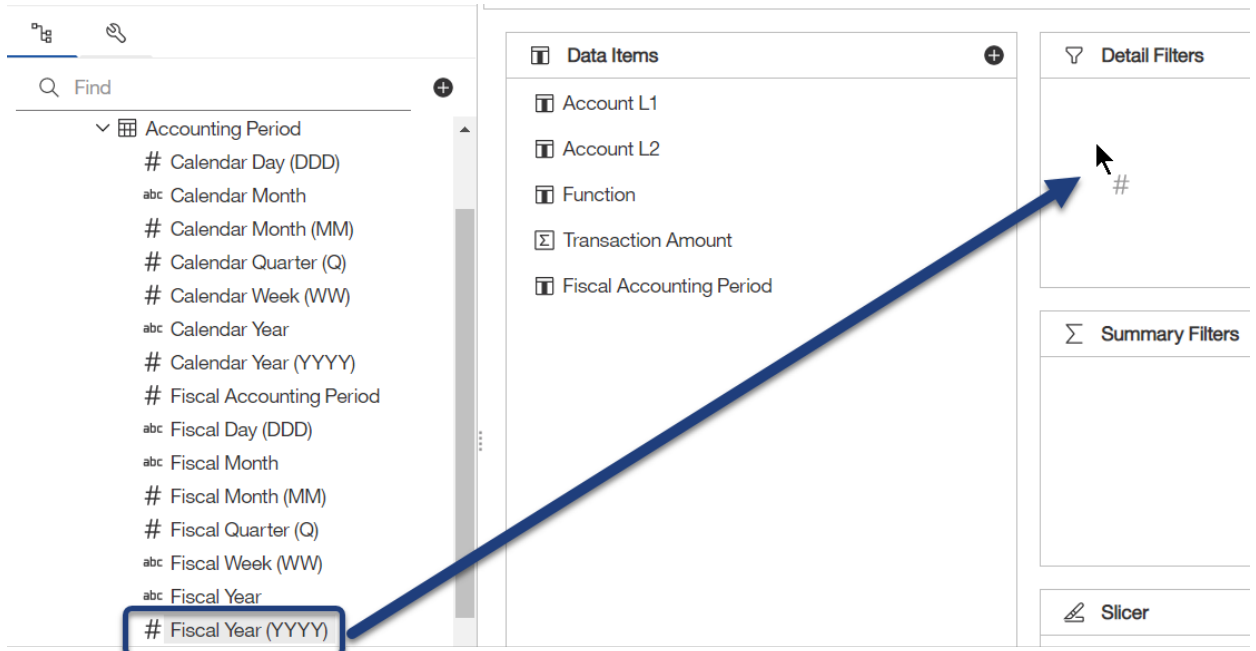
9. Define the following expression:

Expression Definition:

[UCSDGeneralLedger].[Accounting Period].[Fiscal Year (YYYY)] = 2020

Notice there are no single quotes around 2020. In the package, notice the # symbol next to Fiscal Year which indicates Cognos sees the value as a number—and not as text (which would require single quotes).

Fiscal Year (YYYY)

10. Click **Validate** ✓. Click OK.

11. From the **Entity** query subject drag **Entity Code** into the Detail Filters pane and define the following expression:

Expression Definition:

[UCSDGeneralLedger].[Entity].[Entity Code] = '16110'

Recall that Entity Code 16110 is Academic Affairs.

12. Click **Validate** ✓ . Click OK.
13. From the **Fund** query subject drag **Fund Code** into the **Detail Filters** pane and define the following expression:
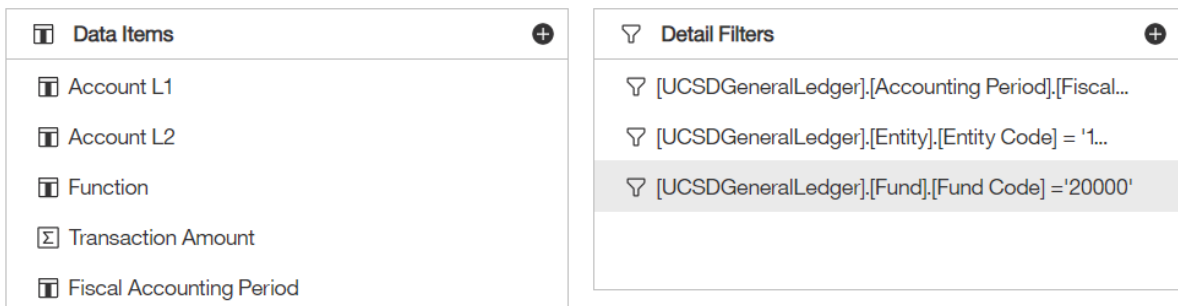
Expression Definition:

[UCSDGeneralLedger].[Fund].[Fund Code] = '20000'

Recall that Fund Code 20000 is Federal Contracts and Grants.

14. Click **Validate** ✓ . Click OK.
15. In the Application toolbar click **Save** (Crosstab).

The query looks like this:

| ⊤ Data Items	⊕	▽ Detail Filters	⊕
⊤ Account L1		▽ [UCSDGeneralLedger].[Accounting Period].[Fiscal...	
⊤ Account L2		▽ [UCSDGeneralLedger].[Entity].[Entity Code] = '1...	
⊤ Function		▽ [UCSDGeneralLedger].[Fund].[Fund Code] ='20000'	
Σ Transaction Amount			
⊤ Fiscal Accounting Period			

In this example we want to see Transaction Amounts broken down by Debits, Credits and an Ending Balance column. Recall we built these calculations in a previous lesson. We can return to the Welcome Portal, open (Edit) the If then else report and copy and paste the calculations into this report.
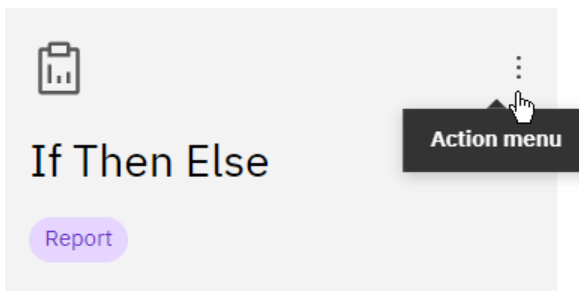
16. At the top of the Cognos window click the **Switcher** menu and click **Welcome** to return to the Welcome Portal.
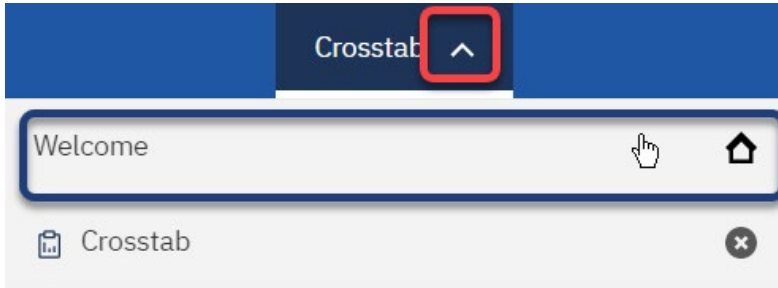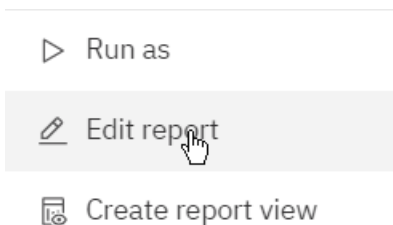

Find the **Recent** area . . . note you may have to scroll down the page to find it, or you can toggle the switch to *turn off* **Show welcome** . . .
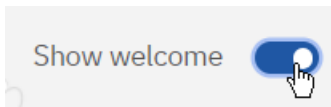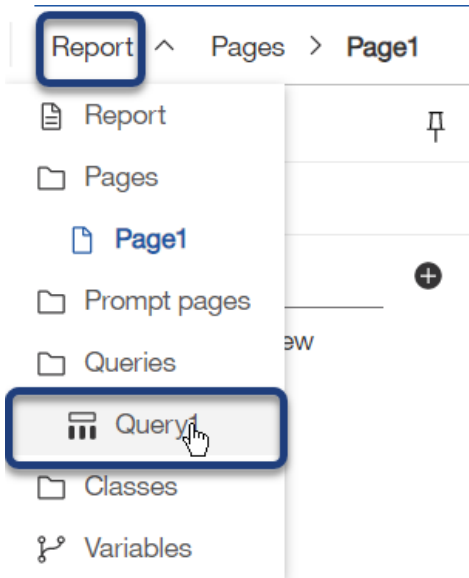

17. Mouse over the **If then else** report "card", click **More** ⋮ (Action Menu)
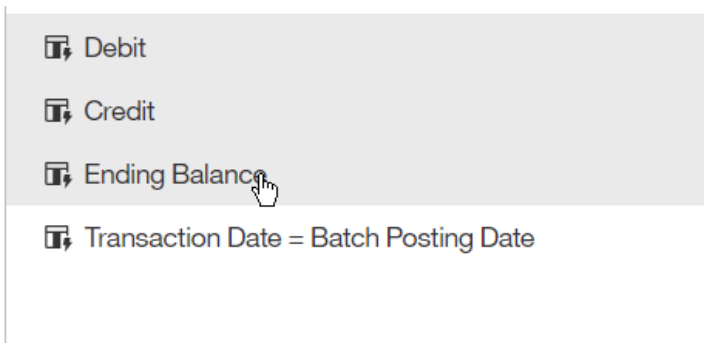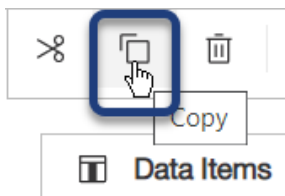

18. And click **Edit report**.

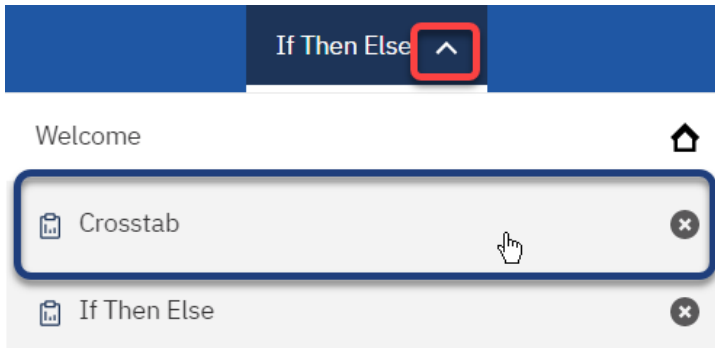19. In the Navigation menu click **Report** and click **Query1**.

20. In the Data Items pane Ctrl-click the **Debit**, **Credit** and **Ending Balance** data items.

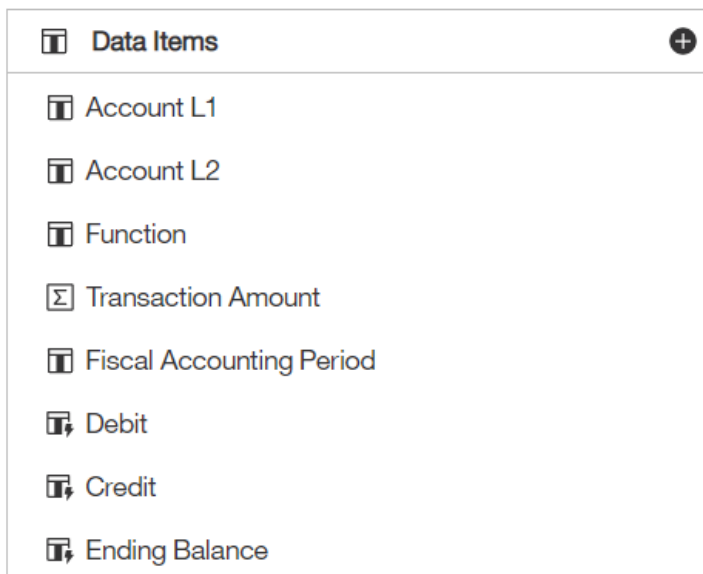21. Above the Data items pane in the Query toolbar click **Copy**.

22. Click the Switcher menu and click **Crosstab**.

If Then Else

Welcome 🏠

📋 Crosstab ✕

📋 If Then Else ✕

23. Click inside the Data Items pane and in the Query toolbar click **Paste**.

The three copied data items appear in the query saving us the time of rebuilding them! Your instructor discusses some of the rules that allowed us to take this shortcut.

Data Items ➕

▦ Account L1

▦ Account L2

▦ Function

Σ Transaction Amount

▦ Fiscal Accounting Period

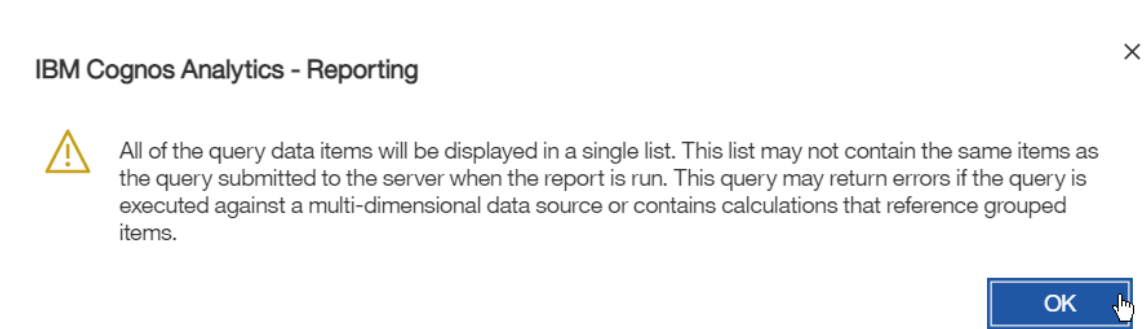▦ Debit

▦ Credit

▦ Ending Balance

Before we return to the Report page and build the Crosstab it is best practice to test the query—or View Tabular Data—to ensure the query returns the data we expect to see.

24. In the Application toolbar click **Save** (Crosstab).
25. Above the Data Items pane click **View Tabular Data** 🔲.
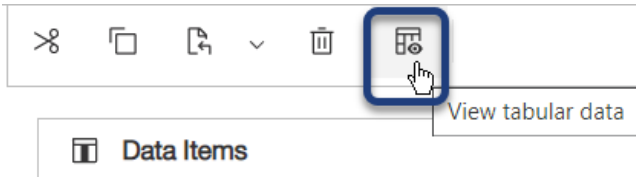
26. Click OK to acknowledge the warning message that appears.

27. If asked to Select a connection select **HANA-QA**.

The query data runs in a new tab—your columns may be in a different order than those shown here:

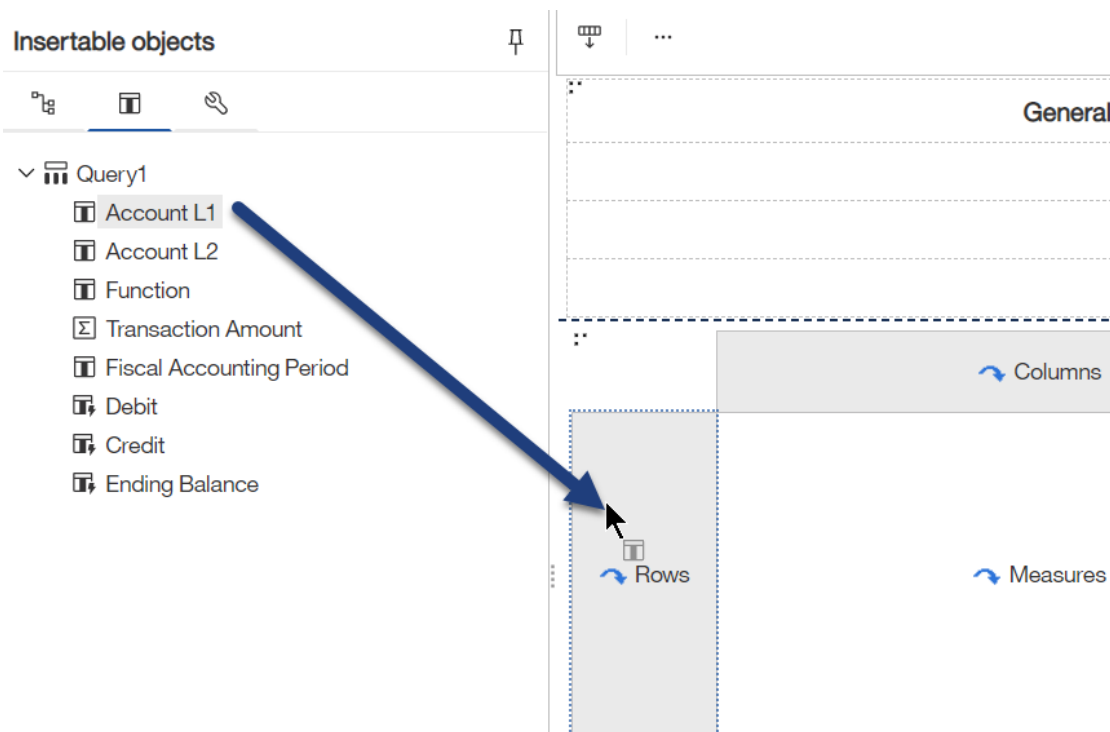| Fiscal Accounting Period	Transaction Amount	Function	Account L2	Account L1	Debit	Credit	Ending Balance
202012	2,251,822,818.48001	No Function	Net Position/Fund Balance	Net Position/Fund Balance	1,128,906,470.56	1,122,916,347.92	5,990,122.63999891
202012	39,611,499.4800001	No Function	Current Assets	Assets	16,806,465.68	22,805,033.8	-5,998,568.12000001
202012	30,000.5	No Function	Current Liabilities	Liabilities	13,858.04	16,142.46	-2,284.42
202010	1,753.88	No Function	Current Liabilities	Liabilities	66.26	1,687.62	-1,621.36
202012	107.1	Research	Noncurrent Assets	Assets	107.1	0	107.1
202012	7,419.88	Research	Other Operating Expense	Expense	5,507.32	1,912.56	3,594.76
202010	1,753.88	Research	Supplies and Materials	Expense	1,687.62	66.26	1,621.36
202011	3,312.69	Research	Supplies and Materials	Expense	3,312.69	0	3,312.69
202009	703.74	Research	Supplies and Materials	Expense	703.74	0	703.74
202012	7,028.04	Research	Supplies and Materials	Expense	7,028.04	0	7,028.04
202007	1,200	Research	Other Operating Expense	Expense	1,200	0	1,200
202011	4,045.82	Research	Noncurrent Assets	Assets	4,045.82	0	4,045.82
202001	77.99	Research	Other Operating Expense	Expense	77.99	0	77.99
202001	1,897.33	Research	Supplies and Materials	Expense	1,897.33	0	1,897.33
202008	1,423.88	Research	Supplies and Materials	Expense	1,423.88	0	1,423.88
202006	6,250	Research	Other Operating Expense	Expense	6,250	0	6,250
202005	5,100	Research	Supplies and Materials	Expense	5,100	0	5,100
202005	6,325	Research	Noncurrent Assets	Assets	6,325	0	6,325
202008	167.78	Research	Other Operating Expense	Expense	167.78	0	167.78
202006	354.57	Research	Supplies and Materials	Expense	354.57	0	354.57

28. Close the New report browser tab.

29. In the Navigation menu click **Report** and click **Page1** to return to the report page.
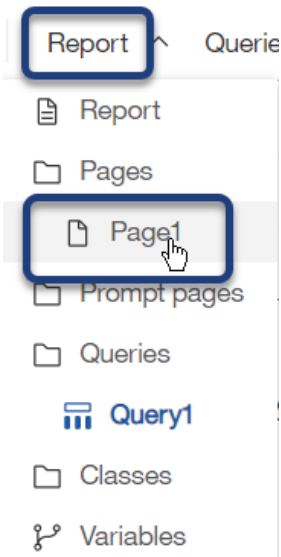
30. Under Insertable objects click **Data Items** ⊞ tab.
31. From **Query1** drag **Account L1** into the **Rows** drop zone of the Crosstab:

32. Drag **Fiscal Accounting Period** into the **Columns** drop zone.
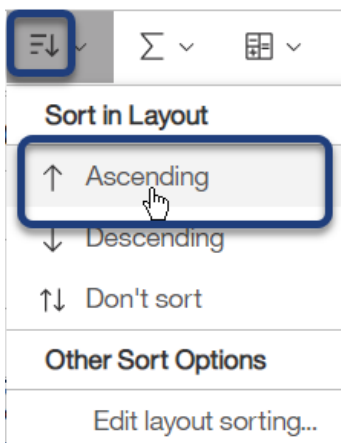33. Drag **Transaction Amount** into the **Measures** drop zone.

The Crosstab looks like this:

Transaction Amount	<#Fiscal Accounting Period#>	<#Fiscal Accounting Period#>
<#Account L1#>	<#1234#>	<#1234#>
<#Account L1#>	<#1234#>	<#1234#>

34. Click inside the **Fiscal Accounting Period** *column header*.

Transaction Amount	<#Fiscal Accounting Period#>	<#Fiscal Accounting Period#>
<#Account L1#>	<#1234#>	<#1234#>
<#Account L1#>	<#1234#>	<#1234#>

35. In the OnDemand toolbar click **Sort** ⥮ and select **Ascending**.

36. Click inside the **Account L1** *row header*.

Transaction Amount	<#Fiscal Accounting Period#>	<#Fiscal Accounting Period#>
<#Account L1#>	<#1234#>	<#1234#>
<#Account L1#>	<#1234#>	<#1234#>

37. In the OnDemand toolbar click **Sort** ⥮ and select **Ascending**.

Notice the Sort indicators in the headers:

Transaction Amount	<#Fiscal Accounting Period#> ▲	<#Fiscal Accounting Period#>
<#Account L1#> ▲	<#1234#>	<#1234#>
<#Account L1#>	<#1234#>	<#1234#>

38. In the Application toolbar click **Save** (Crosstab).
39. In the Application toolbar click Page design and select **Page preview**.
40. If asked to Select a connection select **HANA-QA**.

Transaction Amount	202001	202003	202004	202005	202006	202007	202008	202009	202010	202011	202012
Assets		10,795.63		19,465.2	56,568.75					12,451.01	39,611,606.58
Expense	1,975.32		14.19	5,100	6,604.57	1,229.76	1,591.66	703.74	1,753.88	3,512.7	14,447.92
Liabilities	1,975.32	10,692.67	14.19	11,915.2	63,173.32	1,229.76	1,591.66	703.74	1,753.88	7,872.07	30,000.5
Net Position/Fund Balance											2,251,822,818.48

Let's focus the report on just one Account L1 – Expense.

41. In the **Account L1** row headers click **Expense**.

42. In the OnDemand toolbar click **Filters** ▽ and **Include Expense**

The report refreshes:

Transaction Amount	202001	202005	202006	202007	202008	202009	202010	202011	202012
Expense	1,975.32	5,100	6,604.57	1,229.76	1,591.66	703.74	1,753.88	3,512.7	14,447.92

43. In the Application toolbar click Page preview and select **Page design**.
44. In the Application toolbar click **Save** (Crosstab).

Nesting

In the next steps we learn how to add more than one dimension to the Crosstab rows.

45. From **Data items** 🔳 and **Query1** drag **Account L2** into the Rows and *nest* the values to the right of **Account L1**, like this:
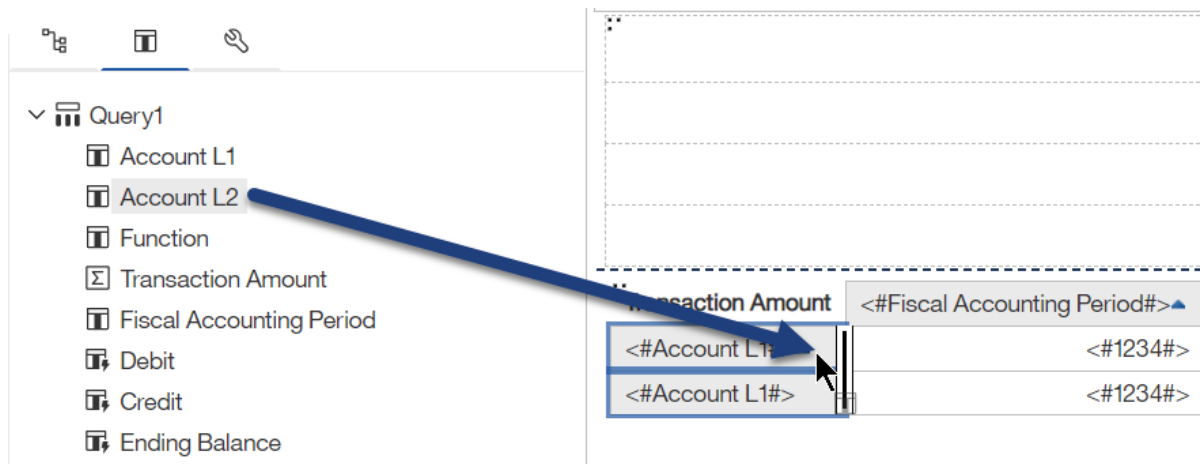
Look for the flashing bar before you drop the data item. The updated Crosstab looks like this:

Transaction Amount		<#Fiscal Accounting Period#>▲	<#Fiscal Accounting Period#>
<#Account L1#>▲	<#Account L2#>	<#1234#>	<#1234#>
	<#Account L2#>	<#1234#>	<#1234#>
<#Account L1#>	<#Account L2#>	<#1234#>	<#1234#>
	<#Account L2#>	<#1234#>	<#1234#>

46. Click inside the **Account L2** row header.
47. In the OnDemand toolbar click **Sort** ⇲ and **Ascending**.
48. In the Application toolbar click **Save** (Crosstab).

49. In the Application toolbar click Page design and select **Page preview**.

Transaction Amount		202001	202005	202006	202007	202008	202009	202010	202011	202012
Expense	Other Operating Expense	77.99		6,250	1,200	167.78			200.01	7,419.88
	Supplies and Materials	1,897.33	5,100	354.57	29.76	1,423.88	703.74	1,753.88	3,312.69	7,028.04

50. In the Application toolbar click Page design and select **Page design**.

Select fact cells and bring in multiple measures

In the next steps we learn how to remove the current measure and columns and demonstrate how to bring in multiple measures—Debit, Credit and Ending Balance.

51. In the Application toolbar click Page preview and **Page design**.
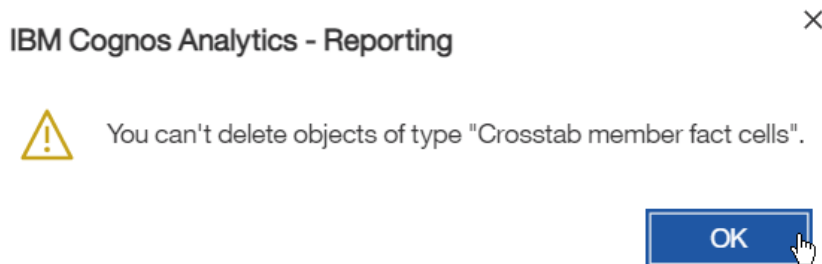52. Click inside the **Fiscal Accounting Period** column header and in the OnDemand toolbar click **Cut** ✂.
53. Click to select the white Measures (<#1234#>) cells in the middle of the Crosstab.

Transaction Amount		↱ Columns
<#Account L1#>▲	<#Account L2#>▲	<#1234#>
	<#Account L2#>	<#1234#>
<#Account L1#>	<#Account L2#>	<#1234#>
	<#Account L2#>	<#1234#

54. On your keyboard hit **Delete**.

But wait . . . we can't delete it this way.

55. Click OK to acknowledge the warning:

IBM Cognos Analytics - Reporting ✕

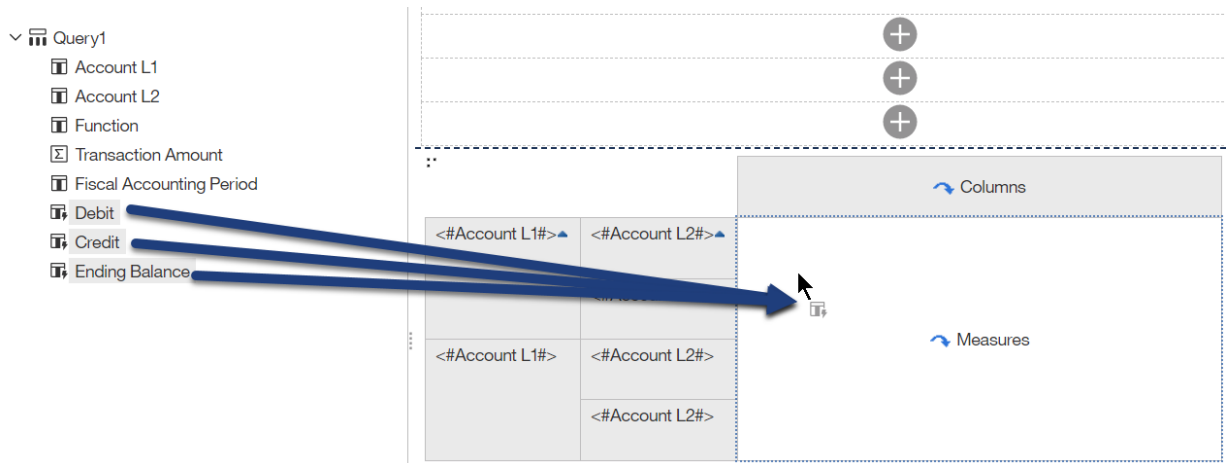⚠ You can't delete objects of type "Crosstab member fact cells".

OK

56. In the OnDemand toolbar click **More** ⋯ and **Select Fact Cells**:
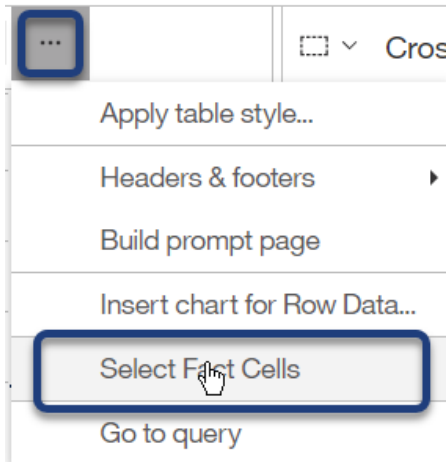
57. In the OnDemand toolbar click **Cut** ✂.

The Measures area is empty.

58. From **Query1** Ctrl-click **Debit, Credit** and **Ending Balance** and drag all three items into the *Measures* drop zone.

The Measures are added as columns:

|		<#Debit#>	<#Credit#>	<#Ending Balance#>
<#Account L1#>▲	<#Account L2#>▲	<#1234#>	<#1234#>	<#1234#>
	<#Account L2#>	<#1234#>	<#1234#>	<#1234#>
<#Account L1#>	<#Account L2#>	<#1234#>	<#1234#>	<#1234#>
	<#Account L2#>	<#1234#>	<#1234#>	<#1234#>

59. Click inside the Crosstab and in the OnDemand toolbar click **Filters** ▽ and **Edit filters**.
60. **Delete** ⊖ the filter on **Account L1**. Click OK.
61. In the Application toolbar click **Save** (Crosstab).
62. In the Application toolbar click Page design and select **Page preview**.

		Debit	Credit	Ending Balance
Assets	Current Assets	16,806,465.68	22,805,033.8	-5,998,568.12
	Noncurrent Assets	70,109.14	29,278.55	40,830.59
Expense	Other Operating Expense	13,403.1	1,912.56	11,490.54
	Supplies and Materials	21,547.09	70.99	21,476.1
Liabilities	Current Liabilities	32,785.28	98,137.03	-65,351.75
Net Position/Fund Balance	Net Position/Fund Balance	1,128,906,470.56	1,122,916,347.92	5,990,122.63999987

63. Ctrl-click inside all three of the measure columns.

		Debit	Credit	Ending Balance
Assets	Current Assets	16,806,465.68	22,805,033.8	-5,998,568.12
	Noncurrent Assets	70,109.14	29,278.55	40,830.59
Expense	Other Operating Expense	13,403.1	1,912.56	11,490.54
	Supplies and Materials	21,547.09	70.99	21,476.1
Liabilities	Current Liabilities	32,785.28	98,137.03	-65,351.75
Net Position/Fund Balance	Net Position/Fund Balance	1,128,906,470.56	1,122,916,347.92	5,990,122.63999987

64. In the OnDemand toolbar click **Data Format** 🔳 :

T ⊞ 🖌 ∨ | 🔳 | ⊒ ∨ |

Data format

Ledger Account Details
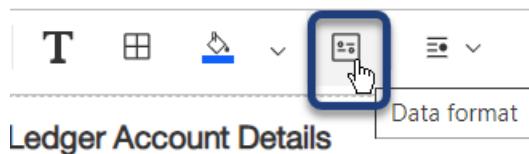
65. In the Data format window for **Format type** select **Number**.
66. In the Properties:
    a. For Number of decimal places select **2**
    b. For Use thousands separator select **Yes**.
    c. Click OK.

☲ **Data format**   ✕

Format type:	Properties:	↺
Number ⌄	Number of decimal places	2
	Decimal separator	
	Scale	
	Negative sign symbol	
	Negative sign position	
	Use thousands separator	Yes ⌄
	Thousands separator	
	Group size (digits)	
	Secondary group size (digits)	
	Maximum number of digits	

Use thousands separator
Specifies whether the grouping delimiter will be applied as
defined by the Group Size property. The default value is inherited
from the user's content language.

OK   Cancel

67. Click inside the **Ending Balance** column and in the OnDemand Toolbar click **Summarize** Σ select **Total**.

The report refreshes:

		Debit	Credit	Ending Balance
Assets	Current Assets	16,806,465.68	22,805,033.80	-5,998,568.12
	Noncurrent Assets	70,109.14	29,278.55	40,830.59
	Total	16,876,574.82	22,834,312.35	-5,957,737.53
Expense	Other Operating Expense	13,403.10	1,912.56	11,490.54
	Supplies and Materials	21,547.09	70.99	21,476.10
	Total	34,950.19	1,983.55	32,966.64
Liabilities	Current Liabilities	32,785.28	98,137.03	-65,351.75
	Total	32,785.28	98,137.03	-65,351.75
Net Position/Fund Balance	Net Position/Fund Balance	1,128,906,470.56	1,122,916,347.92	5,990,122.64
	Total	1,128,906,470.56	1,122,916,347.92	5,990,122.64000058
Total		1,145,850,780.85	1,145,850,780.85	0.00000058

68. In the Application toolbar click **Save** (Crosstab).
69. In the Application toolbar click Page preview and select **Page design**.
70. Ctrl-click inside the all the green Total cells with numbers in them:

		<#Debit#>	<#Credit#>	<#Ending Balance#>
<#Account L1#>▲	<#Account L2#>▲	<#1234#>	<#1234#>	<#1234#>
	Total	<#1234#>	<#1234#>	<#1234#>
Total		<#1234#>	<#1234#>	<#1234#>

71. In the OnDemand toolbar click **Data Format** 🔳.
72. In the Data format window for **Format type** select **Currency** and for **Number of decimal places** select **2**. Click OK.

🔳 **Data format**   ✕

Format type:	Properties:	
Currency ⌄	Currency	
	Currency display	
	Currency symbol	
	International currency symbol	
	Currency symbol position	
	Number of decimal places	2
	Decimal separator	

73. In the Application toolbar click **Save** (Crosstab).

74. In the Application toolbar click Page design and select **Page preview**.

		Debit	Credit	Ending Balance
Assets	Current Assets	16,806,465.68	22,805,033.80	-5,998,568.12
	Noncurrent Assets	70,109.14	29,278.55	40,830.59
	Total	$16,876,574.82	$22,834,312.35	($5,957,737.53)
Expense	Other Operating Expense	13,403.10	1,912.56	11,490.54
	Supplies and Materials	21,547.09	70.99	21,476.10
	Total	$34,950.19	$1,983.55	$32,966.64
Liabilities	Current Liabilities	32,785.28	98,137.03	-65,351.75
	Total	$32,785.28	$98,137.03	($65,351.75)
Net Position/Fund Balance	Net Position/Fund Balance	1,128,906,470.56	1,122,916,347.92	5,990,122.64
	Total	$1,128,906,470.56	$1,122,916,347.92	$5,990,122.64
Total		$1,145,850,780.85	$1,145,850,780.85	$0.00

Conditional formatting

We continue in the Crosstab report and learn how to apply Conditional Formatting to the Measure cells of the Crosstab.

To demonstrate this concept, we apply a Conditional style to highlight outliers in the Ending Balance column.

If the Ending Balance is:
- Less than or equal to -0.01 we want to highlight the cells in **Red**
- Equal to 0 we want to highlight the cells in **Green**
- Greater than 1,000,000 we want to highlight the cells in **Yellow**

Conditional Formatting

1. In the Application toolbar click Page preview and select **Page design**.
2. In the Application toolbar click the **Save** dropdown, select **Save as**, and save the report specification as **Conditional formatting.** Click Save.

3. Click inside the white <1234> cell in the **Ending Balance** column—directly under the column header.

		<#Debit#>	<#Credit#>	<#Ending Balance#>
<#Account L1#>▲	<#Account L2#>▲	<#1234#>	<#1234#>	<#1234#>
	Total	<#1234#>	<#1234#>	<#1234#>
Total		<#1234#>	<#1234#>	<#1234#>
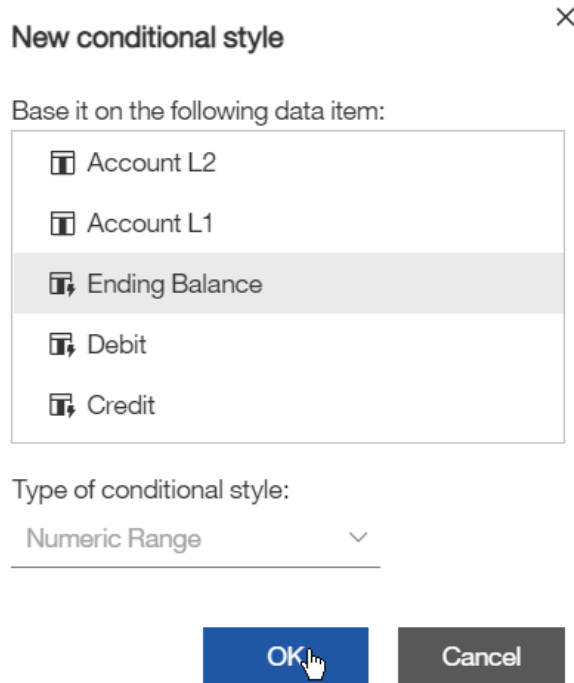
4. In Properties pane ⚏ under CONDITIONAL double-click **Conditional styles**.

CONDITIONAL
Conditional styles
Style variable

5. In the Conditional styles window click **New** ⊕ and select **New Conditional Style**:

Conditional styles ✕

⊕ ✎ ⊖ ↑ ↓

New Conditional Style...

Use Existing Conditional Style...   Cancel

Advanced Conditional Style...

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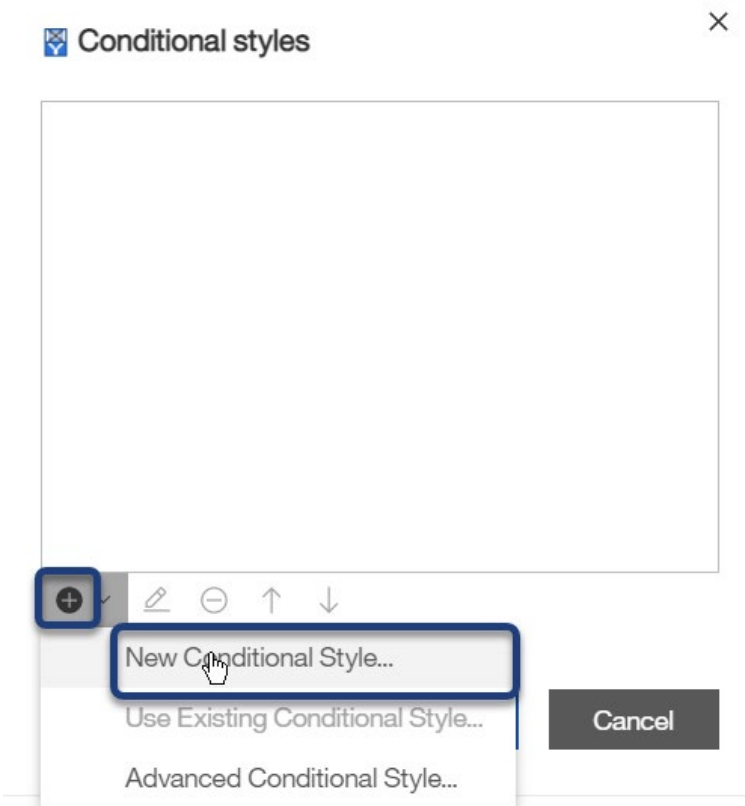
6. In the New conditional style window select **Ending Balance** as the data item to base it on. Click OK.

New conditional style   ✕

Base it on the following data item:

⬚ Account L2

⬚ Account L1

⬚ Ending Balance

⬚ Debit

⬚ Credit

Type of conditional style:

Numeric Range   ⌄

OK   Cancel

The Conditional style – numeric range window opens.

7. Click **New Value** ⊕ and enter the 1st Threshold: 0. Click OK.
8. Click **New Value** ⊕ and enter the 2nd Threshold: -0.01. Click OK.
9. Click **New Value** ⊕ again and enter the 3rd Threshold: 1,000,000. Click OK.

Notice the little arrows and black lines indicating which side of the ranges the values are in.

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10. Click the little arrow next to 1,000,000 to move it above the threshold line:

Range	Style
Highest value –	
1,000,000	(Default) ∨ AaBbCc ✎
	(Default) ∨ AaBbCc ✎

Move value above threshold
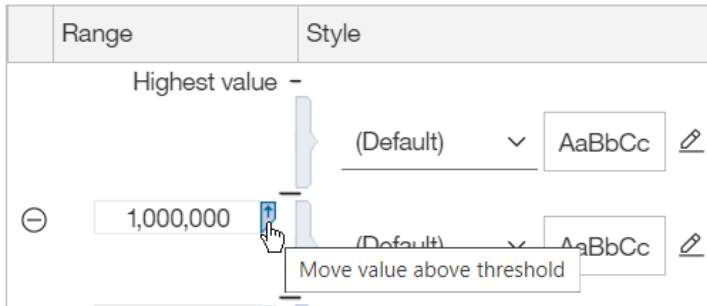
The ranges look like this. You can mouse over each range area to get an explanation of the range to ensure it matches your scenario.

Range	Style
Highest value –	
1,000,000	(Default) ∨ AaBbCc ✎
	(Default) ∨ AaBbCc ✎
0	(Default) ∨ AaBbCc ✎
-0.01	(Default) ∨ AaBbCc ✎
Lowest value –	

Next, we set the Styles.

11. Next to the lowest value Range (-0.01) under **Style** click the **(Default)** dropdown and click **Poor**.
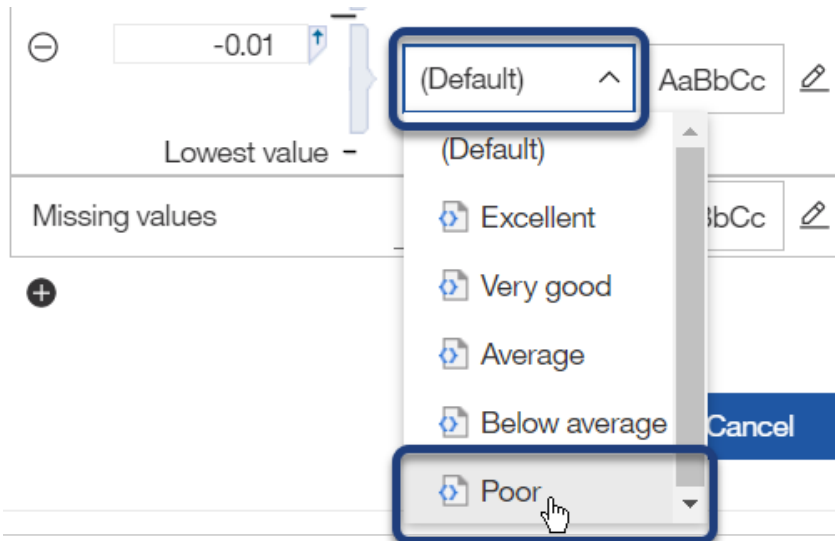
12. Next to the Range for 0 click the **(Default)** dropdown and click **Excellent**.
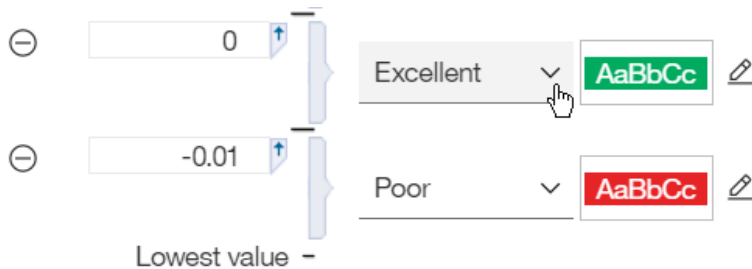
13. Next to the highest value Range (that includes 1,000,000) click **Edit Style** ✎
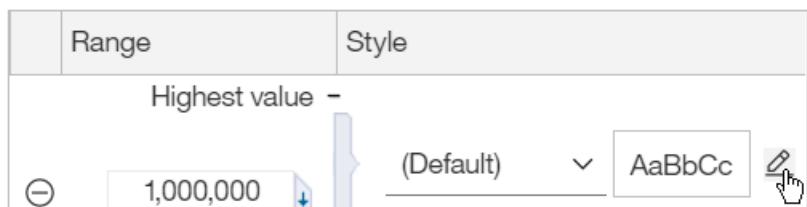
14. In the Style window, notice the variety of style options available – and for **Background color** select **Yellow**. Click OK.

15. Review the settings. Click OK twice to close the Conditional styles windows.

Range		Style			
Highest value –					
⊖	1,000,000 ↓	(Custom) ∨	AaBbCc	✎	
		(Default) ∨	AaBbCc	✎	
⊖	0 ↑	Excellent ∨	AaBbCc	✎	
⊖	-0.01 ↑	Poor ∨	AaBbCc	✎	
Lowest value –					

16. In the Application toolbar click **Save** (Conditional Formatting).
17. In the Application toolbar click Page design and select **Page preview**.

		Debit	Credit	Ending Balance
Assets	Current Assets	16,806,465.68	22,805,033.80	-5,998,568.12
	Noncurrent Assets	70,109.14	29,278.55	40,830.59
	Total	$16,876,574.82	$22,834,312.35	($5,957,737.53)
Expense	Other Operating Expense	13,403.10	1,912.56	11,490.54
	Supplies and Materials	21,547.09	70.99	21,476.10
	Total	$34,950.19	$1,983.55	$32,966.64
Liabilities	Current Liabilities	32,785.28	98,137.03	-65,351.75
	Total	$32,785.28	$98,137.03	($65,351.75)
Net Position/Fund Balance	Net Position/Fund Balance	1,128,906,470.56	1,122,916,347.92	5,990,122.64
	Total	$1,128,906,470.56	$1,122,916,347.92	$5,990,122.64
Total		$1,145,850,780.85	$1,145,850,780.85	$0.00

Notice there are no values = 0 in this report so we are only seeing the yellow and red highlighting.

Visualizations

In the next lesson we return to the Crosstab report and add a Visualization.

Visualizing Data

1. At the top of the window click the **Switcher** button and click **Welcome** to return to the Welcome Portal.
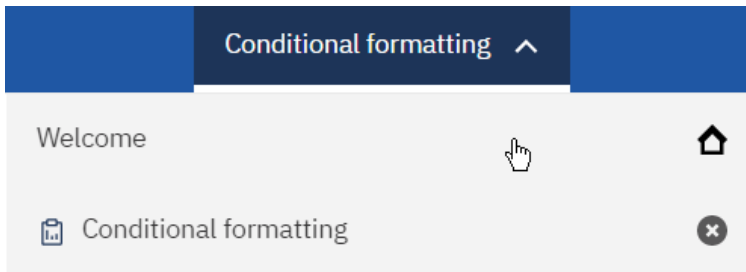
2. In the Recent area mouse over the **Crosstab** report "card", click **More** ⋮ (Action Menu) and click **Edit report**.
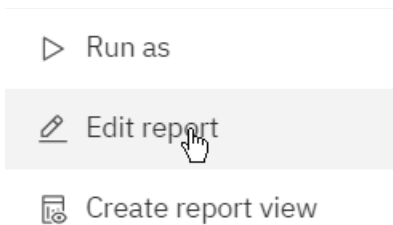
3. In the Application toolbar click the **Save** dropdown, select **Save as**, and save the report specification as **Visualization.** Click Save.
4. Click inside the **Crosstab** and in the OnDemand toolbar click **Filters** ▽ and **Edit Filters**.
5. Double-click the **Entity Code** filter and edit as follows:

Expression Definition:
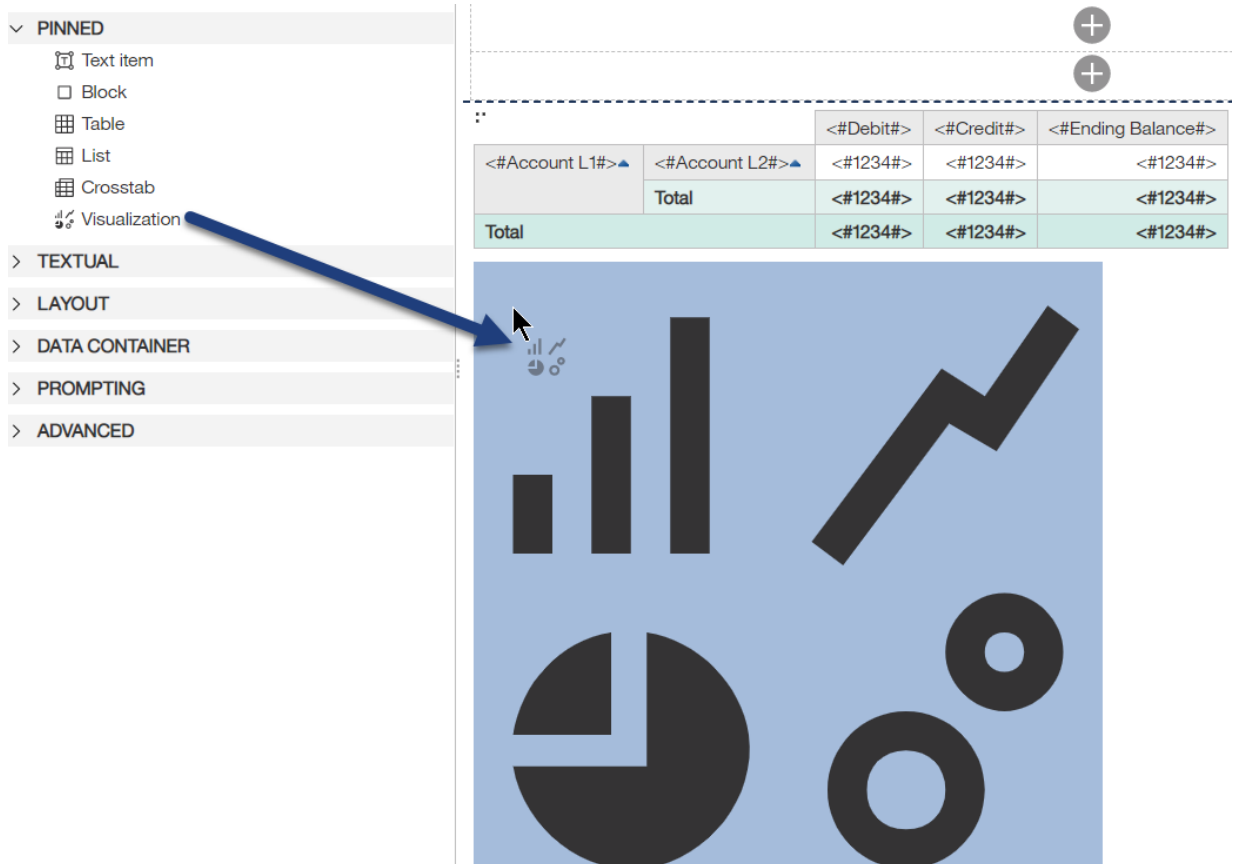
[UCSDGeneralLedger].[Entity].[Entity Code]='16130'

6. Click **Validate** ✓ . Click OK twice to close the Filters windows.

Entity Code 16130 is for Health Science.

7. Under Insertable Objects click the **Toolbox** 🔧 and from the PINNED section drag a **Visualization** 📊 into the work area and drop it below the Crosstab.

Explore the variety of visualizations available in the gallery:
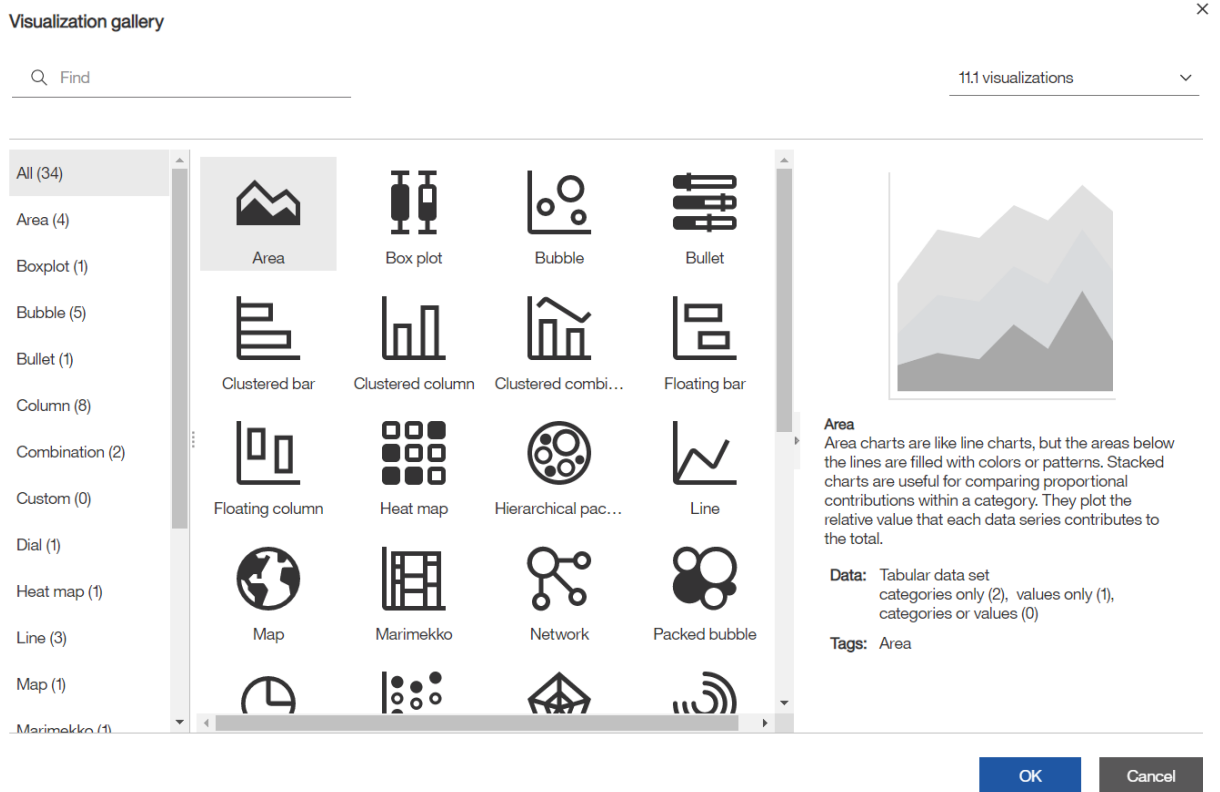
As you click through the options, notice the descriptions available on the right.

8. Double-click **Clustered bar**.

Unlike Crosstabs and Lists, Visualizations don't require the query object connection so we can start dragging items in from the Report Data query.

The visualization appears on the page—notice the drop zones:

9. Under Insertable objects click **Data items** tab ⊞ and from **Query1** drag **Account L1** into the **visualization**.
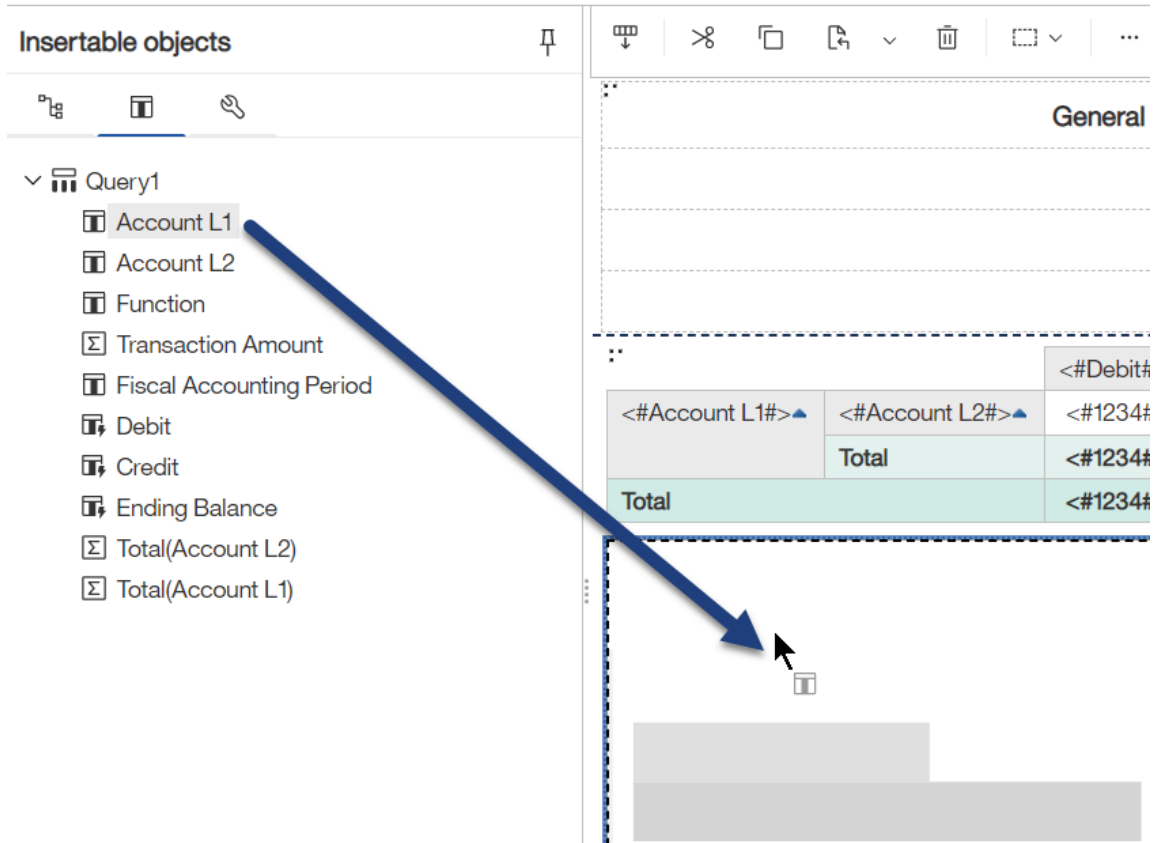
Cognos puts in the Bars ☰ field.

10. Drag **Ending Balance** into the **Length** ⊿ drop zone.
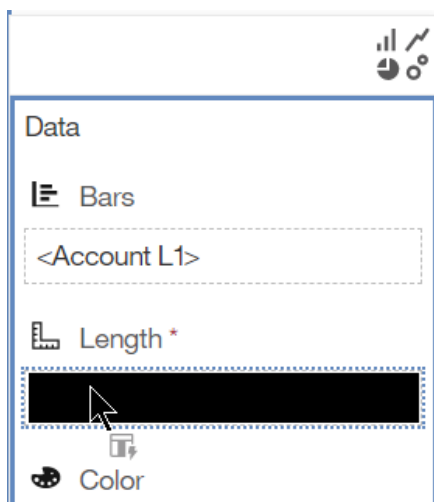
11. In the Application toolbar click **Save** (Visualization).
12. In the Application toolbar click Page design and select **Page preview**.

Scroll down to see the visualization:
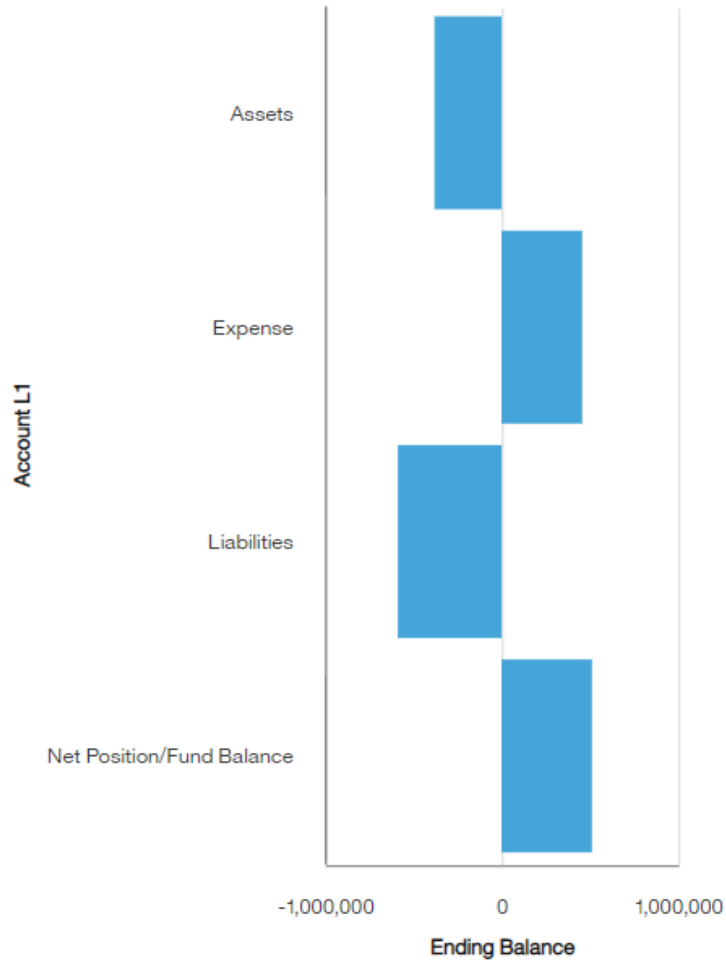
**Tip!** Hit **Esc** on your keyboard to hide the visualization drop zones.

13. From the **Sources** tab and the **GeneralLedger-View** package, from the **Financial Unit** query subject drag **Financial Unit L3** into the visualization.

Cognos drops it into the Color field. The report refreshes and the visualization looks like this—your Legend may be in a different location depending on the size of your screen.
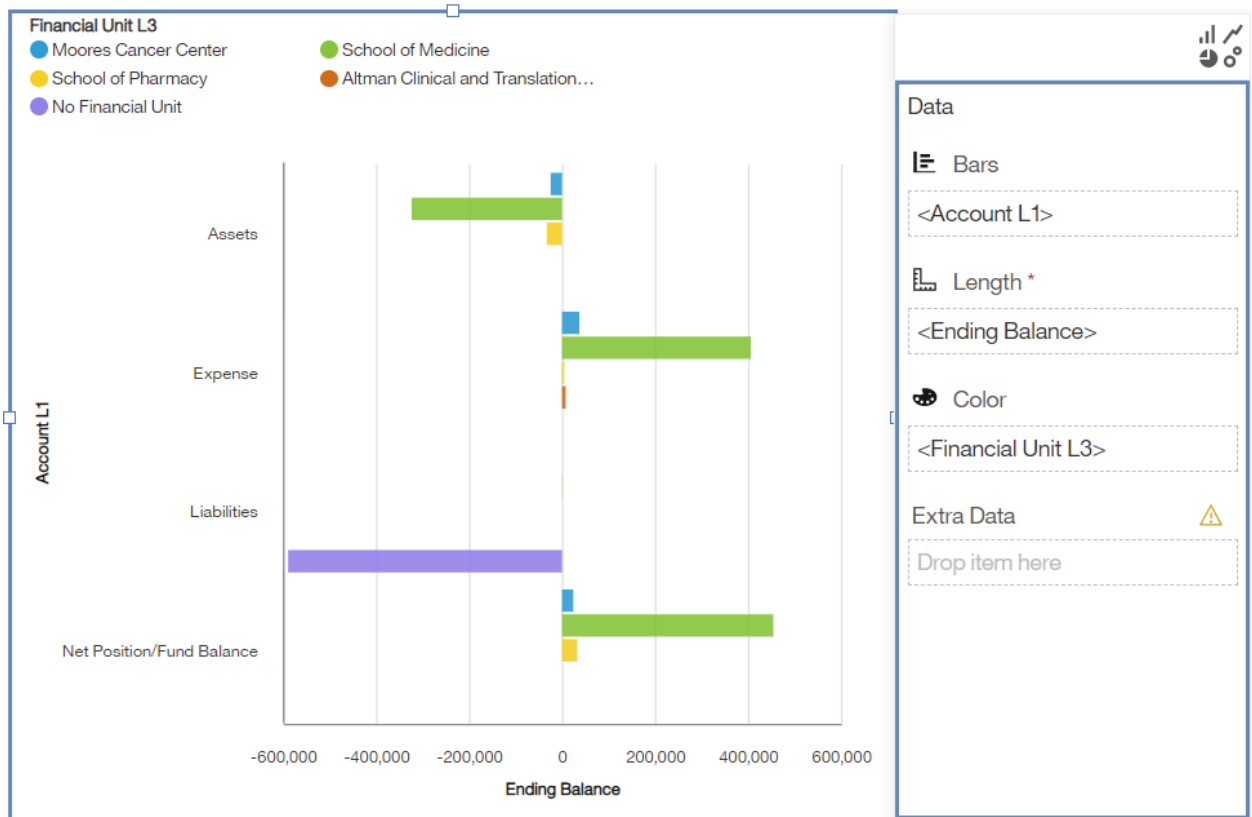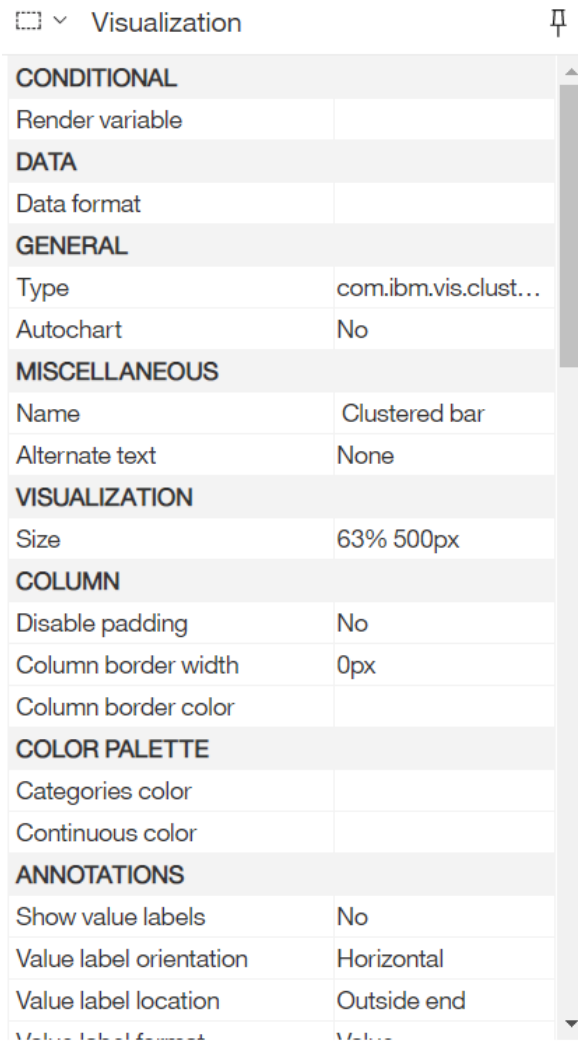
14. Click inside the visualization and use the handle on the right side to drag the visualization so it is the same width as the Crosstab:
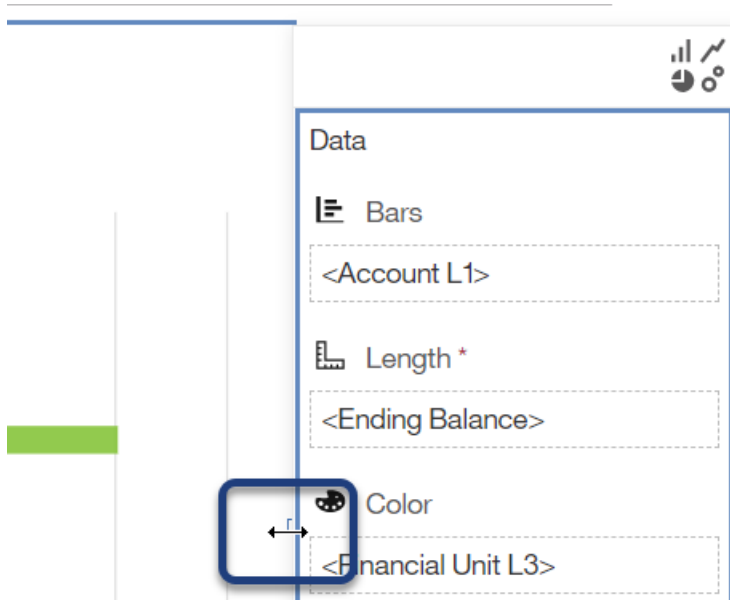
15. In the Bars field click to select **Account L1** and in the OnDemand toolbar click **Sort** ⇟ and **Ascending**.
16. In the Color field to select **Financial Unit L3** and in the OnDemand toolbar click **Sort** ⇟ and **Ascending**.
17. In the Application toolbar click **Save** (Visualization).

18. Click between the bars of the visualization and in the **Properties** pane ⚙ explore the variety of properties available to help customize the appearance and features of the visualization—including the Columns, Color Palette, Axis and Legend options.

▢ ∨   Visualization   ☐

CONDITIONAL	
Render variable	
DATA	
Data format	
GENERAL	
Type	com.ibm.vis.clust…
Autochart	No
MISCELLANEOUS	
Name	Clustered bar
Alternate text	None
VISUALIZATION	
Size	63% 500px
COLUMN	
Disable padding	No
Column border width	0px
Column border color	
COLOR PALETTE	
Categories color	
Continuous color	
ANNOTATIONS	
Show value labels	No
Value label orientation	Horizontal
Value label location	Outside end
Value label format	Value

This is just a small taste of the power of visualizations in Cognos!

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Tips!
* Hide the Properties pane to give you more room on the screen to view the report.
* Click anywhere inside the report and then on your keyboard hit Esc to hide the drop zones for the visualization

Singleton

In the last step by step lesson in this chapter, we continue in the Visualization report and learn about Singletons.

A Singleton inserts a single data item. A singleton can be inserted anywhere in the report where there is no query associated. In this example we create a Singleton with a unique data item that displays the Chart of Accounts Chart String on the report. We create a string with both the Account (Codes) and the Description.

Singleton

1. Continue in the **Visualization** report.
2. In the Application toolbar click Page preview and select **Page design**.
3. In the Application toolbar click the **Save** dropdown, select **Save as**, and save the report specification as **Singleton.** Click Save.
4. Click inside the Visualization and on the OnDemand toolbar click **Cut** ✂.
5. Click inside the Crosstab and in the OnDemand toolbar click **Filters** ▽ and **Edit filters**.
6. Double-click the **Entity Code** filter and edit as follows:

Expression Definition:

[UCSDGeneralLedger].[Entity].[Entity Code]='16110'

7. Click **Validate** ✓ . Click OK.
8. Click **Add** ⊕ . Click **Advanced**. Click OK.
9. Define the following expression:

Expression Definition:

[UCSDGeneralLedger].[Financial Unit].[Financial Unit Code] = '1000135'

10. Click **Validate** ✓ . Click OK.
11. Click **Add** ⊕ . Click **Advanced**. Click OK.

Expression Definition:

[UCSDGeneralLedger].[Account].[Account Code] = '522400'

12. Click **Validate** ✓ . Click OK.
13. Click **Add** ⊕ . Click **Advanced**. Click OK.

Expression Definition:

[UCSDGeneralLedger].[Function].[Function Code] = '440'

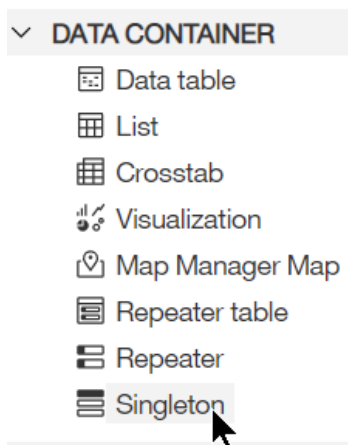14. Click **Validate** ✓ . Click OK.

Review the filters on the report:

Detail Filters   Summary Filters

▽ [UCSDGeneralLedger].[Accounting Period].[Fiscal Year (YY'

▽ [UCSDGeneralLedger].[Entity].[Entity Code] = '16110'

▽ [UCSDGeneralLedger].[Fund].[Fund Code] ='20000'

▽ [UCSDGeneralLedger].[Financial Unit].[Financial Unit Code]

▽ [UCSDGeneralLedger].[Account].[Account Code] = '522400

▽ [UCSDGeneralLedger].[Function].[Function Code] = '440'

15. Click OK.

16. In the Report Header click inside the **2nd row of the Table**—underneath the General Ledger Account Details text.

General Ledger Account Details
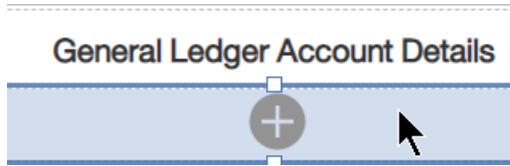
17. From the **Toolbox** 🔧 DATA CONTAINER double-click **Singleton** to add it to the table cell.

∨ DATA CONTAINER
    ▦ Data table
    ⊞ List
    ⊞ Crosstab
    ⊪ Visualization
    ⌖ Map Manager Map
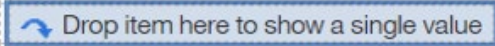   ▤ Repeater table
    ⊟ Repeater
    ☰ Singleton

The Object and query name window opens which indicates Cognos is bringing in a new query with the Singleton. However, we want to use the current query on the report—Query1.

18. On the Object and query name window for **Query Name** select **Query1**. Click OK.

Object and query name   ✕

Name:
   Singleton1

Query Name:
   Query1

☑ Show this dialog in the future

OK   Cancel
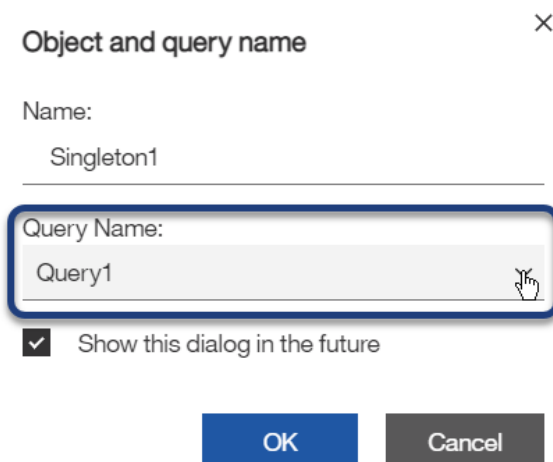
The Singleton appears in the Header.

19. From the **Toolbox** ✎ TEXTUAL section double-click **Query calculation** 🔢 to add it into the Singleton.

The Data item expression window opens.

20. For Name type: COA String.
21. Define the following expression.

Bring each data item into the expression from the applicable query subject and concatenate a period between each code using a combination of plus signs and single quotes. Your instructor explains the logic behind the expression!


To save time for this example you can copy and paste this expression from the book into the definition:

```
'COA String:  '+
[UCSDGeneralLedger].[Entity].[Entity Code] +'.'+
[UCSDGeneralLedger].[Fund].[Fund Code] +'.'+
[UCSDGeneralLedger].[Financial Unit].[Financial Unit Code] +'.'+
[UCSDGeneralLedger].[Account].[Account Code] +'.'+
[UCSDGeneralLedger].[Function].[Function Code]+'.'+
[UCSDGeneralLedger].[Program].[Program Code] +'.'+
[UCSDGeneralLedger].[Project].[Project Code]
```
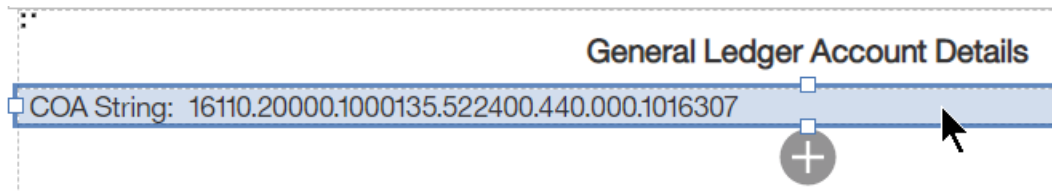
22. Click **Validate** ✓. Click OK.
23. In the Application toolbar click **Save** (Singleton).
24. In the Application toolbar click Page design and select **Page preview**.

Notice the value in the Singleton.

General Ledger Account Details
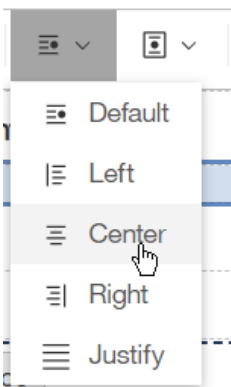
COA String: 16110.20000.1000135.522400.440.000.1016307
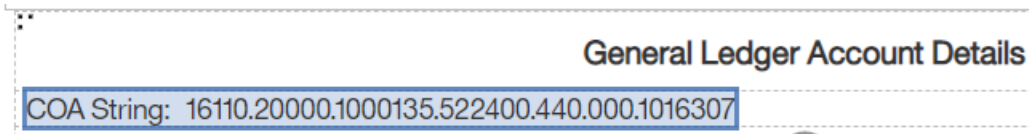
25. Click inside the Table cell that contains the singleton:

General Ledger Account Details

COA String: 16110.20000.1000135.522400.440.000.1016307

26. In the OnDemand toolbar click **Font** T.
27. For **Size** select **12pt** and for **Weight** select **Bold**. Click OK.
28. In the OnDemand toolbar click **Horizontal alignment** and **Center**.

- Default
- Left
- Center
- Right
- Justify

29. In the Application toolbar click **Save** (Singleton).
30. In the Application toolbar click **Run options** and **Run HTML**.

The complete report looks like this:

General Ledger Account Details
COA String: 16110.20000.1000135.522400.440.000.1016307

|		Debit	Credit	Ending Balance
Expense	Supplies and Materials	1,033.27	0.00	1,033.27
	Total	$1,033.27	$0.00	$1,033.27
Total		$1,033.27	$0.00	$1,033.27

plante moran

UC San Diego

Please note: *the calculation for the Account chart string in this lesson does not include Location nor Activity, InterEntity, Future 1, and Future 2.*

Though the Location data items are available in this General Ledger view package, at the time of training they were not returning data and adding the data item to the calculation (as it is written now) causes it to break.

The Activity, InterEntity, Future 1, and Future 2 data items are not available in this General Ledger view package.

Please contact the FINAH data owners for more information and clarification on the chart string.

Report troubleshooting
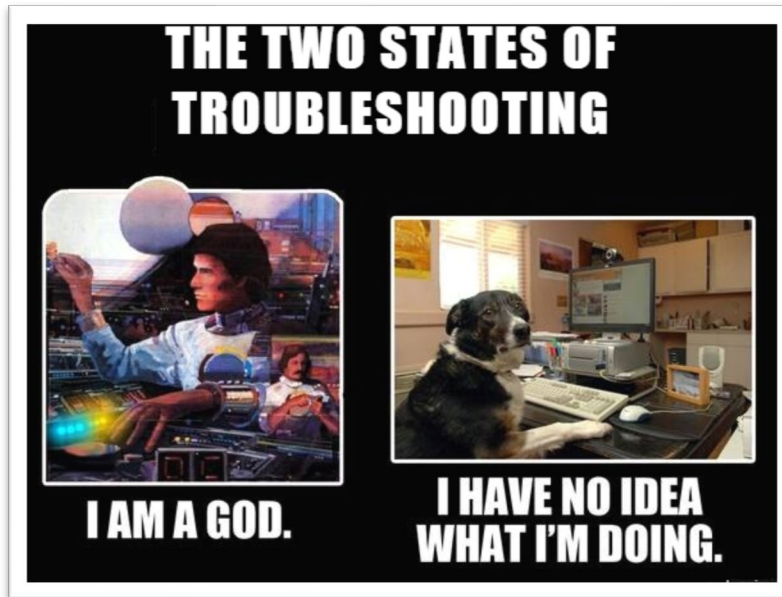
My report doesn't match:
- What does the data source say? Your report should match the data source.
- Are you using the same data source?
- What filters are you using?
- Are you using the same fields?
- Are you using the same join/union/type of join?
- What date/time was the data last updated?

My report is blank:
- What filters are you using?
- Did you add data to the page display?

My report has an error:
- When was the last time the report worked?
- Have you changed anything? The report, the browser you are using, the version of Cognos?
- What part of your report is causing the error?
- Did you hand type in code? Are you missing a quote? Are you missing a parenthesis? Are you using the function correctly?
- Does the report work another browser?
- Does the report work in another Cognos environment?

When to escalate