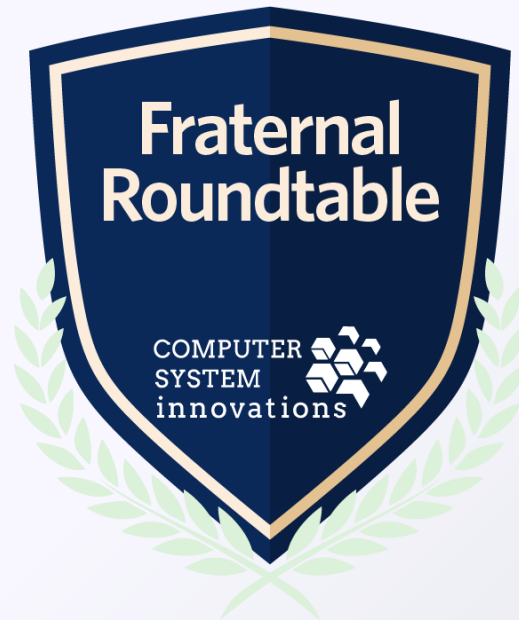


Getting Data from Multiple Sources in IQA

Alison Kinney

Trisha Haas



What is an IQA and when should I use it?

- **Intelligent Query Architect**
- **Query-building tool**
- **User friendly**
- **Extract data from iMIS**
- **Can be simple (single source):**
 - All records with a state filter
- **Or more complex (multiple sources):**
 - Everyone who attended Convention 2019
- **Display information to users:**
 - Committee members
 - Event participation
 - Payments
 - Gifts
- **To jumpstart SSRS reports**



Frequently Used Terms



Business Objects: The “building blocks” of IQAs. Represent the tables where your data is stored

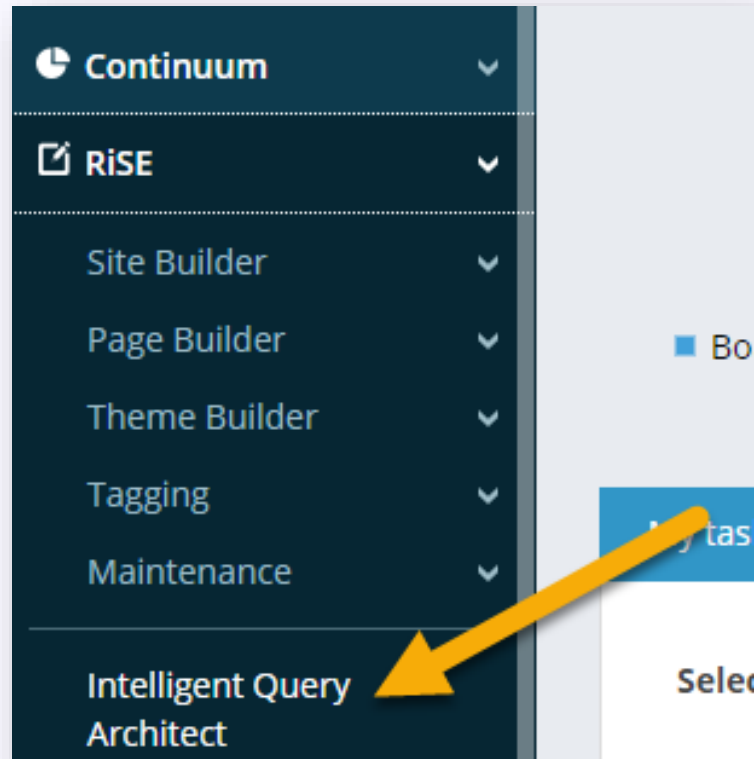


Joins: Use joins to relate your *sources* (Business Objects) together. The most common types of joins use the iMIS ID field. More on this later!

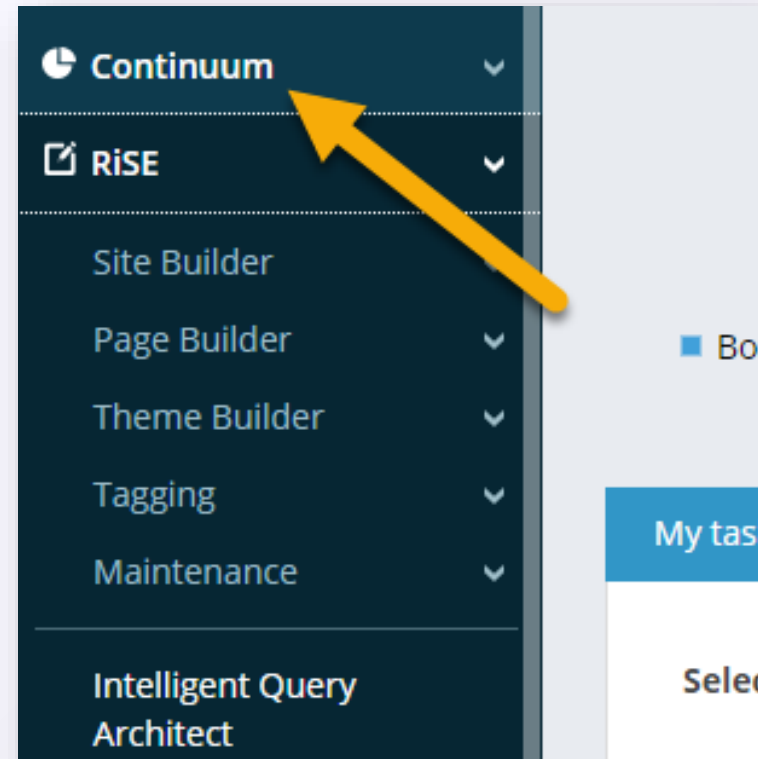


Getting Started

RiSE > Intelligent Query Architect



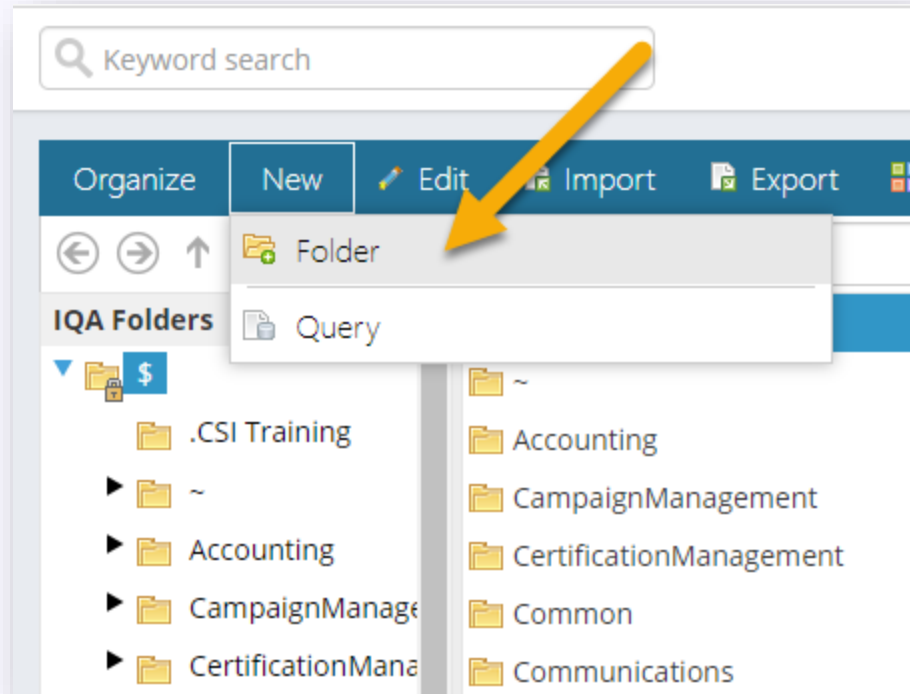
Continuum



Getting Started...Best Practices

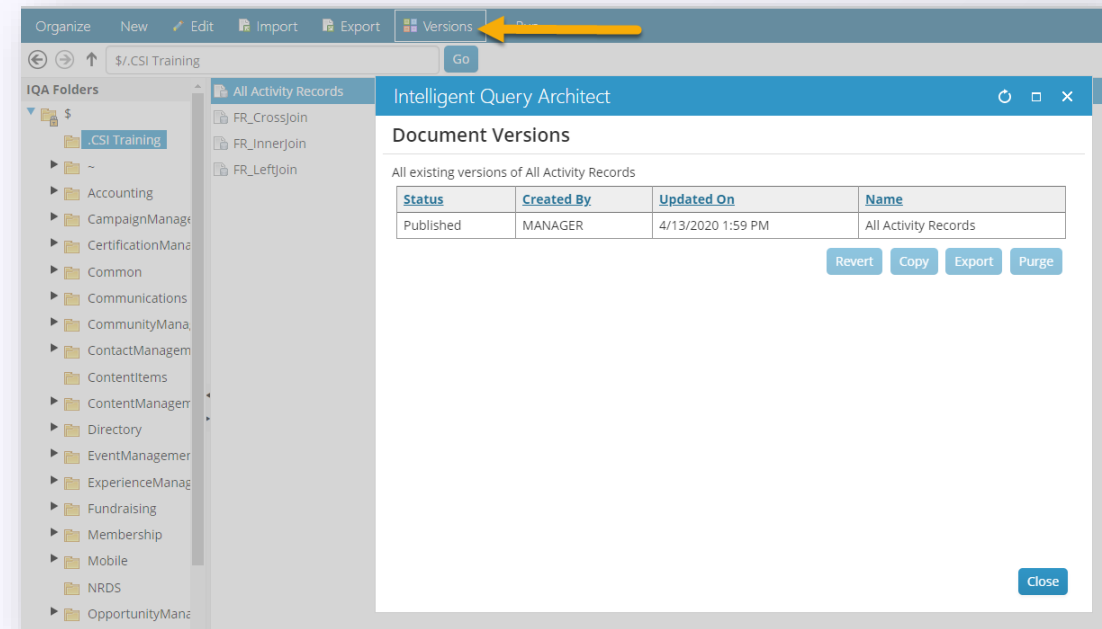
Plan ahead

- Folder Structure
- Naming Convention



New > Folder > Name > Save

Use the Versions tab



Getting Started

Basic Mode	Advanced Mode
<ul style="list-style-type: none">• Define sources and (optional) filters• Specify display details	<ul style="list-style-type: none">• Use calculations, such as sums and averages• Use queries in iMIS searches• Use SQL expressions in queries• Use complex filters, such as displaying only unique results• Allow or require end user to supply parameters at run time• Aggregate data and display• Assign aliases to field names for display• Link a display property to another page



- Give your IQA a name
- Add a description
- Run and save often
 - Hint: You can run without saving if you are verifying data. After you've confirmed the data, **SAVE!**

The screenshot shows the 'Define' tab of an IQA configuration interface. It includes tabs for Define, Run, Report, Group, and Security. Below these are sub-tabs for Summary, Sources, Filters, Display, and Sorting. The 'Summary' sub-tab is active, showing fields for Name (FR_InnerJoin), Description (IQA example for Fraternal Roundtable using INNER JOIN), and Caption text. There is a checkbox for 'Only provide caption for screen readers' which is checked. Below this is a metadata section with fields for Author (MANAGER), Created on (4/9/2020 4:02:05 PM), Updated by (MANAGER), and Updated on (4/9/2020 5:32:26 PM). There is also a checkbox for 'Use cached results' which is unchecked. At the bottom, there is an 'SQL' section with a text area containing a SQL query.

Name: FR_InnerJoin

Description: IQA example for Fraternal Roundtable using INNER JOIN

Caption text

☒ Only provide caption for screen readers

Author: MANAGER

Created on: 4/9/2020 4:02:05 PM

Updated by: MANAGER

Updated on: 4/9/2020 5:32:26 PM

☐ Use cached results ⓘ

SQL

```
SELECT TOP 10 [vBoCsContactBasic].[ID], [vBoCsContactBasic].[MemberType],
[vBoCsContactBasic].[Status], [vBoCsContactBasic].[FullName], [vBoGift].[Appeal],
[vBoGift].[Campaign], [vBoGift].[FiscalMonth], [vBoGift].[FiscalYear], [vBoGift].[Fund],
[vBoGift].[GiftType], [vBoGift].[TransactionDate], [vBoGift].[Amount] FROM
vBoCsContactBasic INNER JOIN vBoGift ON vBoCsContactBasic.ID = vBoGift.ID WHERE
(([vBoCsContactBasic].[Email] > ' ') AND [vBoCsContactBasic].[Status] = 'A') ORDER BY
[vBoGift].[TransactionDate] DESC
```





Business Objects: RECOMMENDATIONS ✓

Business Object	ContactKey	Financial Data	Combo Records*	Recommended
CsContactBasic	N	N	1 row Full Name is the individual's	✓
CsContact	N	Y	1 row Full Name is the individual's	If financial data is needed
NetContactData	Y	N	1 row Organization record	✓
NetContact	Y	Y	2 rows One for org and one for individual	If financial data is needed
NetContactBasic	Y	N	1 row Individual record	NO

*Organization record with an individual's name

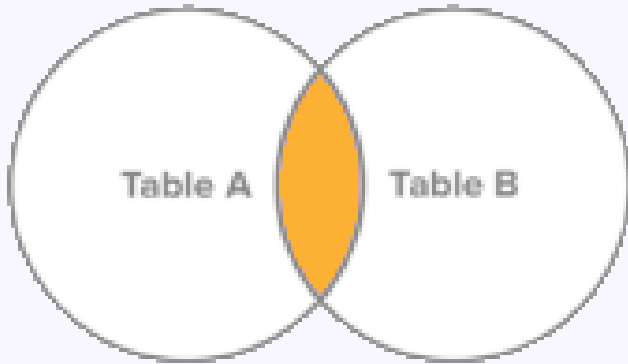
Business Objects: CAUTION ⚠

- InvoiceSummary
- GiftsReceived
- GiftHistory
- GiftHistorySummary
- CsContactRelatedCompany
- TransactionSummary

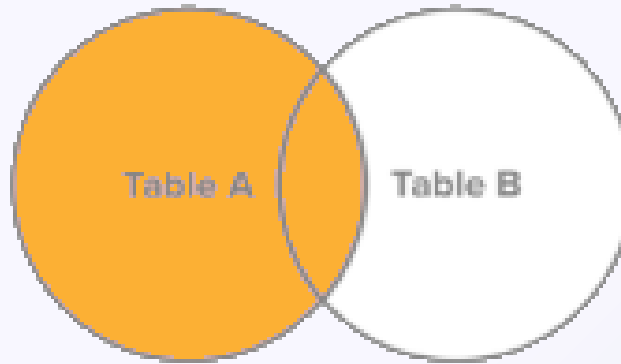




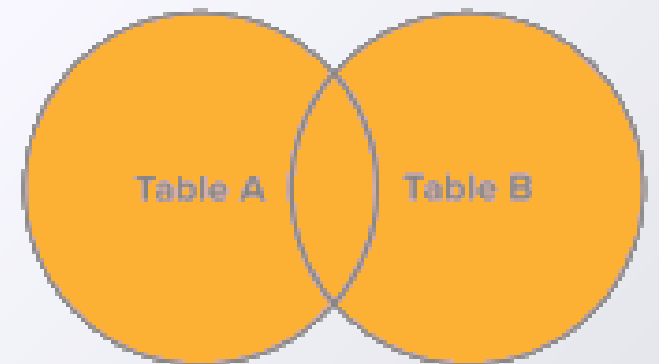
Inner Join

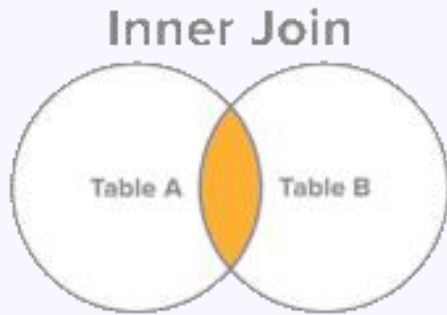


Left Join



Full Join





CsContactBasic Gift

All records that
have a gift.

Donors





Define Run Report Group Security

Summary Sources Filters Display Sorting

Add Source

Source	Type	
CsContactBasic	Business Object	✕ ▲ ▼
Gift	Business Object	✕ ▲ ▼

One or more sources have not been related.

Relations

Description

▼ +

Advanced options

- ☐ Use FORCE ORDER option
- ☐ Use NOLOCK locking hint
- ☐ Use join method for security enforcement

Define Run Report Group Security

Summary Sources Filters Display Sorting

Add Source

Source	Type	
CsContactBasic	Business Object	✕ ▲ ▼
Gift	Business Object	✕ ▲ ▼

One or more sources have not been related.

Relations

Description

▼ +

Custom

Advanced options

- ☐ Use FORCE ORDER option
- ☐ Use NOLOCK locking hint
- ☐ Use join method for security enforcement

Define Run Report Group Security

Summary Sources Filters Display Sorting

Add Source

Source	Type	
CsContactBasic	Business Object	✕ ▲ ▼
Gift	Business Object	✕ ▲ ▼

Relations

Description

Custom (When CsContactBasic.IMIS Id = Gift.Id)	Equals ▼	✕
▼		+

Advanced options

- ☐ Use FORCE ORDER option
- ☐ Use NOLOCK locking hint
- ☐ Use join method for security enforcement

Summary



Data
Sources



Filters



Display



Sorting

Intelligent Query Architect

Define Run Report Group Security

Member Type Equals

(Any)

Status Equals

Active

Transaction Date
Between

Amount Is Greater
Than Or Equal To

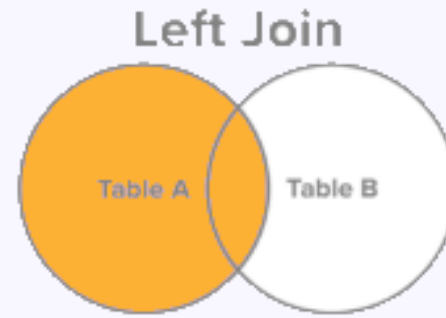
Fiscal Year Equals

Find

Export

<u>IMIS Id</u>	<u>Member Type</u>	<u>Status</u>	<u>Full Name</u>	<u>Appeal</u>	<u>Campaign</u>	<u>Fiscal Month</u>	<u>Fiscal Year</u>	<u>Fund</u>	<u>Gift Type</u>	<u>Transaction Date</u>	<u>Amount</u>
21804	D	A	Ms. Melissa F. Hodges	MAIL	COMBINED	4	2017	OCEAN	GIFT	4/6/2017	30.00
21804	D	A	Ms. Melissa F. Hodges	MAIL	COMBINED	4	2017	POLAR	GIFT	4/6/2017	50.00
23063	D	A	Xander West	MAIL	COMBINED	4	2017	MARSH	GIFT	4/6/2017	100.00
23094	D	A	Allyson Smith	MAIL	COMBINED	4	2017	OCEAN	GIFT	4/6/2017	25.00
23141	D	A	William Goh	MAIL	COMBINED	4	2017	OCEAN	GIFT	4/6/2017	75.00
23150	NM	A	David Lee	MAIL	COMBINED	4	2017	MARSH	GIFT	4/6/2017	250.00
22921	D	A	Dr. Clara Pau	MAIL	COMBINED	4	2017	POLAR	GIFT	4/6/2017	50.00
20800	NM	A	Ms. Pam W. Ballard	MAIL	COMBINED	4	2017	POLAR	GIFT	4/6/2017	300.00
23095	M	A	Alex Morgan	MAIL	COMBINED	4	2017	MARSH	GIFT	4/6/2017	500.00
19510	D	A	Ms. Elana Beckett	MAIL	COMBINED	4	2017	MARSH	GIFT	4/6/2017	500.00





CsContactBasic Gift

All records
whether they have
made a gift or not

Everyone

Summary



Data Sources



Filters



Display



Sorting

Define Run Report Group Security

Summary Sources Filters Display Sorting

Add Source

Source	Type	
CsContactBasic	Business Object	✕ ▲ ▼
Gift	Business Object	✕ ▲ ▼

One or more sources have not been related.

Relations

Description

▼ +

Advanced options

- ☐ Use FORCE ORDER option
- ☐ Use NOLOCK locking hint
- ☐ Use join method for security enforcement

Define Run Report Group Security

Summary Sources Filters Display Sorting

Add Source

Source	Type	
CsContactBasic	Business Object	✕ ▲ ▼
Gift	Business Object	✕ ▲ ▼

One or more sources have not been related.

Relations

Description

▼ +

Custom

Advanced options

- ☐ Use FORCE ORDER option
- ☐ Use NOLOCK locking hint
- ☐ Use join method for security enforcement

Define Run Report Group Security

Summary Sources Filters Display Sorting

Add Source

Source	Type	
CsContactBasic	Business Object	✕ ▲ ▼
Gift	Business Object	✕ ▲ ▼

Relations

Description

Custom (When CsContactBasic.iMIS Id = Gift.Id) Left Join ✕

▼ +

Advanced options

- ☐ Use FORCE ORDER option
- ☐ Use NOLOCK locking hint
- ☐ Use join method for security enforcement



Summary



Data
Sources



Filters



Display



Sorting

Navigation: 1 2 3 4 5 6 7 8 9 10 ... Page: 1 of 25 Go Page size: 20 Change Item 1 to 20 of 500

Show all 500

IMIS Id	Member Type	Status	Full Name	Appeal	Campaign	Fiscal Month	Fiscal Year	Fund	Gift Type	Transaction Date	Amount
263	M	A	Phil Besinger								
262	M	A	Bernard Bourdain	MAIL	COMBINED	2	2017	OCEAN	GIFT	2/3/2017	2000.00
261	M	A	Leisal Gant, III								
259	M	A	Juan Benavides								
258	M	A	Mario Martinez								
257	M	A	Francis Acevedo								
256	M	A	John Romansen								
255	M	A	David Cowlings								
252	M	A	Noah Newton								
251	M	A	Henry Harrison			1	2013	GEN	GIFT	5/5/2016	240.00
248	M	A	Sebastian Ingalls								
246	M	A	Ken Herman								
243	M	A	Maleigh Harrison			1	2013	GEN	GIFT	5/5/2016	240.00
241	M	A	Wilberforce Andropovich								
236	M	A	Edie Richards	MAIL	COMBINED	2	2017	POLAR	GIFT	2/4/2017	850.00
235	DUES	A	Sonya Self	000009	ABC111	5	2010	BLDG	GIFT	9/5/2013	150.00
235	DUES	A	Sonya Self		LIB	9	2013	BLDG	GIFT	9/5/2013	50.00
232	STF	A	Brent Starr								



Summary



Data
Sources



Filters

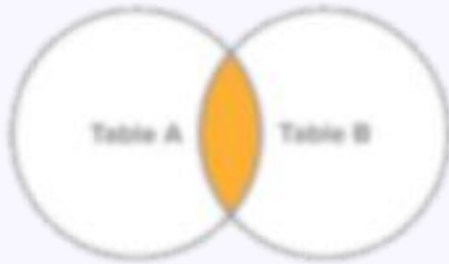


Display



Sorting

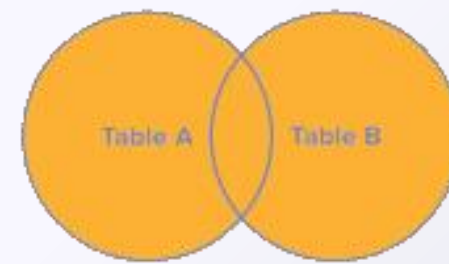
Inner Join



Left Join



Full Join



CsContactBasic Gift

All records and all
gifts.

1,000 records x
1,000 gifts =
100,000 rows
returned





Define Run Report Group Security

Summary Sources Filters Display Sorting

Add Source

Source	Type	
CsContactBasic	Business Object	✕ ▲ ▼
Gift	Business Object	✕ ▲ ▼

One or more sources have not been related.

Relations

Description

▼ +

Advanced options

- ☐ Use FORCE ORDER option
- ☐ Use NOLOCK locking hint
- ☐ Use join method for security enforcement

Define Run Report Group Security

Summary Sources Filters Display Sorting

Add Source

Source	Type	
CsContactBasic	Business Object	✕ ▲ ▼
Gift	Business Object	✕ ▲ ▼

One or more sources have not been related.

Relations

Description

▼ Custom +

Advanced options

- ☐ Use FORCE ORDER option
- ☐ Use NOLOCK locking hint
- ☐ Use join method for security enforcement

Define Run Report Group Security

Summary Sources Filters Display Sorting

Add Source

Source	Type	
CsContactBasic	Business Object	✕ ▲ ▼
Gift	Business Object	✕ ▲ ▼

One or more sources have not been related.

Relations

Description

▼ +

Advanced options

- ☐ Use FORCE ORDER option
- ☐ Use NOLOCK locking hint
- ☐ Use join method for security enforcement

Summary



Data
Sources



Filters



Display



Sorting

Define Run Report Group Security

Summary Sources **Filters** Display Sorting

Add Filter Refresh

Where ▾	Property	Function	Comparison	Multiple	Value	Prompt		×
	CsContactBasic.Member Type	None ▾	Equal ▾	<input checked="" type="checkbox"/>	(Any)	Optional ▾		× ▲ ▾
	CsContactBasic.Status	None ▾	Equal ▾	<input type="checkbox"/>	Active ▾	Optional ▾		× ▲ ▾
	Gift.Transaction Date	None ▾	Between ▾		<input type="text"/> Run and <input type="text"/> Run	Optional ▾		× ▲ ▾
	Gift.Amount	None ▾	Greater Equal ▾		<input type="text"/>	Optional ▾		× ▲ ▾
	Gift.Fiscal Year	None ▾	Equal ▾		<input type="text"/>	Optional ▾		× ▲ ▾
	CsContactBasic.Email	None ▾	Not Empty ▾					× ▲ ▾
	<input type="text"/> ▾							
Query options								
<input checked="" type="checkbox"/> Require user to provide at least one valid value								
<input type="checkbox"/> Limit the number of results returned								





Define
Run
Report
Group
Security

Summary
Sources
Filters
Display
Sorting

Add Filter Refresh

Where ▾	Property	Function	Comparison	Multiple	Value	Prompt		✕
	CsContactBasic.Member Type	None ▾	Equal ▾	<input checked="" type="checkbox"/>	(Any)	Optional ▾		✕ ▲ ▾
	CsContactBasic.Status	None ▾	Equal ▾	<input type="checkbox"/>	Active ▾	Optional ▾		✕ ▲ ▾
	Gift.Transaction Date	None ▾	Between ▾		<div>Run</div> and <div>Run</div>	Optional ▾		✕ ▲ ▾
	Gift.Amount	None ▾	Greater Equal ▾			Optional ▾		✕ ▲ ▾
	Gift.Fiscal Year	None ▾	Equal ▾			Optional ▾		✕ ▲ ▾
	CsContactBasic.Email	None ▾	Not Empty ▾					✕ ▲ ▾
	CsContactBasic.County ▾	None ▾	Equal ▾			No ▾		✕ ▲ ▾

Query options
☒ Require user to provide at least one valid value
☐ Limit the number of results returned

Remember to click the + sign to save the filter!



Summary



Data
Sources



Filters



Display



Sorting

Define

Run

Report

Group

Security

Summary

Sources

Filters

Display

Sorting

☐ Only display unique results

View selected columns ▾

Selected

Refresh

Display	Property	Function	Alias	Link	Subtotal	Order	Length
<input checked="" type="checkbox"/>	CsContactBasic.IMIS Id	None ▾			<input type="checkbox"/>	1 ▾	
<input checked="" type="checkbox"/>	CsContactBasic.Member Type	None ▾			<input type="checkbox"/>	2 ▾	
<input checked="" type="checkbox"/>	CsContactBasic.Status	None ▾			<input type="checkbox"/>	3 ▾	
<input checked="" type="checkbox"/>	CsContactBasic.Full Name	None ▾			<input type="checkbox"/>	4 ▾	
<input checked="" type="checkbox"/>	Gift.Appeal	None ▾			<input type="checkbox"/>	5 ▾	
<input checked="" type="checkbox"/>	Gift.Campaign	None ▾			<input type="checkbox"/>	6 ▾	
<input checked="" type="checkbox"/>	Gift.Fiscal Month	None ▾			<input type="checkbox"/>	7 ▾	
<input checked="" type="checkbox"/>	Gift.Fiscal Year	None ▾			<input type="checkbox"/>	8 ▾	
<input checked="" type="checkbox"/>	Gift.Fund	None ▾			<input type="checkbox"/>	9 ▾	
<input checked="" type="checkbox"/>	Gift.Gift Type	None ▾			<input type="checkbox"/>	10 ▾	
<input checked="" type="checkbox"/>	Gift.Transaction Date	None ▾			<input type="checkbox"/>	11 ▾	
<input checked="" type="checkbox"/>	Gift.Amount	None ▾			<input type="checkbox"/>	12 ▾	



Summary



Data
Sources



Filters



Display



Sorting

Define

Run

Report

Group

Security

Member Type Equals

(Any)

Status Equals

Active

Transaction Date Between

and

Amount Is Greater Than Or Equal To

Fiscal Year Equals

Find

Export

iMIS Id	Member Type	Status	Full Name	Appeal	Campaign	Fiscal Month	Fiscal Year	Fund	Gift Type	Transaction Date	Amount
21804	D	A	Ms. Melissa F. Hodges	MAIL	COMBINED	4	2017	OCEAN	GIFT	4/6/2017	30.00
21804	D	A	Ms. Melissa F. Hodges	MAIL	COMBINED	4	2017	POLAR	GIFT	4/6/2017	50.00
23063	D	A	Xander West	MAIL	COMBINED	4	2017	MARSH	GIFT	4/6/2017	100.00
23094	D	A	Allyson Smith	MAIL	COMBINED	4	2017	OCEAN	GIFT	4/6/2017	25.00
23141	D	A	William Goh	MAIL	COMBINED	4	2017	OCEAN	GIFT	4/6/2017	75.00
23150	NM	A	David Lee	MAIL	COMBINED	4	2017	MARSH	GIFT	4/6/2017	250.00
22921	D	A	Dr. Clara Pau	MAIL	COMBINED	4	2017	POLAR	GIFT	4/6/2017	50.00
20800	NM	A	Ms. Pam W. Ballard	MAIL	COMBINED	4	2017	POLAR	GIFT	4/6/2017	300.00
23095	M	A	Alex Morgan	MAIL	COMBINED	4	2017	MARSH	GIFT	4/6/2017	500.00
19510	D	A	Ms. Elana Beckett	MAIL	COMBINED	4	2017	MARSH	GIFT	4/6/2017	500.00





Define	Run	Report	Group	Security
Summary	Sources	Filters	Display	Sorting
<input type="checkbox"/> Only display unique results View selected columns				
Selected				
Display	Property	Function	Alias	Link
<input checked="" type="checkbox"/>	Gift.Transaction Date	None	Date	
<input checked="" type="checkbox"/>	CsContactBasic.iMIS Id	None	ID	
<input checked="" type="checkbox"/>	CsContactBasic.Member Type	None		
<input checked="" type="checkbox"/>	CsContactBasic.Status	None		
<input checked="" type="checkbox"/>	CsContactBasic.Full Name	None		
<input checked="" type="checkbox"/>	Gift.Appeal	None		
<input checked="" type="checkbox"/>	Gift.Campaign	None		
<input checked="" type="checkbox"/>	Gift.Fund	None		
<input checked="" type="checkbox"/>	Gift.Fiscal Month	None		
<input checked="" type="checkbox"/>	Gift.Fiscal Year	None		
<input type="checkbox"/>	Gift.Gift Type	None		
<input checked="" type="checkbox"/>	Gift.Amount	None		

- After you've checked results, you can uncheck "Display"
- Use your own naming convention for the "Alias". This only changes the column header.
- Change the Order to move the columns.
 - This is a little finicky, trial and error and save often!



Define **Run** Report Group Security

Member Type Equals

Status Equals

Transaction Date Between and

Amount Is Greater Than Or Equal To

Fiscal Year Equals

Find

Export

<u>IMIS Id</u>	<u>Member Type</u>	<u>Status</u>	<u>Full Name</u>	<u>Appeal</u>	<u>Campaign</u>	<u>Fiscal Month</u>	<u>Fiscal Year</u>	<u>Fund</u>	<u>Gift Type</u>	<u>Transaction Date</u>	<u>Amount</u>
21804	D	A	Ms. Melissa F. Hodges	MAIL	COMBINED	4	2017	OCEAN	GIFT	4/6/2017	30.00
21804	D	A	Ms. Melissa F. Hodges	MAIL	COMBINED	4	2017	POLAR	GIFT	4/6/2017	50.00

Export

<u>Date</u>	<u>ID</u>	<u>Member Type</u>	<u>Status</u>	<u>Full Name</u>	<u>Appeal</u>	<u>Campaign</u>	<u>Fund</u>	<u>Fiscal Month</u>	<u>Fiscal Year</u>	<u>Amount</u>
4/6/2017	21804	D	A	Ms. Melissa F. Hodges	MAIL	COMBINED	OCEAN	4	2017	30.00
4/6/2017	21804	D	A	Ms. Melissa F. Hodges	MAIL	COMBINED	POLAR	4	2017	50.00





Priority	Property	Direction	
1 ▼	Gift.Transaction Date	Descending ▼	✕
2 ▼	▼	Ascending ▼	+

Refresh

You must have the property in the display for it to be accessible to Sort by.

One nice thing about IQAs are the end user can sort, on the fly, by clicking the header in the result set.

Live Demo

- **Joining CsContactBasic and CsAddress**
 - Make sure you know which address you want to use.

Intelligent Query Architect

Name and Address

Define Run Report Group Security

Summary Sources Filters Display Sorting

Source Type

Source	Type	
CsContactBasic	Business Object	✕ ▲ ▼
CsAddress	Business Object	✕ ▲ ▼

Relations

Description

FK_Name_Name_Address_ID (When CsContactBasic.iMIS Id = CsAddress.Id) Equals ✕

Custom

- FK_Name_Name_Address_Bill (CsContactBasic, CsAddress)
- FK_Name_Name_Address_ID (CsContactBasic, CsAddress)
- FK_Name_Name_Address_Mail (CsContactBasic, CsAddress)
- FK_Name_Name_Address_Ship (CsContactBasic, CsAddress)

ID = ID join – pulls all addresses for an ID

iMIS Id	Full Name	Member Type	Address Purpose	Address 1	Address 2	Address 3	City	State/Province	Zip	Country
152	Ms. Marcie L. Farmhaven, CPA	M	Address	P.O. Box 4564			Newark	NJ	07107-2564	United States
152	Ms. Marcie L. Farmhaven, CPA	M	Street Address	101 South Congress			Austin	TX	78722	
152	Ms. Marcie L. Farmhaven, CPA	M	Home Address	101 N. Lamar	Bldg B	Suite 200	Austin	TX	78734	

ID = Bill join – pulls only the Bill addresses for an ID

iMIS Id	Full Name	Member Type	Address Purpose	Address 1	Address 2	Address 3	City	State/Province	Zip	Country
152	Ms. Marcie L. Farmhaven, CPA	M	Street Address	101 South Congress			Austin	TX	78722	



A few reminders and helpful links

- **The power of the filter!**
 - Remember one IQA and be run several ways if you leave the filter optional.
- **Extract data from iMIS**
 - You can't hurt anything, you are only pulling result set, not writing anything back to the database
- **Clean up data as you go!**
 - Do not write the query to remove an exception, clean up the record then re-run the IQA
- **The only way to get comfortable with IQA is to write IQAs!**



Next Up...

Starting at 11:45am

Brown Bag Q&A
Open to all staff

Brown Bag Q&A
Foundation Focus

Brown Bag Q&A
RFM Focus

