

Introduction to the RedCentre Carbon Libraries and Applications

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This document describes

- the RedCentre installation,
- how to get started with CSX scripting for DP, and
- the primary usage patterns for Diamond, a GUI desktop application intended for analysts

OVERVIEW

The overall name is the *Red Centre Software Suite*. The suite comprises:

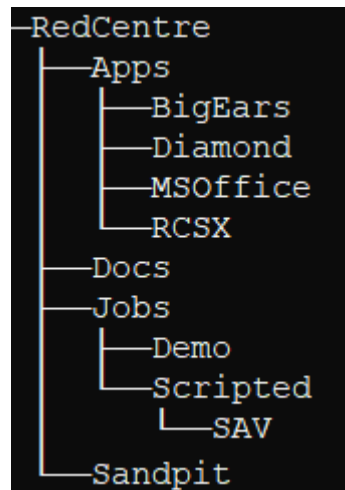
- A set of DLLs, collectively called *Carbon*, which encapsulates all data processing functionality to get from the major case data source formats through to presentation standard tables
- Analysis and crosstabulation applications which call the DLLs, and
- Various demonstration jobs and training examples

THE INSTALLATION

Download from the supplied (by email) FTP.

The install file is not (yet) an official Windows install. Simply unzip the archive to your C: drive. There is no requirement to register the DLLs or executables in the Windows system registry. Everything is drive-independent except the MSOffice application examples. If you want to install to a different drive, and test the MSOffice examples, then change C:\ to your drive letter in the Excel and PowerPoint macros.

The directory structure is



RedCentre: parent folder, no files

Apps: the Carbon DLLs and all support DLLs

BigEars: placeholder for social listening application (in development)

Diamond: desktop GUI crosstabulation and analysis executable and support DLLs

MSOffice: examples of VBA macros which call the C++ DLL for table generation

RCSX: a custom *.CSX script executor

Docs: Various help and support documents

Demo: The standard RCS Demo job

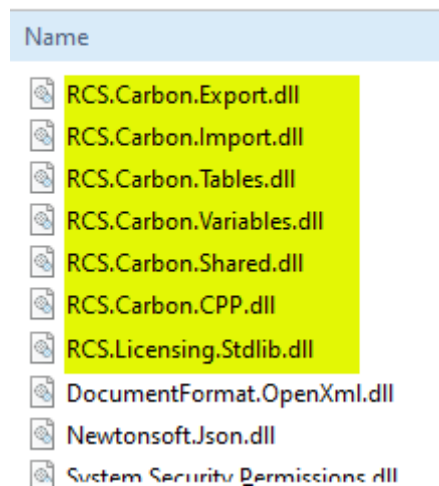
SAV: the Demo job source data as a SAV file, with DP processing script examples to reproduce the full Demo job. More examples for SSS, SPS, MDD/DDF, etc will be added later.

Sandpit: used for training

The Demo and SAV folders follow the standard Ruby job structure.

The Carbon DLLs are

PC > OS (C:) > RedCentre > Apps >



RCS.Carbon.CPP.dll is written in C++. The others are written in C#. The C++ implementation is needed for MSOffice applications (since MSOffice architecture pre-dates C#) and is the engine behind Diamond. All CSX scripts call the C# DLLs.

CSX SCRIPTING

CSX is a simplified implementation of C#. It is designed for scripting, and is an official .Net language, as part of the Roslyn compiler suite. The script file extension is *.csx.

For getting started, usage details and many walkthroughs, see

[\RedCentre\Docs\Carbon Scripting.pdf](#)

DIAMOND

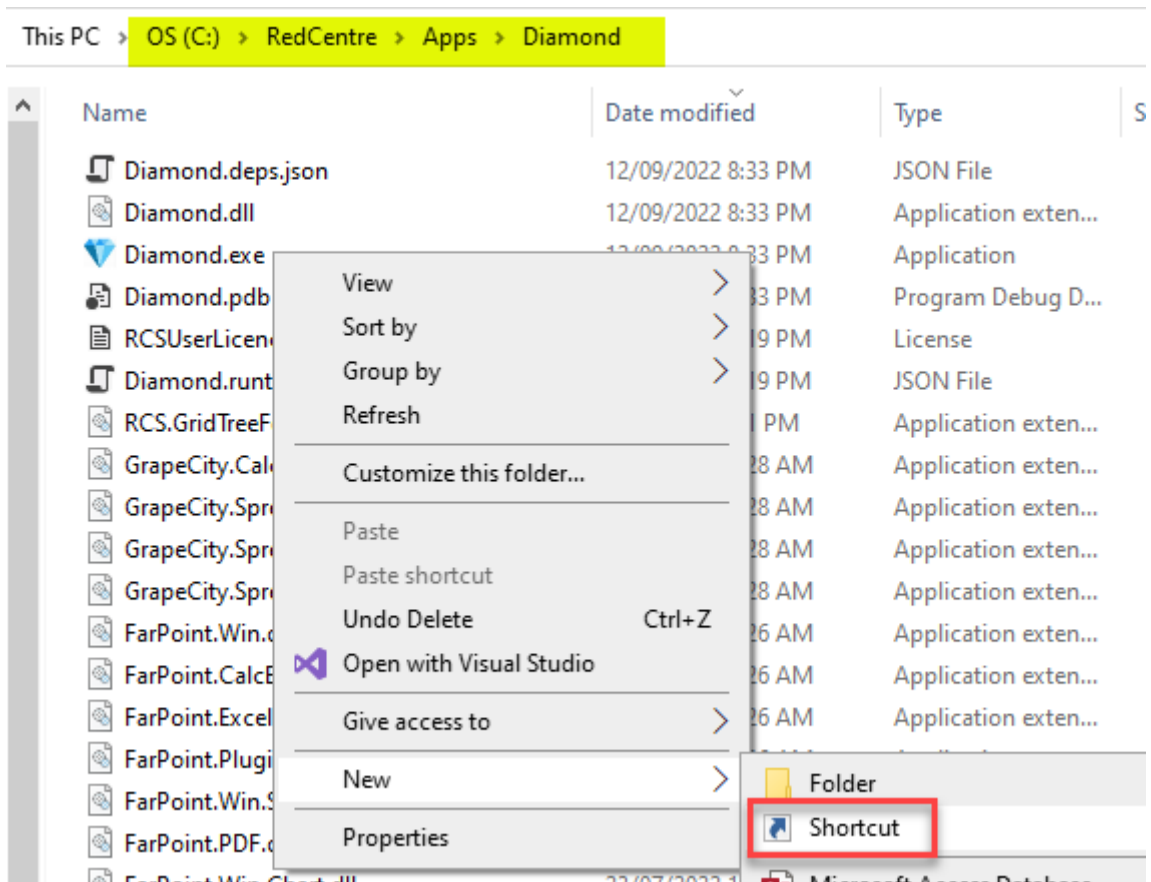
Diamond is a new approach to interactive and batched cross tabulation and analysis. By employing XLSX as the native document type, many synergies become possible, in particular:

- Reports can range from single tables, sheets of tables, to workbooks of sheets of tables
- Dashboards become a set of tables, decorated with commentary, charts, graphics, hyperlinks, etc
- Working with sheets closely matches the Excel interfaces for cell formatting, formulas, charts, graphics, etc
- Saved report books can be opened in Excel – no export required

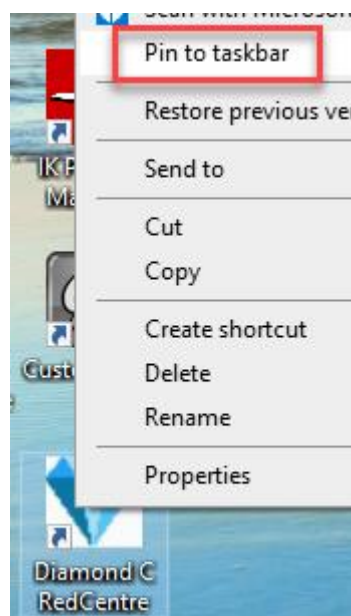
Running Diamond

Since the installation is presently a simple file extraction from zip to your local C:\ drive, you will need to set up your own desktop and taskbar links.

- In Windows Explorer, navigate to Diamond.exe, right click and add a new desktop shortcut

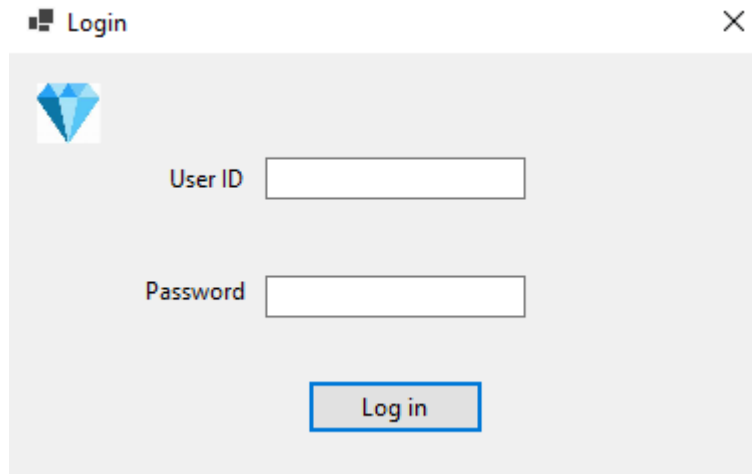


- Then from the desktop icon, right click and select Pin to Taskbar.



- Start Diamond from the desktop or taskbar

The login screen will appear

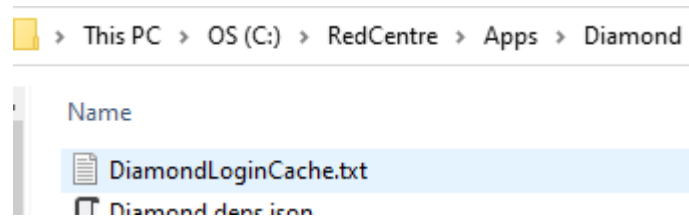


- Enter your Ruby licence ID (not user name) and password.

If your credentials are not at hand, you can obtain them from the Ruby splash screen:



You need do this only once. Your encrypted credentials are stored locally as



Diamond appears as

1. On the Job ribbon page, click Local

2. Navigate to the job directory
The Demo job is at C:\RedCentre\Jobs\Demo

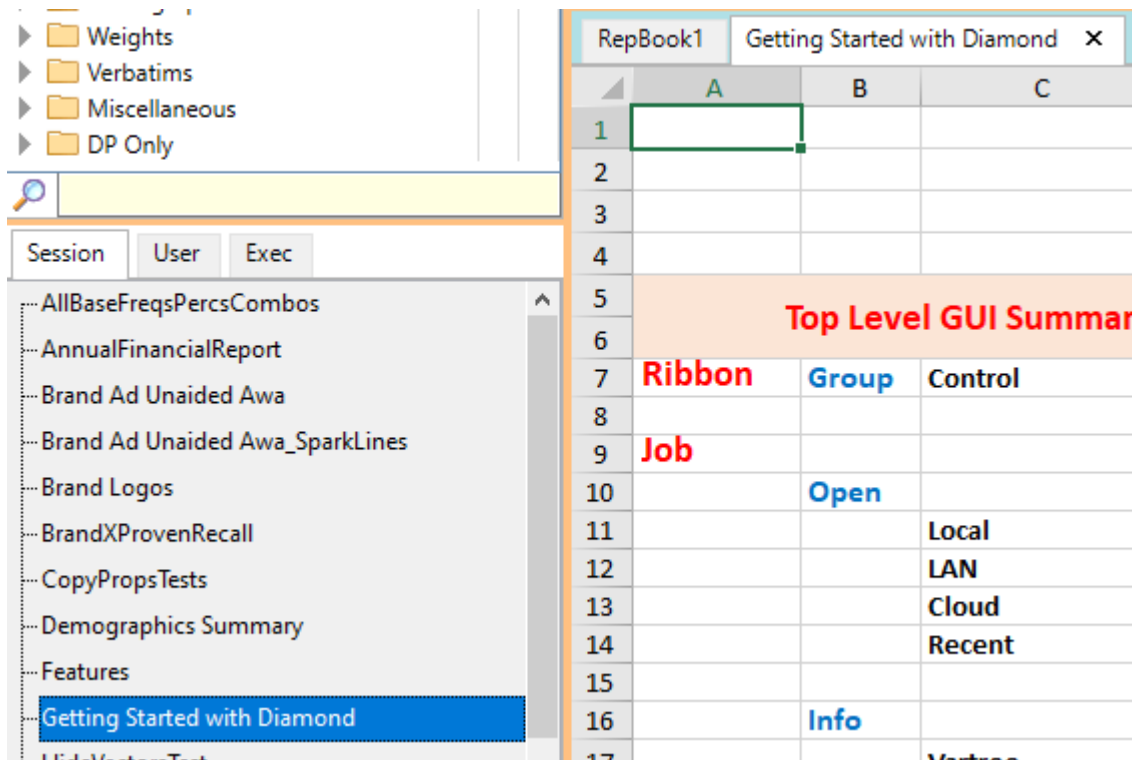
3. Select the file vartree.vtr

4. Click Open

There is a pre-loaded workbook which gives the steps to select and open the Demo job.

With the Demo job open,

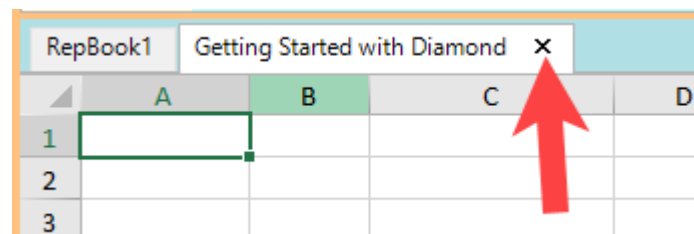
- Double-click the *Getting Started with Diamond* workbook.



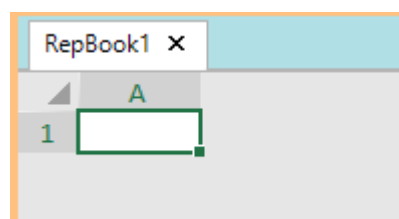
Follow the interactive walkthroughs in this workbook, and then browse the other workbooks to get the broad sweep of what's possible.

You can open any XLSX workbook, as shown above, but if the workbook contains live tables, then we call it a report book. You can have many work/report books open simultaneously.

- Close *Getting Started with Diamond*



Repbook1 is a single cell workbook which is the minimum display. If the only workbook is RepBook1, and you remove it, it is immediately replaced. If you close all named workbooks, RepBook1 will appear.



- Drag Married to Top Axis and Household to Side Axis
- Click Generate (on the Reports tab)

The screenshot shows the Diamond Reports interface. The 'Reports' menu is highlighted, and the 'Generate' button is also highlighted. The interface displays a report configuration window with the following settings:

- Drop Mode:** Vector (selected), Filter, Weight, Nest
- View Mode:** Script
- Top Axis:** Married (base: cwf)
 - 1=Yes
 - 2=No
- Side Axis:** Household (base: cwf)
 - 1=Young Single
 - 2=Peer Group
 - 3=Young Family
 - 4=Middle Family

The report table is displayed below the configuration window. The table has the following data:

Name	Top	Side	Filter	Weight	Status
Name:					
Top: Married					
Side: Household					
Filter:					
Weight:					
Status:					
		Married			
		Yes	No		
	Young Single	0	1654		
	Peer Group	0	1707		

The table appears with top left corner at cell A1.

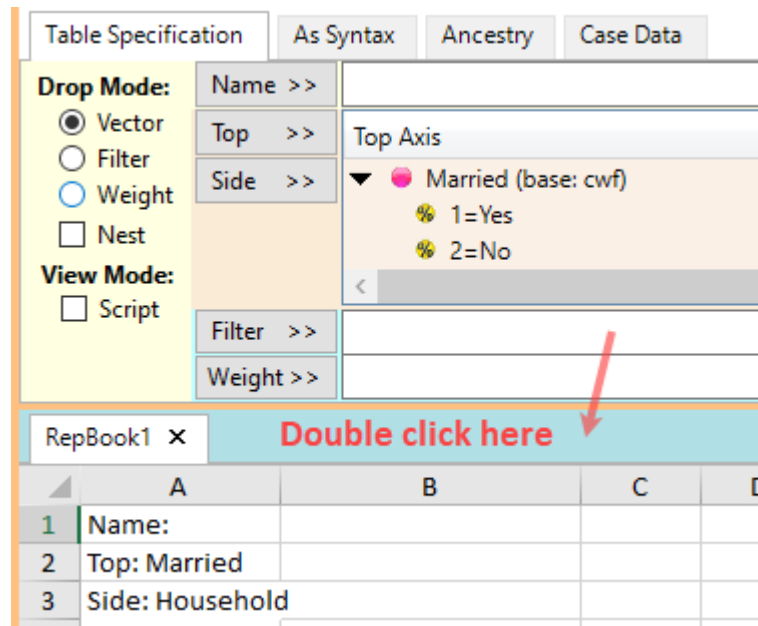
- Select the cell F1
- Click Run again

The table is duplicated at cell F1

- Double-click the Report book tab bar (or right click and select *Maximize to Client*)

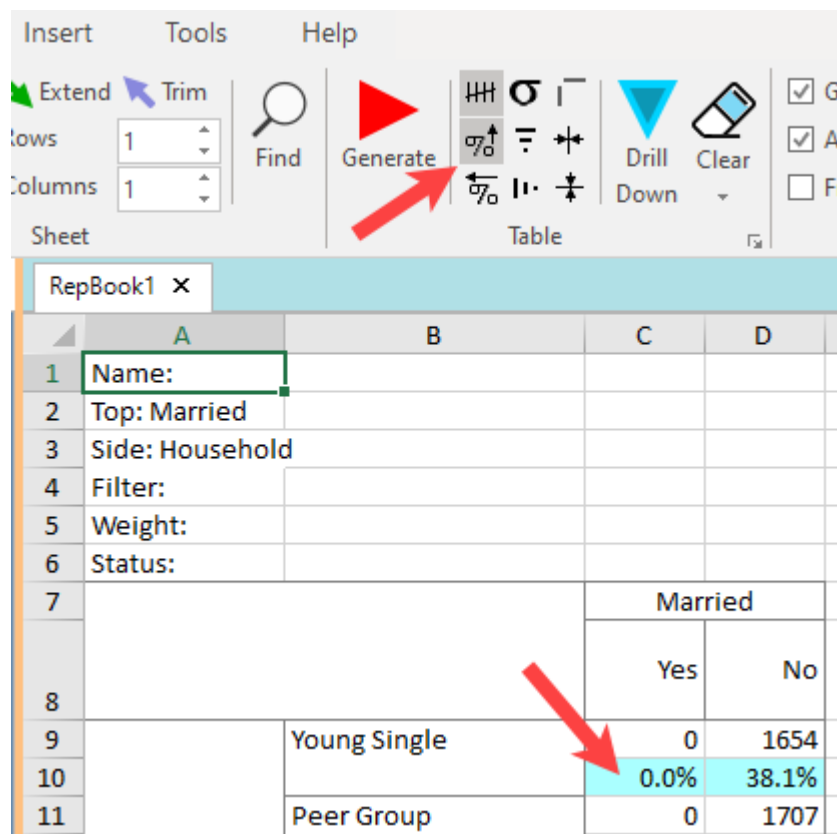
The screenshot shows the Diamond Reports interface with the 'Maximize to Client' context menu option highlighted. The menu options are:

- Maximize to Client
- Maximize Height
- Maximize Width
- Maximize to Screen
- Normalize



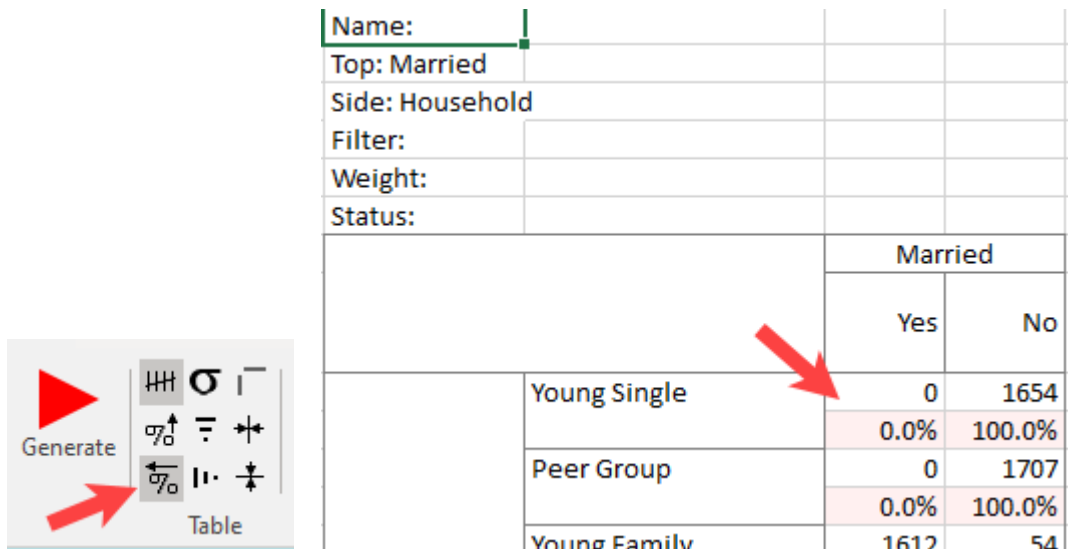
The Specification panel is hidden. (Double-click again to revert.)

- Select cell A1
- Toggle Column% ON



Column percent bands are inserted.

- Select cell F1
- Toggle Column% OFF, Row% ON



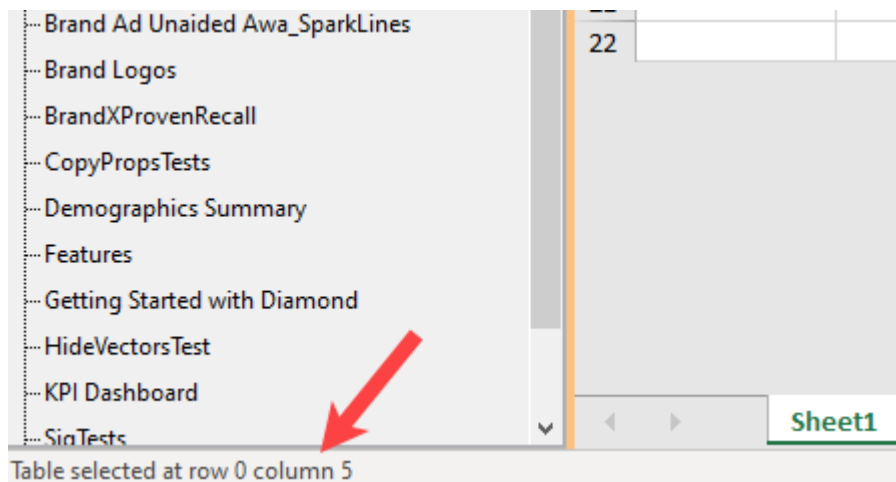
Name:			
Top: Married			
Side: Household			
Filter:			
Weight:			
Status:			
		Married	
		Yes	No
Young Single		0	1654
		0.0%	100.0%
Peer Group		0	1707
		0.0%	100.0%
Young Family		1612	54

Row percent bands are inserted.

- Select cells A1 and F1 in turn.

The % toggle states in the ribbon Table group change accordingly.

This demonstrates a key point: **tables are selected by their top left cell**. Usually that is a title item, but could be an empty or numeric cell, depending on the title and label visibility settings. As soon as you click on a table's top left cell, the Top and Side axes trees are populated with the table's specification, and the internal properties record is set to that table's properties. You are told if the current cell is a table top left cell in the Status bar at the bottom right.



The MetaData Sheet

When you generate the first table in a workbook (making it a report book), a sheet named *MetaData* is appended. This contains all the details necessary to recreate all tables in this report book.

RepBook1 x				
	A	B	C	D
1	Name	TopLeftText	TopLeftAddress	Width
2		Name:	=Sheet1!\$A\$1	4
3		Name:	=Sheet1!\$F\$1	4

Sheet1 **MetaData** (+)

This sheet is controlled by Diamond, but sometimes it is useful to perform direct edits. For example,

- Enter the names as

RepBook1 x				
	A	B	C	
1	Name	TopLeftText	TopLeftAddress	W
2	Tab1	Tab1	=Sheet1!\$A\$1	4
3	Tab2	Tab2	=Sheet1!\$F\$1	4

- Select Sheet1
- Right click on A1 and select Regenerate

RepBook1 x	
	B
1	Tab1
2	Top: Ma
3	Side: Ho
4	Filter:
5	Weight:

Context menu options:

- Edit Specification
- Regenerate**
- Remove
- Edit Properties

The table now has a Name title:

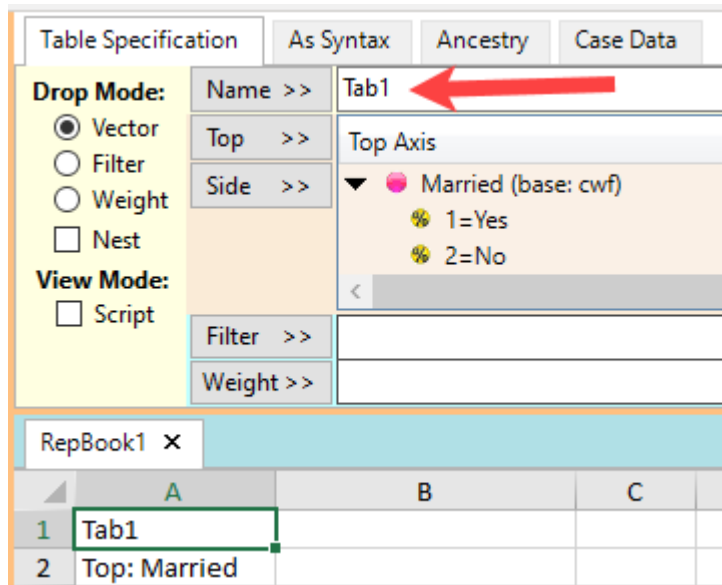


Table Sheet Positions

You can place a table at any cell position. Tables can overlap to allow building hybrids which could not be achieved by a single specification, so be careful. The mental model is that you are working in Excel, where you can put anything you like anywhere you like, and call dynamic procedures (macros versus table specifications) which populate cells.

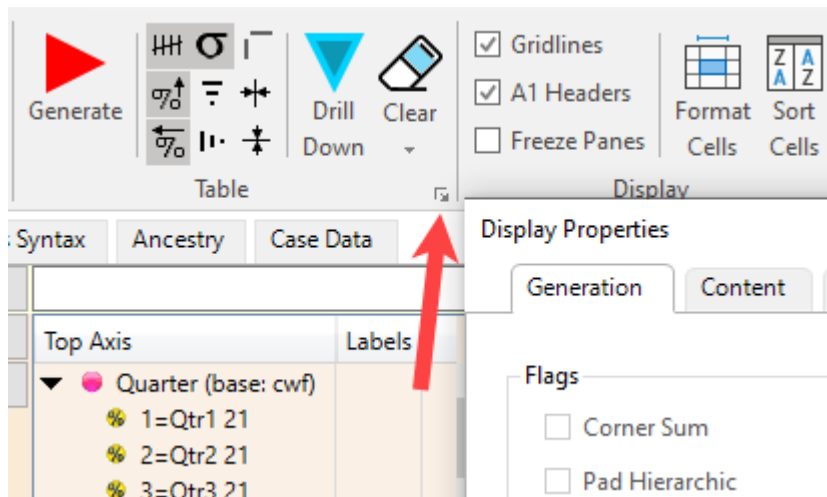
If a table run is initiated by the Generate button then you are warned if an overlap is about to happen, but not if toggling the Ribbon|Reports|Tables percent status buttons or if editing/copying properties from a table's right mouse menu.

It is intended that a potential overlap will offer to adjust neighbouring table positions to create sufficient room.

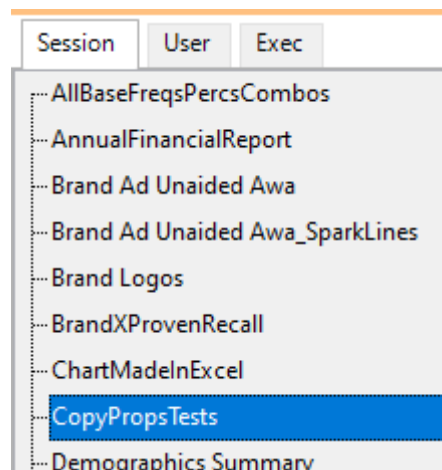
Applying Properties

Apart from the hard-coded defaults, there is no master properties set. The properties kept in RAM are set initially (for the first table in a session) by the settings on the Properties form, and are reset (from the MetaData record) by a left or right click at a table's top left.

The Properties form is accessed from the Tables group's Launch button:



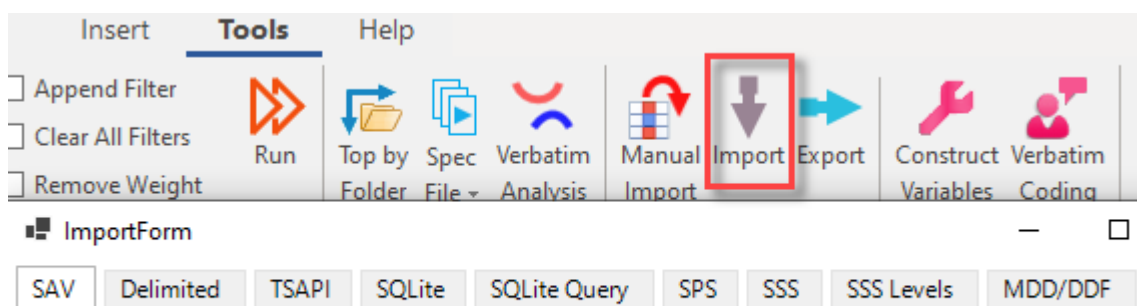
- To exercise applying properties, see this report book:



To Do

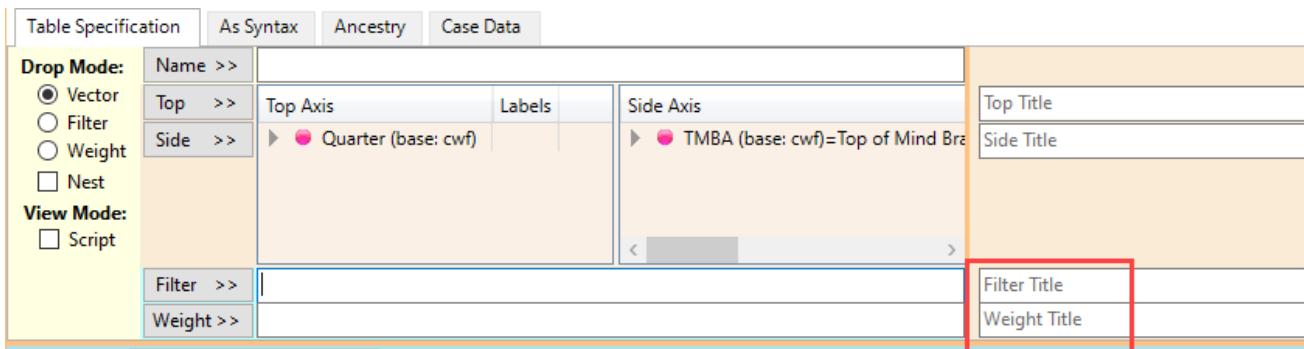
These are the major unfinished bits.

- Imports

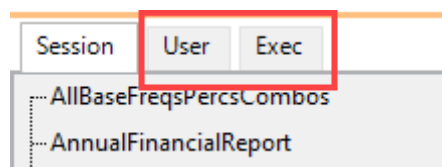


Direct SAV and delimited imports are reasonably well tested. TSAPI works on the example survey. SQLite and SQLite Query work on the supplied examples, but are not yet reliable. SPS, SSS and MDD/DDF remain in development.

2. There is no workbook Undo – save often
3. Filter and Weight title overrides not yet operational



4. User/Exec not yet implemented



Will follow Ruby, except that the item to be promoted from Session to User or Exec will be an XLSX report book, which could contain thousands of tables.

5. An automatic TableOfContents for report books.
6. If impending overlap, offer to adjust neighbouring table positions to create sufficient room.
7. Levels jobs are not implemented yet

Other minor pending items are noted either by an *in situ* comment or by disabled GUI.

[End of document]