



# MYOB EXO Clarity

## User Guide



MYOB ENTERPRISE SOLUTIONS

## Important Notices

This material is copyright. It is intended only for MYOB Enterprise Solutions Business Partners and their customers. No part of it may be reproduced in any way without the prior permission of MYOB.

MYOB has carefully prepared this material but excludes (to the extent allowed by legislation) any direct or indirect liability arising from errors or omissions or from its use. Any case studies (including the application of particular accounting standards or legislation) are representative examples only, and will not directly apply to the user's own circumstances. They are not a substitute for professional advice. Users must check that third party materials, for example from the IRD and the ATO, are current at the time they are used.

## Trademark Rights

MYOB is an internationally registered trademark of MYOB Technology Pty Ltd. The use of this trademark and MYOB's other trademarks is prohibited without prior consent. Other products mentioned may be service marks, trademarks or registered trademarks of their respective owners.

# Table of Contents

<b>Clarity Report Designer</b>	<b>1</b>
Introduction	1
MYOB EXO Clarity	1
Report Designer Tabs	1
Design Tab	2
Preview Tab	3
Data Tab	3
Detail Tab	4
Data Tab	5
Data Tab Overview	5
Creating a Data Source	6
Query Designer	7
Workbench Toolbars	14
Workbench Toolbars Overview	14
Standard Component Palette	16
Data Component Palette	17
Nudge Toolbar	18
Size Toolbar	19
Draw Toolbar	20
Align or Space Toolbar	20
Advanced Component Palette	21
The Report Tree	22
The Data Tree	23
Standard Toolbar	24
Format Toolbar	24
Edit Toolbar	25
Report Menu	27
Selecting Components	30
Creating your First Report	32
Plan the Data Source	32
Start Clarity	32
In the Query Designer	33
Design Workspace	35
Preview Window	37
Tidying Up	37
Grouping Data in a Report	38
Groups	38
A Simple Grouping Example	39
Runtime Parameters	42
Parameters Editor	42
Control Types	44
Displaying Parameter Values	49
Parameter Examples	49
Using Parameters with Stored Procedures and Functions	50

## MYOB EXO Clarity

Calculations .....	50
Calculations Overview .....	50
Programming Basics .....	50
The Calc Tab .....	52
Basic Delphi Syntax .....	55
Event Programming and Useful Functions .....	58
The Message Box .....	58
Using Variable Components .....	59
Date Manipulation .....	60
Conditional Formatting .....	61
Checking for Null Values .....	64
Passing Values between Reports .....	64
Other Useful Functions .....	65
Sub Reports .....	67
Sub Reports Using Non-linked Data Sources .....	67
Summary Sub Reports .....	67
Drill Down Reports .....	67
Crosstab Reports .....	68
The Crosstab Format .....	68
Creating Crosstabs .....	1
Extending the Crosstab Design .....	4
Printing Large Crosstab Layouts on Multiple Sheets .....	6
Advanced Clarity Notes .....	8
Label Printing .....	8
Mail Merge .....	9
Views .....	10
Parameters .....	1
Parameters Available at Runtime .....	1
Command Line Launch Parameter Definitions .....	2
Menu Option Launch Parameter Definitions .....	1
Worked Examples .....	1
Tech-Tips, FAQ & Troubleshooting .....	4
How do I force the Summary section to cover the whole of the last page of the report? .....	4
How do I set an image to print only on duplicate copies? .....	5
How do I skip a group when a condition is met / start each group on a new page? .....	5
How do I use Total Variables? .....	6
Why are my parameters not being passed though? .....	6
Why do I get the message 'Can't find Report Clarity.EXE' .....	6
Why do reports with the /I parameter still go to the default printer? .....	7
How do I set the number of copies to print at design-time? .....	7
How do I make the second or subsequent copies print slightly differently? .....	8
How do I print a second copy to a different printer? .....	9
How can I direct a report to a different printer tray trays on a networked? .....	10
What does the error 'Invalid SQL statement, Ambiguous column' mean? .....	12
How do I set extra date fields to default to today's date? .....	12
How do I create a barcode on a clarity form as a concatenation of two fields? .....	12
How do I make the Footer appear only on the last page of the report? .....	12

How do I force the Group Footer to appear at the end of each page? .....	13
How can I use \$COMPUTERID and \$USERID in Clarity? .....	13
How do I use the New Page option? .....	13
How do I get a record count in the header rather than in the footer? .....	13
How do I count the number of records in each group at the end of the group? .....	14
Why can't I sort by a field in a child data pipeline? .....	14
How do I set the number of detail lines per page? .....	14
How do I draw column lines in the detail band? .....	14
How do I set a watermark image or text in the background? .....	15
How can I strip blank spaces from a database field on a clarity report? .....	16
How do I set the number of copies to print from a database field? .....	16
How do you set a total variable to blank when zero? .....	16
How do I cancel a report if a runtime parameter is not specified? .....	17
How do I display an RTF file? .....	17
How do I dynamically map a printer based on the value of a field? .....	17
Language Reference .....	18
String Functions .....	18
Conversion Functions .....	19
Format Functions .....	20
Datetime Functions .....	23
Utility Functions .....	23
<b>Clarity Dashboard Reporting Tools .....</b>	<b>24</b>
Dashboard Introduction .....	24
MYOB EXO Business Dashboards .....	24
What is a Dashboard? .....	25
Clarity Charts (TeeCharts) .....	26
Dashboard Basics .....	27
General Features .....	27
Using the Dashboard .....	30
Standard EXO Dashboard Views .....	36
Dashboard List .....	36
Creditors Aged Balances .....	37
Debtors Aged Balances .....	38
Due/Overdue CR Accounts .....	38
Due/Overdue Creditor Accounts by Currency .....	39
Due/Overdue DR Accounts .....	39
Due/Overdue Debtor Accounts by Currency .....	39
Daily Sales Analysis by Branch .....	40
Daily Sales Analysis by Salesperson .....	40
Period Sales Analysis by Branch .....	41
Period Sales Analysis by Primary Stock Group .....	41
Period Sales Analysis by Secondary Stock Group .....	41
Period Sales Analysis by Salesperson .....	41
Top Customers by Margin .....	42
Top Customers by Revenue .....	43
Top Stock by Margin .....	43

## MYOB EXO Clarity

Top Supplier by Spend .....	44
Job Costing Dashboards .....	44
Dashboard Design .....	52
What Constitutes a Good Dashboard View? .....	52
Common Features.....	54
TeeChart.....	55
Dashboard Parameters .....	59
Advanced Chart Properties .....	60
Chart Properties Overview.....	60
Series.....	61
General.....	61
Axis .....	61
Titles.....	62
Legend.....	62
Panel.....	62
Paging.....	62
Walls.....	62
3D .....	62
Data .....	62
Export.....	62
Print.....	62
Gradient Panel .....	63
Tee Chart Events .....	64
Dashboard Programming .....	66
New Concepts .....	66
Custom Program Examples .....	71
Inserting or Clearing Data .....	72
Showing or Hiding a Series.....	72
Using Parameter Fields in Dashboard Reports .....	72
Programming Exercises.....	73
<b>Glossary .....</b>	<b>74</b>
<b>Index .....</b>	<b>81</b>

# Clarity Report Designer

## Introduction

### MYOB EXO Clarity

Clarity is the MYOB EXO Business report writer especially written for use with MYOB EXO Business. The Report Designer is the application you will use to build MYOB EXO Business reports.

This manual assumes a basic understanding of databases, and a general understanding of the operation and table structure of MYOB EXO Business.

### **Main Clarity Report Types**

There are mainly three kinds of Clarity report types in MYOB EXO Clarity depending upon the functionality required of them.

#### **Clarity Reports (.CLR)**

Most commonly used report type. Each CLR can have its own set of runtime parameters stored as a .CLS file and can be run from a menu, the command line, custom buttons, and so on.

#### **Clarity Business Forms (.CLF)**

Specific Clarity Forms are identified with specific functions within MYOB EXO Clarity. These are essential business forms that are part of the usual business workflow. In contrast Clarity Reports (CLRs) can be placed on the MYOB EXO Business menu or run via the command line, and can in fact be given any name and there can be any number of them.

A few notable exceptions exist however. Examples include where you are using a variety of invoice forms and they are specified by on the Debtor Account Details > Details 2 tab - Invoice file number – e.g. Invoice1.CLF, Invoice2.CLF - or if you have set up your system to prompt you to select from a list of formats when you save an invoice or sales order.

Another characteristic of a CLF file is that it is automatically passed a single key value such as a transaction record number or an account number to the data pipeline named “Master” in your CLF definition. For example, MYOB EXO Business will pass the DR\_Trans Seqno to the file named Invoice.CLF. Therefore the DR\_Trans.Seqno field must be in the data pipeline named “Master” on the data tab in Clarity.

#### **Clarity Merge Files (.CLM)**

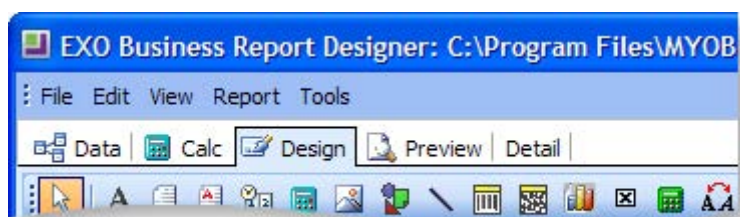
CLM files are basically used to produce clarity merge files.

#### **Clarity Email Templates (.CLE)**

Clarity email templates are the equivalent of a .CLM merge file for bulk-sent emails. They build the HTML that is inserted into the body of an email.

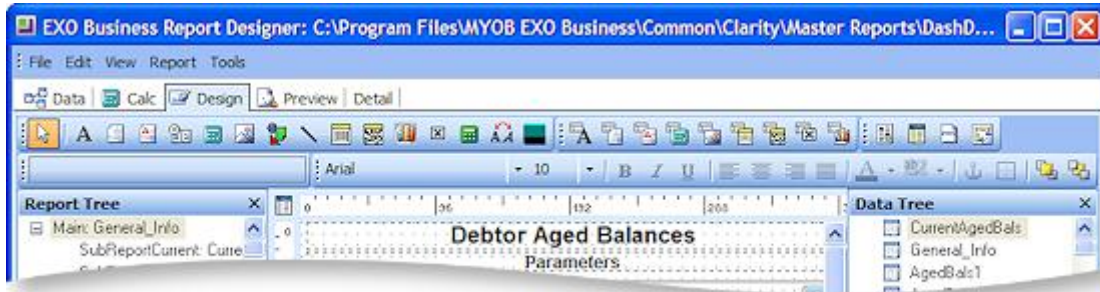
## Report Designer Tabs

Clarity contains four main tabs: Data (see page 3), Design (see page 2), Preview (see page 3) and Detail (see page 4), with Calc (see page 50) reserved for more advanced development.



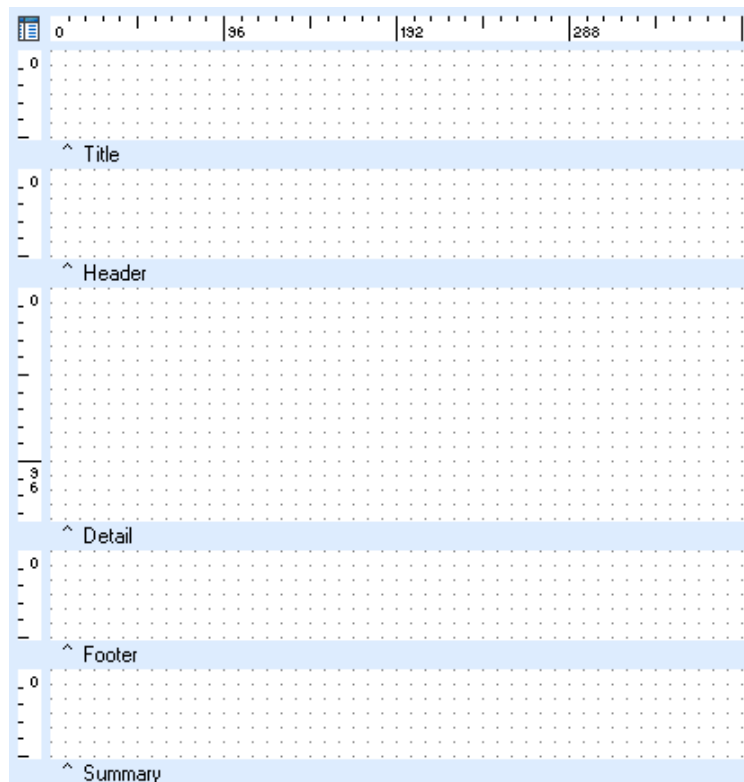
## Design Tab

When first loaded, the MYOB EXO Clarity Report Designer always defaults to the Design tab workspace, because this is where you will spend the majority of your report-building time. The Design workspace is divided into two areas: the workbench and the canvas. The workbench (shown below) comprises toolbars (see page 14), component palettes, rulers, and other tools that can be used to manipulate the canvas.



The canvas is the area that contains the report layout. This is where we place the bands (or sections) and components that will ultimately control the content of each page of the report.

- **Title band** - Generally contains the title of the report and prints on the first page only.
- **Header band** - The header band prints at the top of each page.
- **Detail Band** - The detail band prints once for every row of data.
- **Footer Band** - The footer band prints its on the bottom of each page.
- **Summary** - The summary band prints once at the end of a report. The band is typically used to summarize data.
- **Page Style** - The page style band allows you to set components (for example, images or watermarks) as a background for each page of your report. This is typically only used in advanced reports.



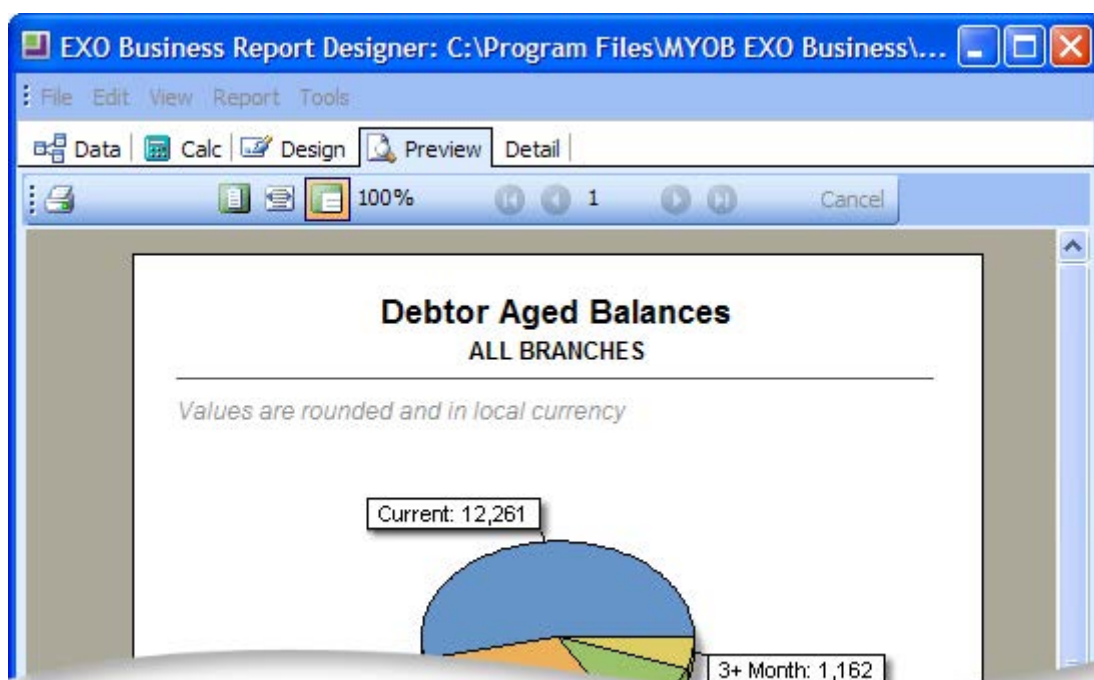
All bands except the Detail band can be either shown or hidden by selecting or de-selecting the appropriate option under the “Report” menu.

**Note:** If the title and summary do not appear on the canvas, they need to be activated from the **Report Menu** (see page 26).

## Preview Tab

The Preview tab plays an integral role in the report-creation process as it allows you to preview the report as it will look when printed. This tab is frequently accessed so that one can see how the report is shaping up. Many changes and corrections are based on what is seen in this preview.

Tools in this tab allow you to view each page of the report or zoom in to get a better look at a specific page. You can browse on screen or you can print the report from the preview tab.



**Note:** You cannot edit in the preview window.

## Data Tab

The Data tab is the key to successful report creation as it allows you to select and manipulate the source data needed for a given report. These tasks are accomplished via two visual tools:

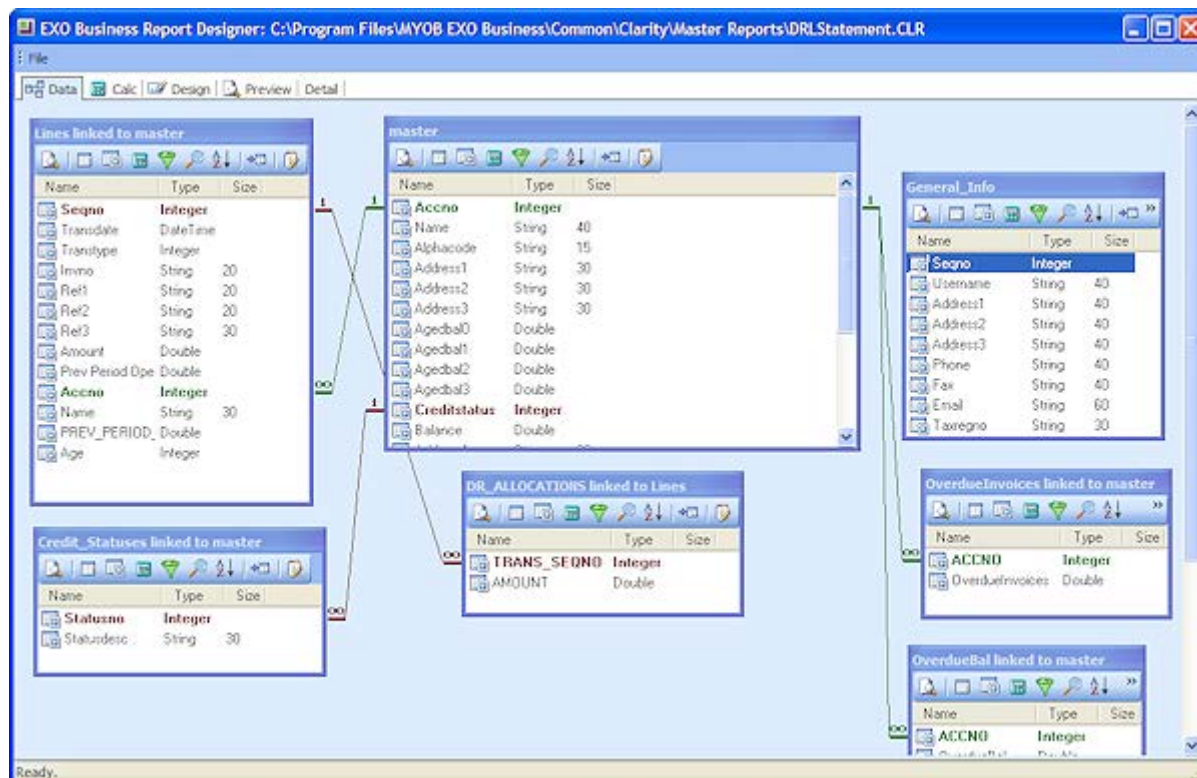
- the **Query Wizard**
- the **Query Designer**

These tools greatly simplify the often-difficult task of data selection by giving us the ability to select data without requiring too much in-depth knowledge of the underlying MYOB EXO Business database structures. Either of them can be used to achieve the same result, the difference being that the Wizard leads you step by step through the processes whereas the designer is a quicker way for the more advanced user to select the data.

The options on the main drop down menus at the top of the screen change when you move to this tab. By selecting one or more tables and joining these tables where needed, “Data pipelines” can be constructed containing only the data required in your report. This gives the benefit of speed, as the subset of data is smaller and any heavy processing is performed on the server.

## MYOB EXO Clarity

The screen capture below shows the data tab with a number of data pipelines. The coloured lines between the data pipelines represent the links between them. They link specific fields to each other, and are often slower than the table joins within the data pipelines, but there are extra benefits with these, which will be explained later.

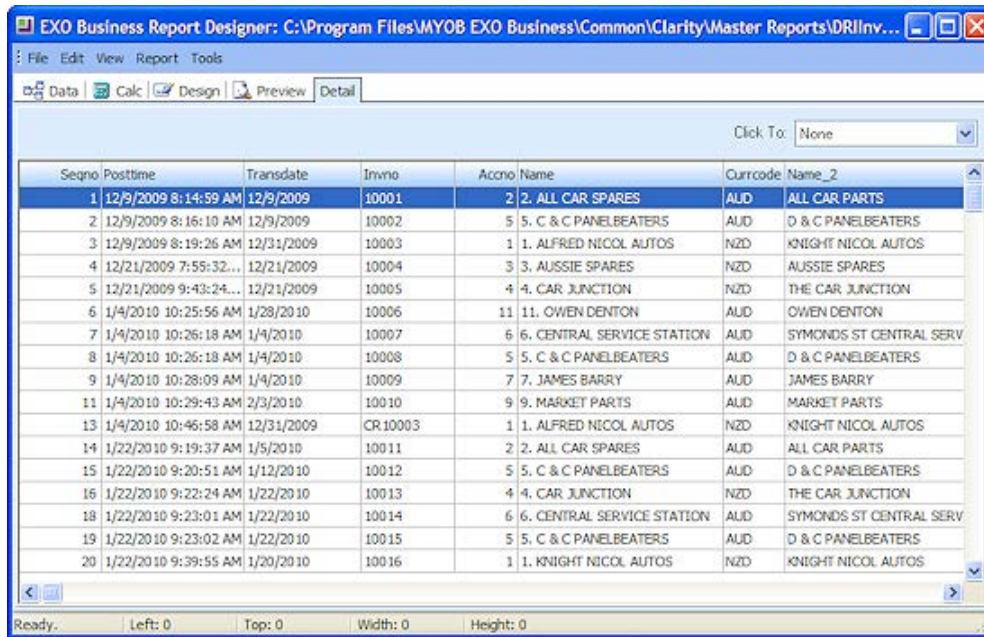


## Detail Tab

This tab is the equivalent of the powerful Report to Grid option in previous MYOB EXO Business versions. It displays the data obtained from the data source that has been selected for the primary detail. The specific MYOB EXO Business component procedure can be selected when drilling on the line in the details band of the report.

All the usual options of Account Maintenance, Stock Item Maintenance, General Ledger Account, Sales & Purchase Order, and Invoice are available. User profile security policies will still apply when these functions are called.

The **Click To** drop down box should be changed to select what you would like to drill down to. For example, in a Debtors Invoice Listing Report it is possible to drill down to either the Debtors Account or the Debtors Invoice.



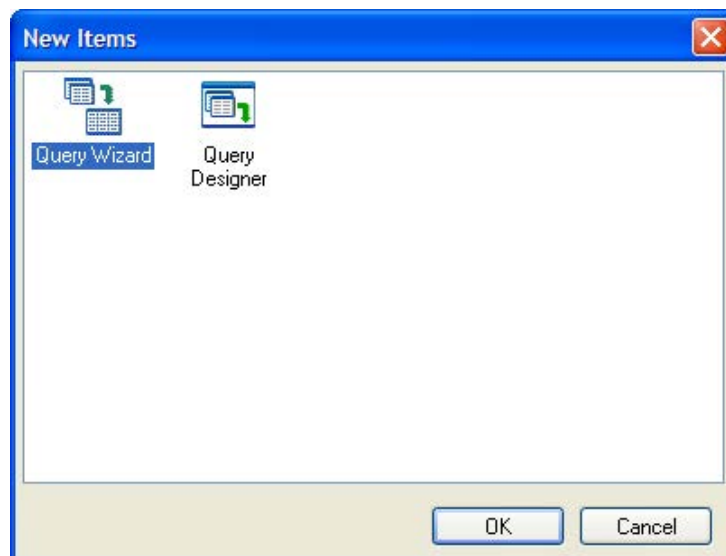
## Data Tab

### Data Tab Overview

As discussed in the Data Tab introduction (see page 3), the Data tab is where the database tables and fields are selected. This section will explain the process of such selection, as this is an important part of the report writing process. If the wrong or no data is extracted, there is no chance of the final report recording the results correctly.

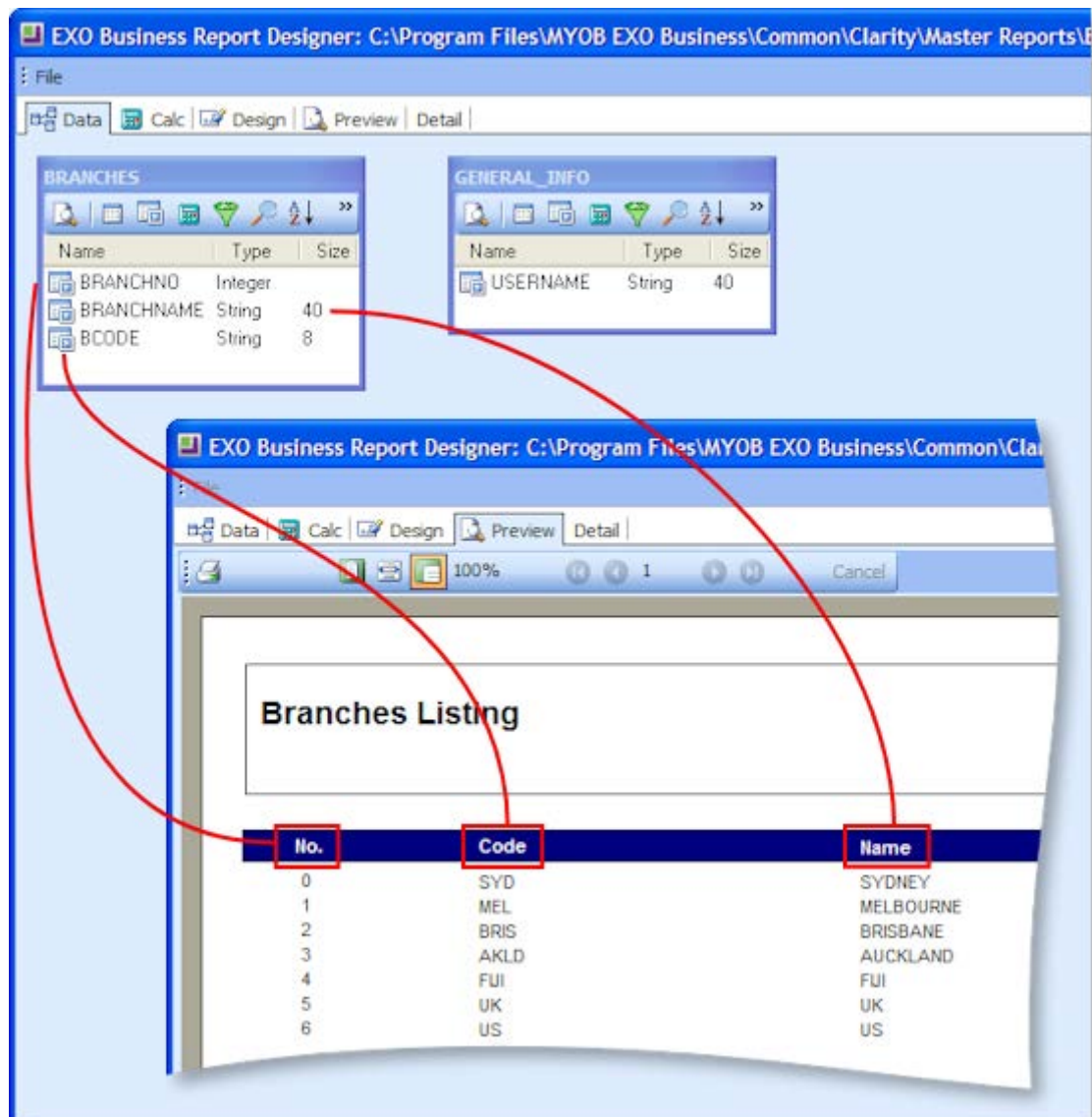
In this section the use of the report Query is discussed, as it is most likely the one you will choose to use.

To create a new data pipeline, from the Clarity Report Designer click on the Data tab so that you see a grey screen with only the menu option of File available. Select **File > New**, and double click on the Query Designer icon.



## Creating a Data Source

This can also be referred to as a Data Pipeline.



The illustration above depicts the data source for a very simple report.

One of the more difficult tasks of creating a report is determining which tables and fields you need to select to obtain the required information.

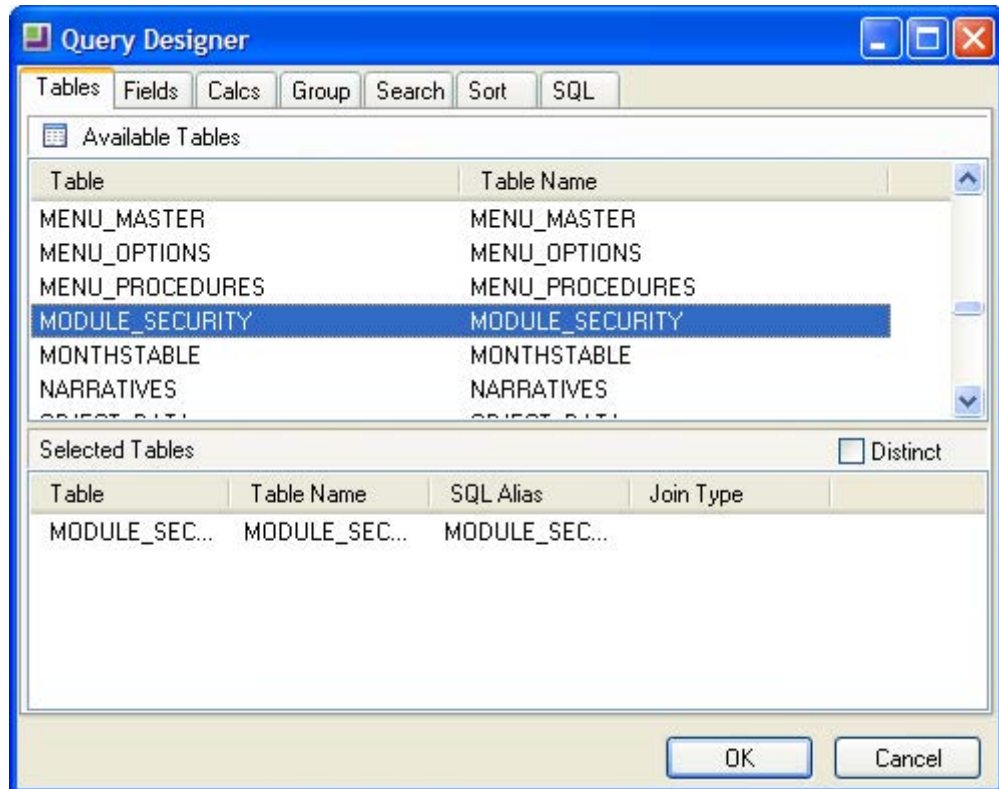
1. Start by making a list of all the fields you need to display on your report. A suggested method is creating a rough sketch of what you would like your report to look like when it prints out (displaying a line or two of example data). You can then make a list of the fields required to show this information.
2. If any of the required fields are calculated fields, ascertain from which field(s) they will be calculated, and add those source fields to the list of required fields.
3. After ascertaining which fields are required, make a list of all of the distinct tables that the fields come from.
4. Establish how these tables are linked in the database, i.e., which fields they are linked on.

You now have all of the information required to create a data source and it is just a matter of selecting the distinct tables in your new data source identified in step 3 above, and joining them with the links established in step 4. The individual fields required, as identified in steps 1 and 2, will then be able to be selected, to be used in your report directly or to within calculations.

## Query Designer

### Tables Tab

Select **Data tab> File> New**, then double click on the **Query Designer** icon. The Query Designer window splits in two, with the upper window displaying all of the MYOB EXO Business database tables available for use in report writing.



The lower window is at present blank, and this is where your selection will be stored.

To select items on any of the tabs, double click on a line in the top pane (in this case a table), and the line will copy into the bottom pane. For example, double click on DR\_TRANS in the top pane to add it to the bottom pane. If you then decide that you have made a mistake and want to remove it from your selection, simply **double click** on it in the lower pane, and it will disappear.

**Note:** If you click the **OK** button at this stage after only selecting a table, you will be confronted with an error message. This is because no data fields have been selected, and selecting a table on its own without fields is of no use.

## MYOB EXO Clarity

If you select a second or subsequent table, the Join Table screen appears:

**Join Table**

Join Type:

Join DR\_ACCS Table with:

**DR\_ACCS Fields**

- ACCNO
- NAME
- ADDRESS1
- ADDRESS2
- ADDRESS3
- DELADDR1
- DELADDR2
- DELADDR3
- DELADDR4

**DR\_TRANS Fields**

- SEQNO
- POSTTIME
- TRANSDATE
- ACCNO
- TRANSTYPE
- INVNO
- REF1
- REF2
- REF3

**Joined Fields**

DR_ACCS Field	Operator	DR_TRANS Field
DR_ACCS.ACCNO	=	DR_TRANS.ACCNO
DR_ACCS.NAME	<>	DR_TRANS.NAME
DR_ACCS.SALESNO	>	DR_TRANS.SALESNO
DR_ACCS.CURRENCYNO	<=	DR_TRANS.CURRENCYNO

Buttons: Add, Remove, OK, Cancel

In this dialog box you can create a table join. A table join links two tables based on a common field. To add a join condition, you need to select four options:

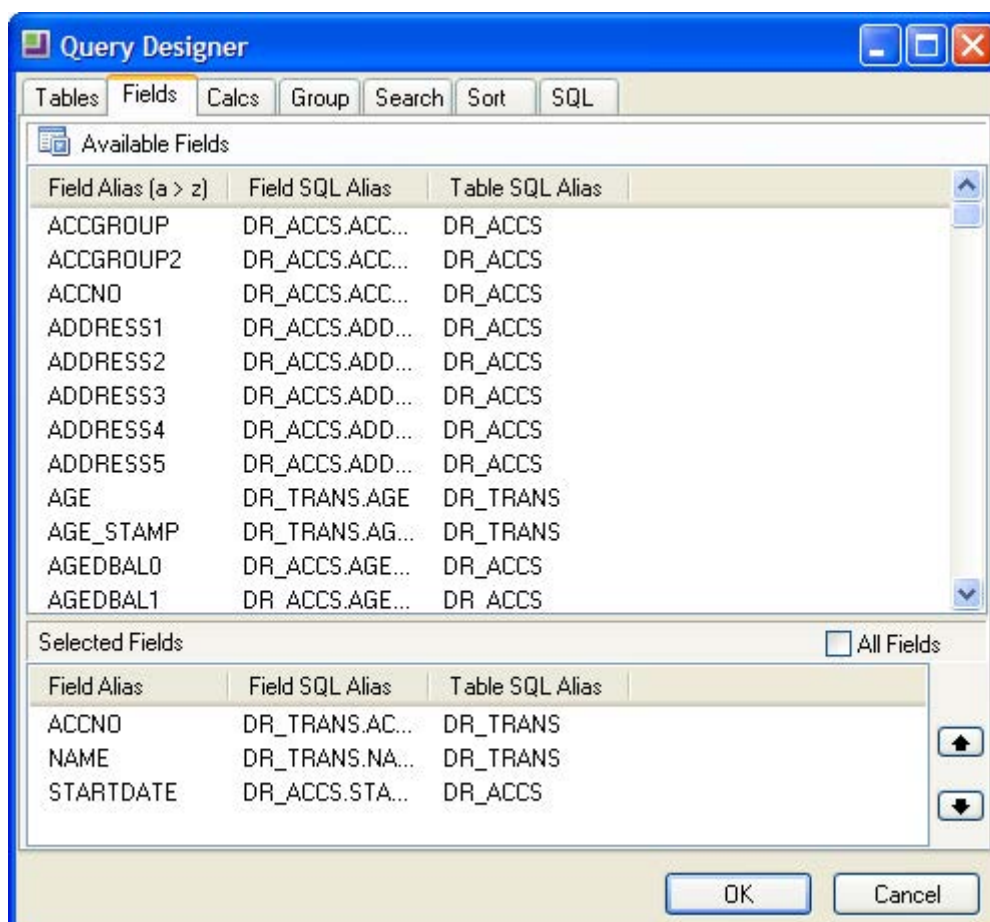
1. First, you must select the type of join: Inner, Left Outer, Right Outer, or Full Outer.
2. Second, choose the table to which you want to join from a list of existing tables in the data pipeline.
3. Third, highlight the new table's join field (on the left).
4. Lastly, select the existing table's join field (on the right), and click **Add** when you are happy with the selection.

In the example above we are "inner" joining the DR\_TRANS table (new) to the DR\_ACCS table (existing) via the Accno field.

All unnecessary joins listed in the Joined Fields box must be removed, or you may not get the results you intended (Clarity adds joins between fields of different tables with the same name automatically).

## Fields Tab

Once you have selected the tables required, click on the Fields tab.



To select items, double click on a line (in this case a field), and the line will copy from where it is, to the other window; when you choose a field it disappears from the top window and only appears in the bottom window. This means that although you can choose the same table more than once, you cannot choose a field more than once from the same instance of that table.

To remove from the bottom window - simply double click it again.

**Note:** In the bottom right quadrant of the screen there is a small check box with the caption **All fields**. As the name suggests, if ticked, all of the fields in the top window will now be selected and will appear in the bottom window.

Keep in mind that as you select more fields this proportionally increases the amount of data that the computer will have to sift through when running a report. Consequentially the longer it will take to run, so it's good practice to only use the ones you need. Should you find later on that you are in need more fields you can return to this window and select more.

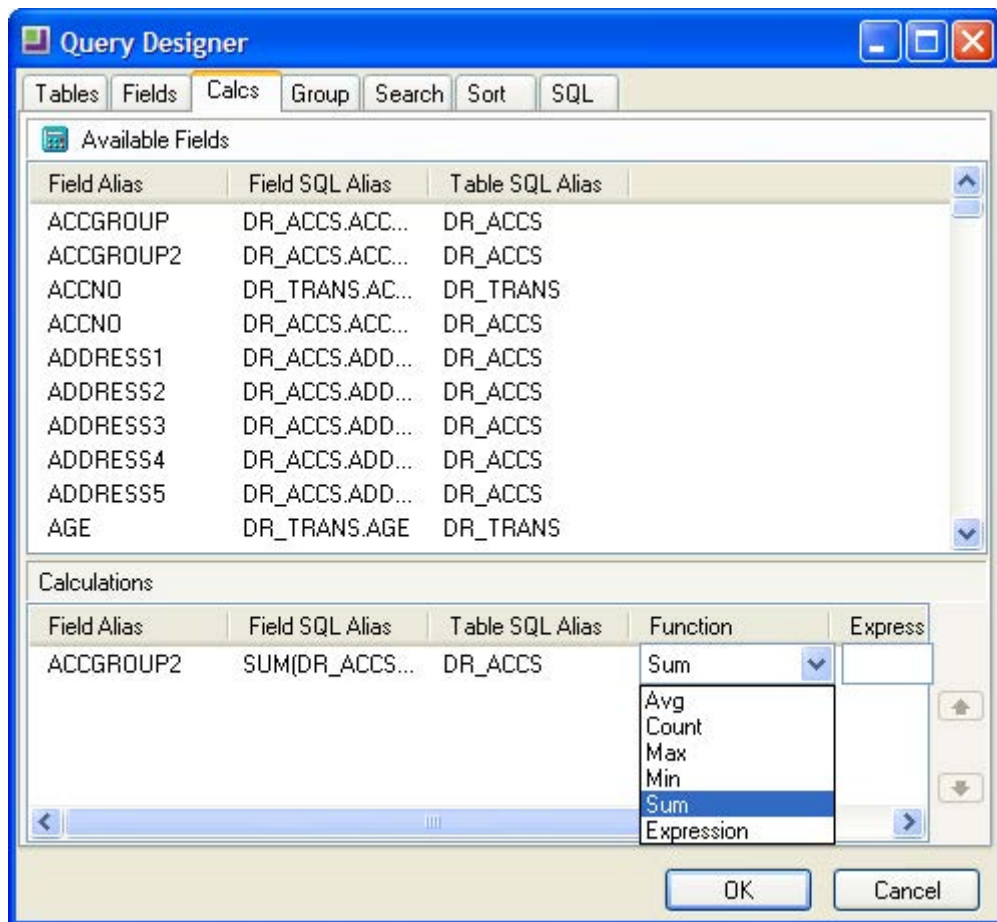
## Field Selection Procedures

To move an individual field from the top window to the bottom window, double-click a line from the top window to copy it to the bottom window. This method is fine if you only need to select a few fields, there are quicker methods for adding fields:

- To find field names more easily, they may be sorted by field alias. To do this, click the **Field Alias** title bar. Click in the list of fields and type the first letter of the field you're searching for. The list will scroll to that location.
- Instead of selecting fields individually by double clicking, multiple fields can be selected by using the default Windows selection method of holding down the CTRL or SHIFT key when selecting with the mouse. Alternatively drag a box around the fields that need selecting - in this example start at click and hold the mouse button down then drag the selection to point.
- Release the mouse and click and hold down the mouse button when the cursor is on the selection. Now drag the selected group to the bottom window.
- There are other options from the right click menu, both from the sort fields window and the available fields window. These may vary according to the tab selected. The best method is to experiment, right clicking will do nothing until a left click action follows this. To get out of the right click menu without affecting your selection, press the ESC key.

## Calcs Tab

The Calcs tab is where simple mathematical calculations are performed.



To record a calculation, choose any field from the top pane and double click on it to bring it down to the bottom pane. Select a function from the drop down list depending on what calculation you wish to apply to the field (e.g. Sum(), Count(), etc.), or select the expression option for a more complex calculation and enter your formula. An alias may then be entered for the resulting field.

For example, if you only had the amount and the exchange rate fields available, but you need to display the foreign currency of an amount of money, you would need to perform a calculation. To calculate the foreign currency amount you would enter the expression (amount/exchrte), and then rename the alias to FCAmount.

To select items, double click on a line (in this case a field), and the line will copy from where it is, to the other window; when you choose a field it disappears from the top window and only appears in the bottom window. This means that although you can choose the same table more than once, you cannot choose a field more than once from the same instance of that table.

To remove from the bottom window, double click it again.

### Group Tab

Unless you know what you are doing, you may wish to ignore this tab as there are easier methods of grouping in the report itself (see page 38). If you add an aggregate function like Sum() in the Calcs tab, Clarity will automatically add non-aggregated fields to the list of fields to group by. This is normal behaviour and you cannot remove these.

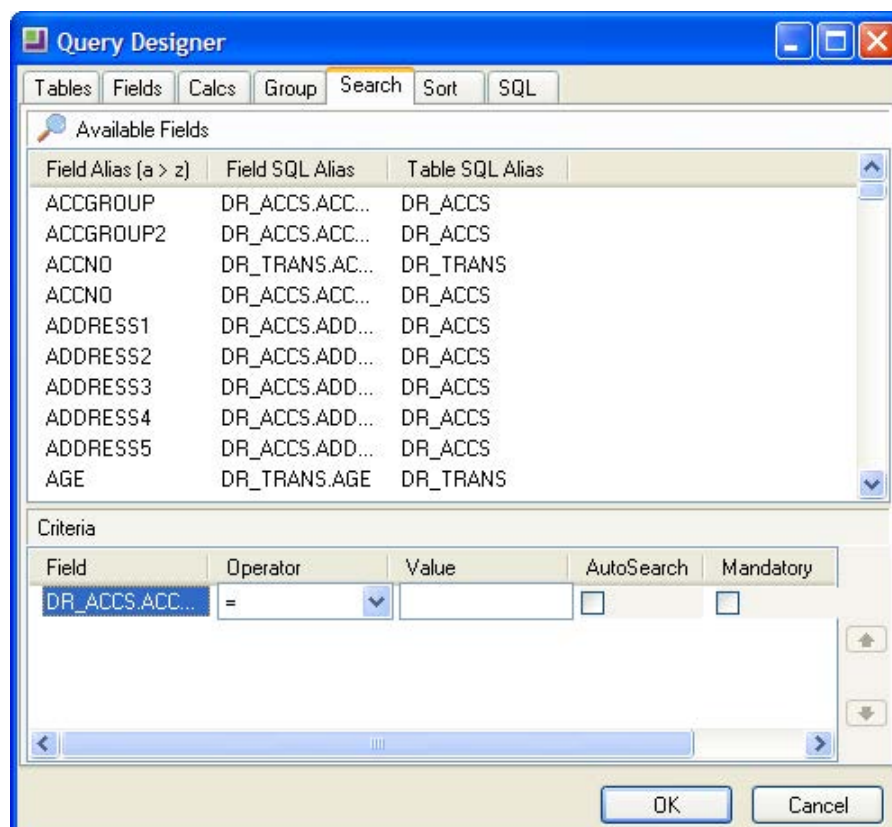
### Search Tab

The Search tab is where we enter selection criteria in order to narrow down the selection of data to be as small as possible. For example, this is where a date range would be recorded, or the records restricted to those where balances are > \$0.00.

To select items, double click on a line (in this case a field), and the line will copy from where it is, to the other window; when you choose a field it disappears from the top window and only appears in the bottom window. This means that although you can choose the same table more than once, you cannot choose a field more than once from the same instance of that table.

To remove from the bottom window - simply double click it again.

To begin building the search criteria, right click on the field name and include the search condition. Add an operator from the drop-down list and choose an appropriate value to enter into the value field.



**Note:** As Clarity does not have the facility to enter a sample size, use the search screen to make your sample size as small as you need it to be so that your report runs quickly whilst you are building and testing. However don't forget to remove the unwanted search criteria before installing your report in a live situation.

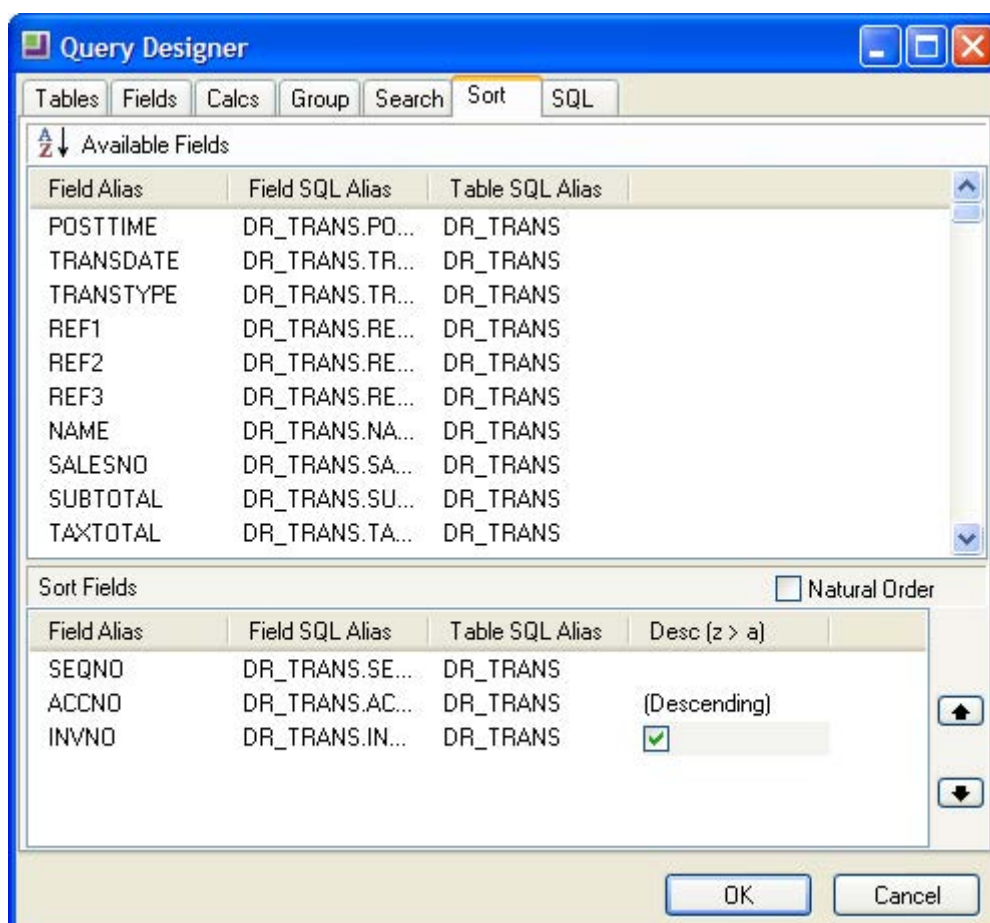
### Sort Tab

This tab defines the sort order that the data will be listed in the report.

If you are grouping in Clarity by fields other than using the data pipeline Group tab (i.e. using the **Report > Groups** menu option, which is the recommended option at this stage), it is essential that the fields that you order by are the same ones that you group by and in the same order, or your report will not make sense. Once these fields have been added in the correct order, any further fields can be added to sort records within the group. For example, in order to correctly group records in a report by Debtor account you must have the records sorted by Debtor account. You could then add a Sort field for the invoice number to sort by invoice number within the Debtor account.

To select items, double click on a line (in this case a field), and the line will copy from where it is, to the other window; when you choose a field it disappears from the top window and only appears in the bottom window. This means that although you can choose the same table more than once, you cannot choose a field more than once from the same instance of that table.

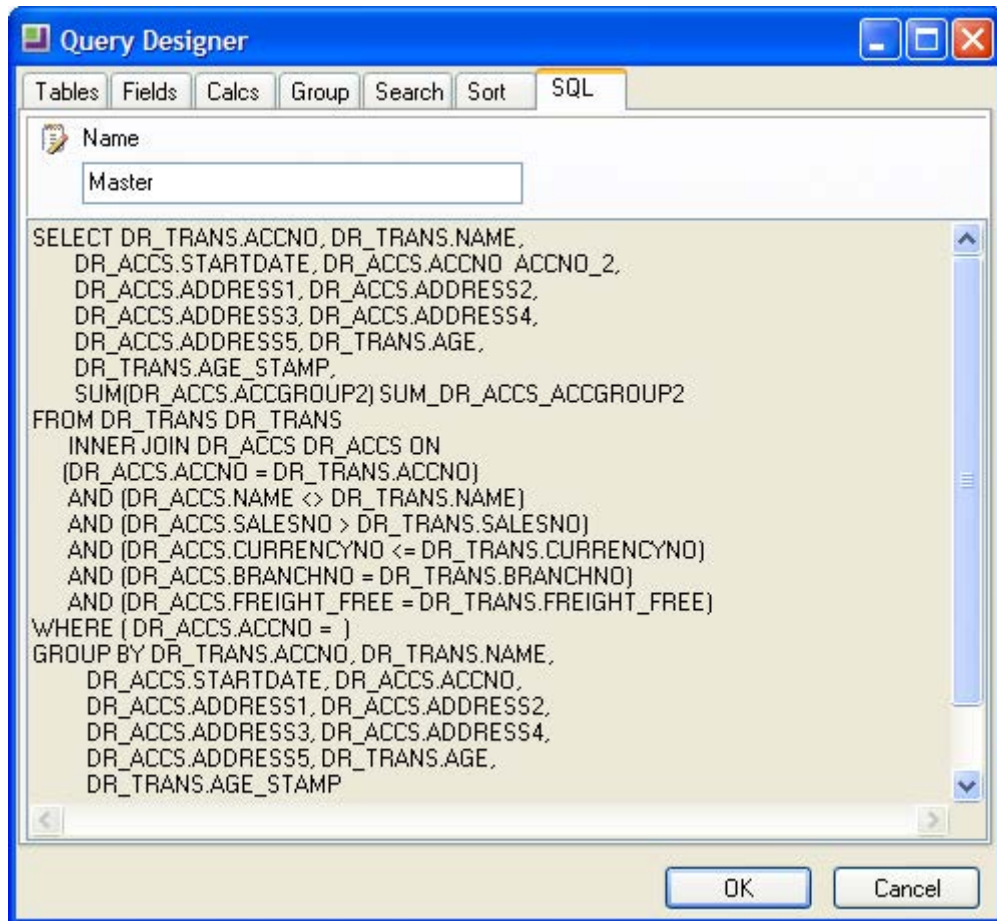
To remove from the bottom window, double-click it again.



Highlight a sort item and click the check box to make it a descending sort.

## SQL Tab

By default, the only editable part of the SQL tab is the **Name** field, which is the name you give the new data source/data pipeline. The rest in the greyed out area shows the commands that you have performed on the tables and fields turned into SQL. Thus if you are familiar with SQL code, this tab provides a useful check to see that you have made the selections you intended.



In the above example, the data source has been renamed to “Master”. This is because MYOB EXO Business looks for a data source named Master to apply search criteria to when passing parameters such as transaction sequence numbers through to reports.

## Editing SQL

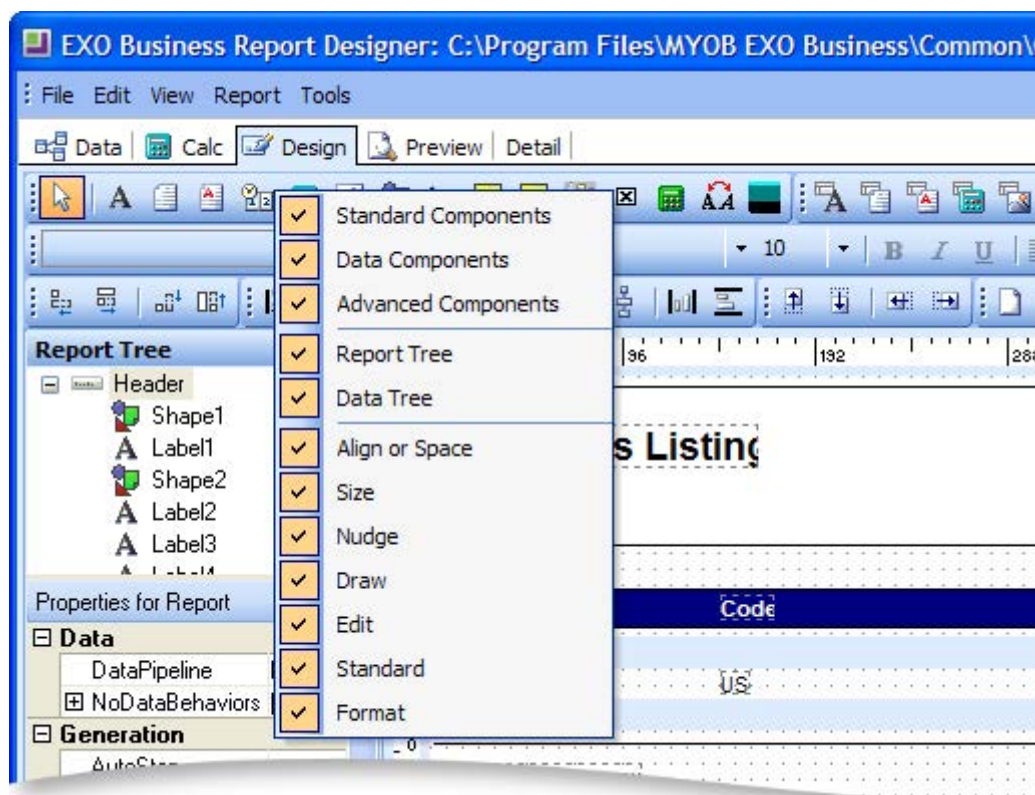
To edit the SQL statement manually, right-click on the main area of the tab and select **Edit SQL**. You can now enter any SQL statement you want here; for example, you can enter a query to take data from a view, function or stored procedure in this mode.

**Note:** Once you choose edit the SQL manually, this cannot be undone; the query can only be edited manually from now on. All of the tabs on the Query Designer window are hidden.

## Workbench Toolbars

### Workbench Toolbars Overview

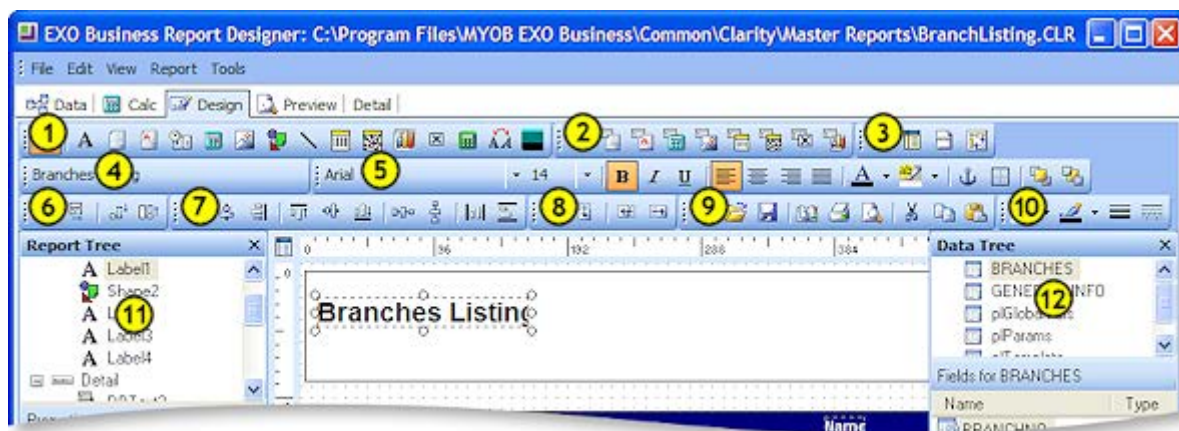
This section introduces you to the various toolbars and their functions.



You can view a list of all toolbars in MYOB EXO Clarity and select those that you want to always show, by selecting the **View > Toolbars** option from the Report Designer main menu, or by right-clicking anywhere on the workbench toolbar area. You should probably select all the toolbars and become familiar with what each tool does.

### Available Toolbars

The workbench is controlled by a series of toolbars to accomplish specific tasks. These are described below.



Ref	Name	Description
1	Standard Components (see page 15)	Used for headings, labels, and company logos etc. that are required to help identify the report or form.
2	Data Components (see page 17)	The set of tools that are used to extract data from the database. Data-aware components have the ability to read the value of a field from a database table, and then display that value in the report.
3	Advanced Components (see page 21)	To tackle and control complex reporting layouts.
4	Edit (see page 25)	The Edit toolbar is unique in that it changes based on the selected component. It consists of two white boxes with drop down capabilities.
5	Format (see page 24)	Used to set the font and colours of text-based components. It's also used to control the layering of components.
6	Size (see page 19)	You can use the Size toolbar to set all of the components within a selection to a uniform height or width.
7	Align or Space (see page 20)	Is useful when components need to be positioned uniformly. For example, it can align several components so that the tops are all even.
8	Nudge (see page 18)	Is useful when you want to move a component or selection of components with extreme precision.
9	Standard (see page 23)	For functions such as opening, saving, and printing reports, as well as cutting and pasting selections.
10	Draw (see page 19)	Is used to set the colour and style used by shape, line, and region components.
11	Report Tree (see page 22)	Used to view the components within each band of the report in a vertical linear format.
12	Data Tree (see page 23)	Can be used to create data-aware components within a band.

## Standard Component Palette



The Standard Component palette and the one described hereafter, the Data Component palette would appear at a glance to contain the same elements. Although the similar icons do similar things, their overall purpose is very different. The Standard Component palette is used for headings, labels, and company logos etc. that are required to help identify the report or form. The Data Component palette is the set of tools that are used to actually extract data from the database.

The icons on the Standard Component palette represent components that are frequently used to build reports. To use a component, click on an icon and then click in a report band.

Icon	Description
	<b>Selection tool:</b> Selects one or more components within the layout. Also clears any selection (by clicking in the white space of a band).
	<b>Label:</b> Displays text. To set the caption of a label, highlight 'Labelx' which appears in the white window below this toolbar, and over type it with the text you require. You need to have selected the label first before you do this.
	<b>Memo:</b> Prints multiple lines of plain text in a report. This can be achieved by editing the white window as with the label described in B above, or by right clicking on the Memo block on your canvas and selecting 'Lines', you will then be presented with a small Word Processing type window in which you can type the text you require. This tool has limited Word Processing capabilities unlike the Rich Text tool – which is described in 'Rich Text' below.
	<b>Rich Text:</b> Prints formatted text. Right click on this block on your canvas and select 'Edit' to access the Rich Text Editor window and its word-processing features.
	<b>System Variable:</b> Displays common report information such as page number, page count, print date and time, and current date and time. When first chosen it defaults to 'Date' but clicking on the drop down box allows a number of other options to be chosen instead.
	<b>Variable:</b> Performs calculations. This tool is used together with the Calc tab and is used for advanced calculations, an explanation of which can be found in Chapter 5
	<b>Image:</b> Displays graphics such as bitmaps, GIFs, and JPEGs. This would be used where a company logo is required on a form.
	<b>Shape:</b> Displays various shapes, such as squares, rectangles, circles, and ellipses. It initially defaults to a Rectangle – use the Edit toolbar (see page 25) in the top left hand corner of the screen to select a different shape.
	<b>Line:</b> Displays a line. Use the edit toolbar to set the line orientation – top or bottom, left or right.
	<b>BarCode:</b> Renders text as a barcode. Use the Edit tool-bar (see page 25) to set the text to be encoded. Right-click and choose <b>Configure</b> from the popup to select industry standard bar code types.
	<b>2d BarCode:</b> Renders text as a 2d barcode. This is also known as a matrix code, a two-dimensional way of representing information. It's similar to a linear barcode, but has more data representation capability.
	<b>Chart:</b> Displays TeeChart (see page 55) charts in the report.



**Checkbox:** Displays a checkbox icon that can be set as checked or unchecked by right mouse click.



**HTML Text:** Displays HTML content. Right click on this block on your canvas and select 'Edit' to access the HTML Editor window.



**Total Variable:** Used to perform totals for groups and reports. Configured by right clicking, choosing 'Grand Total' and then selecting from the drop down list what should be totalled.

## Data Component Palette



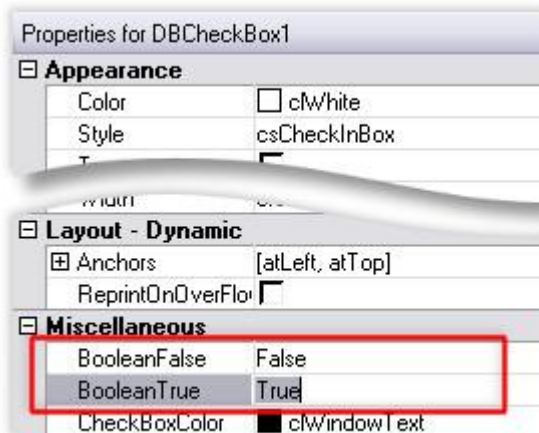
Data Component palette offers several components that are identical to ones in the standard palette, except for one thing: they are “data aware”, also known as “data bound”.

Data aware components have the ability to read the value of a field from a database table at run-time, and then display that value in the report. This is different from the standard components, which display the content assigned when you lay out a report (design-time). You associate a data aware component with a given data pipeline and field by selecting the pipeline and field from drop-down lists in the edit toolbar (the two white boxes with drop down capabilities located in the top left of your screen).

Icon	Description
	<b>DBText:</b> Displays data from most types of database fields. Cannot handle images or Rich Text.
	<b>DBMemo:</b> Prints plain text from a memo field of a database table. It will automatically word-wrap the text, and can be set to stretch vertically down the page to accommodate larger text fields.
	<b>DBRichText:</b> Prints formatted text from a memo field. It will automatically word-wrap the text.
	<b>DBCalc:</b> Performs simple database calculations (Sum, Min, Max, Average, Count). Placing one of these on your report will result in a box containing “Sum(?)”. To replace the ? with the database field to be manipulated, select the field from the drop down box of fields in the top left of your screen. To replace Sum with one of the other functions, right click on the box and select Calculations.
	<b>DBImage:</b> Prints graphics (Bitmaps, GIFs, JPEGs) that are stored in a database field.
	<b>DBBarcode:</b> Renders a database field as a barcode. Use the drop down box of database fields from the Edit toolbar (see page 25) to set the Database field to be encoded. Right-click and access Configure to select from the list of industry standard bar code types.
	<b>DB2dBarcode:</b> Renders database field as a 2D barcode. Use the drop down box of database fields from the Edit toolbar (see page 25) to set the Database field to be encoded. A 2D barcode is also known as a matrix code, a two-dimensional way of representing information. It's similar to a linear barcode, but has more data representation capability.



**DBCheckbox:** Displays a checkbox for a Boolean value in the database. Select the table and field from the drop down boxes. You can also set the BooleanFalse and BooleanTrue properties of the checkbox in the Properties sidebar. Boolean True and Boolean false represent the 'field value to produce a check' and 'field value for an uncheck'. You could also replace the 1 and 0 in the illustration below with Y and N should your database field contain these or T and F.



**DBChart:** Displays a chart based on one or more data series from the defined data pipelines. Right-click and select **Edit Chart** to configure the type and properties of the chart you wish to display.

Clarity provides the ability to paste components or sets of components between reports. This can be useful when copying layouts from one report into another.

Be sure to check that the data aware components pick up the correct data field, and reassign them where necessary. Note that any Variable expressions or Calcs code will not be transferred across, so this needs to be entered manually.

## Nudge Toolbar



The Nudge toolbar is useful when you want to move a component or selection of components (see page 29) with extreme precision. Select a label on your report and then try clicking on each icon (as described in the table below) in turn.

The arrow on each icon represents the direction the selected item will move. Selections will move one pixel each time you click. You can also move selected objects one pixel at a time by pressing CTRL+Arrow Key.

Icon	Description
	<b>Nudge up:</b> Moves all selected components up one pixel.
	<b>Nudge down:</b> Moves all selected components down one pixel.
	<b>Nudge left:</b> Moves all selected components one pixel to the left.
	<b>Nudge right:</b> Moves all selected components one pixel to the right.

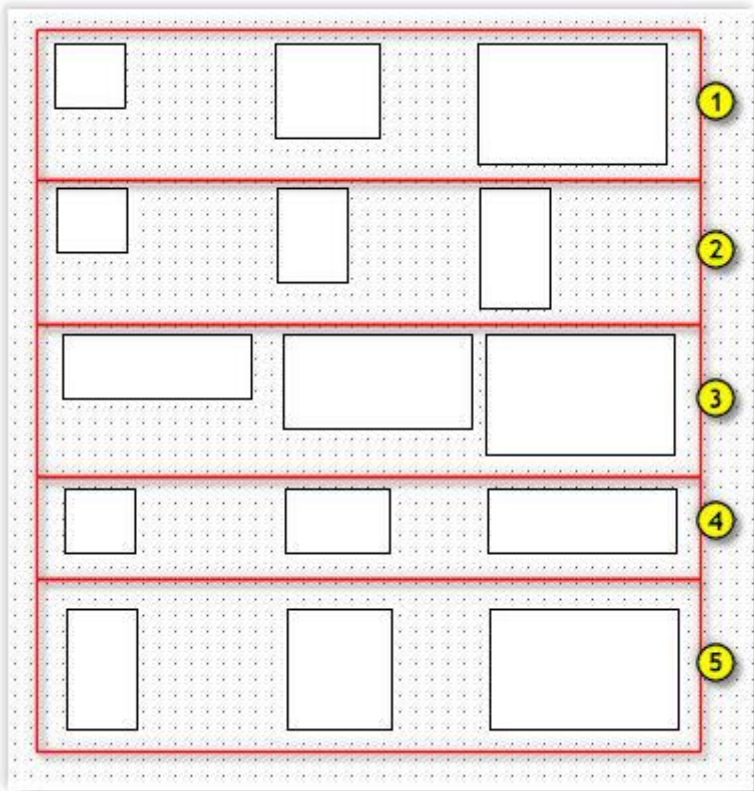
Size Toolbar



You can use the Size toolbar to set all of the components within a selection (see page 29) to a uniform height or width. The numbered items in the table reference to the diagram below. 1 Illustrates the original rectangles before the size transform has been applied.

To make a selection select a component from the design canvas on the report and then while holding down the Shift key select a another component so that both have tiny grey circles at their corners. Then click on each icon in turn, it's recommended viewing the selection topic (see page 29) for details on this.

Icon	Description
	2 Shrinks the WIDTH of all selected components to the width of the narrowest.
	3 Increases the WIDTH of all the selected components to the width of the widest.
	4 Shrinks the HEIGHT of all selected components to the height of the shortest.
	5 Increases the HEIGHT of all the selected components to the height of the tallest.







**Note:** The selected components do not have to be the same shape, i.e. a this will work on a combination of ellipses, circles, squares, text, lines etc.

## Draw Toolbar



The Draw toolbar is used to set the colour and style used by shape, line, and region components.

Icon	Description
	Fill Colour - Sets the colour for a shape or region. Applies to shape components only.
	Line Colour - Sets the colour of the border for shapes and regions. Sets the colour for a line.
	Line Thickness - Determines the thickness of a line. Applies to line components only.
	Line Style - Sets the style of a line.

## Align or Space Toolbar










The Align or Space toolbar is useful when two or more components need to be positioned uniformly. For example, it can align several components so that the tops are all in line or it can space components so that they have an equal amount of space between them.

The first component selected (see page 29) determines the position to which the others will align.

**Note:** The trick is to ensure that the thick black line on the icon represents the border that you want to have aligned.

Alignment always occurs based on the first component you select when you are selecting multiple components

Icon	Description
	<b>Align Left Edges</b> - Aligns a group of components with the leftmost position of the component that was first selected.
	<b>Align Horizontal Centres</b> - Centres a group of components based on the horizontal centre of the first-selected component.
	<b>Align Right Edges</b> - Aligns a group of components with the rightmost position of the first-selected component.
	<b>Align Top Edges</b> - Aligns a group of components with the topmost position of the first-selected component.
	<b>Align Vertical Centres</b> - Aligns a group of components based on the vertical centre of the first-selected component.
	<b>Align Bottom Edges</b> - Aligns a group of components with the bottommost position of the first-selected component.
	<b>Space Horizontally</b> - Spaces a set of components based on the leftmost position of the first-selected component and the rightmost position of the last-selected component.



**Space Vertically** - Spaces a set of components based on the topmost position of the first component selected and the bottommost position of the last component selected.



**Centre Horizontally in Band** - Centres a component horizontally within a band.



**Centre Vertically in Band** - Centres a component vertically within a band.

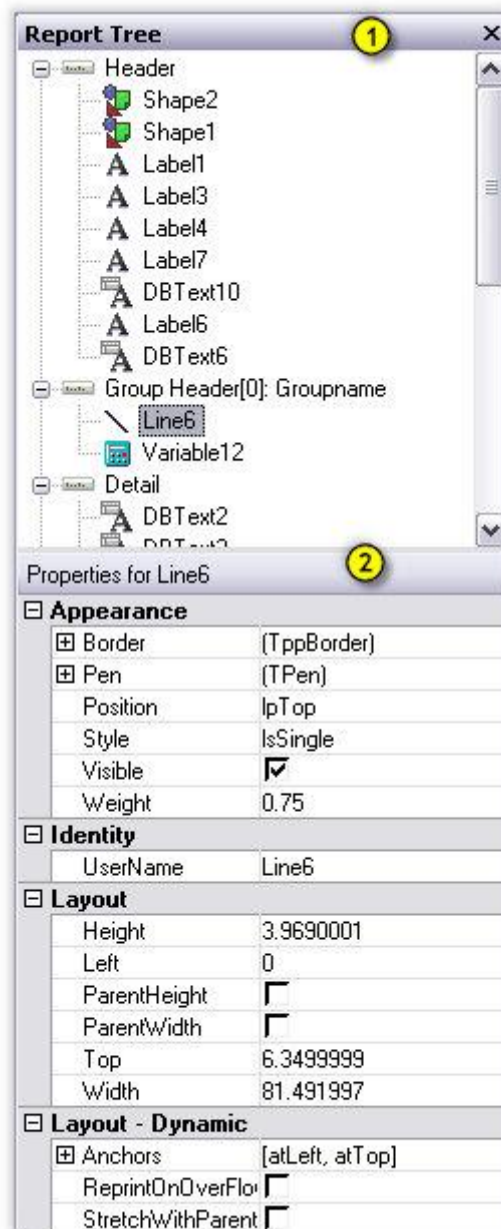
## Advanced Component Palette

The Advanced Component palette contains components that can help you tackle and control complex reporting layouts.

Icon	Description
	<b>Region</b> - Logically groups components together. To achieve this you need to place the region on the canvas first and then place the other components on top of it. This defaults to having a line around it but the choice of 'No line' can be selected from the Line Colour tool. When the region is moved, all components in it also move with it. When the region is made invisible, all components in it are also hidden.
	<b>Sub Report</b> - Handles multiple master details, creates side-by-side reporting effects, and hooks reports with different data sources together as one. This is discussed in detail under the Sub Reports topic which is a part of the Advanced Clarity Course.
	<b>Page Break</b> - Allows advanced control over pagination.
	<b>Crosstab</b> - Allows the user to generate a set of calculations that summarize grouped or aggregated data from database tables and provide a way of extracting a great amount of information from data. Crosstab reports display the calculations in a grid format similar to the following illustration.

					Grand Total
Branchno	Branchname	Jan01	Feb01	Mar01	
0	AUCKLAND	-7760		85000	77240
1	WELLINGTON	-23039	9541	18555	5057
Grand Total		-30799	9541	103555	82297

## The Report Tree



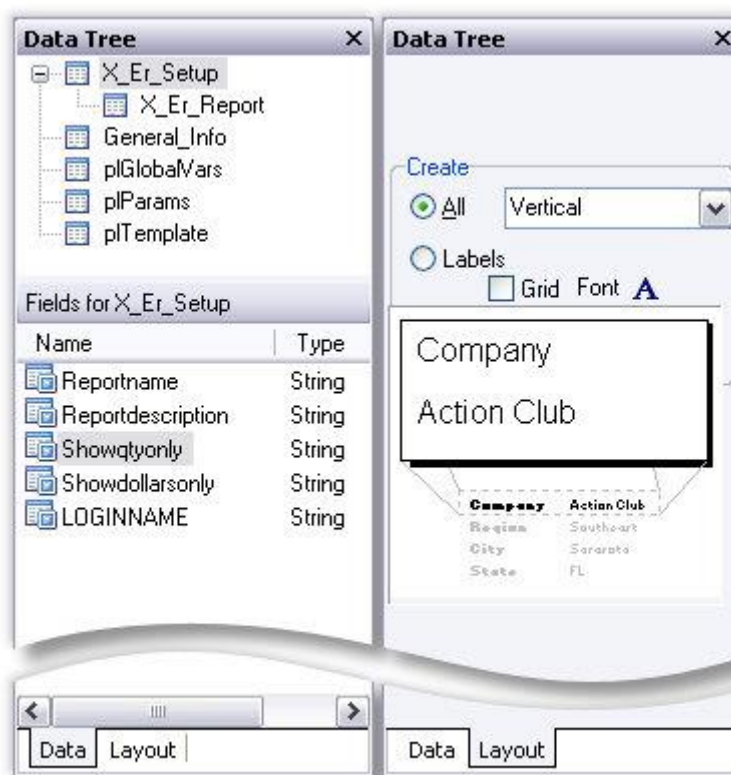
The Report Tree can be used to view the components within each band of the report in a tree-like structure. Components selected in the Report Tree become the selection in the report layout.

You can rename components by right clicking over the name, selecting Rename, and then typing in a new name. Make sure to press the ENTER key after renaming to ensure that the new name is assigned. Renaming objects is useful if you are planning to use them in calculations or formulae. This tool window is dock-able only on the left and right sides of the design workspace. When selected the properties of the component are also displayed and can be altered.

1. Report tree - shows each object on the form in a tree structure.
2. Properties list - shows advanced properties for the currently selected object. If the report itself is selected then it shows the report properties.

## The Data Tree

The Data Tree can be used to create data-aware components within a band. Simply select a set of fields and drag the selection into the band. A set of corresponding data-aware components will be created. This tool window is floating, and dock-able only on the left and right sides of the design workspace.



1. Data Tree - Shows all of the data pipelines in the data workspace, as well as three special data sources: plGlobalVars, plParams and plTemplate. These are not discussed in any detail here.
2. Field List - Shows the MYOB EXO Business database fields available. Individual fields can be dragged from here onto the report.

### Data Tab

This view shows what data is available from the currently selected data pipeline. The screen shot above illustrates how the Data Tree looks when the Data tab is selected. You can drag fields directly from here onto your report canvas to create a DBText component linked to the selected data field.










### Layout Tab

The Layout tab allows you to control the format of the components created when you drag fields from the Data Tree into the layout. You can have it create just a Label, just a DBText or both for each field you drag from the Data tab. You can also specify the orientation of the label relative to the DBText, and the font size and style to use.

## Standard Toolbar



The Standard toolbar allows you to perform basic functions such as opening, saving, and printing reports, as well as cutting and pasting selections.






Icon	Description
	<b>New Report</b> - Creates a blank report.
	<b>Open Report</b> - Displays the Open dialog, allowing you to open an existing report.
	<b>Save Report</b> - Saves a report to file.
	<b>Page Setup</b> - Displays the Page Setup dialog, allowing you to set the paper size and configure the layout for the report.
	<b>Print</b> - Displays the Print dialog before sending the report to the printer.
	<b>Print Preview</b> - Displays the Preview tab.
	<b>Cut</b> - Places the currently selected components in the clipboard and removes them from the report canvas.
	<b>Copy</b> - Copies the currently selected components into the clipboard.
	<b>Paste</b> - Pastes the components in the clipboard into the report layout.











**Note:** Clarity provides the ability to paste components or sets of components between reports. This can be useful when copying layouts from one report into another. Be sure to check that the data aware components pick up the correct data field, and reassign them where necessary. Note that any Variable expressions or Calcs code will not be transferred across, so this needs to be entered manually.

## Format Toolbar



Use the Format toolbar to set the font and colours of text-based components. You can also control the layering of components with this toolbar.

Icon	Description
	<b>Name</b> - Shows the name of the font chosen for the selected component.
	<b>Size</b> - Shows the size of the font chosen for the selected component.
	<b>Bold</b> - Sets text to bold.
	<b>Italic</b> - Sets text to italic.
	<b>Underline</b> - Underlines text

	<b>Left Justify</b> - Left justifies text.
	<b>Centre</b> - Centres text.
	<b>Right Justify</b> - Right justifies text, as would be usually used for numbers
	<b>Fully Justify</b> – Fully justifies paragraphs of text, usually used in memo fields.
	<b>Font Colour</b> - Sets the text colour.
	<b>Highlight Colour</b> - Sets the background colour.
	<b>Anchor</b> - New anchor property allows control to reposition itself when layout changes.
	<b>Border</b> - New border property for all controls.
	<b>Bring to Front</b> - Brings a component to the front of other components. Ideally a text label should be in front of all graphic elements.
	<b>Send to Back</b> - Sends a component to the back of the other components. You can use the Report Tree to see the exact layering of the components within the band.

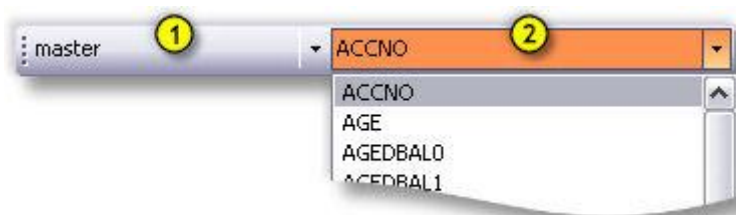
**Note:** When layering (placing objects on top of each other) the latest object placed is on the upper most layer. Therefore if inserting a shape, it needs to be sent to the back so that it does not hide labels in the report.

## Edit Toolbar

The Edit toolbar is unique in that it changes based on the selected component. It consists of 2 boxes with drop down capabilities. It is used with the following components:

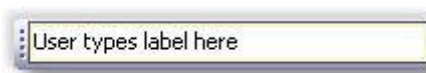
- Data-aware components
- Labels
- Shapes
- Lines

### Edit Toolbar with a Data-aware Component



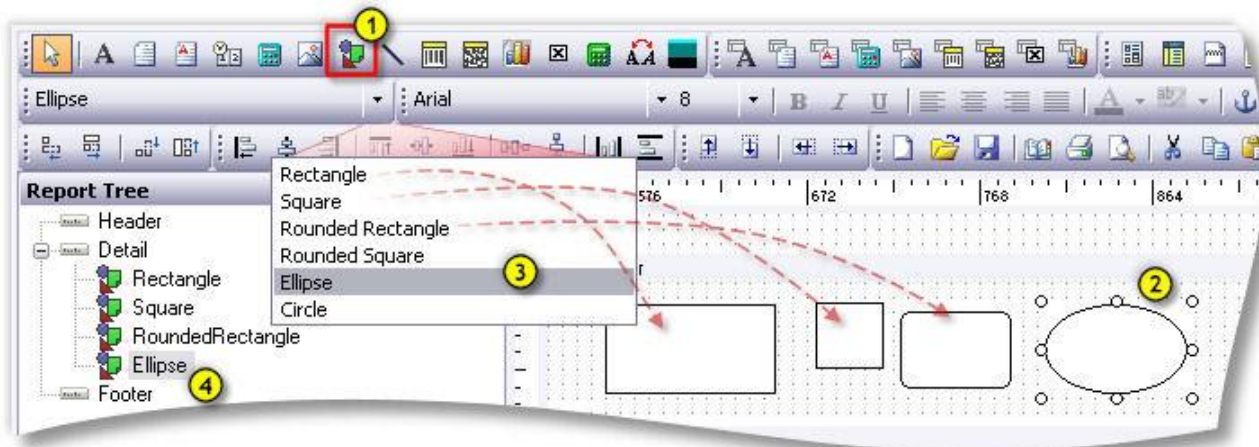
This configuration allows the data pipeline (1) and data field (2) for the component to be set.

### Edit Toolbar with a Label Component



This configuration allows you to type the text for a Label

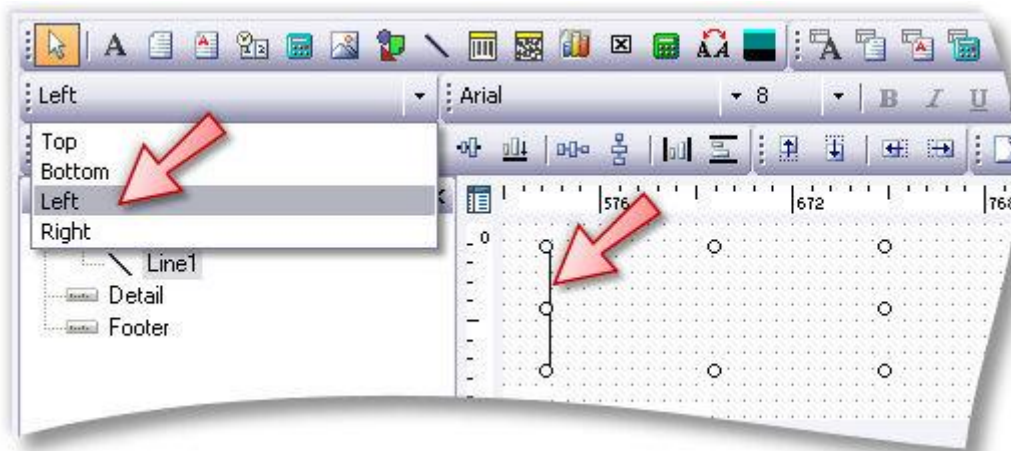
### ***Edit Toolbar with a Shape Component***



The Edit toolbar allows you to choose from several shapes when a shape component is selected:

1. Choose the shape tool from the standard components toolbar.
2. Insert the shape in the canvas (see page 2) area of the designer.
3. Choose the shape type from the Edit toolbar drop-down.
4. For ease of identification, rename the shape to a descriptive term in the report tree (see page 22). This is optional.

### ***Edit Toolbar with a Line Component***



This configuration allows you to move the line to the top, bottom, left, or right within a line component.

## Report Menu

The Report drop down menu includes a number of features that are not covered elsewhere.

### ***Title***

The Title band does not appear in the default Design canvas. It needs to be checked here to activate it. The Title band serves the same purpose as the Header band except that it only prints on the first page and not on subsequent pages. If both title and header are activated, the Title band appears above the header band.

### ***Summary***

The Summary band always appears below the last line of information on the report. The two options are to print it directly below the last line of information or to print it just above the footer on the last page. (**Summary to Bottom** option on the Tools menu) Although on the canvas the footer appears above the Summary band, in reality when the report is printed, the footer is printed at the bottom of each page and is always the last thing printed.

### ***Header / Footer***

The header and footer appear at the top and bottom of each page respectively. These menu options allow you to show or hide the sections.

### ***Page Style***

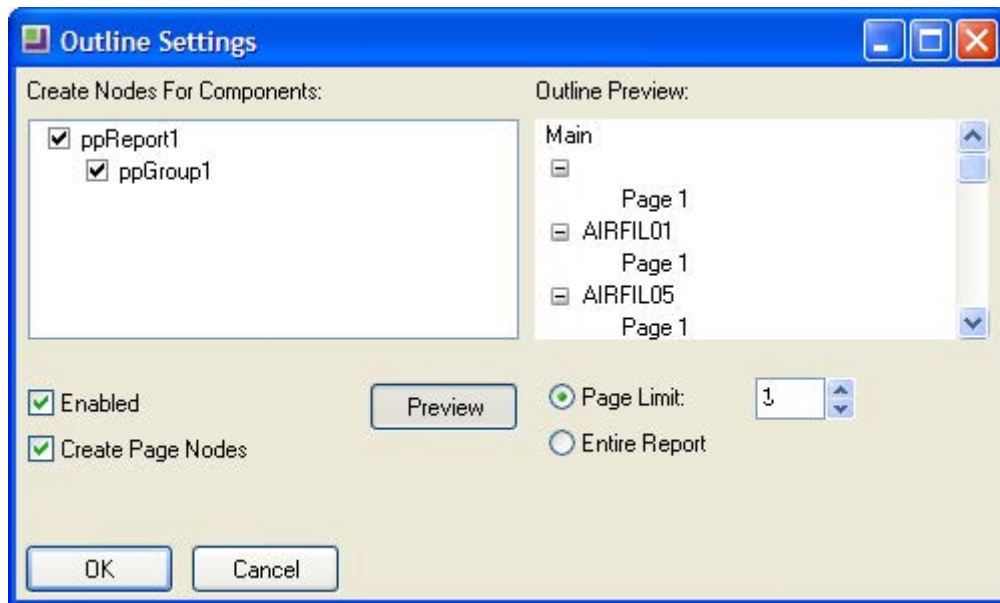
This band, when activated, appears at the bottom of the canvas. Anything entered in this band appears 'behind' the report, as would a watermark. Therefore, if you need lines to run the length of an invoice or a border around the page, you would add these to the Page Style band.

### ***Groups***

The Groups menu item allows you to set up groups in your report (see page 38). This grouping is similar in purpose to the Groups tab in the Data view when setting up a data pipeline, however this option is easier to implement and understand when creating basic reports. Remember that in order to group things here, they must be sorted by the same fields and in the same order in your data pipeline or the grouping will not make sense.

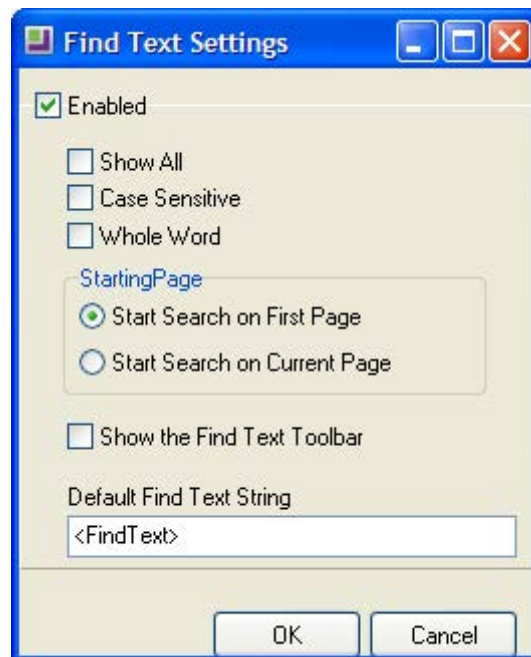
## Outline Settings

The Outline Settings property, once enabled, is available only in the Preview tab of the Clarity designer (see page 3). It shows a tree view display of the various groups in the report and optionally the pages they appear on. Clicking the groups or the page numbers takes the user directly to the appropriate page.



## Find Text Settings

Another setting that is available only in the preview tab of the clarity designer, the Find Text Settings window provides the user with the ability to search for strings within the report.



The user can specify whether the search will be case sensitive or whole word, whether the starting page for search would be the first page or the current one. The default find text string can also be specified.