

4th Dimension 2003

Quick Report Editor Reference
Windows[®]/Mac[™] OS



4th Dimension 2003 ***Quick Report Editor Reference***

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1

Quick Reports

One of the most important tasks in data management is report generation. The Quick Report editor is one of two tools used to design reports. You use the Quick Report editor to create ad-hoc reports in the User environment. The other tool is the Form editor, which you can use to design reports in the Design environment. You should use an output form to design reports that require complex designs, programmatic processing, or graphics.

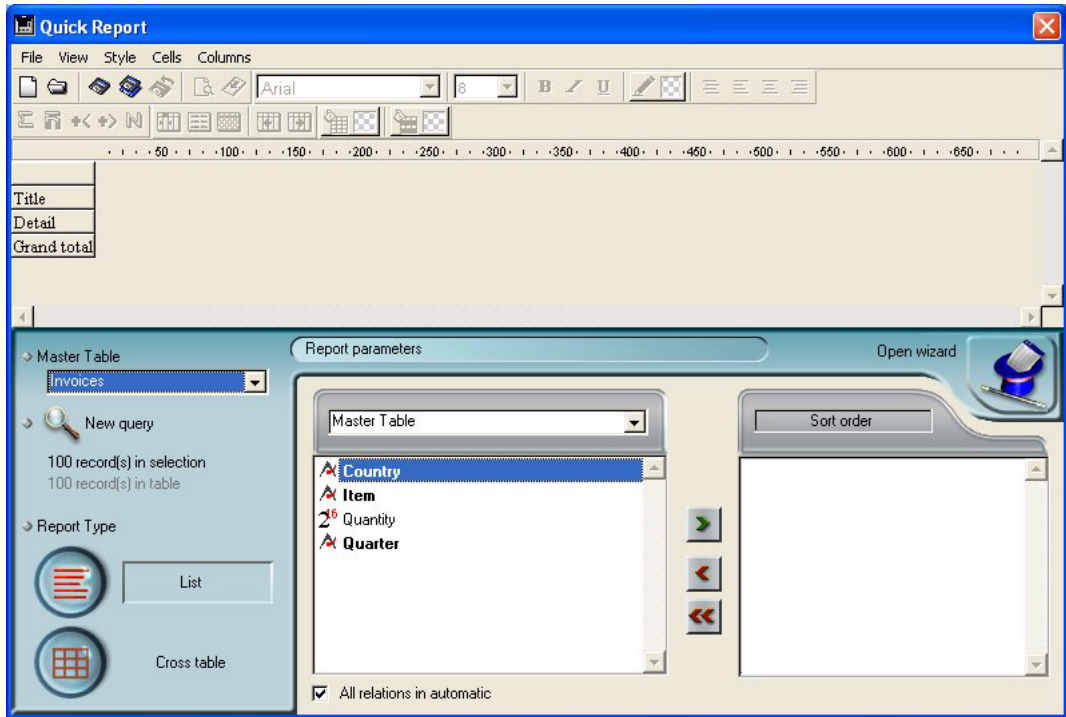
With the Quick Report editor, you can:

- Produce lists of records
- Create break areas
- Produce cross-tab reports
- Compute summary calculations
- Use fonts and styles in the report
- Define borders and background colors on a cell basis
- Save and open quick report designs to disk
- Select different output types such as HTML, text file, 4D View area, chart or print to disk.

The Quick Report editor produces reports from the current selection of records. Before you print a report, set the current selection to the records you want to include in your report.

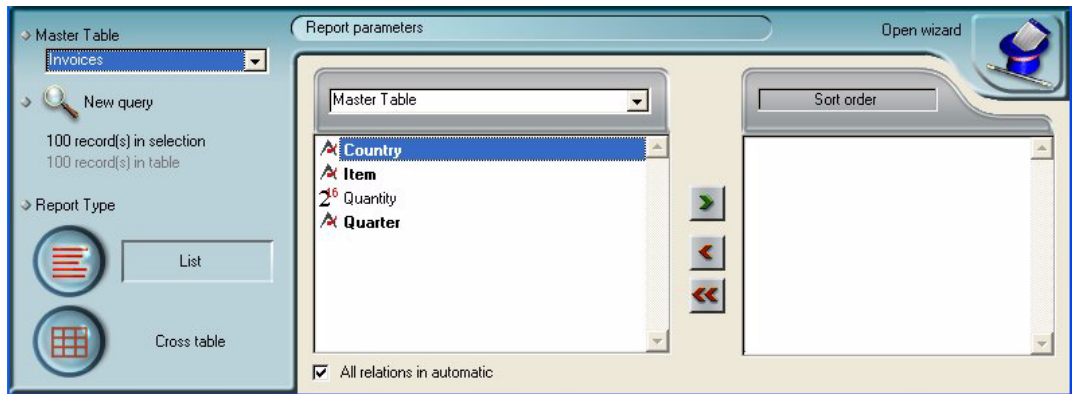
Interface

In the user environment the new Quick Report editor appears as follows:



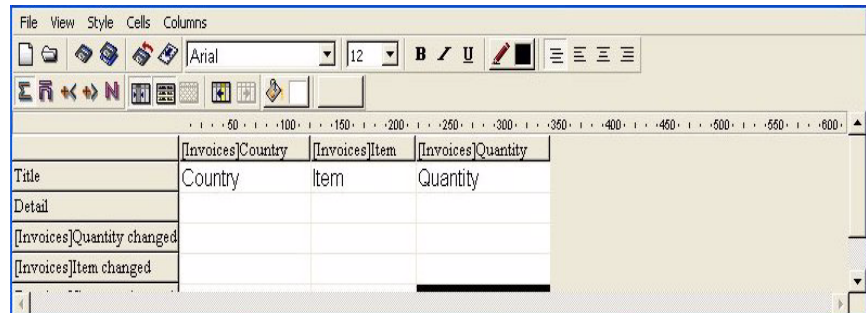
This actually consists of two main areas:

- The Quick Report dialog, which will help you define the contents of the Quick Report area:



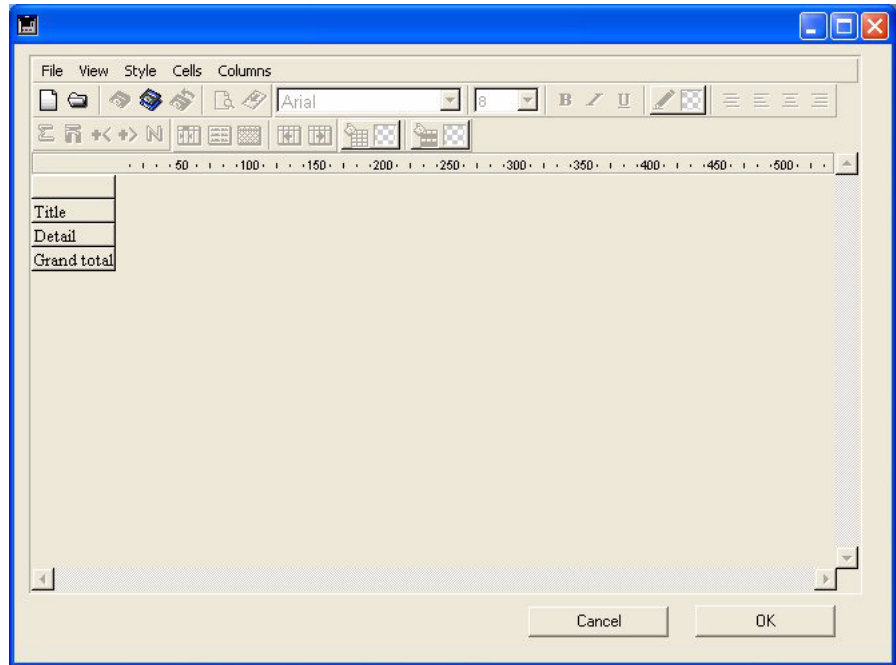
This part of the user interface is actually built in a 4D form. It provides a basic interface for end-users to create Quick Reports through a wizard or the field list to create a report manually.

- The actual Quick Report area:



This area is the area as it appears when a Quick Report area is inserted in a form. This is where actual columns and row contents are created, where sort orders are defined, etc. Also, this area includes toolbars that can turn into palettes, its own menu bar and contextual menus.

For example, this area could be placed in a form as depicted below:



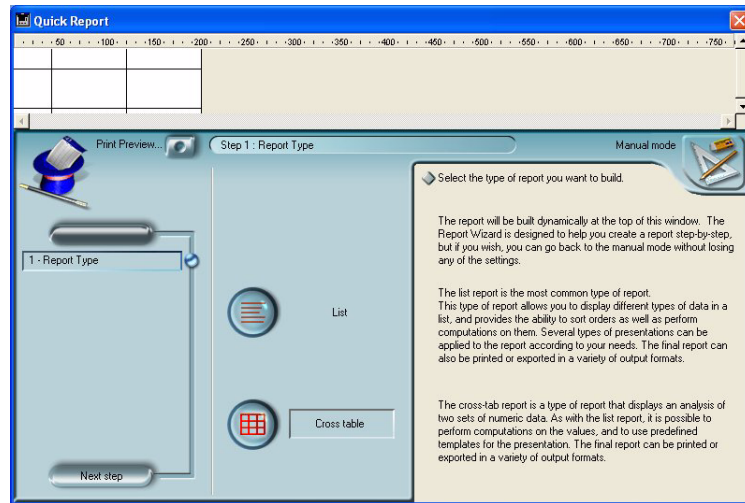
The Quick Report Wizard

When creating a manual Quick report, you can use a Wizard to guide you through the creation of the report.

To invoke the wizard, click the Wizard button in the quick Report Editor:



The wizard is then displayed:



To complete a quick Report, follow the instruction and navigate through the Wizard's pages.

List Mode and Cross-tab Mode

In the Quick Report editor there are now two operation modes available:

- a List mode

This is the default mode and was the only mode available in the previous version of the Quick Report editor. In that mode, reports would typically present records as a list with break levels where

accumulations would be performed. The following is a typical list quick report.

First Name	Last Name	Department Name	Salary
Bliff	Davis	Accounting	43780
Smeldorf	Garbando		19610
Alan	Hull		41460
Bryan	Praff		26440
Shirley	Ransome		36040
Marlys	Wilson		36500
Sum for Department : Accounting			203830
Kathy	Forbes	Engineering	18840
Dennis	Hanson		40520
Mary	Smith		55000
Andy	Venable		43520
Lance	Wolfram		27300
Sum for Department : Engineering			185180

■ a Cross-tab mode

This mode is a cross-tabular mode. It allows you to display your report as a two-dimensional table. This is useful when you want to display data from a data source broken down into categories that actually are a function of two other data sources. For example, if you sell products in several countries, a cross-tab form would let you display in a table how many of each product type was sold for each country.

The following is a typical cross-tab quick report.

	AV Preamplifier	Power module	Remote control	Line Total
Q1	34	29	39	102
				10526316
Q4	48	64	21	133
				66666667
Q3	49	68	40	157
				48148148
Q2	64	74	47	185
				66666667
Grand total	195	235	147	577
	5.9090909090909	5.875	5.4444444444444	5.77
	1	1	1	1

Quick Report Basics


This section describes basic operations used when working with the Quick Report editor to design a report.

Creating a New Quick Report

The Quick Report editor lets you create reports in the User environment.

- To design a quick report in List mode:

- 1 Choose Quick from the Report menu.

4th Dimension displays the Quick Report editor. If an existing report design is displayed, choose New from the File menu or click the icon New in the file management toolbar  to begin a new Quick Report design.


By default, the first time the Quick Report editor is called during a worksession the List mode is selected.

- 2 If the List mode is not selected, click the button List at the bottom left corner of the Quick Report editor:



- To design a quick report in Cross-tab mode:

- 1 Choose Quick from the Report menu.

4th Dimension displays the Quick Report editor. If an existing report design is displayed, choose New from the File menu or click the icon New in the file management toolbar  to begin a new Quick Report design.

- 2 If the Cross-tab mode is not selected, click the button Cross-Tab at the bottom left corner of the Quick Report editor:



Loading and Saving a Quick Report Design

You can save a quick report design as a file that you can open from the Quick Report editor. The quick report design includes all of your specifications for the report, but not the data. By saving report designs, you can maintain a library of quick report designs that you can use depending on your needs.

Note If you do not save your design, it is displayed the next time you open the Quick Report editor in that worksession only.

► To save a quick report design:

1 Choose Save as from the File menu.

OR

Click the Open icon in the file management toolbar. 

4th Dimension displays a create-file dialog box in which you can name the quick report design.

Note Quick report files in 4th Dimension for Windows are denoted by the file extension .4QR.

2 Enter a filename for the quick report and click OK.

4th Dimension saves the report as a file that you can open with the Quick Report editor. You can save the file on any available hard disk. Saving a previously saved or loaded report replaces the old report.

Loading a Quick Report Design

When the Quick Report editor is open, you can load a saved design and use it to print a new report. You can use the same quick report design repeatedly to print different selections of records.

► To load a report design:

1 Choose Open from the File menu.

OR

Click the Open icon in the file management toolbar. 

4th Dimension displays an open-file dialog box displaying a list of available quick report designs.

2 Double-click a filename or select a filename from the list and click OK.

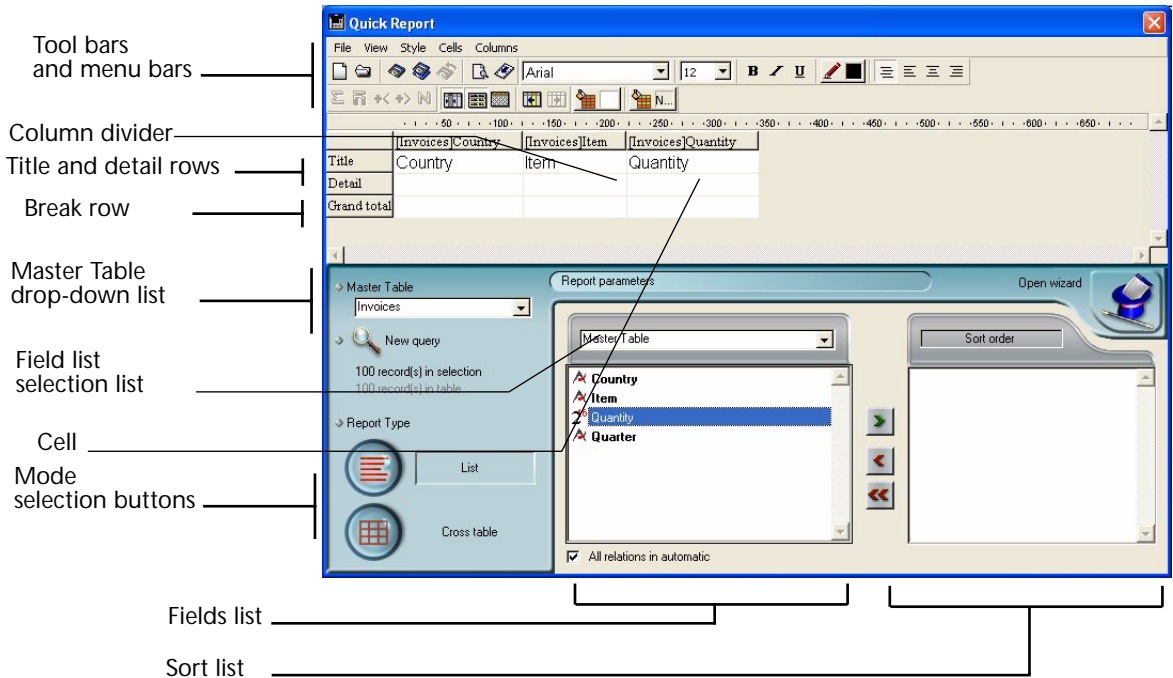
4th Dimension replaces the current design with the design you opened.

The Quick Report Editor

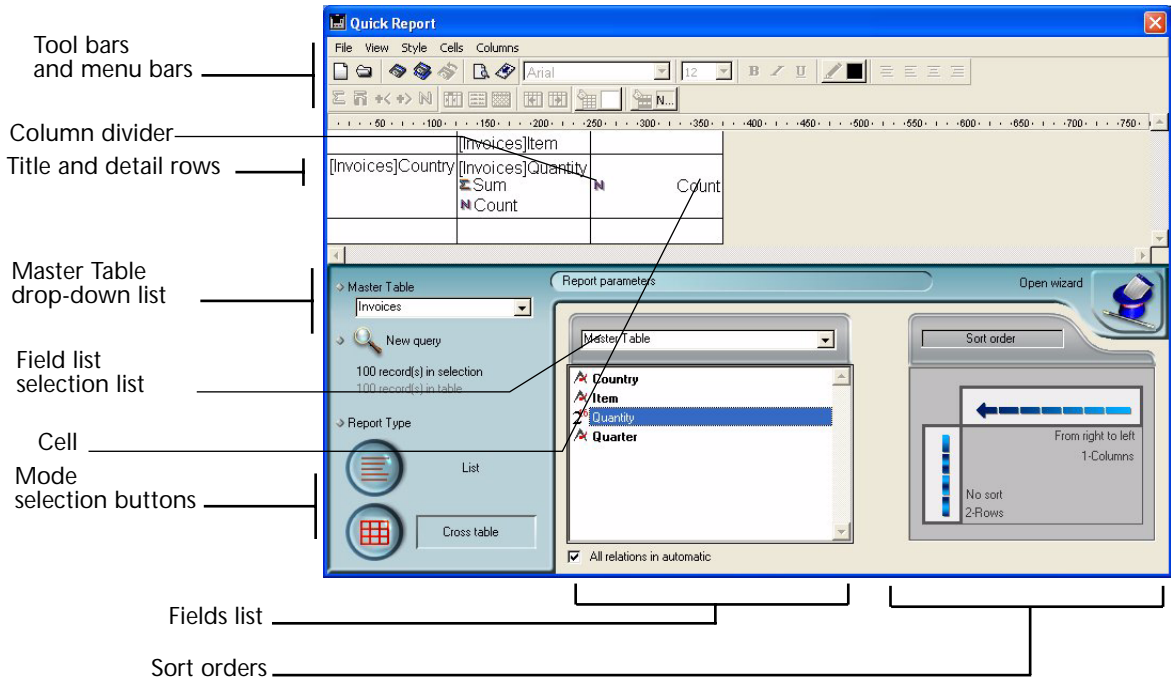
When you create a quick report, you can specify the following:

- Columns that display fields or formulas, either from the current table or from related tables
- Sort levels and order (list mode)
- Summary calculations
- display format
- Text for labels
- Formats for numeric and Boolean data
- Font, font size, style, and justification for labels, summary calculations, and data
- Background colors on a cell column or row basis
- Borders
- Page headers and footers

The following illustration shows the major elements of the Quick Report editor in List mode.



The following illustration shows the major elements of the Quick Report editor in Cross-tab mode.



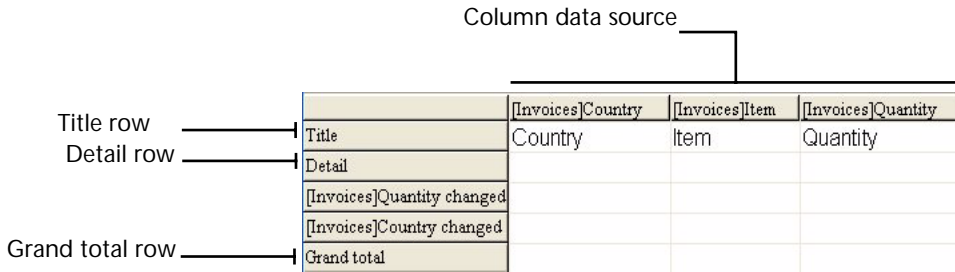
The Quick Report editor contains the following elements:

- **Fields list** This list displays fields in the current table. You can view the names of fields in related tables by expanding the foreign key fields. A foreign key field has a plus sign (on Windows) or an arrow (on Macintosh) to its left.

Note Only tables and fields which are visible appear in the Quick Report editor. For information about making tables and fields invisible, refer to the *4th Dimension Design Reference* manual.

- **Column dividers** These lines indicate the boundaries between columns of the report.
- **Cells** A cell is the intersection of a row and a column.
- **Scroll bars** You use the scroll bars to view parts of the quick report design that extend beyond the area of the quick report form.
- **Sort list/Sort order display area**

- In List mode, this list displays the sort order assigned to the report and indicates whether each sort level is ascending or descending. If your report will contain summary calculations from groups of records, you must sort the current selection on one or more fields.
- In Cross-tab mode, this area displays the sort order for each data source.
- **Quick Report area**
 - **List mode:**
You use this area to design the report by dragging fields, adding formulas, adjusting column widths, defining cell colors and borders.



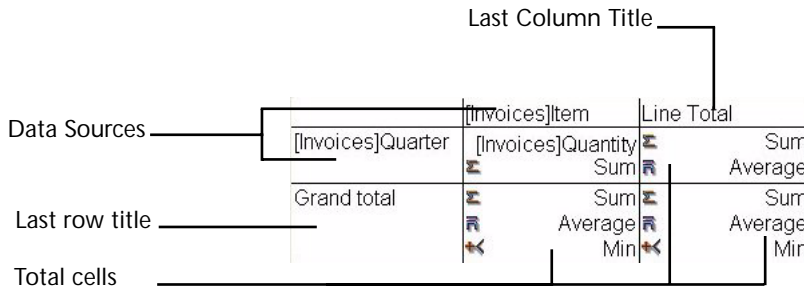
Title row The title row is repeated for each page.

Detail row The detail row indicates the lowest level of the report.

Subtotal rows These rows are created when sorts are created.

Column data sources These titles are the actual data source references.

- **Cross-tab mode:**
You use this area to design a cross-tab report by dragging fields, adding formulas, adjusting column widths, defining cell colors and borders.



Data Sources These two cells will house fields that will be used for the two categories of the array. The center cell can also accept fields sources and calculations at the same time.

Total cells These cells are designed to house calculations on the column's contents.

Title cells These cells house the titles for the last column or the last row.

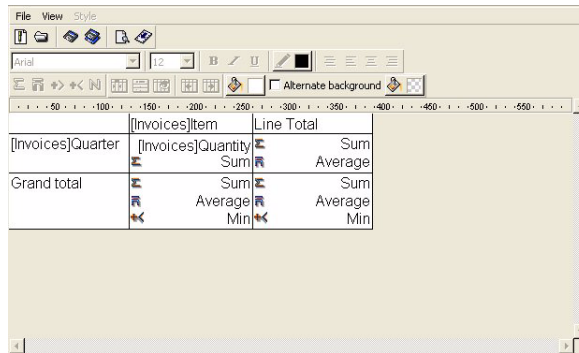
The following figures shows completed quick report designs and the relationship between the specifications in the design and the printed output.

List Report:

	[Invoices]Country	[Invoices]Item	[Invoices]Quantity
Header	Nation	Device	Quantity sold
Detail			
[Invoices]Quantity changed			
[Invoices]Item changed			
[Invoices]Country changed		Accumulated	Sum
Total			

Nation	Device	Quantity sold
France	AV Preamplifier	1
		2
		4
		5
		6
		7
		8
		9
		10
	Power module	4
		6
		7
		8
	Remote control	4
		5
		6
		7
		9
		10
	Accumulated orders	141


Cross-tab Report:



	AV Preamplifier	Power module	Remote control	Line Total
Q1	34	29	39	102
Q4	48	64	21	133
Q3	49	68	40	157
Q2	64	74	47	185
Grand total	195	235	147	577
	5.9090909090909	5.875	5.4444444444444	5.77
	1	1	1	1

Resizing Areas in the Editor

You can resize the various list and display areas in the Quick Report editor. Areas that can be resized are bordered by a raised line.

- ▶ To resize an area in the editor:
 - 1 Move the pointer over the area border to change the pointer into a resizing pointer .
 - 2 Drag the border left or right to resize the area.

The Quick Report Contextual Menu

The Quick Report editor has “hidden” contextual menus that make it easy to access certain row, column, and cell operations. Instead of making menu selections or working with the Cell or Column properties areas, you can perform certain operations by displaying a Quick Report contextual menu.

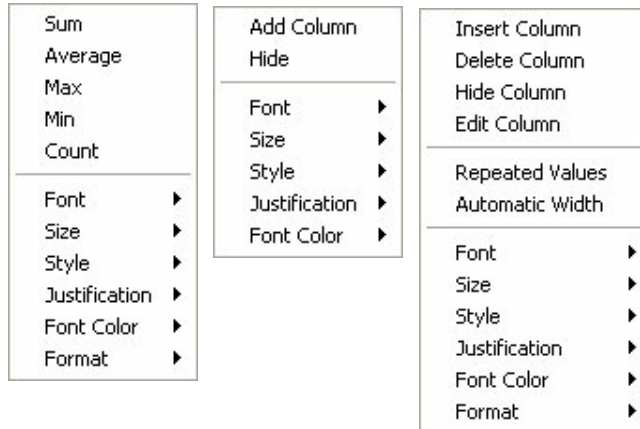
There are separate contextual menus for row, column, and cell operations.

- ▶ To use a contextual menu:

- 1 Position the pointer in a cell, a row title, or a column heading and hold down the right mouse button (on windows) or press the Control key while clicking in the report area (Mac OS).

A contextual menu appears. The commands in the contextual menu depend on where your pointer is (i.e., a row label, column heading, or cell). Also, menu commands that are inappropriate for the particular row, column, or cell are disabled.

- 2 Choose the desired menu command



As with any contextual menu, this menu's contents varies depending on which cell type is highlighted. Items available break into three main types:

- Font attributes
- Display formats
- Standard calculations
- Column or row management items
- Cell borders

Font Attributes

These items appear in the contextual menu when a cell, a column or a row is selected. Selecting a font attribute will apply it to the current selection (cell, row or column)The Font attribute items are appear as follow:

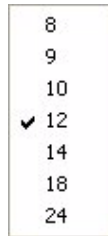
- Font
Selecting this item displays the list of fonts installed on your machine

from which you can select the font that will apply to the items selected in the report area.

Once an item is selected, a check mark is displayed next to it.

■ **Size**

Selecting this item displays the list font sizes from which you can select the font that will apply to the items selected in the report area.



Once an item is selected, a check mark is displayed next to it.

■ **Style**

Selecting this item displays the list styles (plain, Bold, Italic, and Underline) from which you can select the font that will apply to the items selected in the report area.



Once an item is selected, a check mark is displayed next to it.

■ **Justification**

Selecting this item displays the list of justification attributes (Default, Left justified, Centered and Right justified).



Note Default is the default justification for this data type (left for number or otherwise right).

Once an item is selected, a check mark is displayed next to it.

- **Font color**
Selecting this item displays a palette of colors.

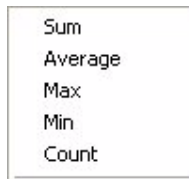


Display Formats

These items appear in the contextual menu when either a cell or a column is highlighted. From the menu you can select one of the 4D default formats that match the data type of the column. Once selected, the format applies to the entire column, regardless of whether the current selection is a cell or a column.

Summary Calculations

These items appear in the contextual menu when the current highlighted cell belongs to either the Grand total row or to a break row.



Selecting an item will insert the corresponding calculation in the highlighted cell. Once an item is selected for a cell, a check mark is placed next to it.

Column and Row Management Items

There are several items that are dedicated to column or row management:

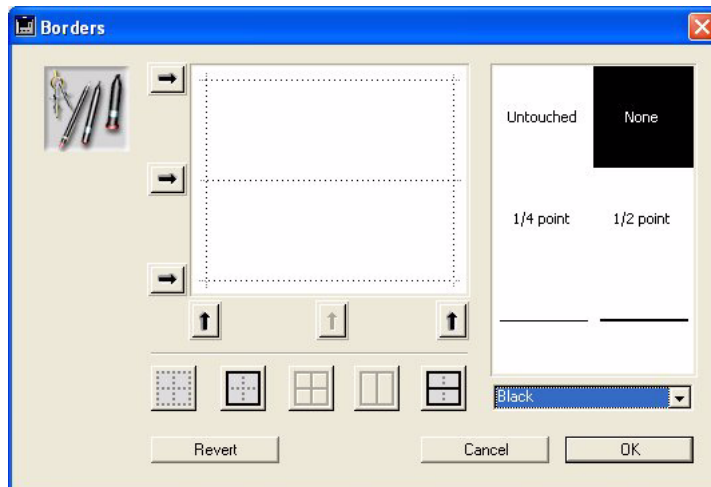
- **Hide**
Selecting that item hides the current column or row. Once it is hidden, a check mark is displayed next to the item and the line or column is squared out.
- **Add Column**
This item is displayed when a row is highlighted or nothing is highlighted. Selecting that item displays the formula editor to allow you to

define the data source for the new column. Once this is done the new column is added to the right of the rightmost existing column.

- **Insert**
This item is displayed only when a column is highlighted in list mode. Selecting that item displays the formula editor to allow you to define the data source for the new column. Once this is done the new column is added to the left of the current highlighted column.
- **Delete**
This item is displayed only when a column is highlighted in list mode. Selecting that item deletes the current highlighted column .
- **Edit**
This item is displayed only when a column is highlighted in list mode or when a cell is highlighted in cross-tab mode. Selecting that item displays the formula editor to allow you to edit the data source for the current column (list mode) or for the current cell (cross-tab mode).
- **Automatic Width**
This item is displayed only when a column is highlighted in list mode, or when any cell is highlighted in cross-tab mode. You can use this item to select or deselect the automatic width. When Automatic Width is selected, 4D will try to match the column size to the data so that the data fits on one line.

Borders

These items appear in the contextual menu when a cell, a column or a row is selected. Selecting the item Borders displays the Borders dialog:



Once defined, the border format is applied to the current selection (cell, row or column).

Working with the Quick Report Editor

This section describes the basic operations that you can perform in the Quick Report editor.

Selecting Rows, Columns, and Cells

When designing a List quick report, you need to select rows, columns, and cells in the quick report form. A cell is the intersection of a row and a column.

- ▶ To select a row:
 - Click on the row Title, Detail, Break, or Total markers on the row label.
- ▶ To select a column:
 - Click above the Title row of a column.
- ▶ To select a cell:
 - Click the cell.

Adding and Modifying Text

You can add or modify text in the quick report form to label parts of the report. For example, if you requested summary calculations, you can label them by adding text to other cells in the subtotal and Total rows.

You can add and modify text as follows:

- Edit the text that 4th Dimension automatically adds to the Title row of the report
- Insert text in empty cells of the Break and Totals rows
- Insert the value of a Subtotal field in the Subtotal rows
- Specify the font, font size, justification, and style for any text that appears in the report

Adding Text

- ▶ To add text in a report cell:
 - 1 Click twice on an empty cell in the quick report form.
A text insertion point appears in the cell.
If you are entering a label for a summary calculation, select a cell in the same row as the cell containing the calculation icons. You cannot enter text into the same cell that contains summary calculations.
 - 2 Type the text in the cell.

Modifying Text

- ▶ To modify text in a cell:
 - 1 Double-click in a cell to get an insertion point and drag across the text in the cell you want to modify.
4th Dimension highlights the selected text.
 - 2 Type the new text in the cell.

Specifying Font Attributes

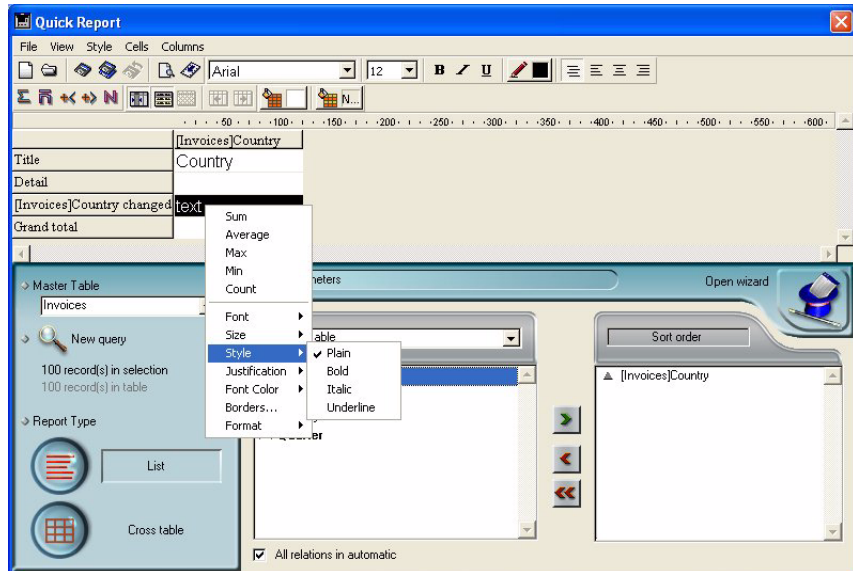
While designing your quick report, you can specify different fonts, font sizes, justification, and styles. You can then apply these specifications to text, data, and summary calculations within rows, columns, or cells in the quick report.

If you assign specifications to the Detail row of the report, you will not see the results until you preview or print the report.

You can specify font attributes using either the Quick Report menu commands or the Quick Report contextual menu.

- ▶ To specify font attributes using the Quick Report menus:
 - 1 Select the column, row, or cell where you want to apply the font.
 - 2 Choose a font from the Font drop-down list.
 - 3 Choose a font size from the font size drop-down list.
 - 4 Choose a style or justification from the Style menu.
4th Dimension applies the font to any text, data, or summary calculations that appear in the selected area.
- ▶ To specify font attributes using the Quick Report contextual menu:
 - 1 Hold down the mouse button on the row label, column header, or cell to which you want to apply the font attributes.

A contextual menu appears.



- 2 Use the Font, Size, Style, or Justification hierarchical menus to change the font attributes as desired.

Adding Columns to the Report

You create columns by dragging field names from the Fields list in the to the quick report area. If you want to add a field from a related table, expand the foreign key field in the hierarchical list of fields to display the fields in the related table. You can add fields from related tables, provided that the relationship is automatic.

Note You cannot add or edit a column in cross-tab mode, since the report comes with all the needed columns.

- ▶ To add a field by Drag & Drop:
 - Drag the name of a field to the right of existing columns in the Quick Report area and release the mouse button.
- 4th Dimension creates a column for the field and places the field name in both the column header and the cell in the Header row.

By default, 4th Dimension prints the field names as column heads at the top of each page in the quick report.

- ▶ To add a field using the contextual menu:

- 1 Right-click (Windows) over an unused area of the Quick Report area or click over an unused area of the Quick Report while pressing the Control key.



- 2 Select the Add menu item.
The formula editor is displayed. Once you have entered either a formula or a field and validated the dialog, the column is created.

Inserting Columns

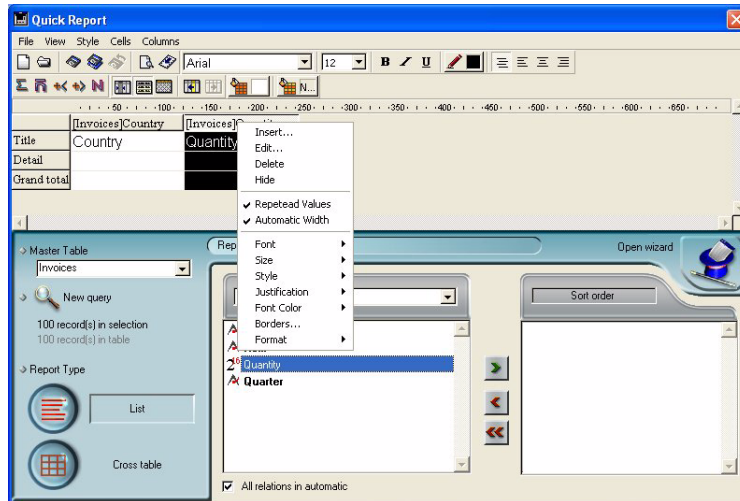
You can insert an empty column in a quick report. After you insert the column you can assign a field or a formula to the column.

- ▶ To insert a column:
 - 1 Select a column.
 - 2 Choose Insert from the Column menu.



OR

Hold down the mouse button to display the Quick Report contextual menu and choose Insert.



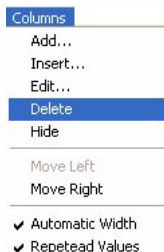
The formula editor is displayed. Once you have entered either a formula or a field and validated the dialog, the column is created.

Deleting Columns

As you specify fields for your quick report, you may want to remove some columns to place them elsewhere. Or, you might want to delete the column from the report.

- ▶ To delete a column using the Quick Report menu bar:
 - 1 Select the column you want to delete.
 - 2 Choose Delete from the Edit menu.

4th Dimension removes the selected column from the quick report form.
- ▶ To delete a column using the Quick Report contextual menu:
 - 1 Right-click on the column data Source (on windows) or click on the column data source while pressing the Control key.



The Quick Report contextual menu appears.



- 2 Choose Delete Column from the contextual menu.

Replacing Columns

You can replace a column in the quick report by dragging another field over it. You can also replace a field with a formula.

- To replace a column:

- 1 Drag a field from the Fields list to the column you want to replace.

OR

Select the column you want to replace and choose Edit from the Columns menu.

OR

Hold down the mouse button on the column header to display the Quick Report contextual menu and choose Edit.

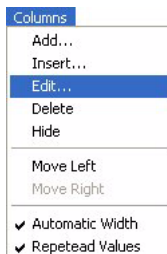
The Formula editor appears.

- 2 If you displayed the Formula editor, enter a formula for the column.

If you want to assign a field to the column, you can simply use the field name as the formula.

When you print the quick report, 4th Dimension prints the results of the formula for each record that appears in the Detail row.

See the section [“Adding Formulas to a Quick Report”](#) on page 32 for information about adding a formula to a quick report.



Sizing Columns

By default, the Quick Report editor sizes columns automatically, as reflected in the Automatic Width button:




It sizes each column based on the maximum length of data displayed in the column and any labels typed into the column. The Quick Report editor sizes columns at the time the report is printed.

To view the widths of each column, preview the report to the screen. See [“Generating a Quick Report” on page 52](#) for more information about previewing the report.

Because selecting the **Automatic Width** button or contextual menu item changes the width of a column based on the maximum width of data in the records being printed, selecting different records can change the size of the columns.

You can resize a column manually after deselecting the **Automatic Width** check box. When a column is set manually, text in the column wraps within the specified area.

- ▶ To manually resize a column:
 - 1 Select the column you want to resize.
 - 2 Deselect **Automatic Width**¹.
 - 3 Move the pointer over the column divider in the quick report to change the pointer into a column width cursor .
 - 4 Drag the column divider to the left or right to resize the column.

Moving Columns

In List mode, as you specify fields for your quick report, you may want to move some columns to place them elsewhere.

- ▶ To move a column using the Quick Report tool bar:
 - 1 Select the column you want to move.
 - 2 Click the move icon to move it to the right or to the left:



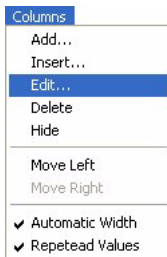
4th Dimension moves the selected column.

1. You can deselect **Automatic Width** using either the button “**Automatic width**” in the toolbar Properties area or the Quick Report contextual menu for that column.

- ▶ To move a column using the Columns menu:
 - 1 Select the column you want to move.
 - 2 Select Move right or Move left from the Columns menu to respectively move the column to the right or to the left.

4th Dimension moves the selected column.

Adding Formulas to a Quick Report



You can add a formula to a column in a quick report. For example, you can add a formula that computes employees' monthly salaries from an Annual Salary field.

- ▶ To add a formula:
 - 1 Insert an empty column or click an existing column and choose Edit from the Columns menu.

OR

Double-click an existing column's header.

OR

Hold down the mouse button on an existing column header to display the Quick Report contextual menu and choose Edit.

4th Dimension displays the Formula editor, in which you can build a formula. If you selected an existing column, the formula you create will replace the previous contents of the column.

Note Make sure that the formula you create does not change the current selection. Changing the current selection will cause problems when you print the quick report since the report is based on the current selection. For information about commands and functions that change the current selection, refer to the *4th Dimension Language Reference*.

- 2 Build the formula.

OR

Click the Load button to retrieve an existing formula from disk.
- To save the formula as a file that you can retrieve and use in another column or in another report, click the Save button and enter a filename in the dialog box.
- If you click the Load button, 4th Dimension displays an open-file dialog box and asks you to select a file. When you load a file, it replaces any formula that currently appears in the Formula editor. After you load a formula, you can modify it in the editing area.

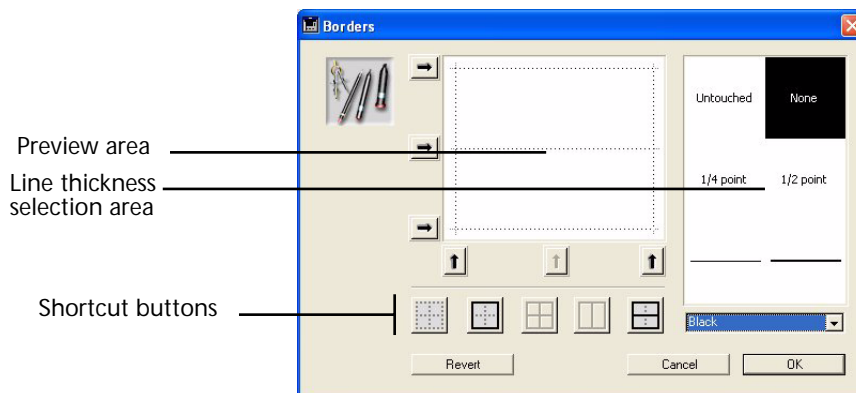
- 3 Click OK to assign the formula to the column.
 - 4th Dimension adds a new label to the column that identifies it as a formula. You can relabel the column by typing a label into the header cell for that column.
- Click the Cancel button to close the editor and return to the Quick Report editor without adding the formula.

Setting Borders

You can set the borders for cells in both cross-tab and list reports. The layout of the border setting dialog is dynamic to adapt to the nature of the different cells that can be displayed in a report design. For example the behavior of the center cell in a cross-tab report is different from the behavior of a detail cell in a list report. The center cell is repeated both horizontally and vertically for a cross-tab report whereas the detail cell in a list report is going to be repeated only vertically. Also, other cells may not be repeated at all (titles, for example).

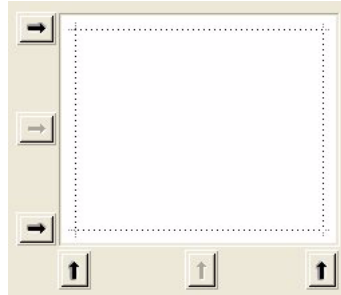
- ▶ To display the Borders dialog:
 - The Borders dialog is displayed by highlighting a cell, column or row, and either selecting Borders in the contextual menu or selecting Borders from the Columns menu.

The dialog appears as follows:

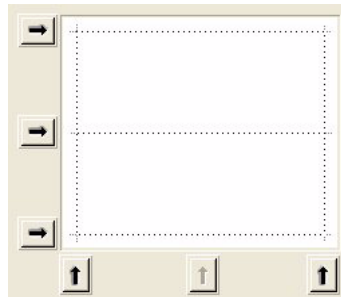


The preview area adjust to the type of cell (or row or column) that was selected when the dialog was invoked. The outer lines represent the outer borders.

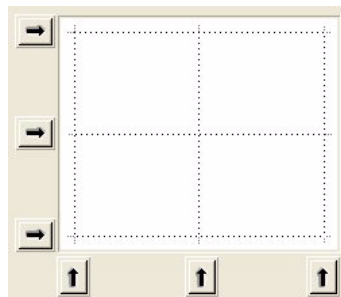
If the selected cell is a title cell (which is therefore not repeated), the outer lines represent the outer lines of the cell:



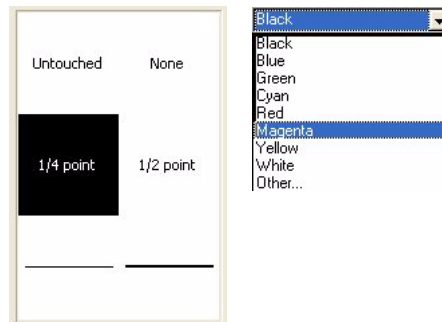
If the selected cell is a detail cell in a List report (which is therefore repeated vertically), the outer lines represent the outer lines of the cell repetition and the inner horizontal line represents the border between two cells in the sequence:



If the selected cell is the center cell in a Cross-tab report (which is therefore repeated both horizontally and vertically), the outer lines represent the outer lines of the repetition of cells and the inner line represent the borders between each cell generated from the center cell:



The arrows are used to fill the border towards which they point, using the border thickness defined in the border thickness area and the color selected in the color drop-down list:



- ▶ To set the borders for a cell, a column or a row:
 - 1 **H**ighlighting a cell, column or row, and either select Borders in the contextual menu or select Borders from the Columns menu.
The Borders dialog is displayed.
 - 2 Select the line thickness and color to use.
You can use different colors for different borders.
 - 3 Select the borders using either the arrows or the shortcut buttons.
You will notice that some shortcut buttons are disabled to match the type of the cell you are editing.
 - 4 Click OK to validate the changes
OR
Click Revert to revert to the original border settings.
OR
Click Cancel to discard the changes and close the dialog.

Sorting Records

An important feature of the Quick Report editor is the ability to sort the records in your report. You sort records for two reasons:

- To view records in a particular order,
- To create groups of records and subtotal areas in the report for the purpose of reporting summary calculations for groups.

Specifying a Sort Order for a List Report

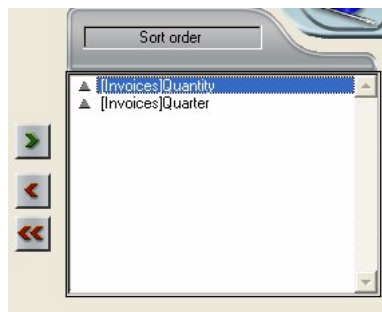
You can specify a sort order at any time. For example, if you wanted to sort the records of salespeople by the Sales Region field, you would select the Sales Region column, and then set the Sorted property.

You can also sort on a formula by selecting the column that contains the formula and then clicking the Sorted check box or choosing Sorted from the Quick Report contextual menu for that column. See the section “[Adding Formulas to a Quick Report](#)” on page 32 for more information about adding formulas to quick reports.

- ▶ To specify the sort order using the field list:
 - Drag the Field you want to sort from the field list to the sort list.
- OR
- Highlight the field from the field list and click on the field insertion button:



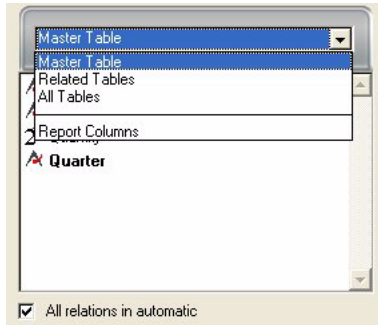
The field is then added to the sort order.



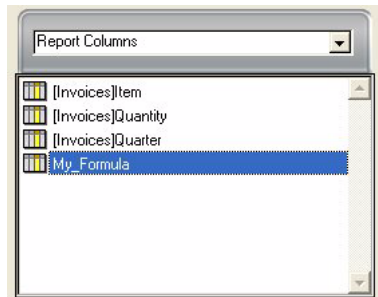
You can set the sort order by simply clicking on the triangle next to the field in the sort list.

- ▶ To specify the sort order for a formula:

1 Select Report Columns from the table selection drop-down list.

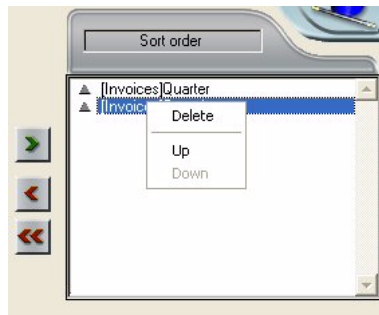


The list of columns present in the report is then displayed:



► To change the level of a Sort field:

1 Select the field in the sort list and display the contextual menu:

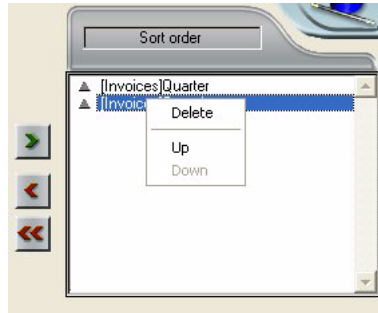


2 Select Up or Down to respectively move up or down the field in the sort levels.

Deleting a Field or Formula from the Sort List

You can delete the any field or formula from the Sort list.

- ▶ To remove a field or formula from the Sort order:
 - 1 Select the field or formula in the sort list and display the contextual menu:

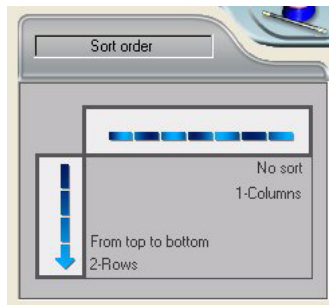


- 2 Select Delete.
The file is then removed.

Sorting the Cross-Tab Values

In a Cross-tab report, the only values that can be sorted are the horizontal and vertical data sources (the two data sources that are used as categories in the final table).

- ▶ To sort the categories in a cross-tab report:
 - 1 Click the sort indicators in the Sort order area:



The arrows display the sort order you just selected. When no arrow is displayed, no sort order is selected, values will be displayed in the order they appear in the selection.

Subtotal Levels

In a quick report, you set break levels to separate or “break” records into groups according to values in one or more sort fields. A Break or Subtotal area is printed at each break level. You can print summary calculations in the Break area. The summary calculations — sum, average, minimum, maximum, and count — are calculated for each group of records.

Break levels are determined by the sort levels and Break rows. For example, if you sort records by Sales Region and create a Break row, 4th Dimension inserts a break between each group of records that have the same sales region. These rows are automatically inserted when a sort is defined:

After you add a Break row to the quick report, you can request summary calculations on each break. For example, you can insert a summary calculation in a Break row to display subtotals for sales from each state in a marketing region. Refer to the section “[Adding Summary Calculations](#)” on page 40 for more information about adding summary calculations to Break and Total rows.

Subtotal rows

	[Invoices]Country	[Invoices]Item	[Invoices]Quantity
Title	Country	Item	Quantity
Detail			
[Invoices]Quantity changed			
[Invoices]Country changed			
Grand total			

The label of a subtotal row indicates which change in value triggers the break.

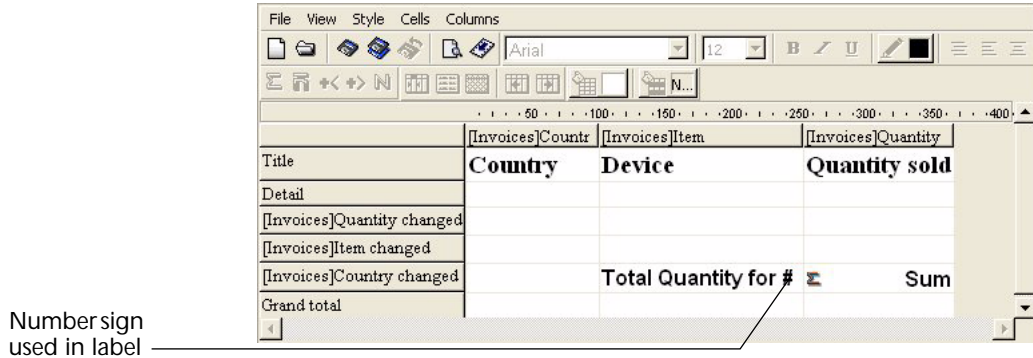
Using the Values of Break Fields in Labels

You can improve the appearance and comprehensibility of your reports by labeling each Break row using the value of the Break field.

To request that the value of a Break field be printed in a label placed in the Break area, use the number sign (#) in the label. For example, the text “Total salaries for department #” will insert the department name (in this case, the value of the Department field) in place of the number sign when the report is printed.

The number sign does not need to be placed in the same column as the Break field. It will display the value of the Break field in any cell in the Break row.

The following figure illustrates the use of the number sign in a label in the Break row.



Adding Summary Calculations

You can add summary calculations on the contents of fields and formulas to each Subtotal row and to the Totals row. In a cross-tab report calculations can be inserted in the center row.

The calculation buttons in the toolbars of the Quick Report editor identify the summary calculation options available for quick reports.



The following summary calculations are available.

- **Sum** totals the values in the report or break.



- **Minimum** displays the lowest value in the report or break.



- **Maximum** displays the highest value in the report or break.



- **Average** calculates the average of the values in the report or break.



- **Count** calculates the number of records in the report or break.



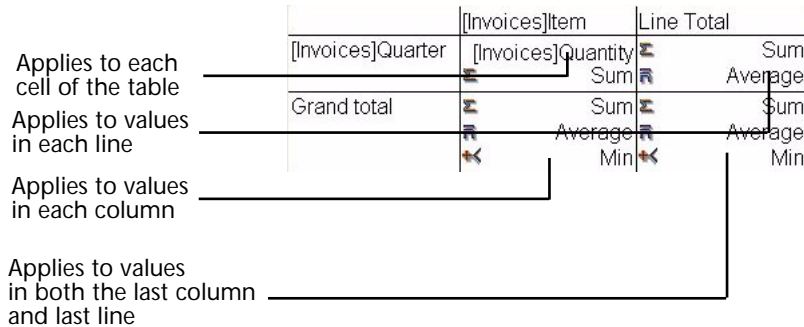
These options also appear in the Quick Report contextual menu for cells in the Subtotal and Total rows or, for a Cross-tab report, in the total cells and the center cell.

- **List Reports**

When you place a summary calculation in the Totals row, the calculation is done for all records in the report. If you place the summary calculation in a subtotal row, separate calculations are done for the records in each break.

- **Cross-tab reports**

Summary calculations will apply as follows



- **To add a summary calculation:**

- 1 Select a cell where you want to insert the summary calculation.

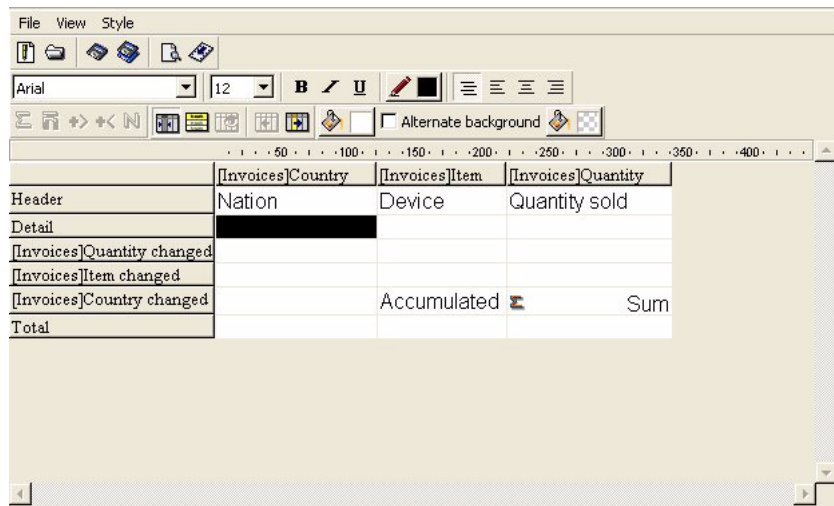
The Sum, Minimum, Maximum, and Average calculations work only on a numeric field or formula.

- 2 Click as many summary calculation buttons as you like.

Or

From the contextual menu, choose the desired summary calculations.

4th Dimension displays a calculation icon in the selected cell for each type of summary calculation you request. The following figure shows calculation icons in the Break and Total rows.



If you add more than one summary calculation to a cell, 4th Dimension stacks the calculation icons on top of each other, as shown above.

Using Calculations and Column Values in Labels

You can insert summary calculations using the following codes.

- - ##S will be replaced by the sum at the break or subtotal value.
- - ##A will be replaced by the Average.
- - ##C will be replaced by the Count
- - ##X will be replaced by the Max.
- - ##N will be replaced by the Min.
- - ##xx, where xx is a column number. This will be replaced by that column's value, using its formatting. If this column does not exist, then it will not be replaced

These codes can be useful when you want to mix labels and data in a cell.

Displaying Repeated Values for Break Columns


In a report with subtotals, the columns which are used to group records so that summary calculations can be done are called *Break*

columns. In the report shown above, the Department field is a Break column since the records in the report are grouped by department.


When a report like this is printed, the values for the Break column are printed only once per break. In other words, a department name is printed only for the first record in the group and is not repeated until the department changes.

First Name	Last Name	Department Name	Salary
Biff	Davis	Accounting	43780
Smeldorf	Garbando		19610
Alan	Hull		41460
Bryan	Pfaff		26440
Shirley	Ransome		36040
Marlys	Wilson		36500
		Sum for Department : Accounting	203830
Kathy	Forbes	Engineering	18840
Dennis	Hanson		40520
Mary	Smith		55000
Andy	Venable		43520
Lance	Wolfram		27300
		Sum for Department : Engineering	185180

Nonrepeating
break values

In some cases, you may want to repeat the values for the Break columns so that they appear for every record in the Break area. You do so by selecting the Repeated Values column property. You can do so either by clicking the Repeated Values button in the toolbars , by choosing the Repeated Values menu command in the Quick Reports contextual menu for that column or, by selecting Repeated Values from the Columns menu item.

► To display repeated values for fields in a column:

- 1 Select the column by clicking above the Header row for that column and click the Repeated Values button. 

OR

From the contextual menu for that column, choose Repeated Values.

The following figure shows the report at the top of this page after the Repeated Values check box has been checked for the Department Name column.

First Name	Last Name	Department Name	Salary
Biff	Davis	Accounting	43780
Smeldorf	Garbando	Accounting	19610
Alan	Hull	Accounting	41460
Bryan	Pfaff	Accounting	26440
Shirley	Ransome	Accounting	36040
Marlys	Wilson	Accounting	36500
		Sum for Department : Accounting	203830
Kathy	Forbes	Engineering	18840
Dennis	Hanson	Engineering	40520
Mary	Smith	Engineering	55000
Andy	Venable	Engineering	43520
Lance	Wolfram	Engineering	27300
		Sum for Department : Engineering	185180

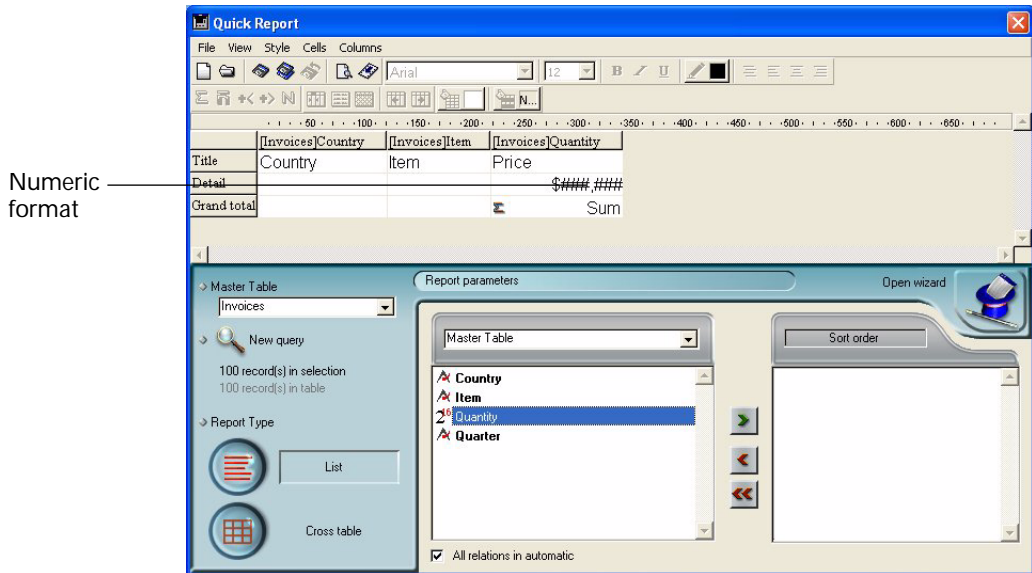
Setting Display Formats

You can specify display formats for columns that contain numeric or alphanumeric (Alpha) data. For example, if you are displaying salaries in a column, you can add a numeric format to the Detail cell for the Salary field. If your report includes Alpha fields such as a telephone number or Social Security number, you can use an Alpha format.

Numeric Formats

The following format places a dollar sign to the left of the number and allows up to 6 digits: \$###,###

This format can display dollar amounts up to \$999,999.



You can also create custom display formats in the Database Properties dialog box and use them in Quick Report designs. For more information about creating custom formats, refer to the *4th Dimension Design Reference* manual.

Alpha Formats

You can use an Alpha format for fields that contain string information. For example, Social Security number or telephone number fields can be formatted with an Alpha format.

For example, the following format would be used to format Social Security numbers:

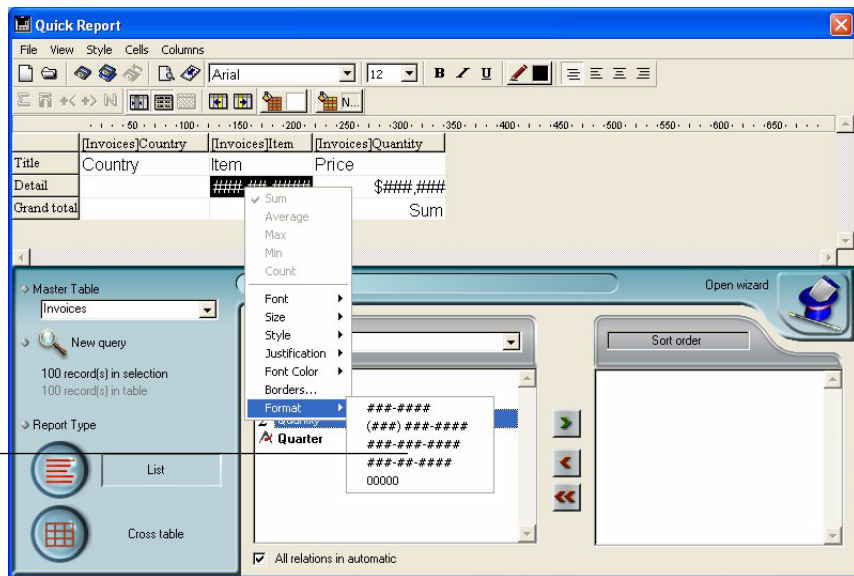
###-##-####

Entering the Display Format for a Field

You enter a display format or custom format by choosing it from the Quick Report contextual menu for the cell or by typing it into a cell.

- ▶ To enter a display format for a numeric or Alpha field:
 - 1 Click twice in the Detail cell for a numeric or Alpha column.
 - 2 Type a display format or the name of a style that you want to use as the display format.
The names of styles are preceded by a vertical bar (|).
- ▶ To choose a display format from the Quick Report contextual menu:
 - 1 Position the pointer anywhere over the column, display the contextual menu and select a format from the format submenu.

Display formats for Alpha fields



The hierarchical menu will show display formats that are appropriate for the data type of the column. For example, if the field was a numeric format, the menu command would be “Numeric” instead of “Alpha” and the submenu would list only numeric formats. After you make your selection, you can edit the format normally.

If you have also requested summary calculations for that column, the format specified in the Detail cell will automatically be applied to the summary calculations.

Regardless of the display format, the count is always displayed as an integer without formatting symbols such as the dollar sign. Different formats can be applied to different columns in the report.

Hiding and Showing Rows and Columns

4th Dimension lets you hide rows or columns in a quick report. If desired, you can show a hidden column or row.

Hiding rows is useful when you want the report to include only summary calculations. For example, hide the Detail row if you want to display only the summary calculations that appear in the Totals and Subtotal rows. You can also use this feature to hide a Break row or the Totals row.

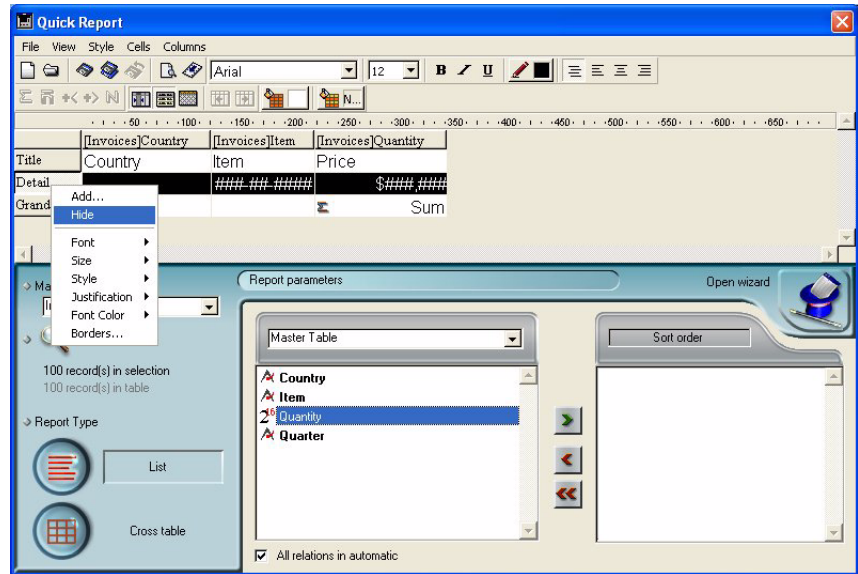
You can hide a column if you need to use the column as a sort column, but do not want the report to display the column.

You can hide a row using either a Quick Report menu command or the Quick Reports contextual menu.

Note You cannot hide a row or column in a cross-tab report.

- ▶ To hide a row or column using the menu command:
 - 1 Select the row or column you want to hide.
 - 2 Choose Hide from the Columns menu.
- ▶ To hide a row using the contextual menu:

- 1 Display the contextual menu when the mouse pointer is placed over the column or row label:



- 2 Choose Hide from the contextual menu.

4th Dimension displays the column in gray to remind you that the row will not appear when you print or preview the quick report.

Hidden row

	[Invoices]Country	[Invoices]Item	[Invoices]Quantity
Title	Country	Item	Price
Detail	#####	#####	\$###,###
Grand total			Sum

Hidden column

	[Invoices]Country	[Invoices]Item	[Invoices]Quantity
Title	Country	Item	Price
Detail		#####	\$###,###
Grand total			Sum

Showing a Hidden Row or Column

When a row or column is hidden, a check mark is displayed next to the Hide menu command in the Columns menu and Quick Report contextual menu displays Show. You can display a hidden row or column choosing Hide again from either the Columns or contextual menu. When you do so, the row or column is displayed normally in the Quick Report area.

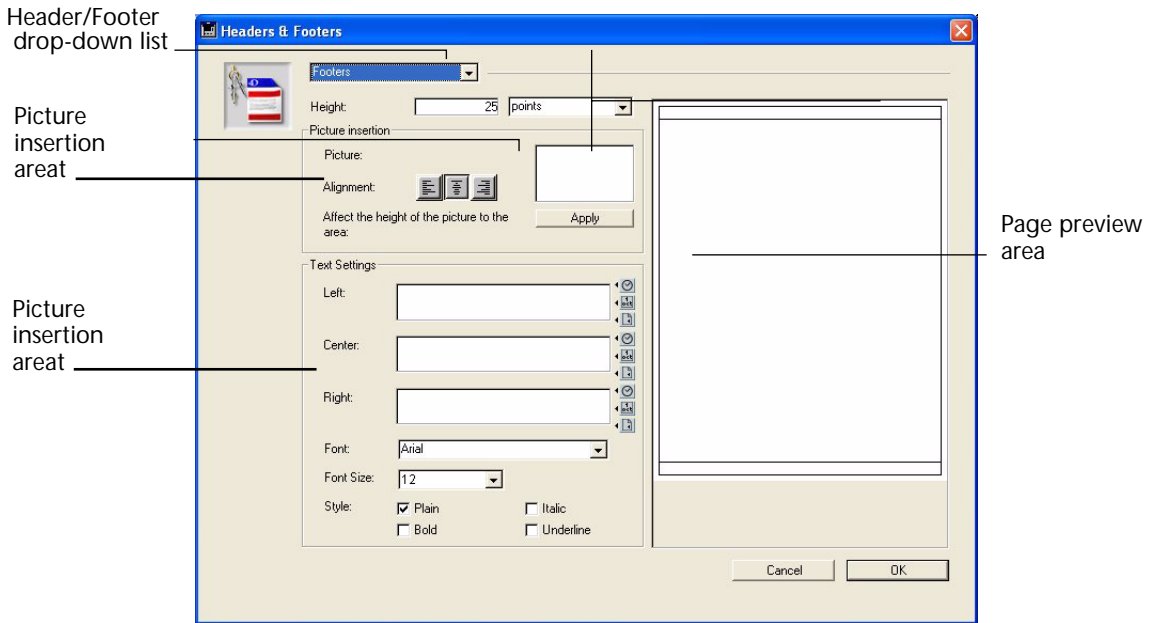
Adding Page Headers and Footers

Before printing a quick report, you can add page headers and footers. You specify page headers and footers in the Headers and Footers dialog box. Use this dialog box to do the following:

- Add page header and footer text or picture,
- Use separate text for left, center and right for the header and footer.
- Specify the size of the page header and footer areas,
- Specify fonts, font sizes, and font styles for page header and footer text,
- Insert codes that add page numbers and the date and time to your reports.

You can only specify page headers when printing to a printer. See the section [“Generating a Quick Report” on page 52](#) for more information about alternate output devices.

- ▶ To add page headers and footers:
 - 1 Choose Headers and Footers from the File menu.
The Headers and Footers dialog box appears.



The Header and Footers dialog box lets you specify both headers and footers from the same screen. You use the header/footer selection drop-down list to specify either the header or footer.

- 2 Choose Header or Footer from the header/footer selection menu.



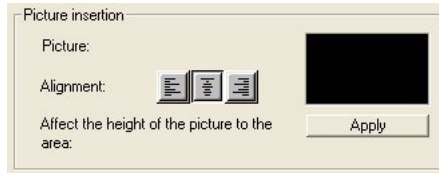
- 3 Enter the header or footer height in the Height area.

When you first enter the dialog box, the header and footer heights are set to 25 points each. You can change values for the height and can change measurement scale to enter values in inches or centimeters.



As you enter the header and footer height, the dotted lines on the page preview area change to indicate the size of the header and footer as they will appear on the printed report.

4 If you want to use a picture, paste it in the picture area:

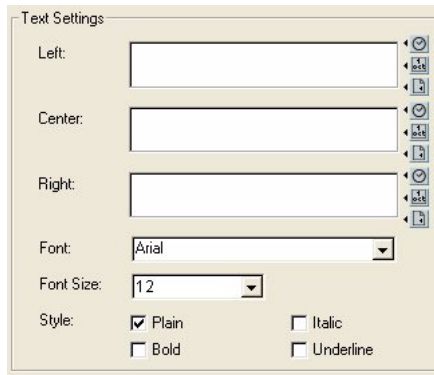


5 Select its alignment by clicking on the alignment icons:

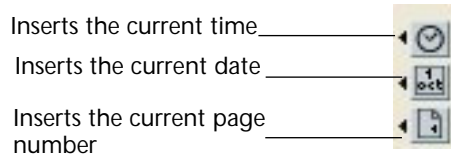


6 If you want the height of the picture to become the height of the header/footer, click the Apply button.

7 Select an entry area and type the header or footer text.



To the right of each entry area, there are three buttons that let you enter variables into the entry area.



You can insert the current page number, time of execution, or date of execution.

You can also directly use the code for the variables: #H, for the time, #D for the date and #P for the page number.

8 Assign the font attributes for the header/footer.



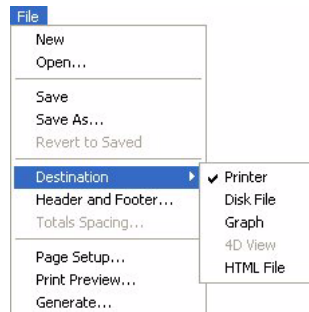
9 Click OK, to validate the changes.

Generating a Quick Report

After you have completed your report design, you can “print” the quick report. You can print a quick report to a variety of output types:

- On the standard printer selected
- To disk
- To a graph
- To a 4D View document
- To an HTML document
- ▶ To select an output device:
 - Choose Destination from the File menu.

The Print Destination hierarchical menu contains three items.



Printer

This option uses the printer you have chosen in your current print settings. If you are printing to a printer, you can preview the report before printing it.

- ▶ To print to a printer:
 - 1 In the File menu, choose Printer from the destination submenu.

- 2 Select Generate from the File menu.
- 3 Choose the settings that are appropriate for your report and click the OK button.

Disk File

This option sends your quick report to a disk file that you can open and modify with other applications, including text editors and spreadsheets. This option exports the records in the quick report to a text file.

When you use this option, 4th Dimension automatically uses the column headings as the first “record” that is exported.

- ▶ To print to a disk file:
 - 1 In the File menu, choose Disk File from the Destination hierarchical menu.
 - 2 Choose Generate from the File menu.

4th Dimension displays a standard create-file dialog box and asks you to enter a filename.
 - 3 Enter a filename and click the OK button.

4th Dimension displays a dialog box that keeps you informed of the progress of the operation.

After the report is printed to a file, 4th Dimension returns you to the Quick Report editor. Remember to change the output device if you want to resume sending a quick report to a standard printer.

Print to Graph

This option directs the report to 4D Chart, 4th Dimension’s plug-in for plotting data. When you choose the Graph item in the Destination hierarchical menu, your report is presented as a graph rather than in tabular form. 4D Chart uses only the summary calculations and labels in the Break row. It uses the leftmost non-numeric column for the Values axis (the horizontal axis). Your graph can then be printed using 4D Chart.

To use the Graph feature, your report should:

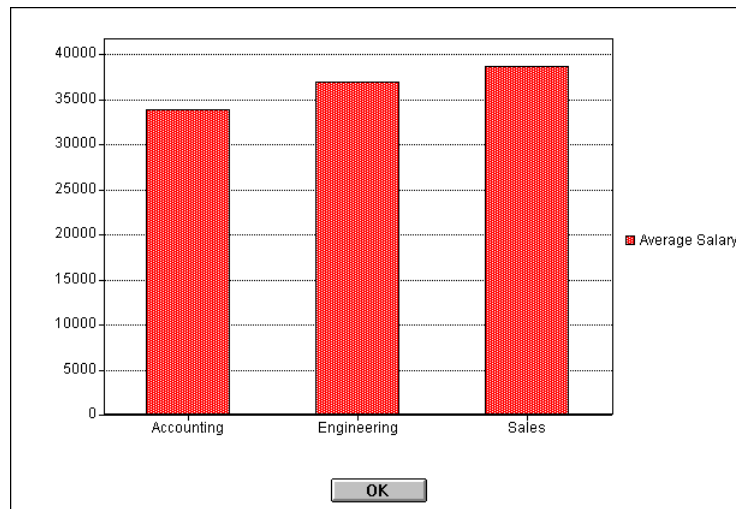
- Include from one to five numeric fields or formulas. These columns will be assigned to the values axis in the graph.
- Use one type of summary calculation per numeric field.

For example, if you want to graph average salary by department, you should create a quick report with two columns, Department Name and Salary. Use the Average summary calculation for Salary.

► To print to a graph:

- 1 In the File menu, choose Graph from the Destination hierarchical menu.
- 2 Choose Generate from the File menu.
4th Dimension graphs your data as a column graph.

The following figure shows the graph produced from the quick report design described above.



You can use 4D Chart to select another graph type or print the graph.

Printing to a 4D View Document

This option directs the report to 4D View, 4th Dimension's plug-in for displaying data. When you choose the 4D View item in the Destination hierarchical menu, your report is presented as a 4D View window rather than in tabular form. 4D View uses all the data in the report.

- ▶ To print to a 4D View document:
 - 1 In the File menu, choose 4D View from the Destination hierarchical menu.
 - 2 Choose Generate from the File menu.
4th Dimension creates a 4D View window.

Printing to an HTML Document

This option sends your quick report to an HTML file. This options uses the default HTML template unless is was changed programatically.

When you use this option, 4th Dimension automatically uses the column headings as the first “record” that is exported.

- ▶ To print to an HTML file:
 - 1 In the File menu, choose HTML File from the Destination hierarchical menu.
 - 2 Choose Generate from the File menu.
4th Dimension displays a standard create-file dialog box and asks you to enter a filename.
 - 3 Enter a filename and click the OK button.
4th Dimension displays a dialog box that keeps you informed of the progress of the operation.
After the report is printed to an HTML file, 4th Dimension returns you to the Quick Report editor. Remember to change the output device if you want to resume sending a quick report to a standard printer.

2 Language

New Architecture

With the previous Quick Report editor, you could define a Quick Report through the standard interface, make that interface available to custom application and end-users through the REPORT command, but could not alter your Quick Report programmatically.

With 4D 2003, part of the Quick Report editor becomes an “internal” plug-in which makes it available as a plug-in area in addition to the more standard end-user access. It also comes with a new set of commands that lets you reproduce programmatically anything that can be done manually.

Hierarchical Reports

In the new Quick Report editor the handling of “hierarchical reports” was extended. In the previous version of the quick report editor, when you wanted to create a report on related data the starting table had to be a child table. Now, the master table for the report can either be a child table or a parent table.

How are relations propagated?

- 1 to N

A selection in the 1 table conditions a selection in the N table that includes the child records of all the records in the 1 table.

For example, if the master table is a Customer table and its selection includes three customers, the selection in the child Invoice table includes all the invoices for these customers.

- N to 1

A selection in the N table conditions a selection in the 1 table that includes all the parent records of all the records in the N table.

For example, if the master table is an invoice table and its selection includes invoices from different customers, the selection in the parent customer table includes all these customers.

It is important to understand that the propagation at the selection level is actually a “join” that includes all the records for a set of given related values. Once relations have been propagated to the detail level, 4D goes through all the records of the detail selection and populates the related data at this point. This implies that, if a parent record has no child in the detail selection, it will not appear at all in the report.

Commands

QR BLOB TO REPORT

QR BLOB TO REPORT (area;blob)

Parameters	Type	Description
area	Longint	→ Reference of the area
blob	BLOB	→ BLOB that houses the report

The QR BLOB TO REPORT command places the report contained in blob in the Quick Report area passed in area.

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid blob parameter, the error 9852 will be generated.

The following code allows you to display in MyArea, a report file named "report.4qr" located next to the database structure. The report file does not have to be created with 4D 2003, it can originate from previous versions.

```
C_BLOB($doc)
C_LONGINT (MyArea)
DOCUMENT TO BLOB("report.4qr";$doc)
QR BLOB TO REPORT(MyArea;$doc)
```

The following statement retrieves the Quick Report stored in Field4 and displays it in MyArea.

QR BLOB TO REPORT(MyArea;[Table 1]Field4)

QR Count columns

QR Count columns(area) → Longint

Parameters	Type	Description
area	Longint	→ Reference of the area
result	Longint	← Number of columns in area

The QR Count columns command returns the number of columns present in the Quick Report area.

If you pass an invalid area number, the error 9850 will be generated.

The following code retrieves the column count and inserts a column to the right of the rightmost existing column:

```
$ColNb:=QR Count columns(MyArea)
QR INSERT COLUMN(MyArea;$ColNb+1;->[Table 1]Field2)
```

QR DELETE COLUMN

QR DELETE COLUMN(area;colNumber)

Parameters	Type	Description
area	Longint	→ Reference of the area
colNumber	Longint	→ Column number

The QR DELETE COLUMN command deletes the column in area whose number was passed in colNumber. This command does not apply to cross-tab reports.

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid column number, the error 9852 will be generated.

The following example makes sure the report is a list report and deletes the third column.

```
If(QR Get report kind(MyArea )=qr list report)
  QR DELETE COLUMN (MyArea;3)
End if
```

QR DELETE OFFSCREEN AREA

QR DELETE OFFSCREEN AREA(area)

Parameters	Type	Description
area	longint	→ Reference of the area to delete

The QR DELETE OFFSCREEN AREA command deletes in memory the Quick Report offscreen area whose reference was passed as parameter.

If you pass an invalid area number, the error 9850 will be generated.

QR EXECUTE COMMAND

QR EXECUTE COMMAND (area;command)

Parameters	Type	Description
area	Longint	→ Reference of the area
command	Longint	→ Menu command to be executed

The QR EXECUTE COMMAND command executes the menu command or toolbar button whose reference was passed in command. The most common use for this command is to execute a command after the user selected that command and your code intercepted it through the QR ON COMMAND command.

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid command number, the error 9852 will be generated.

Value	Command
500	Bold
501	Italic
502	Underlined
503	Left justification
504	Center justification
505	Right Justification
506	Compute sum
507	Compute Avg
508	Compute Min
509	Compute Max
510	Compute count
511	Plain
512	Default justified
1000	Font list
1002	Font color
1003	Background color
1004	Alt Background color

2000	New file
2001	Open file
2002	Save file
2003	Save as
2004	Revert to Saved
2005	Header and footer
2006	Page setup
2007	Print preview
2008	Execute
2050	View font palette
2051	View computations palette
2052	View background colors palette
2053	View standard palette
2054	View columns palette
2300 +	First size menu
2399 +	Last size menu
2500	Printer output
2501	Disk output
2502	Graph output
2503	4D View output
2504	HTML output
2600	Insert column
2601	Delete column
2602	Hide column
2603	Edit column
2604	Repeat value
2605	Auto column width
2606	Format menu (contextual menu)
2607	Hide line
2608	Add column
2609	Repeat value
2610	Totals Spacing
3002	Move Left
3003	Move Right

QR Find column

QR Find column (area; expression) → Longint

Parameters	Type	Description
area	Longint	→ Reference of the area
expression	String Pointer	→ Column object
result	Longint	← Number of the column

The QR Find column command returns the number of the first column whose contents match the expression passed in parameter.

expression can either be a string or a pointer.

Result equal -1 if nothing has been found.

If you pass an invalid area number, the error 9850 will be generated.

The following code retrieves the column number that holds the field [G.NQR Tests]Quarter and deletes that column:

```
$NumColumn :=QR Find column (MyArea;->[G.NQR Tests]Quarter)
```

or

```
$NumColumn :=QR Find column (MyArea; "[G.NQR Tests]Quarter")
```

followed by:

```
If ($NumColumn#-1)
```

```
  QR DELETE COLUMN (MyArea ; $NumColumn)
```

```
End if
```

QR Get area property

QR Get area property (area; property) → Longint

Parameters	Type	Description
area	Longint	→ Reference of the area
property	Longint	→ Palette designated
result	Longint	← 0 = visible 1 = invisible

The QR Get area property command returns 0 if the interface element (palette or menu bar) passed in property is not displayed; otherwise, it returns 1.

The menu bar and toolbars are numbered from 1 to 6 (top to bottom) and the value 7 is dedicated to the contextual menu.

You can use the constants from the QR Area Properties theme to designate the interface item.

Property	Constant	Description
Menu bar	QR view menubar (1)	Display status of the menu bar (Displayed=1, Hidden=0)
Standard palette	QR view standard toolbar (2)	Display status of the Standard palette (Displayed=1, Hidden=0)
Style palette	QR view style toolbar (3)	Display status of the Style palette (Displayed=1, Hidden=0)
Computation palette	QR view computation toolbar (4)	Display status of the Computation palette (Displayed=1, Hidden=0)
Column palette	QR view column toolbar (5)	Display status of the Column palette (Displayed=1, Hidden=0)
Color palette	QR view color toolbar (6)	Display status of the Color palette (Displayed=1, Hidden=0)
Contextual menu	QR view contextual menu (7)	Display status of the Contextual menu (Displayed=1, Hidden=0)

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid property parameter, the error 9852 will be generated.

QR GET BORDERS

QR GET BORDERS (area; column; row; border; line{;color})

Parameters	Type	Description
area	Longint	→ Reference of the area
column	Longint	→ Column number
row	Longint	→ Row number
border	Longint	← Border value
line	Longint	← Line thickness
color	Longint	← Border color

The command QR SET BORDERS allows you to retrieve the border style for a border of a given cell.

area is the reference of the Quick Report area.

column is the column number of the cell.

row designates the row number of the cell.

- if row equals -1, the title of the report is affected
- if row equals -2, the detail of the report is affected
- if row equals -3, the grand total of the report is affected
- if row is a positive integer, it designates the Subtotal (break) level that is affected

You can use constants from the QR Rows for Properties theme to designate the row item. (qr title= -1, qr detail=-2, qr grand total=-3)

border is the value that indicates whose cell border is to be affected:

- 1 indicates the left border
- 2 indicates the top border
- 4 indicates the right border
- 8 indicates the bottom border
- 16 designates the inside vertical border
- 32 designates the inside horizontal border

You can use constants from the QR Borders theme to designate the border item.

Note Unlike the command QR SET BORDERS, QR GET BORDERS does not accept a cumulative value.

line is the thickness of the line:

- 0 indicates no line
- 1 indicates a thickness of 1/4 point
- 2 indicates a thickness of 1/2 point
- 3 indicates a thickness of 1 point
- 4 indicates a thickness of 2 points

color is the color of the line, it returns the value of the color applied to the line segment.

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid column number, the error 9852 will be generated.

If you pass an invalid row number, the error 9853 will be generated.

If you pass an invalid border parameter, the error 9854 will be generated.

QR Get command status

QR Get command status (area; command{; value})→ Longint

Parameters	Type	Description
area	Longint	→ Reference of the area
command	Longint	→ Command number
value	Text longint	← Value for the selected sub-item
result	Longint	← Command status

The QR Get command status command returns 0 if the command is disabled or 1 if it is enabled.

value is the value of the selected sub-item, if any. For example, if the command that was selected is the font menu (1000) and the font selected was “Arial“, value would return “Arial“, or if the command that was selected is a color menu (1002, 1003 or 1004), value would return the color number.

You can use the command in two types of contexts:

As a simple statement to determine whether a command is enabled or disabled.

In the method installed by QR ON COMMAND, it allows you to know which sub-item was selected. In that method, \$1 is the reference of the area and \$2 is the number of the command.

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid command number, the error 9852 will be generated.

QR GET DESTINATION

QR GET DESTINATION (area; destination; {specifics})

Parameters	Type	Description
area	Longint	→ Reference of the area
type	Longint	← Type of the report
specifics	String Variable	← Specifics linked to the output type

The QR GET DESTINATION command retrieves the output type of the report for the area whose reference was passed in area.

Destination	Constant (value)	Specifics
Printer	QR Printer (1)	N.A.
Text file	QR Text File (2)	File pathname
4D View	QR 4D View Area (3)	N.A.
4D Chart	QR 4D Chart Area (4)	N.A.
HTML file	QR HTML File (5)	Pathname to the HTML file

If you pass an invalid area number, the error 9850 will be generated.

QR Get document property

QR Get document property (area; option) → Longint

Parameters	Type	Description
area	Longint	→ Reference of the area
property	Longint	→ 1 = Print Dialog 2 = Document unit
result	Longint	← Value for the option

The QR Get document property command allows you to retrieve the display status for the print dialog or the unit used for the ruler.

- If property equals 1, the command applies to display of the print dialog.
 - If result equals 1, the print dialog is displayed prior to printing.
 - If result equals 0, the print dialog is not displayed prior to printing.

The default value is 1.

- If option equals 2, the command applies to the document unit.
 - If result equals 0, the document's unit is points.
 - If result equals 1, the document's unit is centimeters.
 - If result equals 2, the document's unit is inches.

You can use the following constants, located in the QR Document properties constant theme: qr Printing Dialog and qr Unit.

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid property value, the error 9852 will be generated.

QR Get drop column `QR Get drop column(area) → Longint`

Parameters	Type	Description
area	Longint	→ Reference of the area
result	Longint	← Drop value

The QR Get drop column command returns a value depending on where the drop was performed:

- if the value is negative, it indicates a column number (i.e. -3 if the drop was performed on column number 3)
- if the value is positive, it indicates that the drop was performed on a separator preceding the column (i.e. 3 if the drop was performed after column 2). Keep in mind that the drop does not have to take place before an existing column.

If you pass an invalid area number, the error 9850 will be generated.

QR GET HEADER AND FOOTER

`QR GET HEADER AND FOOTER(area; selector; leftTitle; centerTitle;rightTitle; height{; picture}{; pictAlignment})`

Parameters	Type	Description
area	Longint	→ Reference of the area
selector	Longint	→ 1 = Header 2 = Footer
leftTitle	String	← Text displayed on the left side
centerTitle	String	← Text displayed in the middle
rightTitle	String	← Text displayed on the right side
height	Real	← Header or footer height
picture	Picture	← Picture to display
pictAlignment	Longint	← Alignment attribute for the picture

The QR GET HEADER AND FOOTER command allows you to retrieve the contents and size of the header or footer.

selector allows you to select the header or the footer. If selector equals 1, the header information will be retrieved; if selector equals 2, the footer information will be retrieved.

leftTitle, centerTitle and rightTitle are the values for, respectively, the left, center and right header/footer.

height is the height of the header/footer, expressed in the unit selected for the report.

picture is a picture that is displayed in the header or footer.

pictAlignment is the alignment attribute for the picture displayed in the header/footer.

- If alignment equals 0, the picture is aligned to the left.
- If alignment equals 1, the picture is centered.
- If alignment equals 2, the picture is aligned to the right.

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid selector value, the error 9852 will be generated.

The following code retrieves the values of the header titles as well as the header size and displays them in alerts:

```
QR GET HEADER AND FOOTER(MyArea;1;$LeftText;$CenterText;$Right-
Text;$height)
ALERT("The Left title is "+Char(34)+$LeftText+Char(34))
ALERT("The center title is "+Char(34)+$CenterText+Char(34))
ALERT("The right title is "+Char(34)+$RightText+Char(34))
ALERT("The height of the header is "+String($height))
```

QR Get HTML template

QR Get HTML template (area) → Text

Parameters	Type	Description
area	Longint	→ Reference of the area
result	Text	← HTML code used as template

The QR Get HTML template command returns the HTML template currently used for the Quick Report area. The returned value is a text value and includes all the contents of the HTML template.

If no specific template was defined, the template that is returned is the default template. Please note that no template will be returned if the output was not set to HTML file, either manually or programmatically.

QR GET INFO COLUMN

QR GET INFO COLUMN (area; colNum; title; object; hide; size; repeated-Value; displayFormat)

Parameters	Type	Description
area	Longint	→ Reference of the area

Parameters	Type	Description
colNum	Longint	→ Column number
title	String	← Title of the column
object	FieldName Variable	← Object assigned for that column
hide	Longint	← 0 = visible 1 = invisible
size	Longint	← Column size
repeatedValue	Longint	← 0 = not repeated 1 = repeated
displayFormat	Text	← Display format for the data

List mode

The QR Get Info Column command allows you to retrieve the parameters of an existing column.

area is the reference of the Quick Report area.

colNum is the number of the column to modify.

title is the title that will be displayed in the header of the column.

object is the actual object of the column (variable, field name or formula).

size is the size of the column in pixels. If size equals -1, the size is automatic.

repeatedValue is the status for data repetition. For example, if the value for a field or variable does not change from one record to the other it may or may not be repeated when they do not change. If repeatedValue equals 0, values are not repeated. If repeatedValue equals 1, values are repeated.

format is the display format. Display formats are the 4D formats compatible with the data displayed.

Cross-tab mode

The QR GET INFO COLUMN command allows you to retrieve the same parameters but the reference of the areas to which it applies is different and varies depending on the parameter you want to set. First of all, the parameters title, hide, and repeatedValue are meaningless when that command is used in cross-tab mode. The value to use for column varies depending on whether you want to retrieve the column size or the data source and display format.

■ Column size:

This is a “visual” attribute, therefore columns are numbered from left to right, as depicted below.

column = 1 column = 2 column = 3

	[Invoices]Item	Line Total
[Invoices]Quarter	[Invoices]Quantity	Σ Sum
	Σ Sum	Ⓜ Average
Grand total	Σ Sum	Σ Sum
	Ⓜ Average	Ⓜ Average
	⚡ Min	⚡ Min

The following statement sets the size to automatic for all the columns in a cross-tab report and leaves other elements unchanged.

```
For ($i;1;3)
  QR GET INFO COLUMN(qr_area;$i;$title;$obj;$hide;$size;$rep;$format)
  QR SET INFO COLUMN(qr_area;$i;$title;$obj;$hide;0;$rep;$format)
End for
```

You will notice that since you want to alter only the column size, you have to use QR GET INFO COLUMN to retrieve the column properties and pass them to QR SET INFO COLUMN to leave it unchanged, except for the column size.

- Data source (object) and display format

In this case the numbering of column operates as depicted below:

column = 2 column = 3 column = 1

	[Invoices]Item	Line Total
[Invoices]Quarter	[Invoices]Quantity	Σ Sum
Grand total	Σ Sum Average Min	Σ Sum Average Min

QR Get info row

QR Get info row (area; row)→ longint

Parameters	Type	Description
area	Longint	→ Reference of the area created
row	Longint	→ Row designator
result	Longint	← 0= visible 1= hide

The QR Get info row **command** retrieves the display status of the row whose reference was passed in row.

row designates which row is affected by the command:

- if row equals -1, the title display attribute is retrieved
- if row equals -2, the detail display attribute is retrieved
- if row equals -3, the grand total display attribute is retrieved
- if row is a positive integer, it designates the subtotal (break level) whose display attribute is retrieved.

You can use constants from the QR Rows for Properties theme to designate the row item.(qr title= -1, qr detail=-2, qr grand total=-3)

result specifies whether the row is visible or hidden. If it equals 1, the row is set to hidden; if it equals 0, the row is set to visible.

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid row value, the error 9852 will be generated.

QR Get report kind

QR Get report kind (area) → longint

Parameters	Type	Description
area	Longint	→ Reference of the area
type	Longint	← Type of the report

The QR Get report kind command retrieves the report type for the area whose reference was passed in area.

- If type equals 1, the report type is list
- If type equals 2, the report type is cross-table

If you pass an invalid area number, the error 9850 will be generated.

QR Get report table

QR Get report table (area) → Longint

Parameters	Type	Description
area	Longint	→ Reference of the area
table	Longint	← Table number

The QR Get report table command returns the current table for the report area whose reference was passed in area.

If you pass an invalid area number, the error 9850 will be generated.

QR GET SELECTION

QR GET SELECTION (area; left; top{; right}{; bottom})

Parameters	Type	Description
area	Longint	→ Reference of the area
left	Longint	← Left boundary
top	Longint	← Top boundary
right	Longint	← Right boundary
bottom	Longint	← Bottom boundary

The command QR GET SELECTION Returns the coordinates of the cell that is selected.

left is the number of the column that is the left boundary of the selection. If left equals 0, the entire row is selected.

top is the number of the row that is the top boundary of the selection. If top equals 0, the entire column is selected.

Note If both left and top equal 0, the entire area is highlighted.

right is the number of the column that is the right boundary of the selection.

bottom is the number of the row that is the bottom boundary of the selection.

Note If there is no selection, left, top, right and bottom are set to -1.

If you pass an invalid area number, the error 9850 will be generated.

QR GET SORTS

QR GET SORTS(area;columns;{orders})

Parameters	Type	Description
area	Longint	→ Reference of the area
aColumns	Array real	← columns
aOrders	Array real	← sort orders

The QR GET SORTS command populates two arrays:

- **aColumns**
This array includes all the columns that have a sort order.
- **aOrders**
Each element of this array contains the sort orders for the matching column.
 - If aOrders $\{i\}$ equals 1, the sort order is ascending.
 - If aOrders $\{i\}$ equals - 1, the sort order is descending.

If you pass an invalid area number, the error 9850 will be generated.

QR Get text property

QR Get text property(area;colNum; rowNum; property)→ Longint

Parameters	Type	Description
area	Longint	→ Reference of the area
colNum	Longint	→ Column number
rowNum	Longint	→ Break number
property	Longint	→ Operator value for the cell
result	Longint	← Value for the selected property

The command QR Get text property returns the property value for the text attributes for the cell determined by colNum and RowNum.

- area is the reference of the Quick Report area.
- colNum is the number of the cell column.
- rowNum is the reference of the cell row.
 - if rowNum equals -1, it designates the column title.
 - if rowNum equals -2, it designates the detail area.
 - if rowNum equals -3, it designates the column grand total.
 - if rowNum equals -4, it designates the page header.
 - if rowNum equals -5, it designates the page footer.

Note When passing -4 or -5 as rowNum, you still need to pass a column number in colNum, even if it is not used.

- if rowNum is a positive value, it designates the corresponding subtotal (break level).

Note In cross-tab mode the principle is similar except for the row values that are always positive.

- property is the value or constant of the text attribute to assign.
 - If property equals 1, the value is the font number as returned through Font list.
 - If property equals 2, the value is the font size expressed in points (9 to 255).
 - If property equals 3, the value is the Bold style attribute (0 or 1).
 - If property equals 4, the value is the Italic style attribute (0 or 1).
 - If property equals 5, the value is the font Underline style attribute (0 or 1).
 - If property equals 6, the value is the font Color attribute (0 or 1).
 - If property equals 7, the value is the font Justification attribute (0 for default, 1 for left, 2 for center or 3 for right).
 - If property equals 8, the value is the background color.
 - If property equals 9, the value is the alternate background color.

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid colNum number, the error 9852 will be generated.

If you pass an invalid rowNum number, the error 9853 will be generated.

If you pass an invalid property number, the error 9854 will be generated.

QR GET TOTALS DATA

QR GET TOTALS DATA(area;colNum; breakNum; operator; text)

Parameters	Type	Description
area	Longint	→ Reference of the area
colNum	Longint	→ Column number
breakNum	Longint	→ Break number
operator	Longint	← Operator value for the cell
text	String	← Contents of the cell

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid colNum number, the error 9852 will be generated.

If you pass an invalid breakNum number, the error 9853 will be generated.

List Mode

The QR GET TOTALS DATA command allows you to retrieve the details of a specific break.

area is the reference of the Quick Report area.

breakNum is the number of the break whose data will be retrieved (subtotal or grand total)

Subtotal : between 1 and the number of Subtotal/sort.

Grand total : -3 / constant : qr grand total

colNum is the number of the column whose data will be retrieved

operator is the sum of all the operators present in the cell:

- If operator equals 0, there is no operator.
- If operator equals 1, the operator is Sum.
- If operator equals 2, the operator is Average.

- If operator equals 4, the operator is Max.
- If operator equals 8, the operator is Min.
- If operator equals 16, the operator is Count.

text is the text present in the cell.

Note operator and text are mutually exclusive, so you either have a result returned through operator or through text.

Cross-tab Mode

The QR GET TOTALS DATA command allows you to retrieve the details of a specific cell.

area is the reference of the Quick Report area.

colNum is the column number of the cell whose data is going to be retrieved.

breakNum is the row number of the cell whose data is going to be retrieved.

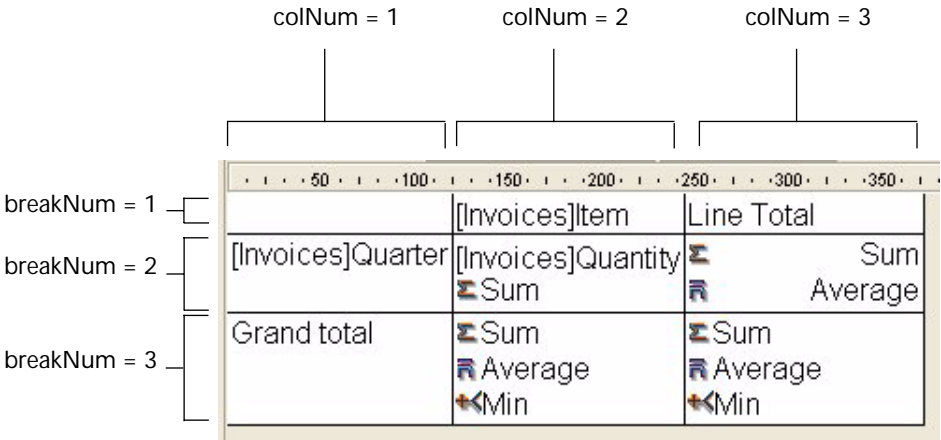
operator is the sum of all the operators present in the cell:

- If operator equals 0, there is no operator.
- If operator equals 1, the operator is Sum.
- If operator equals 2, the operator is Average.
- If operator equals 4, the operator is Max.
- If operator equals 8, the operator is Min.
- If operator equals 16, the operator is Count.

You can use constants from the QR operators theme to designate the operator.

value is the text present in the cell.

Here is a depiction of how the parameters column and break have to be combined in cross-tab mode:



QR GET TOTALS SPACING

QR GET TOTALS SPACING(area; subtotalNumber;value)

Parameters	Type	Description
area	Longint	→ Reference of the area
subtotal	Longint	→ Subtotal number
value	Longint	← 0: no space 32000: inserts a page break Positive value: spacing added at the top of the break level. Negative value: proportional increase

The command QR GET TOTALS SPACING allows you to retrieve a space above a subtotal row. It applies only to the list mode.

area is the reference of the Quick Report area.

subtotal is the subtotal level (or break level) that will be affected.

value defines the value of the spacing:

- If value equals 0, no space is added.
- If value equals 32000 a page break is inserted.
- If value is a positive value, it expresses the spacing value in pixels.
- If value is a negative value, it expresses the spacing as a percentage of the subtotal row. For example, -100 will set a space of 100% above the subtotal row.

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid subtotalNumber, the error 9852 will be generated.

QR INSERT COLUMN QR INSERT COLUMN(area;colNumber; object)

Parameters	Type	Description
area	Longint	→ Reference of the area
colNumber	Longint	→ Column number
object	FieldName Variable Pointer	→ Object to be inserted in the column

The QR INSERT COLUMN command inserts or creates a column at the specified position. Columns located to the right of that position will be shifted accordingly.

If you pass an invalid area number, the error 9850 will be generated.

position is the number of the column, established from left to right.

The default title for the column will be the value passed in object.

The following statement inserts (or creates) a first column in a Quick Report area, inserts "Field1" as column title (default behavior) and populates the contents of the body with values from Field1.

```
QR INSERT COLUMN (MyArea;1;->[Table 1]Field1)
```

QR New offscreen area

QR New offscreen area -> Longint

Parameters	Type	Description
area	longint	← Reference of the area created

The QR New offscreen area command creates a new Quick Report offscreen area and returns its reference.

QR ON COMMAND QR ON COMMAND(area;4DRepmethod)

Parameters	Type	Description
area	Longint	→ Reference of the area
4DRepMethod	String	→ Name of the replacement method

The QR ON COMMAND command executes the method passed as 4DRepMethod when a Quick Report command is invoked by the user, by the selection of a menu command or by a click on a button. If area equals zero, 4DRepMethod will apply to each Quick Report area until the database is closed or until the following call to QR ON COMMAND is made: QR ON COMMAND(0; "").

4DRepMethod receives two parameters:

\$1 is the reference of the area (Longint).

\$2 is the command number of the command that was selected (Longint).

Note When planning on compiling the database, it is necessary to declare both \$1 and \$2 as Longints, even if you do not use them.

If you want the initial command to be executed you need to include the following in the called method: QR EXECUTE COMMAND(\$1;\$2).

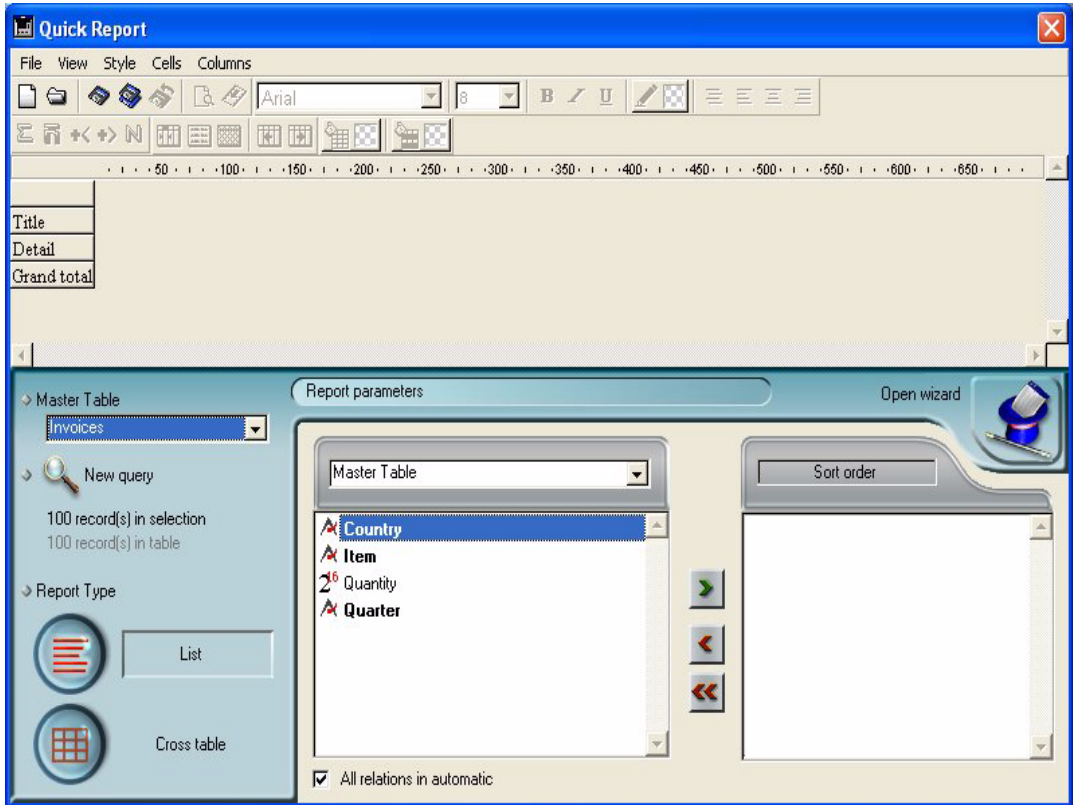
If you pass an invalid area number, the error 9850 will be generated.

QR REPORT

QR REPORT ({table; }document{; hierarchical}{; wizard}{; search}{; *})

Parameters	Type	Description
table	Table	→ Table to use for the report, or Default table, if omitted
document	String	→ Quick Report document to load
hierarchical	Boolean	→ 0 = does not display N related tables (default) 1 = displays N related tables
wizard	Boolean	→ 0 = wizard button is not displayed in the dialog (default) 1 = wizard button is displayed in the dialog
search	Boolean	→ 0 = no search tools and master table choice (default) 1 = search tools and master table choice
*		→ Suppresses the printing dialog boxes

QR REPORT runs a report for table, created with the Quick Report editor shown here.



- document (string)

The document parameter is a report document that was created with the Quick Report editor and saved on disk. The document stores the specifications of the report, not the records to be printed.

If an empty string ("") is specified for document, QR REPORT displays an Open File dialog box and the user can select the report to print.

If the document parameter specifies a document that does not exist (for example, pass Char(1) in document), the Quick Report editor is displayed.

- hierarchical (boolean)

The hierarchical parameter defines whether the N tables are displayed in the field selection list.

- wizard (boolean)
This parameter indicates whether the Open Wizard button is going to be displayed in the Quick Report Editor therefore allowing or disallowing access to the wizard. By default, this value is set to 0 (no access to the wizard).
- search (boolean)
This parameter indicates whether the New Query button and the Master table drop-down menu are going to be displayed in the quick report editor therefore allowing or disallowing modification of the current table and current master table. By default, this value is set to 0 (no access to the modifications).

The Quick Report editor allows users to create their own reports. When the Quick Report editor is displayed, the user is in the same context as when the editor is displayed in user mode, at the exception of the possible presence of the Master table selection drop-down list and of the New Query button. The user has complete control over the editor.

If the Quick Report editor is not involved, the OK variable is set to 1 if a report is printed; it is set to 0 (zero) if not (i.e., if the user clicked Cancel in the printing dialog boxes).

- *
After a report is selected, the dialog boxes for printing are displayed, unless the * parameter is specified. If this parameter is specified, these dialog boxes are not displayed. The report is then printed.

► Examples:

1. The following example lets the user query the [People] table, and then automatically prints the report "Detailed Listing":

```
QUERY ([People])
  If (OK=1)
    REPORT ([People];"Detailed Listing";False;False;False*)
  End if
```

2. The following example lets the user query the [People] table, and then lets the user choose which report to print:

```
QUERY ([People])
If (OK=1)
  QR REPORT ([People];"";False;False;False)
End if
```

3. The following example lets the user query the [People] table, and then displays the Report editor so the user can design, save, load and print any reports:

```
QUERY ([People])
If (OK=1)
  QR REPORT ([People];Char(1);False;False;False)
End if
```

QR REPORT TO BLOB

QR REPORT TO BLOB (area;blob)

Parameters	Type	Description
area	Longint	→ Reference of the area
blob	BLOB	← Blob that houses the Quick Report

The QR REPORT TO BLOB command places the report whose reference was passed in area in a BLOB (variable or field).

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid blob parameter, the error 64 will be generated (“A picture field or variable was espected”).

The following statement assigns the Quick Report stored in MyArea into a BLOB Field.

```
QR REPORT TO BLOB (MyArea:[Table 1]Field4)
```

QR RUN

QR RUN(area)

Parameters	Type	Description
area	longint	→ Reference of the area to execute

The QR RUN command executes the report area whose reference was passed as parameter with the Quick Report current settings, including the output type.

If you pass an invalid area number, the error 9850 will be generated.

QR SET AREA PROPERTY

QR SET AREA PROPERTY(area;property;value)

Parameters	Type	Description
area	Longint	→ Reference of the area
property	Longint	→ Palette designated

Parameters	Type	Description
value	Longint	→ 0 = visible 1 = invisible

The QR SET AREA PROPERTY command allows you to display or hide the interface element (palette or menu bar) whose reference is passed in option.

The menu bar and toolbars are numbered from 1 to 6 (top to bottom) and the value 7 is dedicated to the contextual menu.

You can use the constants from the QR Area Properties theme to designate the interface item.

Property	Constant	Description
Menu bar	QR view menubar (1)	Display status of the menu bar (Displayed=1, Hidden=0)
Standard palette	QR view standard toolbar (2)	Display status of the Standard palette (Displayed=1, Hidden=0)
Style palette	QR view style toolbar (3)	Display status of the Style palette (Displayed=1, Hidden=0)
Computation palette	QR view computation toolbar (4)	Display status of the Computation palette (Displayed=1, Hidden=0)
Column palette	QR view column toolbar (5)	Display status of the Column palette (Displayed=1, Hidden=0)
Color palette	QR view color toolbar (6)	Display status of the Color palette (Displayed=1, Hidden=0)
Contextual menu	QR view contextual menu (7)	Display status of the Contextual menu (Displayed=1, Hidden=0)

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid property parameter, the error 9852 will be generated.

QR SET BORDERS

QR SET BORDERS(area ; column ; row; border; line{ ;color})

Parameters	Type	Description
area	Longint	→ Reference of the area
column	Longint	→ Column number
row	Longint	→ Row number
border	Longint	→ Border composite value

Parameters	Type	Description
line	Longint	→ Line thickness
color	Longint	→ Border color

The command QR SET BORDERS allows you to set the border style for a given cell.

area is the reference of the Quick Report area.

column is the column number of the cell.

row is the row number of the cell.

border is a composite value that indicates whose borders of the cell are to be affected:

- 1 indicates the left border
- 2 indicates the top border
- 4 indicates the right border
- 8 indicates the bottom border

For example, a value of 5 passed in border would affect the right and left borders.

line is the thickness of the line:

- 0 indicates no line
- 1 indicates a thickness of 1/4 point
- 2 indicates a thickness of 1/2 point
- 3 indicates a thickness of 1 point
- 4 indicates a thickness of 2 points

color is the color of the line:

- If color is a positive value, it indicates a specific color.
- If color equals 0, the color is black.
- If color equals -1, no changes are to be made.

Note The default color is black.

QR SET DESTINATION

QR SET DESTINATION(area; destination; {specifics})

Parameters	Type	Description
area	Longint	→ Reference of the area

Parameters	Type	Description
type	Longint	→ Type of the report
specifics	String Variable	→ Specifics linked to the output type

The QR SET DESTINATION command sets the output type of the report for the area whose reference was passed in area.

Destination	Constant (value)	Specifics
Printer	QR Printer (1)	N.A.
Text file	QR Text File (2)	File pathname
4D View	QR 4D View Area (3)	N.A.
4D Chart	QR 4D Chart Area (4)	N.A.
HTML file	QR HTML File (5)	Pathname to the HTML file

- Text File (2) :

If you pass an empty string as the file's pathname, a Save file dialog is going to be displayed, otherwise the file is saved at the location indicated by the path.

The default field delimiter is the tab character (ASCII 9). The default record delimiter is the carriage return character (ASCII 13). You can change these defaults by assigning values to the two delimiter system variables: FldDelimit and RecDelimit. If under Windows, FldDelimit equals 13, a char 10 (line feed) will be appended after the carriage return. Be aware that these variables are used by other commands such as IMPORT TEXT for example. Changing them for the quick Report editor, changes them everywhere in the application.

- 4D View (3) :

If 4D View is active for the user, a 4D View external window is created and populated with the results of the current settings of the Quick Report area.

- 4D Chart(4):

A 4D Chart external window is created and populated with the results of the current settings of the Quick Report area. For detailed information on how the translation is performed, please refer to the User Reference section of the Quick Report Editor documentation.

- **HTML file(5):**

An HTML file is created using the template set by SET HTML TEMPLATE. For detailed information on how the translation is performed, please refer to the User Reference section of the Quick Report Editor documentation.

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid destination value, the error 9852 will be generated.

The following code sets the destination as being the text file Mydoc.txt and executes the Quick Report:

```
QR SET DESTINATION(MyArea; 2; "MyDoc.txt")
QR RUN(MyArea)
```

QR SET DOCUMENT PROPERTY

QR SET DOCUMENT PROPERTY(area;option;value)

Parameters	Type	Description
area	Longint	→ Reference of the area
property	Longint	→ 1 = Printing dialog 0 = Document unit
value	Longint	→ Value for the property

The QR SET DOCUMENT PROPERTY command allows you to display the printing dialog or to define the unit used for the document.

- If property equals 1, the command applies to display of the print dialog.
 - If value equals 1, the print dialog is displayed prior to printing.
 - If value equals 0, the print dialog is not displayed prior to printing.
- If property equals 2, the command applies to the document unit.
 - If value equals 0, the document's unit is points.
 - If value equals 1, the document's unit is centimeters.
 - If value equals 2, the document's unit is inches.

You can use the following constants, located in the QR Document properties constant theme: qr Printing Dialog and qr Unit.

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid property value, the error 9852 will be generated.

QR SET HEADER AND FOOTER

QR SET HEADER AND FOOTER(area; selector; leftTitle; centerTitle; rightTitle; height{; picture}{; pictJustification})

Parameters	Type	Description
area	Longint	→ Reference of the area
selector	Longint	→ 1 = Header 2 = Footer
leftTitle	String	→ Text displayed on the left side
centerTitle	String	→ Text displayed in the middle
rightTitle	String	→ Text displayed on the right side
height	Real	→ Header or footer height
picture	Picture	→ Picture to display
pictAlignment	Longint	→ alignment attribute for the picture

The QR SET HEADER AND FOOTER command allows you to set the contents and size of the header or footer.

selector allows you to select the header or the footer. If selector equals 1, the header will be affected; if selector equals 2, the footer will be affected.

leftTitle, centerTitle and rightTitle are the values for, respectively, the left, center and right header/footer.

height is the height of the header/footer, expressed in the unit selected for the quick report.

picture is a picture that will be displayed in the header or footer.

pictAlignment is the alignment attribute for the picture passed in picture.

- If alignment equals 0, the picture is aligned to the left.
- If alignment equals 1, the picture is centered.
- If alignment equals 2, the picture is aligned to the right.

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid selector value, the error 9852 will be generated.

The following statement places the title “Center title” in the header for the Quick Report in MyArea and sets the header height to 200 pixels:

```
QR SET HEADER AND FOOTER(MyArea; 1; "" ; centerTitle;"" ; 200)
```

QR SET HTML TEMPLATE

QR SET HTML TEMPLATE (area; template)

Parameters	Type	Description
area	Longint	→ Reference of the area
template	text	→ HTML template

The QR SET HTML TEMPLATE command sets the HTML template currently used for the Quick Report area. The template will be used when building the report in HTML format. The template use a set of tags to process the data to either retain a layout close to the original report or to adopt your own custom HTML.

If you pass an invalid area number, the error 9850 will be generated.

Note Please note that you first need to call QR SET DESTINATION to set the output to HTML file.

HTML Tags

- `<!--#4DQRheader--> ... <!--/#4DQRheader-->`
The HTML contents that are included between those tags come from the column titles. You will typically use these tags to define the title row of the report.
- `<!--#4DQRrow--> ... <!--/#4DQRrow-->`
The HTML contents that are included between those tags are repeated for each data row (including detail and subtotal rows).
- `<!--col--> ... <!--/#4DQRcol-->`
The HTML contents that are included between those tags are repeated for each data column within a row. The column order will remain identical to the order in the report. When used in conjunction with `<!--#4DQRcol;n--> ... <!--/#4DQRcol;n-->`, the tags `<!--#4DQRcol--> ... <!--/#4DQRcol-->` will only go through the columns whose contents are not inserted using `<!--#4DQRcol;n--> ... <!--/#4DQRcol;n-->`.

For example, in a report that has five columns, you choose to use `<!--#4DQRcol;2--> ... <!--/#4DQRcol;2-->` to insert data from the second column, `<!--#4DQRcol--> ... <!--/#4DQRcol-->` will go, for each row through columns 1, 3, 4, and 5. These last tags ignore the column whose contents are published through `<!--#4DQRcol;2--> ... <!--/#4DQRcol;2-->`

- `<!--#4DQRcol;n--> ... <!--/#4DQRcol;n-->`
The HTML contents that are included between those tags are

extracted from the column in the report whose number is “n”. If, for example, you want to display a different column order in the HTML output in a three-column report, you could be using:

```
<!--#4DQRrow--> <!--#4DQRcol;3--> ... <!--/#4DQRcol;3--><!--#4DQRcol;2--> ... <!--/#4DQRcol;2--><!--#4DQRcol;1--> ... <!--/#4DQRcol;1--> <!--/#4DQRrow-->
```

In this example, the columns are inserted in the opposite order of the report.

- <!--#4DQRfont--> ... <!--/#4DQRfont-->

The HTML contents that are included between those tags will be assigned the font and font size of the current column or cell.

<!--#4DQRfont--> will be replaced by an HTML font definition and <!--/#4DQRfont--> will be replaced by the matching closing tag (</font-->).

- <!--#4DQRface--> ... <!--/#4DQRface-->

The HTML contents that are included between those tags will be assigned the font style of the current column or cell.

<!--#4DQRface--> will be replaced by an HTML face definition and <!--/#4DQRface--> will be replaced by the matching closing tag (</face-->).

- <!--#4DQRbgcolor-->

This color tag will be replaced by the current color for the current cell.

- <!--#4DQRdata-->

This tag will be replaced by the current data for the current cell.

- <!--#4DQRHeader-->, <!--#4DQRcHeader-->, and <!--#4DQRrHeader-->

These tags will be replaced respectively by the data in the left, center or right header.

- <!--#4DQRFooter-->, <!--#4DQRcFooter-->, and <!--#4DQRrFooter-->

These tags will be replaced respectively by the data in the left, center or right footer.

If you pass an invalid area number, the error 9850 will be generated.

QR SET INFO COLUMN

QR SET INFO COLUMN (area; colNum; title; object; hide; size; repeated-Value; displayFormat)

Parameters	Type	Description
area	Longint	→ Reference of the area
colNum	Longint	→ Column number
title	String	→ Title of the column
object	Field Variable	→ Object assigned for that column
hide	Longint	→ 0 = visible 1 = invisible
size	Longint	→ Column size
repeatedValue	Longint	→ 0 = not repeated 1 = repeated
displayFormat	String	→ Format for the data

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid ColNum value, the error 9852 will be generated.

List mode

The QR SET INFO COLUMN command allows you to set the parameters of an existing column.

area is the reference of the Quick Report area.

colNum is the number of the column to modify

title is the title that will be displayed in the header of the column.

object is the actual object of the column (variable, field or formula)

size is the size in pixels to assign to the column. If size equals -1, the size is made automatic.

displayFormat is the display format. Display formats are the 4D formats compatible with the data displayed.

repeatedValue is the status for data repetition. For example, if the value for a field or variable does not change from one record to the other it may or may not be repeated when they do not change. If repeatedValue equals 0, values are not repeated. If repeatedValue equals 1, values are repeated.

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid ColNum value, the error 9852 will be generated.

The following statement sets the title of column #1 to Title, sets the contents of the body to Field2, makes the column visible with a width of 150 pixels and sets the format to ###.##.

```
QR SET INFO COLUMN(area; 1; "Title"; "[Table 1]Field2";
0;150;0;"###.##")
```

Cross-tab mode

The QR SET INFO COLUMN command allows you to set the same parameters but the reference of the areas to which it applies is different and varies depending on the parameter you want to set. First of all, the parameters title, hide, and repeateValue are not used when that command is used in cross-tab mode. The value to use for column varies depending on whether you want to set the column size or the data source and display format.

- Column size:

This is a “visual” attribute, therefore columns are numbered from left to right, as depicted below.

column = 1	column = 2	column = 3
	[Invoices]Item	Line Total
[Invoices]Quarter	[Invoices]Quantity	Sum
	Sum	Average
Grand total	Sum	Sum
	Average	Average
	Min	Min

The following statement will set the size to automatic for all the columns in a cross-tab report and leaves other elements unchanged.

For (\$i;1;3)

```
QR GET INFO COLUMN(qr_area;$i;$title;$obj;$hide;$size;$rep;$format)
```

```
QR SET INFO COLUMN(qr_area;$i;$title;$obj;$hide;0;$rep;$format)
```

End for

You will notice that since you want to alter only the column size, you have to use QR GET INFO COLUMN to retrieve the column properties

and pass them to QR SET INFO COLUMN to leave it unchanged, except for the column size.

- Data source (object) and display format

In this case the numbering of columns operates as depicted below:

column = 2 column = 3 column = 1

	[Invoices]Item	Line Total
[Invoices]Quarter	[Invoices]Quantity	Sum
	Sum	Average
Grand total	Sum	Sum
	Average	Average
	Min	Min

You will notice that not all cells can be addressed through the command QR SET INFO COLUMN, the cells that are not numbered above are addressed through QR SET TOTALS DATA.

The following code assigns data sources to the three cells required for creating a basic cross-tab report:

```
QR SET REPORT TABLE(qr_area;Table(->[Invoices]))
ALL RECORDS([Invoices])
QR SET REPORT KIND(qr_area;2)
QR SET INFO COLUMN(qr_area;1;"";->[Invoices]Item;1;-1;1;""")
QR SET INFO COLUMN(qr_area;2;"";->[Invoices]Quarter;1;-1;1;""")
QR SET INFO COLUMN(qr_area;3;"";->[Invoices]Quantity;1;-1;1;""")
```

This would be the resulting report area:

	[Invoices]Item	
[Invoices]Quarter	[Invoices]Quantity	

QR SET INFO ROW

QR SET INFO ROW (area; row; hide)

Parameters	Type	Description
area	Longint	→ Reference of the area created
row	Longint	→ Row designator
hide	Longint	→ 0= visible 1= hide

The QR SET INFO ROW command displays/hides the row whose reference was passed in row.

row designates which row is affected:

- if row equals -1, the title of the report is affected
- if row equals -2, the detail of the report is affected
- if row equals -3, the grand total of the report is affected
- if row is a positive integer, it designates the subtotal (break) level that is affected

You can use constants from the QR Rows for Properties theme to designate the row item. (qr title=-1, qr detail=-2, qr grand total=-3)

hide specifies whether the line is visible or hidden. If hide equals 1, the row is set to hidden; if hide equals 0, the row is set to visible.

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid row value, the error 9852 will be generated.

The following statement hides the detail row:

QR SET INFO ROW (area; -2; 1)

QR SET REPORT KIND

QR SET REPORT KIND(area;type)

Parameters	Type	Description
area	Longint	→ Reference of the area
type	Longint	→ Type of the report

The QR SET REPORT KIND command sets the report type for the area whose reference was passed in area.

- If type equals 1, the report type is list
- If type equals 2, the report type is cross-tab

If you set a new type for an existing current report, it removes the previous settings and creates a new empty report, ready to be set.

You can also use the constants qr List Report and qr Cross Report from the theme QR Report Types.

QR SET REPORT TABLE

QR SET REPORT TABLE (area; table)

Parameters	Type	Description
area	Longint	→ Reference of the area
table	Longint	→ Table number

The QR SET REPORT TABLE command sets the current table for the report area whose reference was passed in area to the table whose number was passed in table.

It is critical that a table is assigned to the report since the report editor will be using the current selection for that table to display the data, perform computations and propagate relations, if needed.

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid table value, the error 9852 will be generated.

QR SET SELECTION

QR SET SELECTION(area;left;top;right;bottom)

Parameters	Type	Description
area	Longint	→ Reference of the area
left	Longint	→ Left boundary
top	Longint	→ Top boundary
right	Longint	→ Right boundary
bottom	Longint	→ Bottom boundary

The QR SET SELECTION command allows you to highlight a cell, a row a column or the entire area as you would with a mouse click. It also allows you to deselect the current selection.

left is the number of the left boundary. If left equals 0, the entire row is selected.

top is the number of the top boundary. If top equals 0, the entire column is selected.

right is the number of the right boundary.

bottom is the number of the bottom boundary.

Notes If both left and top equal 0, the entire area is highlighted.

If you want no selection, pass -1 to left, right, top and bottom.

If you pass an invalid area number, the error 9850 will be generated.

QR SET SORTS

QR SET SORTS(area;aColumns;{aOrders})

Parameters	Type	Description
area	Longint	→ Reference of the area
aColumns	Array real	→ Columns
aOrders	Array real	→ Sort orders

The QR SET SORTS command allows you to set the sort orders for the columns in the report whose reference is passed in area.

- **aColumns**
In this array, you need to store the column numbers of columns to which you want to assign a sort order.
- **aOrders**
Each element of this array must contain the sort orders for the matching column in the aColumns array.
 - If aOrders{\$i} equals 1, the sort order is ascending.
 - If aOrders{\$i} equals - 1, the sort order is descending.

If you pass an invalid area number, the error 9850 will be generated.

QR SET TEXT PROPERTY

QR SET TEXT PROPERTY(area;colNum; rowNum; property; value)

Parameters	Type	Description
area	Longint	→ Reference of the area
colNum	Longint	→ Column number
rowNum	Longint	→ Row number
property	Longint	→ Operator value for the cell
value	Longint	→ Value for the selected property

The command QR SET TEXT PROPERTY allow you to set the text attributes for the cell determined by colNum and rowNum.

- area is the reference of the Quick Report area.

- colNum is the number of the cell column.
- rowNum is the reference of the cell row.
 - if rowNum equals -1, it designates the column title.
 - if rowNum equals -2, it designates the detail area.
 - if rowNum equals -3, it designates the column grand total.
 - if rowNum equals -4, it designates the page header.
 - if rowNum equals -5, it designates the page footer.

You can use constants from the QR Rows for Properties theme to designate the row item. Constant Values are: qr title (-1), qr detail (-2), qr grand total (-3), qr header (-4), qr footer (-5)

Note When passing -4 or -5 as rowNum, you still need to pass a column number in colNum, even if it is not used.

- if rowNum is a positive value, it designates the corresponding subtotal (break level).
-

Note In cross-tab mode the principle is similar except for the row values that are always positive.

- property is the value or constant of the text attribute to assign. You can use constants from the QR Text Properties theme to designate the property item.
 - If property equals 1, the value is the font number as returned through Font number.

The following call assigns the font Times to the first column's title:

```
QR SET TEXT PROPERTY(qr_area;1;-1;1;Font number("Times"))
```

- If property equals 2, the value is the font size expressed in points (9 to 255).

The following call assigns the font size 10 to the first column's title:

```
QR SET TEXT PROPERTY(qr_area;1;-1;2;10)
```

- If property equals 3, the value is the Bold style attribute (0 or 1).

The following call assigns the font attribute Bold to the first column's title:

```
QR SET TEXT PROPERTY(qr_area;1;-1;3;1)
```

- If property equals 4, the value is the Italic style attribute (0 or 1).

The following call assigns italicizes the first column's title:

```
QR SET TEXT PROPERTY(qr_area;1;-1;4;1)
```

- If property equals 5, the value is the Underline style attribute (0 or 1).

The following call assigns underlines the first column's title:

```
QR SET TEXT PROPERTY(qr_area;1;-1;5;1)
```

- If property equals 6, the value is the Color value (longint) to apply to the text (Color number).

The following call assigns the color bright green to the first column's title:

```
QR SET TEXT PROPERTY(qr_area;1;-1;6;0x0000FF00)
```

- If property equals 7, the value is the text Justification attribute (0 for default, 1 for left, 2 for center or 3 for right).
- If property equals 8, the value is the background color.
- If property equals 9, the value is the alternate background color.

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid colNum number, the error 9852 will be generated.

If you pass an invalid rowNum number, the error 9853 will be generated.

If you pass an invalid property number, the error 9854 will be generated.

QR SET TOTALS DATA

```
QR SET TOTALS DATA(area;colNum; breakNum; operator)
```

Parameters	Type	Description
area	Longint	→ Reference of the area
colNum	Longint	→ Column number
breakNum	Longint	→ Break number
operator value	Longint String	→ Operator value for the cell or cell content

This command cannot create a subtotal.

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid colNum number, the error 9852 will be generated.

If you pass an invalid breakNum number, the error 9853 will be generated.

List Mode

The QR SET TOTALS DATA command allows you to set the details of a specific break (total or subtotal).

area is the reference of the Quick Report area.

colNum is the column number of the cell whose data is going to be set.

breakNum is the number of the break whose data will be set(subtotal or grand total). For a Subtotal, breaknum is the sort number. For the grand total, breaknum equals -3 or the constant qr grand total.

operator is an addition of all the operators in the cell:

- If operator equals 0, there is no operator.
- If operator equals 1, the operator is Sum.
- If operator equals 2, the operator is Average.
- If operator equals 4, the operator is Max.
- If operator equals 8, the operator is Min.
- If operator equals 16, the operator is Count.

You can use the constants from the QR operators theme to designate the operator.

value is the text to be placed in the cell.

4D Server Operator/value is mutually exclusive, so you either set an operator or a text.

You can pass the following values

- # for the value that triggered the break or subtotal
- ##S will be replaced by the sum.
- ##A will be replaced by the Average.
- ##C will be replaced by the Count
- ##X will be replaced by the Max.

- ##N will be replaced by the Min.

- ##xx, where xx is a column number. This will be replaced by that column's value, using its formatting. If this column does not exist, then it will not be replaced

Cross-tab Mode

The QR SET TOTALS DATA command allows you to set the details of a specific cell.

area is the reference of the Quick Report area.

colNum is the column number of the cell whose data is going to be set.

breakNum is the row number of the cell whose data is going to be set.

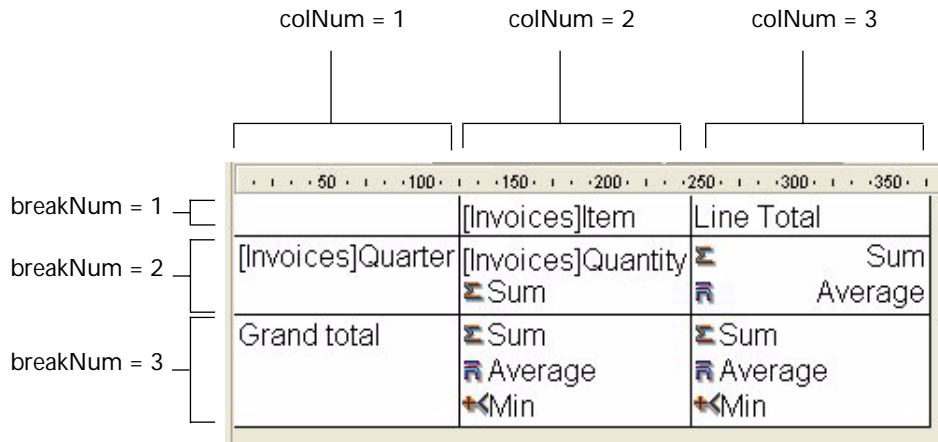
operator is an addition of all the operators present in the cell:

- If operator equals 0, there is no operator.
- If operator equals 1, the operator is Sum.
- If operator equals 2, the operator is Average.
- If operator equals 4, the operator is Max.
- If operator equals 8, the operator is Min.
- If operator equals 16, the operator is Count.

You can use the constants from the QR operators theme to designate the operator.

value is the text to be placed in the cell.

Here is a depiction of how the parameters column and break have to be combined in cross-tab mode:



Supported Types of Data:

The types of data that you can pass are of two basic kinds:

- **Title**
A title is passed through the parameter value. The value is actually a string and can be passed only for the following cells: column=3 breakNum =1 and column = 1 and breakNum =3.
- **Operator**
An operator or a combination of operators (as described above) can be passed for the following cells:
 - column=2, breakNum =2
 - column=3, breakNum =2
 - column=2, breakNum =3
Please note that these last two values affect the cell (Column 3; Row 3) as well. If a computation is defined in the cell (Column 2; Row 3), the contents of the cell (Column 2; Row 3) always define the contents of the cell (Column 3; Row 3).

QR SET TOTALS SPACING

QR SET TOTALS SPACING(area; subtotalNumber;value)

Parameters	Type	Description
area	Longint	→ Reference of the area
subtotal	Longint	→ Column number

Parameters	Type	Description
value	Array real →	0: no space 32000 : inserts a page break Positive value: spacing added at the top of the break level. Negative value: proportional increase

The command QR SET TOTALS SPACING allows you to set a space above a subtotal row. It applies only to the list mode.

area is the reference of the Quick Report area.

subtotal is the subtotal level (or break level) that will be affected.

value defines the value of the spacing:

- If value equals 0, no space is added.
- If value equals 32000 a page break is inserted.
- If value is a positive value, it expresses the spacing value in pixels.
- If value is a negative value, it expresses the spacing as a percentage of the subtotal row. For example, -100 will set a space of 100% above the subtotal row.

Note If the space above a subtotal row “pushes” the row to the next page, there will be no space inserted above the row on that page.

If you pass an invalid area number, the error 9850 will be generated.

If you pass an invalid subtotalNumber, the error 9852 will be generated.

3 Constants

Theme QR Reports Types

Constant	Value
qr list report	1
qr cross report	2

Theme QR Destination

Constant	Value
qr printer	1
qr text file	2
qr 4D View area	3
qr 4D Chart area	4
qr HTML file	5

Theme QR Rows for Properties

Constant	Value
qr title	-1
qr detail	-2
qr grand total	-3
qr header	-4
qr footer	-5

Theme QR Text Properties

Constant	Value
qr font	1
qr font size	2
qr bold	3
qr italic	4
qr underline	5
qr text color	6
qr justification	7
qr background color	8
qr alternate background color	9

Theme QR Area Properties

Constant	Value
qr view menubar	1
qr view standard toolbar	2
qr view style toolbar	3
qr view operators toolbar	4
qr view column toolbar	5
qr view color toolbar	6
qr view Contextual menus	7

Theme QR Document Properties

Constant	Value
qr printing dialog	1
qr unit	2

Theme QR Operators

Constant	Value
qr sum	1
qr average	2
qr max	4

Constant	Value
qr min	8
qr count	16

Theme QR Borders

Constant	Value
qr left border	1
qr top border	2
qr right border	4
qr bottom border	8
qr inside vertical border	16
qr inside horizontal border	32

Theme QR Commands

Constant	Value
qr cmd bold	500
qr cmd italic	501
qr cmd underline	502
qr cmd left justified	503
qr cmd center justified	504
qr cmd right justified	505
qr cmd sum	506
qr cmd average	507
qr cmd min	508
qr cmd max	509
qr cmd count	510
qr cmd plain	511
qr cmd default justified	512
qr cmd font dropdown	1000
qr cmd font color palette	1002
qr cmd back color palette	1003
qr cmd new	2000
qr cmd open	2001
qr cmd save	2002
qr cmd save as	2003

Constant	Value
qr cmd revert to save	2004
qr cmd header and footer	2005
qr cmd page setup	2006
qr cmd print preview	2007
qr cmd execute	2008
qr cmd style toolbar	2050
qr cmd operators toolbar	2051
qr cmd back colors toolbar	2052
qr cmd standard toolbar	2053
qr cmd columns toolbar	2054
qr cmd printer destination	2500
qr cmd disk file destination	2501
qr cmd graph destination	2502
qr cmd 4D view destination	2503
qr cmd HTML file destination	2504
qr cmd insert column	2600
qr cmd delete column	2601
qr cmd hide column	2602
qr cmd edit column	2603
qr cmd repeated values	2604
qr cmd automatic width	2605
qr cmd format	2606
qr cmd hide line	2607
qr cmd add column	2608
qr cmd borders	2609
qr cmd totals spacing	2610
qr cmd move left	3002
qr cmd move right	3003

4 Error Codes

9850: Invalid area parameter passed to an external command.

9851: Invalid parameter number 1.

9852: Invalid parameter number 2.

9853: Invalid parameter number 3.

9854: Invalid parameter number 4.

9855: Invalid parameter number 4.

5

Basic Form Examples

Creating a Basic List Form

This section describes a basic example of list form. Here we will describe a basic hard-coded report. This is just an example of how to proceed with basic column assignment, breaks, and titles. In “real life” you would most likely not use a hard-coded report, you would either create it manually first and then store it or provide the interface to let your users define a form manually. In this example, the data consists of item sales that are stored in a single table. In this table there are the following fields:

Invoices	
Country	Ax
Item	Ax
Quantity	2 ¹⁶
Quarter	Ax

This table is an invoice table where each invoice record has a country of purchase, an item denomination, a number of items and a quarter of purchase. The typical data would look as follows:

Country :	Item :	Quantity :	Quarter :
UK	Remote control	3	Q1
USA	AV Preamplifier	9	Q3
UK	Power module	1	Q3
Italy	Remote control	1	Q1
Germany	Remote control	6	Q1
France	AV Preamplifier	1	Q2
UK	Power module	8	Q3
USA	Remote control	6	Q3
France	Remote control	4	Q1
France	Power module	4	Q1
Germany	Remote control	10	Q1
Germany	AV Preamplifier	6	Q2
France	Remote control	6	Q2
Italy	Power module	6	Q2
UK	Power module	8	Q4
Italy	Remote control	10	Q3
Italy	AV Preamplifier	5	Q1
France	Power module	8	Q2
Germany	Power module	7	Q2
USA	AV Preamplifier	9	Q4
USA	Remote control	9	Q2
Italy	Power module	10	Q1
Italy	AV Preamplifier	1	Q3

The report we are going to create should look like this:

Nation	Device	Quantity sold
France	AV Preamplifier	1
		2
		4
		5
		6
		7
		8
		9
		10
	Power module	4
		6
		7
		8
	Remote control	4
		5
		6
		7
		9
		10
	Accumulated orders	141

The idea here is to display each invoice for a given country, sorted by equipment type and by country. You will notice that the equipment type and country are not repeated for each record, they are displayed only when their value change.

Here is the Quick Report area as it should appear in the dialog:

	[Invoices]Country	[Invoices]Item	[Invoices]Quantity	
Header	Nation	Device	Quantity sold	
Detail				
[Invoices]Quantity changed				
[Invoices]Item changed				
[Invoices]Country changed		Accumulated		Sum
Total				

Here is the code from which it originated:

```

OR SET REPORT KIND(qr_area;1)
OR SET REPORT TABLE(qr_area;Table(->[Invoices]))
ARRAY REAL($ColOrdered;3)
ALL RECORDS([Invoices])
OR INSERT COLUMN(qr_area;1;->[Invoices]Quantity)
OR INSERT COLUMN(qr_area;1;->[Invoices]Item)
OR INSERT COLUMN(qr_area;1;->[Invoices]Country)
OR SET INFO COLUMN(qr_area;1;"Nation";->[Invoices]Country;0;-1;0;""")
OR SET INFO COLUMN(qr_area;2;"Device";->[Invoices]Item;0;-1;0;""")
OR SET INFO COLUMN(qr_area;3;"Quantity sold";->[Invoices]Quantity;0;-1;0;""")
For ($i;1;3)
  $ColOrdered{$i}:=$i
End for
ARRAY REAL($Orders;3)
For ($i;1;3)
  $Orders{$i}:=$i
End for
OR SET SORTS(qr_area;$ColOrdered;$Orders)

```



```
QR SET TOTALS DATA(qr_area;3;3;1)
QR SET TOTALS DATA(qr_area;2;3;"Accumulated orders")
```

This code is applied to a new Quick Report document stored whose plug-in area is named `qr_area`.

Initializing the New Quick Report

The first three line are dedicated to choices that are usually taking place at the inception of the report:

```
QR SET REPORT KIND(qr_area;1)
```

This statement sets the report type to List. By default, the report type is List, but it is advisable to actually always force it, so that you always know which report type is selected.

```
QR SET REPORT TABLE(qr_area;Table(->[Invoices]))
```

This statement tells 4D what table is to load. It is mandatory to select a table for a report since 4D will otherwise only load the table of the form that houses the Quick Report area. This could interfere with the actual contents of the selection on which the report is based.

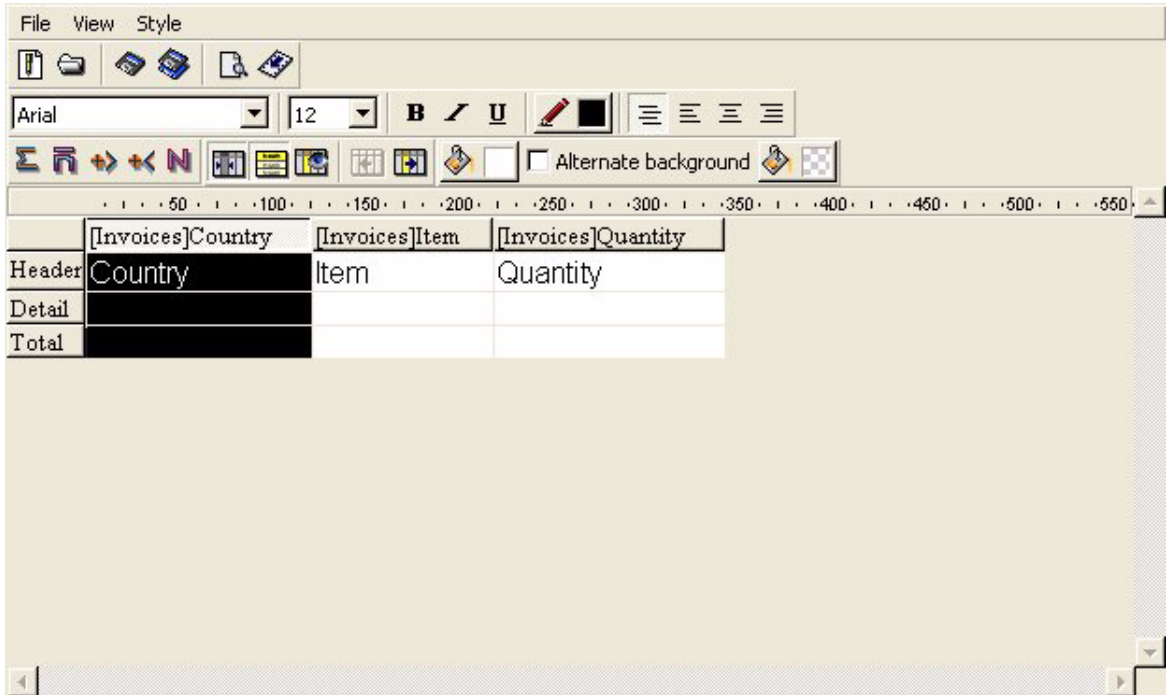
Column Insertion and Modification

This is handle by the following code:

```
QR INSERT COLUMN(qr_area;1;->[Invoices]Quantity)
QR INSERT COLUMN(qr_area;1;->[Invoices]Item)
QR INSERT COLUMN(qr_area;1;->[Invoices]Country)
QR SET INFO COLUMN(qr_area;1;"Nation";->[Invoices]Country;0;-1;0;"")
QR SET INFO COLUMN(qr_area;2;"Device";->[Invoices]Item;0;-1;0;"")
QR SET INFO COLUMN(qr_area;3;"Quantity sold";->[Invoices]Quantity;0;-1;0;"")
```

The command `QR INSERT COLUMN` is used to create the columns by inserting them one by one. You will notice, that, since this is an insertion of the first column each time, it sequence begins with the

rightmost column first. After these statements, the area would look like this:



You will notice that the default column titles are the field names and you may want them to be replaced by their interface names.

This is achieved through the use of the command QR SET INFO COLUMN:

```
QR SET INFO COLUMN(qr_area;1;"Nation";->[Invoices]Country;0;-1;0;"")
QR SET INFO COLUMN(qr_area;2;"Device";->[Invoices]Item;0;-1;0;"")
QR SET INFO COLUMN(qr_area;3;"Quantity sold";->[Invoices]Quantity;0;-1;0;"")
```

The calls above are very similar to calls to the QR INSERT COLUMN command: they assign a new column title, specify the data source again, make sure the column is visible, that its size is automatic and that values are not repeated.

Creating Break Levels

Break levels are created by sorts levels through the statement:
 QR SET SORTS(qr_area;\$ColOrdered;\$Orders)

QR SET SORTS accepts two arrays: one for the columns that are to be sorted and another one for the actual sort orders.

In our examples the two arrays affect an ascending order to all the columns. They are handled by the following loops:

```
For ($i;1;3)
    $ColOrdered{$i}=$i
End for
ARRAY REAL($Orders;3)
For ($i;1;3)
    $Orders{$i}=1
End for
```

By now, the quick report area looks as follows:

The screenshot shows the Quick Report Editor interface. The table displayed has the following structure:

	[Invoices]Country	[Invoices]Item	[Invoices]Quantity
Header	Nation	Device	Quantity sold
Detail			
	[Invoices]Quantity changed		
	[Invoices]Item changed		
	[Invoices]Country changed		
Total			

You will notice that the subtotal levels have been created and you can now assign them dedicated contents (title, calculations, variables etc.).

Assigning Break Data

This is handled by the following code:

```
QR SET TOTALS DATA(qr_area;3;3;1)
QR SET TOTALS DATA(qr_area;2;3;"Accumulated orders")
```

The first statement assigns a sum to the third break level. This will display the sum of all invoices for a specific product in a specific country.

The next statement assigns a static content to the second column of the third break area: “Accumulated orders“ in this case. This is how you will display a title for a break area.

Creating a Basic Cross-tab Report

This section describes a basic example of a Cross-tab report. Here, we will describe a basic hard-coded report. This is just an example of how to proceed with basic column assignment, breaks, and titles. In “real life” you would most likely not use a hard-coded report, you would either create it once manually and then store it, or provide the interface to let your users define a form manually. In this example, the data is similar to that used in the previous example.

In this example, we are trying to create a table that describes the sales volume by quarters:

	AV Preamplifier	Power module	Remote control	Line Total
Q1	34	29	39	102
				10526316
Q4	48	64	21	133
				66666667
Q3	49	68	40	157
				48148148
Q2	64	74	47	185
				66666667
Grand total	195	235	147	577
	5.90909090909	5.875	5.44444444444	5.77
	1	1	1	1

If, for example, we have a closer look at the first column, we obtain from top to bottom the sales were 34 units for Q1, 48 for Q2 and so on. There were 195 AV preamplifiers sold, the invoice quantity average is slightly above 5.9 and the minimum quantity is 1.

Here is the report as it should appear in the Quick Report area:

	[Invoices]Item	Line Total	
[Invoices]Quarter	[Invoices]Quantity	Σ	Sum
	Σ	Ⓜ	Average
Grand total	Σ	Σ	Sum
	Ⓜ	Ⓜ	Average
	Ⓜ	Ⓜ	Min

As with the previous example, the report is hard-coded. This time the code is as follows:

```

\ Cross table report builder
\ We go into cross mode
QR SET REPORT KIND(qr_area;2)
QR SET REPORT TABLE(qr_area;Table(->[Invoices]))
\ Sets the column source.
\ Those are the fields that will become column title
\ Column is 1, title is unused in cross-table mode
\ visible is unused, width is set to automatic, and repeat is unused
QR SET INFO COLUMN(qr_area;1;"";->[Invoices]Item;1;-1;1;""")
\ Sets the column total title
QR SET TOTALS DATA(qr_area;3;1;"Line Total")

\ Sets the line source. Those are the fields that will become line titles
\ Column is 2, title is unused in cross-table mode
\ visible is unused, width is set to automatic, and repeat is unused
QR SET INFO COLUMN(qr_area;2;"";->[Invoices]Quarter;1;-1;1;""")

```

` Sets the cell source. This field/formula has to be numeric/Time
 ` Column is 3, title is unused in cross-table mode
 ` visible is unused, width is set to automatic, and repeat is unused
QR SET INFO COLUMN(qr_area;3;"";->[Invoices]Quantity;1;-1;1;"")
 ` Now, we set the computation we want in those cells.
QR SET TOTALS DATA(qr_area;2;2;1)

` Now, we setup the line computation.
QR SET TOTALS DATA(qr_area;3;2;3)

` Now we can setup the grand total label
QR SET TOTALS DATA(qr_area;1;3;"Grand total")

` The column computation
QR SET TOTALS DATA(qr_area;2;3;7)

You will notice that the entire process is actually simpler with a Cross-tab report than with a List report. This is explained by the fact that a Cross-tab report uses only three data sources: one for the columns, one for the lines and one for the center cell. Once they have been defined you can define additional calculations for the cells.

Initializing the New Quick Report

The first two lines are dedicated to choices that are usually taking place at the inception of the report:

QR SET REPORT KIND(qr_area;2)

This statement sets the report type to Cross-tab. By default, the report type is List, so it is mandatory to switch to the Cross-tab mode.

QR SET REPORT TABLE(qr_area;Table(->[Invoices]))

This statement tells 4D what table is to load. It is mandatory to select a table for a report since 4D will otherwise only load the table of the form that houses the Quick Report area. This could interfere with the actual contents of the selection on which the report is based.

Setting the Data Sources

The first step that follows initialization is defining the data sources. As specified earlier, there will be one data source for the columns and one data source for the lines.

The first statement sets the data source for the column. You will notice that the parameters title, visible and repeated are not used in cross-tab mode. That statement also sets the width to Automatic.

The data sources have now been set, the additional computations remain to be set as well as the title for the grand total line:

The following statement sets the computation for the cell to Sum.

```
QR SET TOTALS DATA(qr_area;2;2;1)
```

The following statement sets the computation for the line to Sum and Average.

```
QR SET TOTALS DATA(qr_area;3;2;3)
```

The following statement sets the title for the bottom line to “Grand Total”.

```
QR SET TOTALS DATA(qr_area;1;3;"Grand total")
```

Finally, the last statement inserts the computations (Sum, Average and Min) for the entire Grand Total line:

```
QR SET TOTALS DATA(qr_area;2;3;7)
```

At this point, the Quick Report area is set as needed:

