SAP Crystal Solutions
SAP Crystal Reports and SAP Crystal Server

Step by Step guide: Create a Sales Report
With SAP Crystal Reports 2020

THE BEST RUN **SAP**

CREATE A SALES REPORT

As SAP Crystal Reports is an infinitely flexible reporting tool not limited to any particular industry or report type, sales reporting presents no more of a challenge than any other kind of reporting. And, there are many features of SAP Crystal Reports that lend themselves to insightful analysis of sales trends, salesperson performance, product mix analysis, and on and on.

Take advantage of SAP Crystal Reports features to maximize sales reporting benefits:
- Report parameters allow your reporting audience to customize reports to their needs, prompting for date ranges, sales territories, sales rep groups, and so forth.

- Drill down capabilities permit interactive analysis over different levels of detail with natural "click to drill deeper" hierarchies and relationships.

- Rich graphics capabilities permit more visual analysis capabilities, moving away from less intuitive "rows and columns of numbers" data presentation.

- The companion SAP Crystal Server product with Concurrent Access Licensing permits interactive sales reports to be run on-demand in any web browser by a wide audience both inside, and outside, your organization.

Steps for creating a sales report are similar to other reports.
1. Connect to a data source. Add and join necessary tables. Other white papers on the SAP Crystal Reports Guides website discuss details. Other reporting techniques discussed in other white papers on the same site will also be helpful.

2. As you design, double-check accuracy of your results. The example in this white paper presents a potential issue with orders detail and orders summary data appearing in the same data source. This can easily result in inflated, inaccurate totals if you summarize the wrong fields.
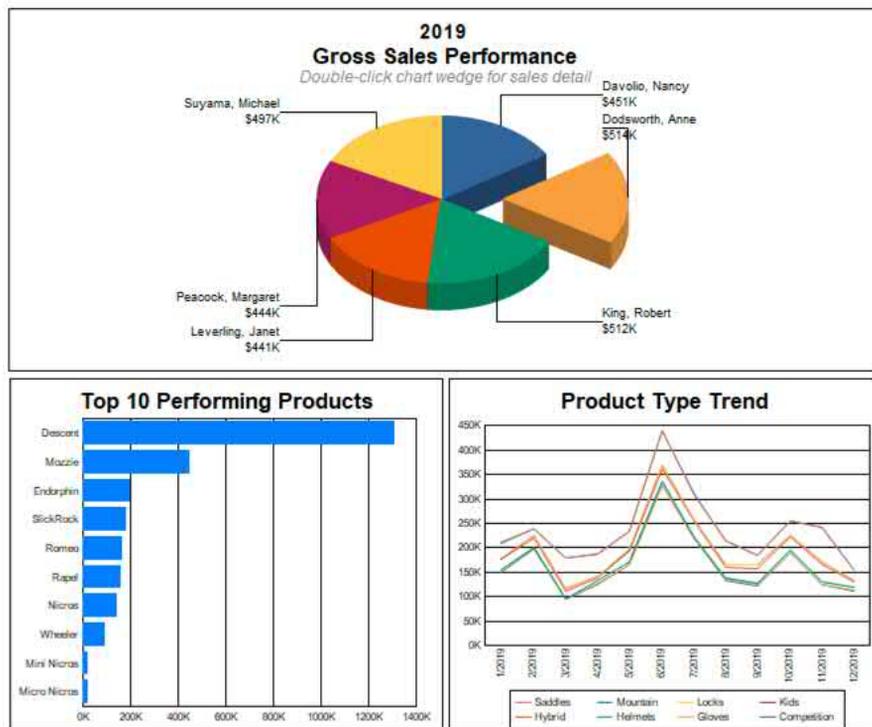
Consider a finished sales report. When the report is refreshed, the viewer is prompted for several items:

Once values are supplied the main report view appears. This is designed in a high-level "dashboard" style with three graphical charts presented.

In addition to the salesperson pie chart, the dashboard presents a Top 10 Performing Products horizontal bar chart and a Product Type Trend chart visualizing sales trends month-over-month by product type.

Interactive drill down is available from the pie chart. A DOUBLE-CLICK (SINGLE-CLICK in SAP Crystal Server) on the desired pie wedge will drill down into that salesperson group.

A viewer can return to the main dashboard by clicking the Preview tab. From there, they may drill down on other salesperson pie wedges, creating additional drill down tabs.

PROVIDE INTERACTIVITY WITH PARAMETERS

When the report is first refreshed, two prompts appear. These are created by use of report Parameter Fields. One parameter field is used in the report record selection formula with the other used to conditionally format a report section.

To create a parameter field:
1. RIGHT-CLICK on the Parameter Fields category in the Field Explorer. Choose New from the context menu. The Parameter dialog box will appear.

2. Give the parameter field a meaningful name and select the desired data type (the data type you choose will depend on how you plan on using the parameter in record selection, report formulas, or conditional formatting).

3. Other parameter field choices will depend on your particular requirement. In this case, the parameter is provided with three values for a static picklist, the prompt text is customized, and the ability to supply a custom value is set to False.

Once a parameter field is created, you may use it in most all areas of report design, including conditional formatting and record selection. You may even drag a parameter field from the Field Explorer onto the report (or, even inside a text object) to display the value of the parameter field on the report itself.

In this example, the report will use the value from the parameter field to limit data to the selected year. Because the parameter is defined with a string data type and a date field in the data source will be compared to the parameter, a custom record selection formula must be used.
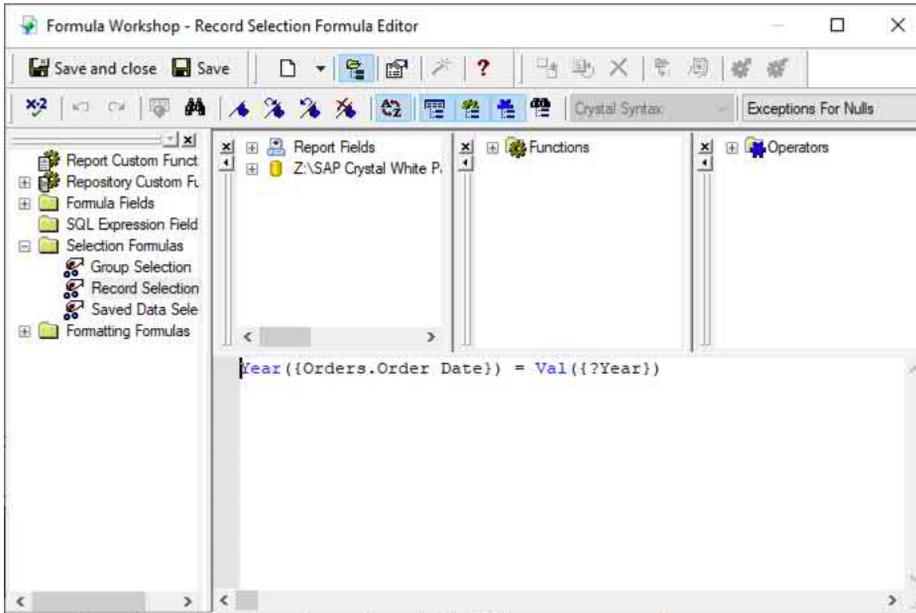
CAUTION: Depending on the type and size of your data source, using formula functions in a record selection formula may impact the performance of your report. This performance may be improved by creating a SQL Expression in the Field Explorer and using the SQL Expression in record selection.

PROVIDE DRILL DOWN WITH A GROUP CHART

SAP Crystal Reports contains a rich charting component. Chart interactivity is available with a Group Chart. A group chart makes use of an existing report group, and summary fields within the group, to enable drill down.

To create a group chart:

1. Ensure that groups have already been created on the report that you wish the chart to reflect. Drill down behavior can be tested with group name and group summaries prior to creating the group chart.

2. Select Insert | Chart from the drop-down menus, or click the Insert Chart toolbar button.

3. An outline of the chart will be placed on the mouse cursor. Drop the chart in a report section one level higher than the group you wish the chart to represent. In this case, because the Sales Rep group is the first group, the chart is placed in the Report Header.

4. RIGHT-CLICK on the chart and select Chart Expert from the context menu.

      a. On the Type tab, select the most appropriate type of chart based on the data the chart's group represents. Remember visual best practices!
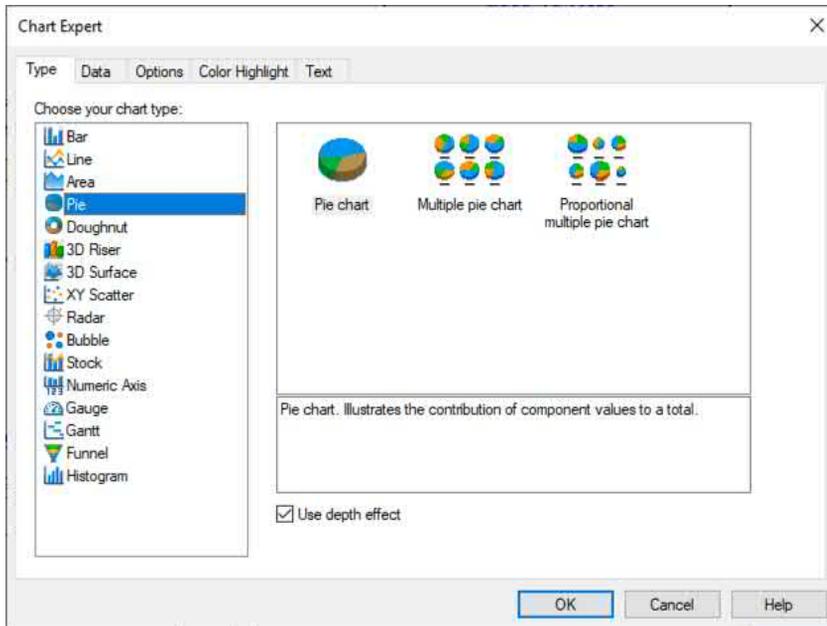
      b. On the Data tab, make sure the button is selected (it should be if you dropped the chart in a group or report header). Then, select the group field you wish to base chart elements (bars, pie wedges, and so forth) on from the On change of drop-down list (you may only have one option here, depending on where you dropped the chart). Select the numeric value you wish to use to determine chart element size from the Show drop-down list (if you don't see the desired value in this list, return to the report and Insert Summary using the desired field and re-display the Chart Expert).
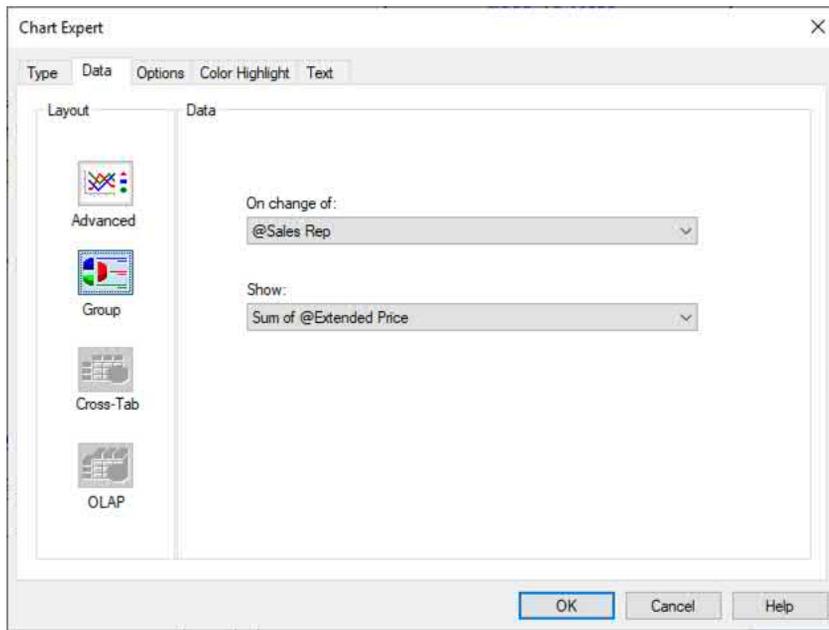
c. Use Options, Color Highlight, Axes, and Text tabs to further customize chart appearance.

CREATE A GROUP TO AVOID DUPLICATE DATA

Relationships between data tables may create situations that appear to duplicate records. In the data source used for this sample sales report, two tables with different levels of detail are joined, creating a "many-to-one" relationship. The Orders table contains one record per order, whereas the OrdersDetail table contains one record per line item within an order. If there are multiple line items within an order, a single Orders table record will repeat in the report for each line item within the order. If you place fields from the Orders table in the details section, duplicate records will appear when your viewer drills down, leading to confusion and potentially bad business decisions.

By creating a group on the Order ID field within the existing Sales Rep group and placing fields in the Order ID group header or footer, only one line will appear within a drill down tab for an order, regardless of how many line items it encompasses. The group headers and footers may then be set to Hide (Drill Down OK) from the section context menu. The details section may be set to Suppress (No Drill Down) unless you want the viewer to be able to drill down to individual order detail line items within an order.
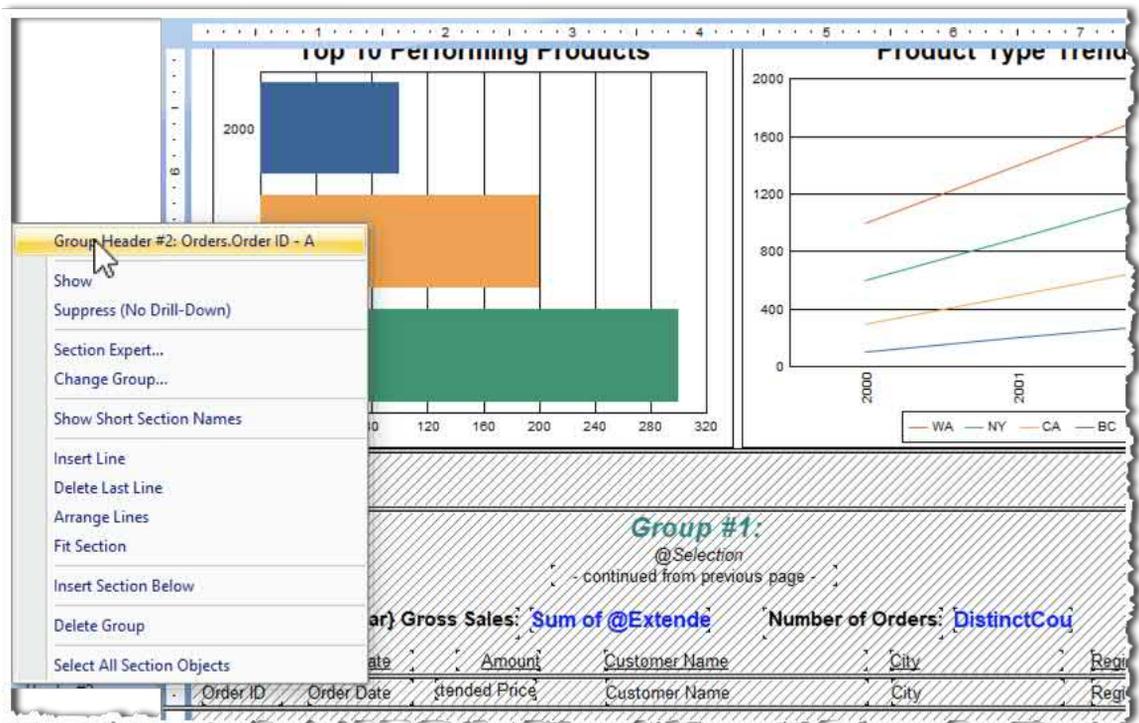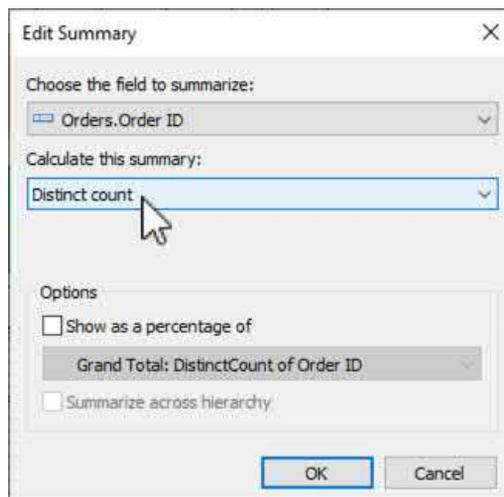
SUMMARIZE FIELDS PROPERLY FOR ACCURATE RESULTS

As discussed previously, many-to-one relationships may create the appearance of duplicate records. Also, subtotals or summaries based on fields in the "one" table may often inflate values because "one" table records will appear multiple times to match many table records. There are two general ways to avoid this problem:

• Summarize fields in the "many" table. Because many table records don't duplicate, summaries will accurately reflect true report data. For example, summing a calculated field using the "many" records, as opposed to a total from a "one" record field, will result in accurate sales totals.
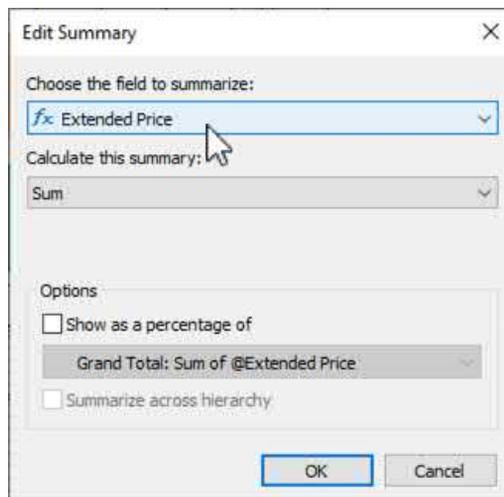
• Use Distinct Count summaries. Even if you summarize fields in the one table, a Distinct Count summary will only count unique values of a field. For example, if multiple records include the same Order ID, a distinct count of Order ID will reflect number of orders, not number of order details.
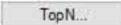
VISUALIZE DATA WITH ADVANCED CHARTS

As discussed previously, group charts provide the advantage of drill down interactivity. But, even if you don't have matching report groups to base charts on, you may use Advanced Charts to create graphics for any combination of fields in your data source, whether they're in use on the report or not. Adding advanced charts provide more leading-edge data visualization features to your reports, as opposed to old-style rows and columns of numbers.

To create an advanced chart:
1. Select Insert | Chart from the drop-down menus, or click the Insert Chart ![icon] toolbar button.

2. Drop the chart in the desired report section, depending on the number of times you wish the chart to appear and the underlying data you wish the chart to summarize. In this example, the chart should appear only once at the top of the report. As such, it will be placed in the report header.

3. RIGHT-CLICK on the chart and select Chart Expert from the context menu.
     a. On the Type tab, select the most appropriate type of chart based on the data the chart's group represents. Remember visual best practices!
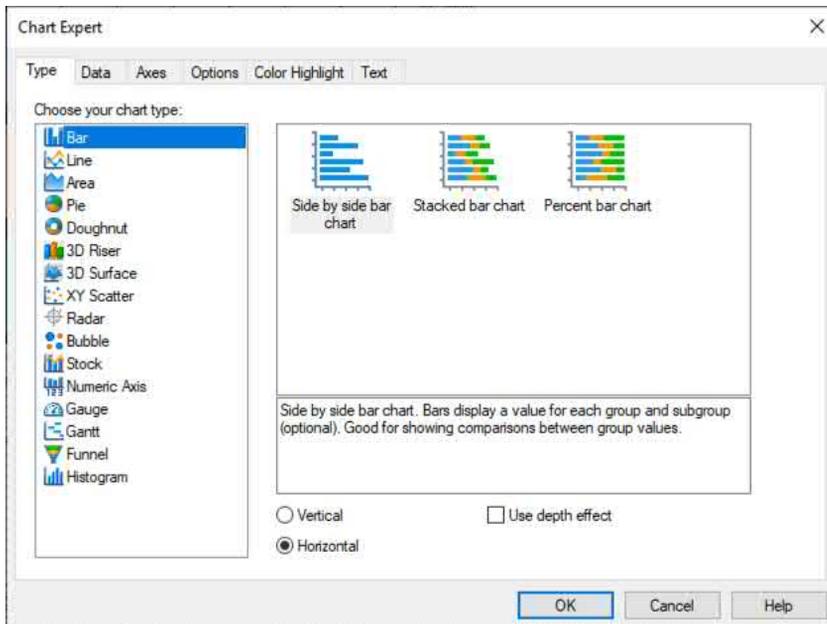

     b. On the Data tab, make sure the ![Advanced] button is selected (if you dropped the chart in a report that contains groups, a group chart may be selected by default). Then, select the database field you wish to base chart elements (bars, pie wedges, and so forth) on from the Available Fields list. Click the `>` button to add the field to the On change of box. Depending on the type of chart you selected in the Type tab, you may add more than one field to the On change of box. Additional options are available with the `Order...` `TopN...` buttons, such as the ability to choose the date level for date field, or to chart only the top or bottom N chart elements.

c. Select the database field you wish to determine chart element size from the Available Fields list. Click the ▸ button to add the field to the Show value(s) box. Depending on the type of chart you selected in the Type tab, you may add more than one field to the Show value(s) box. If you wish to modify the type of aggregation the chart will use with the selected field (sum, average, distinct count, and so forth) make desired choices with ☐ Don't summarize / Set Summary Operation... options.
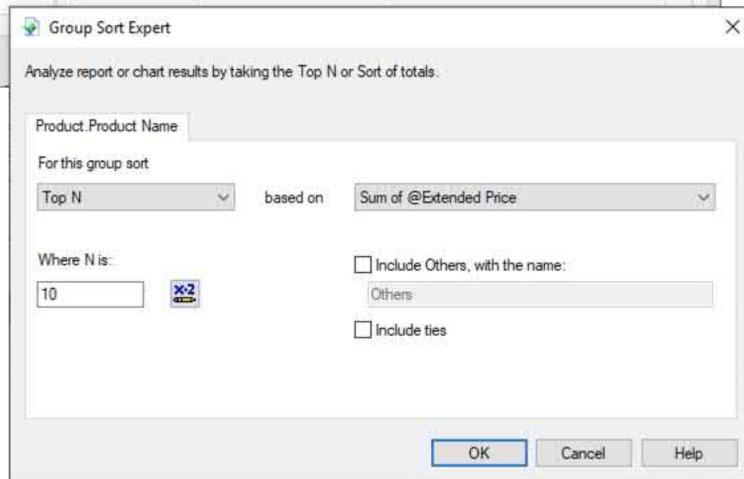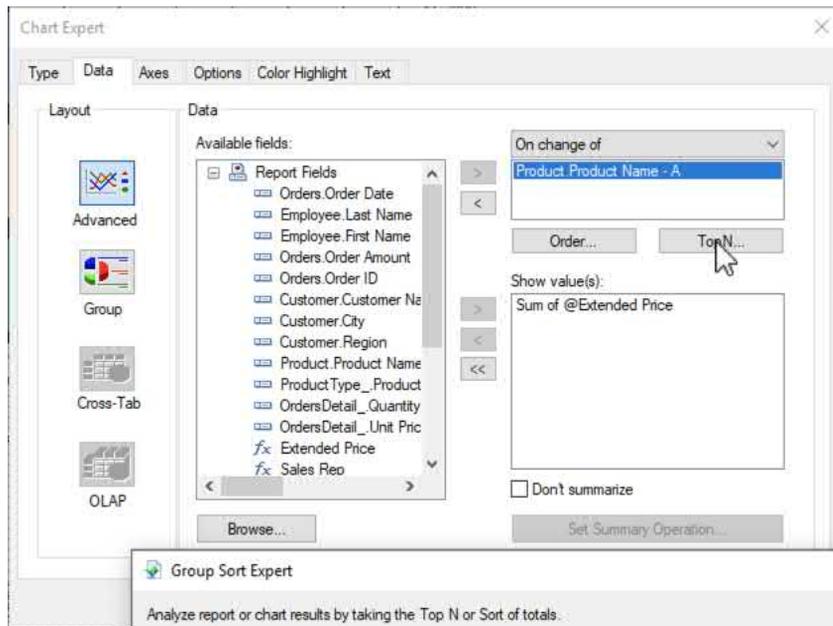

d. Use Options, Color Highlight, Axes, and Text tabs to further customize chart appearance.

CONDITIONALLY FORMAT OBJECTS AND REPORT SECTIONS

One of the standout features of SAP Crystal Reports is the infinitely flexible formula language. Similar in breadth to a high-level programming language, Crystal Reports formulas can customize appearance and behavior in virtually unlimited ways. Many formatting and appearance properties in various experts and dialog boxes appear with a conditional formatting button ![x-2] next to them. When clicked, the standard Crystal Reports Formula Editor appears, where a formula (from a simple one-line Boolean condition, to a robust multi-line logic construct) will set the value of the selected property "on the fly."

For example, a text object placed in a group header may have its Suppress property set conditionally to only appear if the group header is repeated from a previous page.
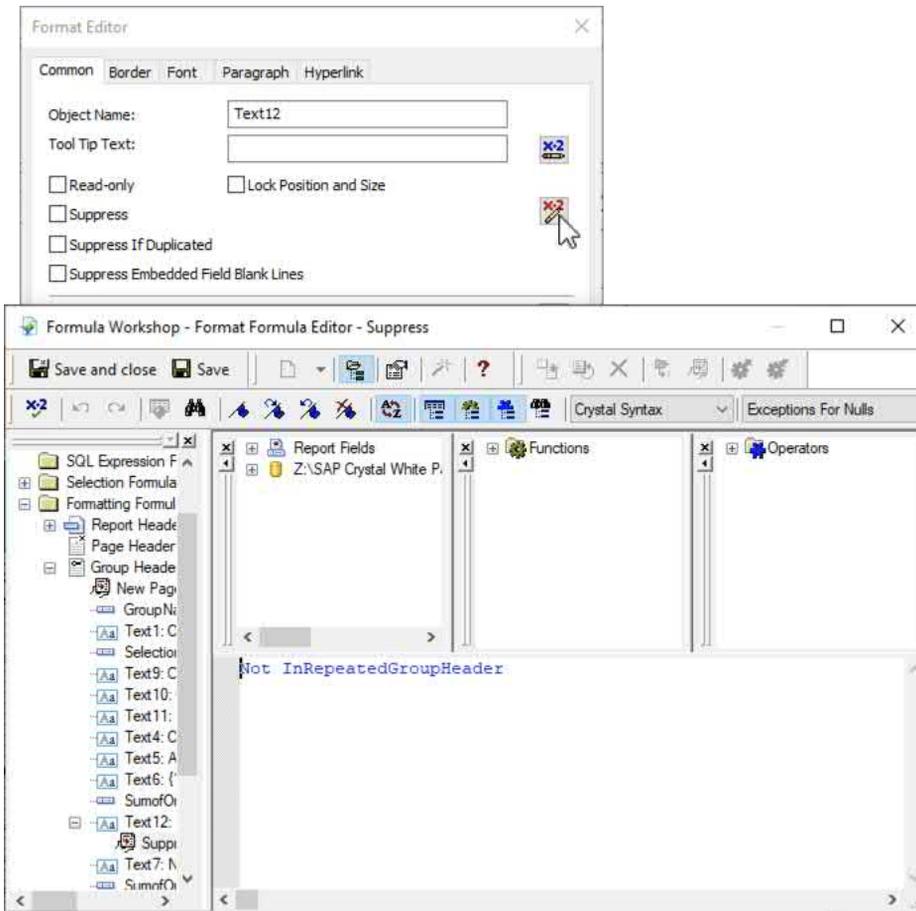
The result is a "- continued from previous page –" annotation that only appears on the second, and subsequent, pages of a multi-page group drill down tab.

When combined with parameter fields (discussed previously in this white paper), conditional formulas can control all kinds of formatting aspects. For example, an optional parameter field (a value may be supplied or the parameter may be left blank) may prompt for a dollar level to use for order highlighting:
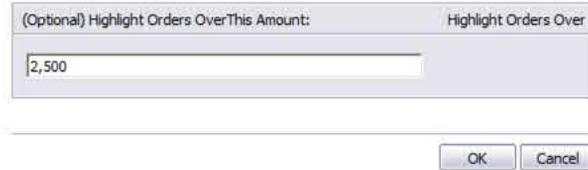
In the Section Expert's Color tab, a conditional formula may be supplied which tests whether the parameter contains a value. If so, the parameter's value is used to set the section background color.
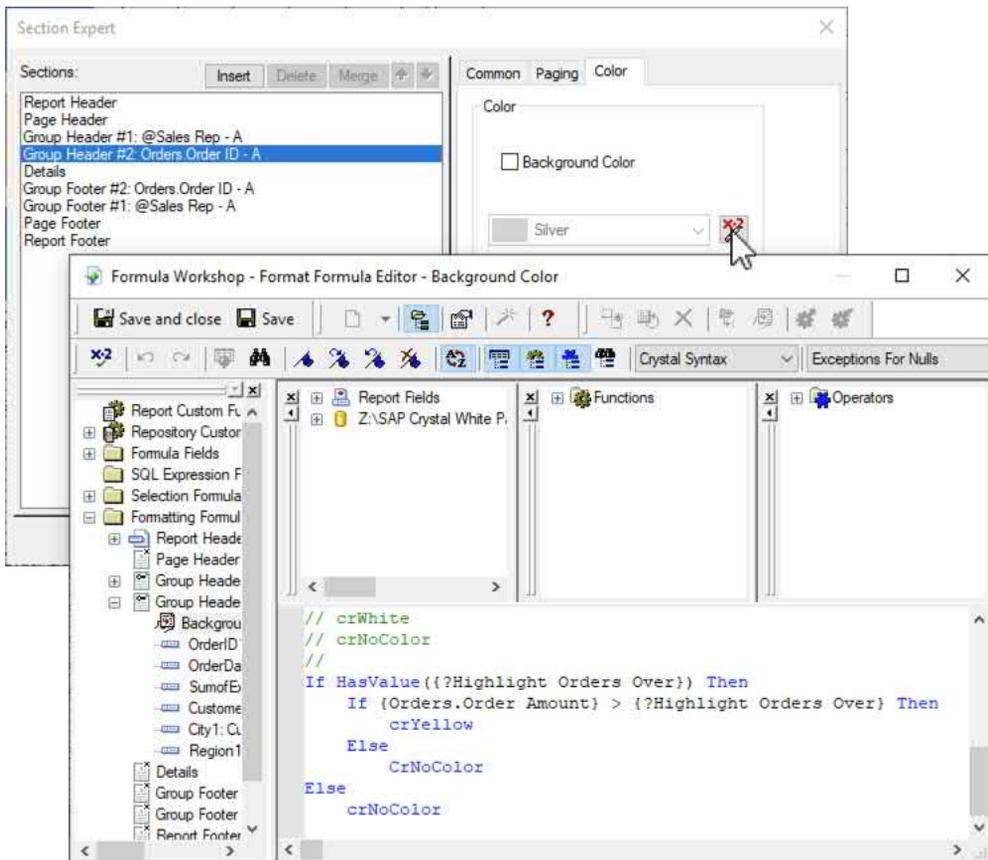
The resulting drill down tab highlights orders that exceed the value specified in the parameter field.

Dodsworth, Anne
Sales Year: 2019 - Orders over $2,500.00 highlighted.

2019 Gross Sales: $ 513,546   **Number of Orders: 255**

Order #	Order Date	Amount	Customer Name	City	Region
1121	1/1/2019	$851.77	Rough Terrain	Madison	WI
1125	1/2/2019	$75.42	Road Runners Paradise	Kingston	RI
1126	1/2/2019	$3,842.55	Platou Sport	Stavanger	Rogaland
1134	1/5/2019	$43.80	Paris Mountain Sports	Paris	Ile de France
1141	1/6/2019	$21.60	Paris Mountain Sports	Paris	Ile de France
1145	1/6/2019	$27.00	Pathfinders	DeKalb	IL
1149	1/7/2019	$329.85	Mountain Madmen Bicycles	Hightstown	NJ
1160	1/11/2019	$5,219.55	Fahrkraft Räder	Bonn	Nordrhein-Westfalen
1161	1/11/2019	$1,799.70	Rockshocks for Jocks	Austin	TX
1163	1/12/2019	$31.00	Wheels and Stuff	Clearwater	FL
1164	1/12/2019	$66.99	Road Runners Paradise	Kingston	RI
1172	1/14/2019	$101.70	Tyred Out	Santa Ana	CA
1176	1/15/2019	$101.70	Cyclopath	Kingston	RI
1182	1/15/2019	$161.70	Paris Mountain Sports	Paris	Ile de France
1190	1/15/2019	$2,478.60	Hercules Mountain Bikes	DeKalb	IL
1191	1/16/2019	$1,409.55	Warsaw Sports, Inc.	Warsaw	Warsaw
1192	1/16/2019	$2,987.20	The Great Bike Shop	Huntsville	AL
1203	1/19/2019	$14.50	Blazing Saddles	Brown Deer	WI
1212	1/19/2019	$70.50	The Bike Cellar	Winchester	VA
1215	1/20/2019	$43.50	Bike Shop from Mars	Newbury Park	CA
1221	1/22/2019	$5,341.24	The Biker's Path	DeKalb	IL

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