

## HUG 2005: Crystal Reports Advanced

The following is a script of the Crystal Reports Advanced training session. These tutorials should teach you how to use the following advanced features of Crystal Report

- Create a detail report with amount field totals using Crystal Reports outside of halFILE.
- Use the Report Wizard to make database connections and place fields on the report.
- Create user parameter prompts for selecting the data that will appear on the report.
- Create a summary report of the totals section from the detail report.
- Add a bar chart to the summary report.
- Add the summary report as a subreport to the detail report.
- Add a report the halFILE's Administrative Reports menu and run the report
- Set up and run the Consistency Check Report

### Tutorial 1: Create a Lenders Report with Crystal Reports

This tutorial shows the user how to connect to halFILE databases and select fields for Lender Detail report using Crystal Report's report creation wizard.

1. Go into Crystal Reports and click the new report icon.
2. Select options to create the report using the Report Wizard and choose the Standard Wizard.
3. Make the database connection and add the tables to use for the report as follows:
  - a. Click Create New Connection.
  - b. Click ODBC (RDO)
  - c. Select Find File DSN and browse to the ...\\halfile\dsn folder and select the dsn to your halFILE database (for example PCAHFWPR32.DSN). You will need to provide credentials for logging into the database.
  - d. Click on the + for the PCAHFWPR – dbo - Tables and add Primetable and Multi to the tables for the report.
  - e. Scroll back up and double click Make New Connection right under ODBC (RDO).
  - f. Click Find File DSN and browse to the ...\\halfile\dsn folder and select HFWParams.DSN. Again, you will need to provide credentials for logging into the database.
  - g. Click + beside HFWParams.
  - h. Click + beside dbo
  - i. Click + beside Tables
  - j. Select the Instrument Type table for inclusion on the report.
  - k. Click NEXT
4. Link the database tables that were selected. Primetable.PRSERV links to Multi.PRSERV (this should be automatically selected). Primetable Instrument Type field links to the Code field in the Instrument Types table. Click NEXT
5. Add the Fields that you wish to include on the report. In this case, we will select Instrument Type, Date Filed, Grantee, and Consideration. Click NEXT.
6. Select the field to group by. We want the report to group by Grantee so that is the field we select. Click NEXT.
7. Select the field to summarize by and include an average column.
  - a. To summarize by Consideration, select that field and designate the summary type as "sum"

- b. To add an average column, select Consideration a second time. We will set percent of total parameters later.
- c. Click NEXT.
- 8. On Group sorting, just click FINISH. The following screens in the wizard are for a chart (we will add later) and for data selection (we will specify later).
- 9. The report is built and processed (against the entire database).

## **Tutorial 2: Filter the data that appears on the report using user prompts**

This tutorial shows how to create Parameter fields that can be used to prompt the user for information. Then, the content of the report is filtered using these parameter fields.

1. Now let's filter the report to include a certain date range.
  - a. On the Field Explorer windows (View-Field Explorer menu), right click on Parameter Field and select New
  - b. Enter the name of the Parameter (StartDate) and prompting text (Enter the starting date for the report).
  - c. Set the Value type to date and click OK to create the StartDate Parameter.
  - d. On the Field Explorer windows (View-Field Explorer menu), right click on Parameter Field and select New
  - e. Enter the name of the Parameter (EndDate) and prompting text (Enter the ending date for the report).
  - f. Set the Value type to date and click OK to create the EndDate Parameter.
  - g. Now lets filter the report to include only documents within the date range .
  - h. Select the Report – Selection Formulas – Record menu.
  - i. Click the +Report Fields.
  - j. Double click the primetable.Filing\_Date to add it to the bottom box where the selection formula is built.
  - k. Enter “>=” (without the quotes) to the clause following primetable.Filing\_Date since we want all documents have a date greater then or equal to the starting date entered by the operator.
  - l. Double click ?StartDate to add that to the formula which should now read “{primetable.Filing\_Date} >= {?StartDate}”
  - m. Add “ and “ to the clause and the double click primetable.Filing\_Date again to add it to the clause after the “ and “.
  - n. Enter “<=” to the clause following primetable.Filing\_Date since we want all documents have a date less then or equal to the ending date entered by the operator.
  - o. Double click ?EndDate to add that to the formula which should now read: {primetable.Filing\_Date} >= {?StartDate} and “{primetable.Filing\_Date} <= {?EndDate}
  - p. Save and Close the Record Selection Formula Editor.
  - q. Now that we have filtered the report by the date range, click the refresh icon (lightning bolt), prompt for new parameter values, and enter the date range. The report should now only include documents within the specified date range.
2. Now let's eliminate any documents with a blank Grantee.
  - a. Select the Report – Selection Formulas – Record menu.
  - b. Place the cursor at the end of the selection clause, add the “ and “ clause then double click primetable.Grantee to add it to the clause.

- c. Add <> " (<> followed by two single quotes) so the clause now reads: {primetable.Filing\_Date} >= {?StartDate} and {primetable.Filing\_Date} <= {?Enddate} and {primetable.Grantee} <> "
  - d. Save and close and refresh the report and blank grantees should have been eliminated.
3. Now let's filter the report by Instrument Type and let the user select from a list of valid Instrument Types in our table.
  - a. On the Field Explorer windows (View-Field Explorer menu), right click on Parameter Field and select New
  - b. Enter the name of the Parameter (ReportIT) and prompting text (Select the Instrument Type to process).
  - c. To include the list of instrument types from your table, click Set Default Values. Then select the Instrument Type table from the Browse table box and select Description from your Browse field box.
  - d. Click the >> button to add all of the Instrument Type descriptions to the list of default values (or you can select single descriptions and add them one by one).
  - e. Click OK to return to the Create Parameter Field screen. Then click OK again to save the new Parameter field.
4. Now lets filter the report to include only the instrument type selected.
  - a. Select the Report – Selection Formulas – Record menu and add the " and " at the end of the clause.
  - b. Click the + HFWPARAMS.DSN.
  - c. Click the + Instrument Types table.
  - d. Double click the Description field to add it to the bottom box designating the report selection criteria.
  - e. Add an = sign after the just added Description field.
  - f. Click the + Report Fields
  - g. Double click the ?ReportIT field to add it to the selection formula. This should complete our selection formula which now reads: {primetable.Filing\_Date} >= {?StartDate} and {primetable.Filing\_Date} <= {?Enddate} and {primetable.Grantee} <> " and {InstrumentType.Description} = {?ReportIT}
  - h. Save and Close the Record Selection Formula Editor.
  - i. Now that we have filtered the report, click the refresh icon (lightning bolt), prompt for new parameter values, and select Mortgage from the list. The report should now only include Mortgages within the date range specified.
5. Let's add a percentage of the total for each Lender on the report.
6. Right click on the Consideration field on the report details section and select the Insert-Summary menu.
  - a. For Summary location select Group #1 (the group level you want the percentage to appear).
  - b. Check the Show as percentage of box and select Grand Total: Sum of Consideration.
  - c. Click OK and then drag the summary box to the desired location in the Group Footer section.
  - d. Click preview and we now have a nice looking Lenders Report.
7. Add headers to the report.
  - a. Select the Insert-Text Object menu and add a report header.
  - b. From the field explorer, add StartDate and EndDate with a " thru " text object in between.
  - c. Add ReportIT to the report
8. Save the Report as LenderDetail.rpt (be sure to uncheck Save Data with Report.

### Tutorial 3: Create a Lenders Summary Report

This tutorial shows how to create a Lender Summary Report from the Lender Detail Report we created in the prior tutorials. It also shows the user how to create a bar chart and place it at the end of the report.

1. The summary report only should print the Page Header, Group #1 footer, Grand Total, and Report Footer sections. To suppress the remaining sections:
  - a. Right click on Group Header #1 and select hide.
  - b. Right click on Details and select hide.
  - c. Right click on Page Footer and select suppress.
  - d. Save the report as LenderSummary.rpt so we do not accidentally overwrite our detail report.
2. The report looks pretty good except we do not need the border lines in the Group Footer #1 section. The header section also needs some clean up.
  - a. Right click on the Consideration field and select Format Field. Go to the Border tab and set the Top and Bottom borders to none.
  - b. Remove the headings which are not applicable to the summary report by clicking on them and pressing the delete key. Change the other report headers as needed.
  - c. Refresh the report and you now have a nice looking summary report.
3. Add a bar chart based on the Consideration field.
  - a. Select the Insert – Chart menu.
  - b. On the Type tab, select Bar.
  - c. On the Data tab, set the parameters as:
    - i. Place chart: once per report in Footer
    - ii. On change of primetable.Grantee
    - iii. Show Sum of primetable.consideration
  - d. On the Text tab uncheck the Auto text column for Title and enter a better title. Uncheck the Group title auto text and clear out its box. Uncheck the auto text for Data title and clear out its box.
4. Click OK and preview the report. You will find that because there are so many lenders, the lender takes up most of the page so lets do some cleanup.
  - a. Right click on the report and select Chart Options – General. Go to the Look tab and uncheck show legend.
  - b. The preview window still doesn't look too good so let's change the printer options to landscape and then drag the report wider.
  - c. You begin to see that having the Lenders at the bottom won't work so change the report from Verticle to Horizontal by right clicking on the report and selecting Chart Export. Then on the Type tab, check the Horizontal box. Use the Chart – Auto Arrange Chart menu which helps size the report.
  - d. The fonts on the labels are too big. Right click on the report and select Chart Export. Go to the Text tab and set font to 4 for Group labels and Data Labels. Again use the Auto Arrange to help. Now the chart is looking pretty good.
5. Show the lenders on the chart in order by amount of loans.
  - a. Chart Expert – Data tab and click Advanced.
  - b. Add primetable.grantee to the On Change Of box.
  - c. Add primetable.consideration to Show Values box.
  - d. Highlight primetable.grantee in the On Change Of box, click the TopN button, select All based on sum of primetable.consideration. Click descending.
  - e. Refresh the report and looks fine.
6. Show only the top 10 lenders.

- a. Return to the Advanced options in the Data tab of Chart Expert.
- b. Highlight primetable.grantee in the On Change Of box, click the TopN button, select Top N for the group sort based on sum of primetable.consideration. Set where N is 10.
- c. Refresh the report – success!!

#### **Tutorial 4: Insert the summary report in the report footer section of the Detail Report**

This tutorial shows the user how to add a summary report to the end of a detail report using Crystal's subreport feature.

1. Close and save the LenderSummary report.
2. Re-open the LenderDetail report.
3. Select the Insert – Subreport menu.
4. Select choose a report and find LenderSummary.rpt.
5. Click OK and drag and place the report into the report footer section.
6. Since the summary report was set to landscape mode, change the detail report to landscape mode as well and then size the summary report to fill.
7. Refresh the report and you should now have the summary report at the bottom.
8. Now that the summary report has been inserted into the detail report, you can make changes to it inside the detail report by click on the LenderSummary.rpt tab. Change made here do not affect the saved LenderSummary.rpt.

#### **Tutorial 5: Add the finished Lender Report to the halFILE Administrative Reports menu**

1. Go into the halFILE Administrator
2. Select the Tools-Options menu and go to the Administrative Reports tab.
3. Click Add a Report and enter the report name.
4. Highlight the Lender Report you added and click the Change Report Settings box.
5. Use the browse button to find and select the Lenders.rpt file.
6. Use the browse button to find and select the file DSN to the halFILE database for the report (PCAHFWPR32.dsn in the halfile\dsn folder.
7. Click Save Changes then Ok to exit the Tools-Options screen.
8. Under the Report menu of the Administrator, the new report has been added and can be selected for processing.

## Tutorial 6: Setting up the Consistency Check Report

1. Login to halFILE for Windows as a user with ADMIN rights (i.e., super). Then go into the **Administrator** select the **Tools-Options** menu.
2. Click the Administrative Reports tab.
3. If a Consistency Check report entry already exists, highlight it and click Change Report Settings. Otherwise, click the Add Report button and set up a new report named the Consistency Check Report. Then Change Report Settings. Note: if you have multiple databases, you can use different report names.
4. The Report file box should point to fieldgap32.rpt (or the report you wish to use to print the results of the consistency check).
5. The Pre-execute box should point to fieldgap32.exe.
6. The INI file box should point to fieldgap32.ini.
7. The SETUP text box should have the path to the FIELDGAP32.EXE program, with a command-line switch of CONFIG after it. If it does not, put this value in. (Example: c:\halfile\fieldgap32 CONFIG).
8. Click the button labeled SETUP. This launches the Field Gap setup program to define how the scan the data to figure out gap in a field. Once it is open, set it up as follows:
  - a. Drop down the Mask combo box, and select <NEW MASK>. When you run the report, you will be prompted to select a mask which ties to the Field Gap setting you are defining here. When your database has different number schemes then you can set up a mask for each number scheme.
  - b. Type in a title for your report (i.e., Consistency Check Report for Travis County).
  - c. Type in a name for the mask (if you are going to define multiples, make it descriptive).
  - d. Select the Application and database to locate the gaps in.
  - e. Select the field to check for gaps from the Check Field drop down box.
  - f. If the numbers have a prefix (year, or Book Type), enter that into the Prefix text box, according to the instructions. Since the consistency check is looking for gaps in a series of numbers, and then this can handle situations where a prefix needs to be stripped off so a numbering sequence can be examined.
  - g. Select a field from the Date Field. This is the field to use when determining the range of documents to search. Most commonly, this is a date field, but you can also put in the same as the Check Field, to narrow your search. When you run the report, the system will prompt you for the beginning and ending range of this field for the search.
  - h. If desired, select a field from the INCLUDE FIELD box. This will add an additional field to be output on duplicate record matches. Nothing will show in this field for missing documents.
  - i. If your CHECK FIELD is a fixed length (possibly a prefix and zero-filled), check the box that is labeled FIELD TO MATCH IS FIXED LENGTH. Only leave this unchecked if your field is a numeric datatype.
  - j. If you want the program to also determine duplicates in the range, and output those, check the box labeled FIND AND MARK DUPLICATES.
  - k. Click the box labeled SHOW LAST VALID DATE to have the program output the last RANGE FIELD value on the report.
  - l. Use the Additional SQL Criteria field to add any extra criteria to your search, to further narrow your search. Some examples are:
    - i. You want to skip certain instrument types from the data set: “Instrument\_Type not in ('BK', 'STR')” for example, will skip documents having an Instrument\_Type = BK or STR.

- ii. You want to skip documents having a different form than the standard form we are evaluating. For example, “ clerk\_number not like ‘%-%' ” will skip clerk numbers that have a dash in them.
- iii. Skip documents where the number being evaluated is an unexpected length. For example, “len(clerk\_number) = 5 “ includes only documents having a clerk number that is 5 digits in length.
- m. Save the mask and exit the Consistency Check setup module.
- n. Back on the Administrative Report set up form, define the prompts that must be asked to obtain the date range for the report and to select the mask to process. This is done as follows:
  - i. Check the Prompt for Change box.
  - ii. Click the Command-line Parameters button
  - iii. In the Parameter Edit box, Enter “Starting Date:” and click Save Change to add it to the Prompt box.
  - iv. In the Parameter Edit box, Enter “Ending Date:” and click Save Change.
  - v. In the Parameter Edit box, Enter “Mask:” and check the Use pop-up list of .INI file sections box then click Save Change.
  - vi. Click Return to Report Setup.
- o. Click Save Changes to save the report setup and close.

### **Tutorial 7: Running the Consistency Check Report**

1. Go into the halFILE Administrator
2. Select the Report menu and the Consistency Check report that you added.
3. Answer YES to the questions about processing the report.
4. Enter the Starting Date. If you do not get this prompt, then the report set up is incorrect.
5. Enter the Ending Date.
6. Select the Mask from the list of masks that were set up.
7. The FieldGap32.exe program is executed since that was set up as the Pre-execute program.
8. Once the data set of missing numbers is built, the Report Printing Utility is run for report Preview or Printing.