

Using Crystal Reports with Lucity

Intermediate - 1

The third of a seven-part series, this workbook is designed for Crystal Reports® users with some experience. By now you have many of the skills needed to modify existing reports. The main advantage to modifying existing reports is that the general format is already defined. This format helps create a uniform look and feel for your reports. It also helps save you the time it takes to set up the initial aspects of your reports. These include items such as page numbers, date fields, title placement, logos, lines, size, spacing, and boldness, just to name a few.

In this workbook, you'll learn that creating new reports uses many of these same techniques, but starts with a blank page. Through a series of step-by-step examples, we'll show you how to create a Crystal Report from scratch.

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Creating Reports

Before creating a report, it is a good idea to have a general idea of what you would like the report to look like. You should know which tables, fields and calculations will be involved. You should know which module the report will be run from.

We would like a report to run from the **Employees Setup** module.

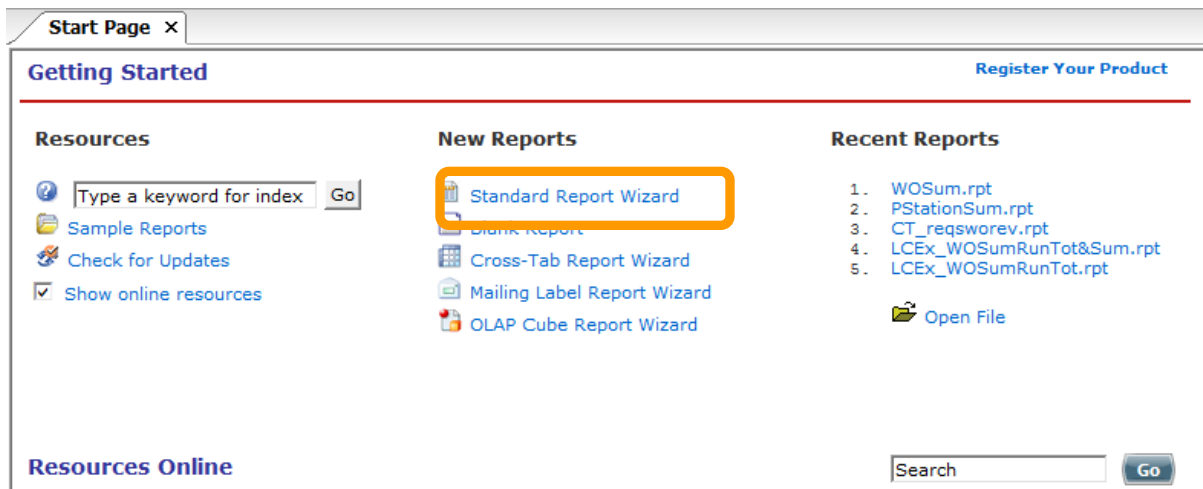
It will *show* the **Name, Job Title, Department, Supervisor** and **Active**.

It will *group* on **Department**.

It will *count* the number of **Employees** for the **Department**.

Report Wizard

1. Open *Work > Work Flow Setup > Employees*.
2. Ctrl right click all fields to be used in the report.
 - o Table Name: **WKUEMP**
 - o Fields: Name: **EM_EMPL_TY**
Job Title: **EM_TITLETY**
Department: **EM_DEPT_TY**
Supervisor: **EM_SUPR_TY**
Active: **EM_ACT_FLG**
3. Open **Crystal Reports**.
4. Click on **Standard Report Wizard**.

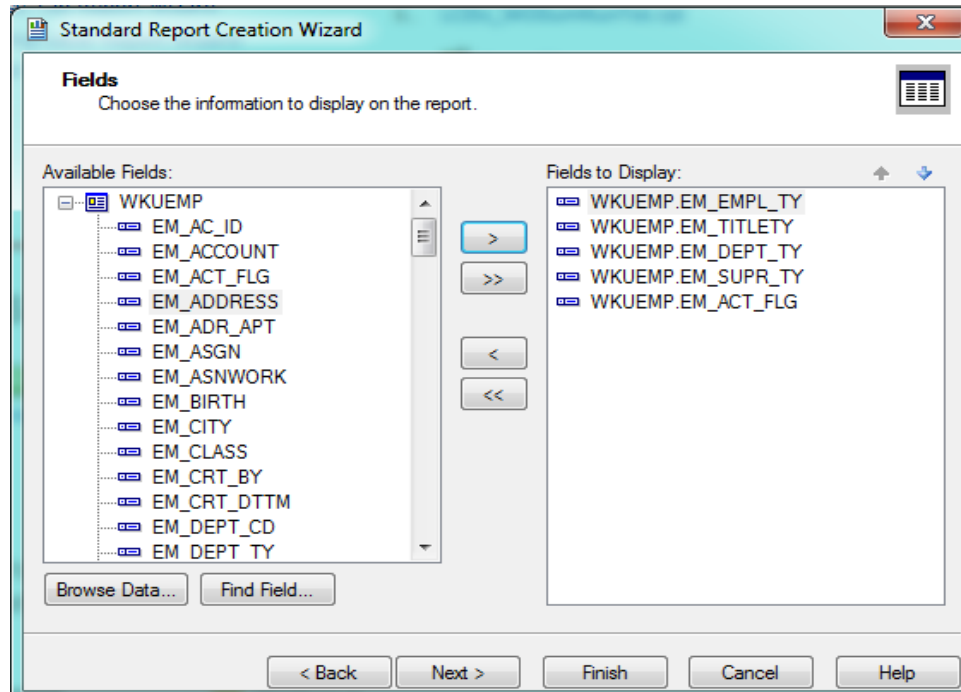


Bring in Tables

5. Open *Create New Connection >> ODBC (RDO) >> GBWork001 >> Next >> Finish >> Tables*
6. Move **WKUEMP** under *Selected Tables* (right-hand side).
7. Click *Next*.

Bring in Fields

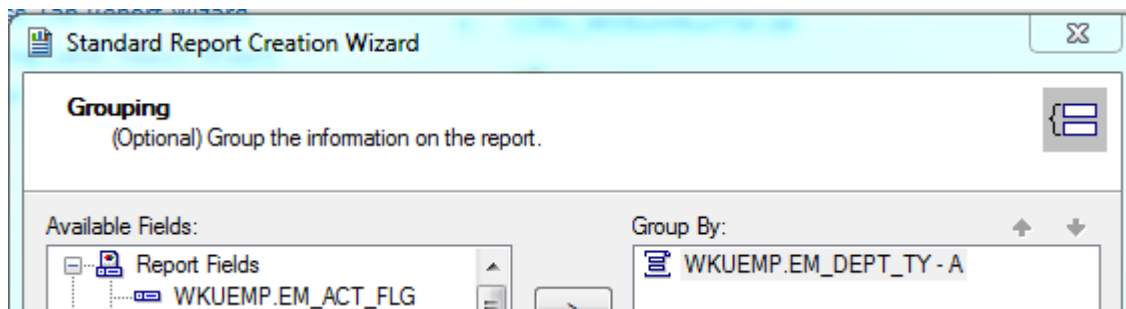
8. Select the fields you would like to have in the report and move them to the right-hand box titled *Fields to Display*.



9. Click *Next*.

Field Grouping

10. If you wish to group your data, select the grouping field and move it to the right side of the dialog under *Group By*.
 - o Since we would like to group this report by **Department**, move the **EM_DEPT_TY** field to *Group By*.

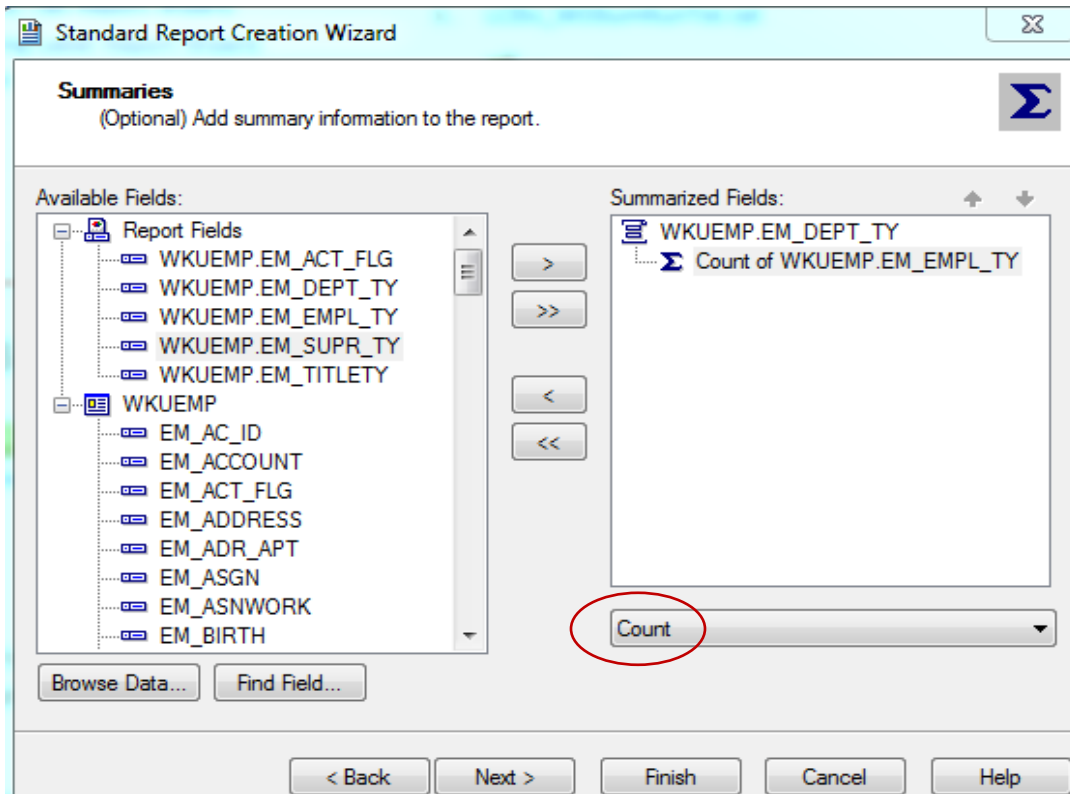


11. Click *Next*.

Summaries

12. You may also choose fields to summarize.

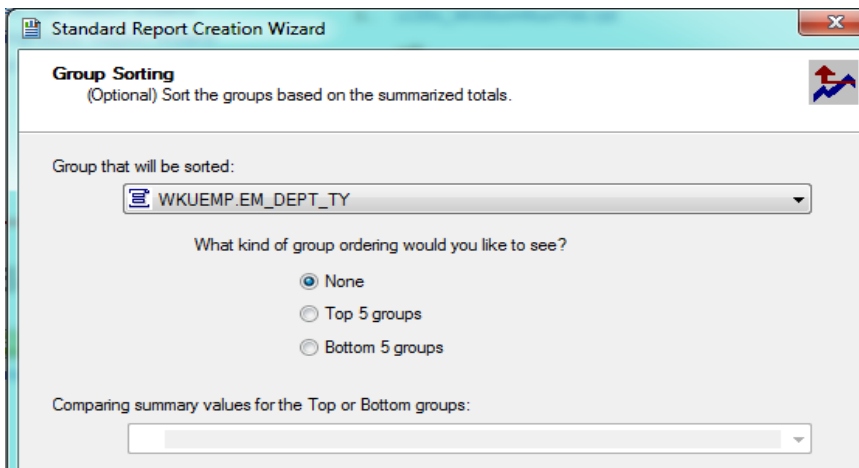
- For our example, we'd like to count the number of Employees (**EM_EMPL_TY**).
- You'll need to select the type of summary from the drop-down box at the bottom of the dialog. For our example, we've chosen *Count*.



13. Click *Next*.

Group Sorting

14. There is also a *Group Sorting* option. There is only one group, so this is already in the sort box.



15. Click *Next*.

Chart Addition

16. There is an additional option to add a chart. For our example, we will not put a chart in at this time.

The screenshot shows the 'Standard Report Creation Wizard' dialog box, specifically the 'Chart' step. The title is 'Chart' with the subtitle '(Optional) Include a chart on the report.' Below the title, there are radio buttons for 'No Chart', 'Bar Chart', 'Line Chart', and 'Pie Chart'. The 'No Chart' option is selected. There are also input fields for 'Chart title:', 'On change of:', and 'Show summary:'. A small chart icon is visible in the top right corner.

17. Click *Next*

Record Selection

18. In the following dialog, you'll see a *Record Selection* option. We'll use this option to view *Active Employees* only.

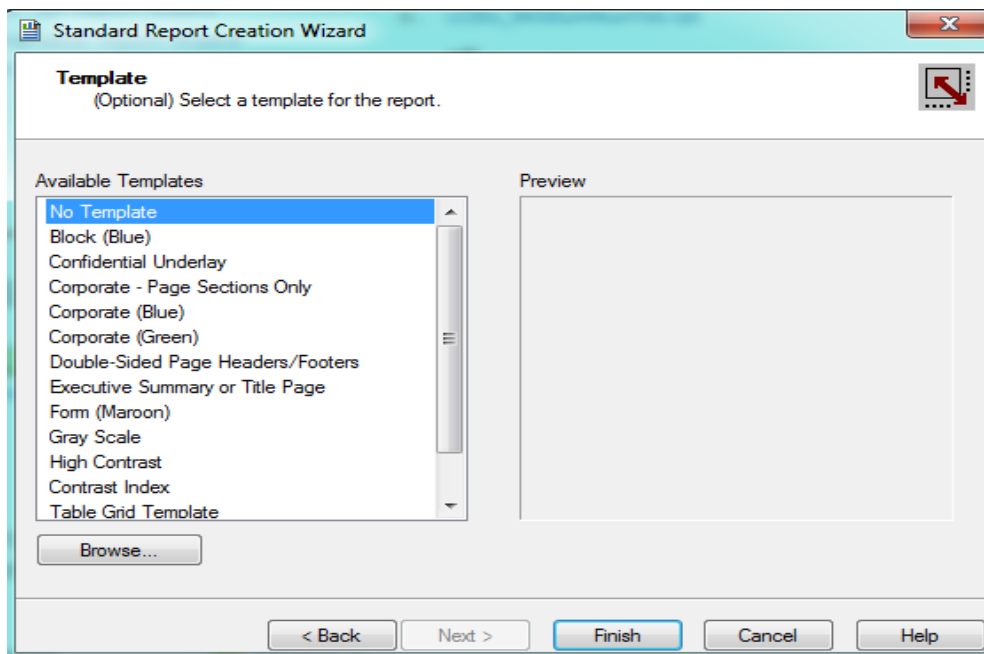
- Move **EM_ACT_FLG** to the right side of the screen under *Filter Fields*.
- Use the drop-down box to choose the selection criteria. For our example, we've selected *is True*.

The screenshot shows the 'Standard Report Creation Wizard' dialog box, specifically the 'Record Selection' step. The title is 'Record Selection' with the subtitle '(Optional) Select a subset of information to display.' Below the title, there are two main sections: 'Available Fields' and 'Filter Fields'. The 'Available Fields' section contains a tree view with 'Report Fields' and 'WKUEMP' categories. The 'Filter Fields' section contains a list box with 'WKUEMP.EM_ACT_FLG' selected. Below the list box, there is a dropdown menu with 'is True.' selected, which is circled in red. There are also '>' and '<' buttons between the two sections.

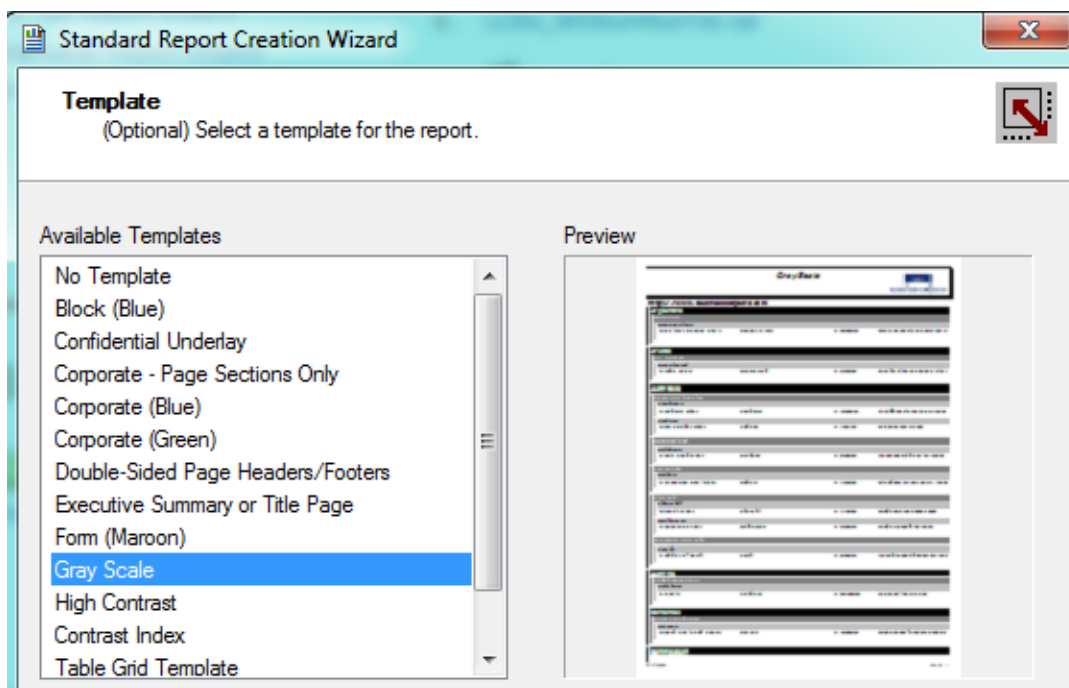
19. Click *Next*.

Template

20. There are a number of *Templates* available to choose from. Typically, you would choose *No Template*.

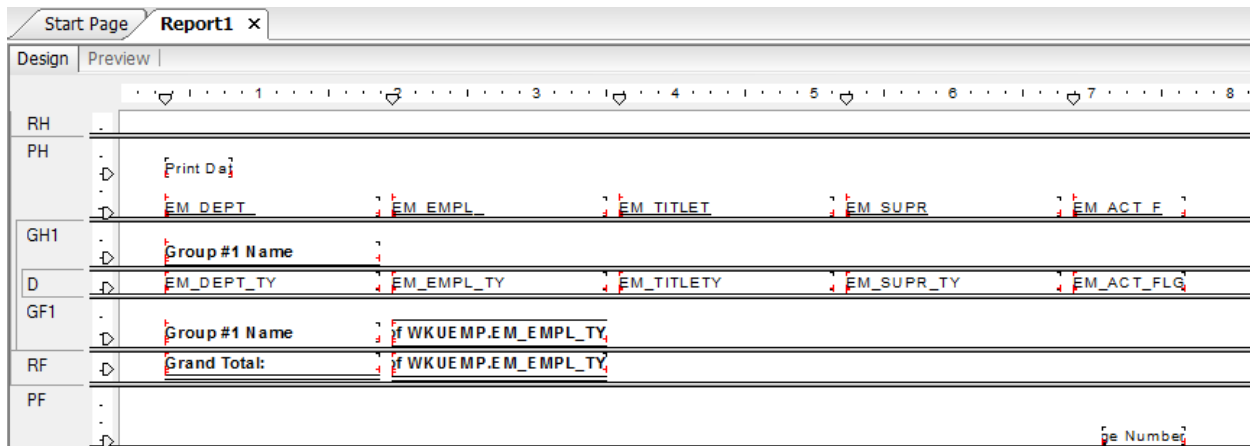


- The other options are worth looking at and playing with. It is easy to select one and preview the look.

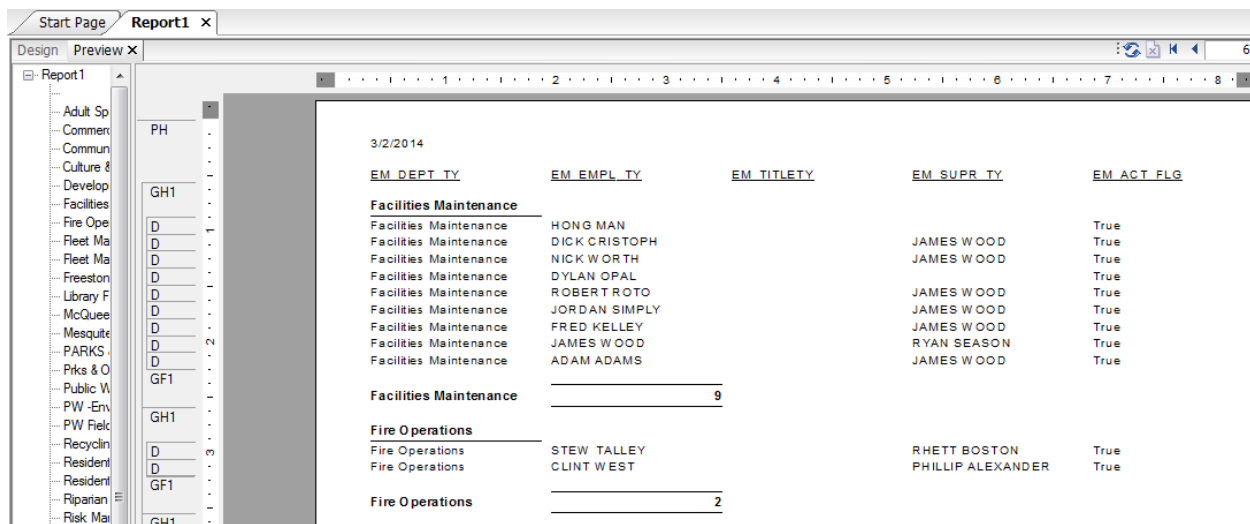


21. Select *Finish* when you are done.

The Report Wizard has created the following:



Preview



This report still needs modifications to make it presentable.

22. Remove the *Active* field (**EM_ACT_FLG**) since the report is selecting on this field.
23. Remove the **EM_DEPT_TY** field since it is the Group field.
24. Add a text object in the *Page Header* for the *Title* (**Employees By Department**).
 - o Resize and center the *Title*.
25. Change the *Column Headers* (field headings) to match the fields.
26. Modify the Summary Fields.
 - a. Left align.
 - b. Reduce widths.
 - c. Remove the bottom borders.
27. Change the Group Option to *Keep Group Together*.

3/2/2014

Employees By Department

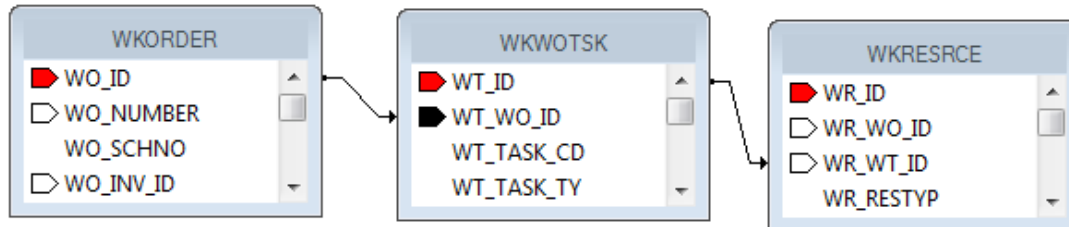
	<u>Name</u>	<u>Job Title</u>	<u>Supervisor</u>
<u>Facilities Maintenance</u>			
	NICK WORTH	COMM REFUSE SERVICE	JAMES WOOD
	JAMES WOOD	FACILITIES MANAGER	
	FRED KELLEY	SECRETARY	JAMES WOOD
	HONG MAN	SENIOR CUSTODIAN W OF	
	ADAM ADAMS	SENIOR MAINTENANCE W	JAMES WOOD
	DICK CRISTOPH	OFFICE SUPERVISOR	JAMES WOOD
	ROBERT ROTO	SENIOR CUSTODIAN W OF	JAMES WOOD
	JORDAN SIMPLY	SENIOR CUSTODIAN W OF	JAMES WOOD
	DYLAN OPAL	SENIOR MAINTENANCE W	
Facilities Maintenance	9		
<u>Fire Operations</u>			
	STEW TALLEY		RHETT BOSTON
	CLINT WEST		PHILLIP ALEXANDER
Fire Operations	2		

28. Finally, save the report with an appropriate name under the Work family of reports (LC_EmpByDept.rpt).

Table Joins

Usually in Crystal's Database Expert the tables are linked with an outer join. When there is information in the first table then it looks to the table it is joined to with the outer join. This normally shows up with an arrow from the one to the other. (Sometimes in older versions of Crystal the arrow point doesn't show up, so the line looks like an inner join. You have to click on it to figure out the kind of join that is being made.)

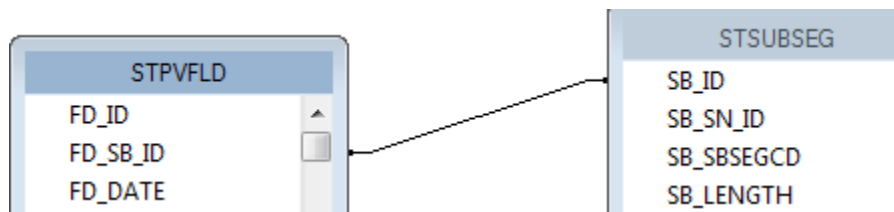
Left Outer Join:



There would need to be a work order before you would pull task information. There would need to be a task before the resource information would show up.

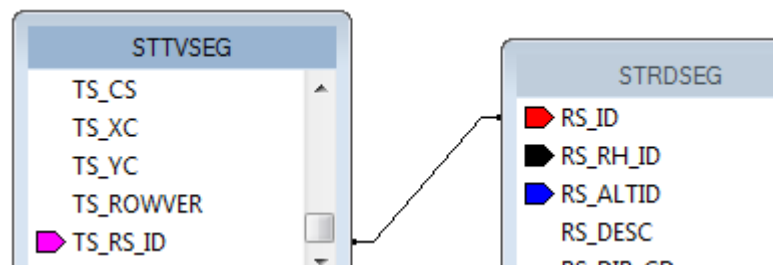
There are some cases within Lucy where an inner join is required. One example is where both Subsegment and Road share the same table (**STPVFLD**) for storing Inspection data. Chances are good that you would not use both Subsegment and Road so this shouldn't be an issue but if you do, then an inner join would be the way to handle the information.

Inner Join:



Now in order to see records both tables would need to have data where **FD_SB_ID** is equal to **SB_ID**.

A similar case is how the Traffic Volume table (**STTVSEG**) connects to Segment and Roads. An inner join is again used.



Example 15

Blank Report

Reports can be made from a “blank slate”. It will have the five sections open to add what you would like. Report Header, Page Header, Detail, Report Footer and Page Footer.

We will create a **Work Order** report with subtask and resource information. The subtask data comes from a grid or child box. The resource data comes from a grid dependent on the subtask thus a grandchild box.

Typically there would be at least one group on a field from the parent table and then at least one group on the child table and then possibly another one on the grandchild table.

We would like a report to run from the *Work order* module.

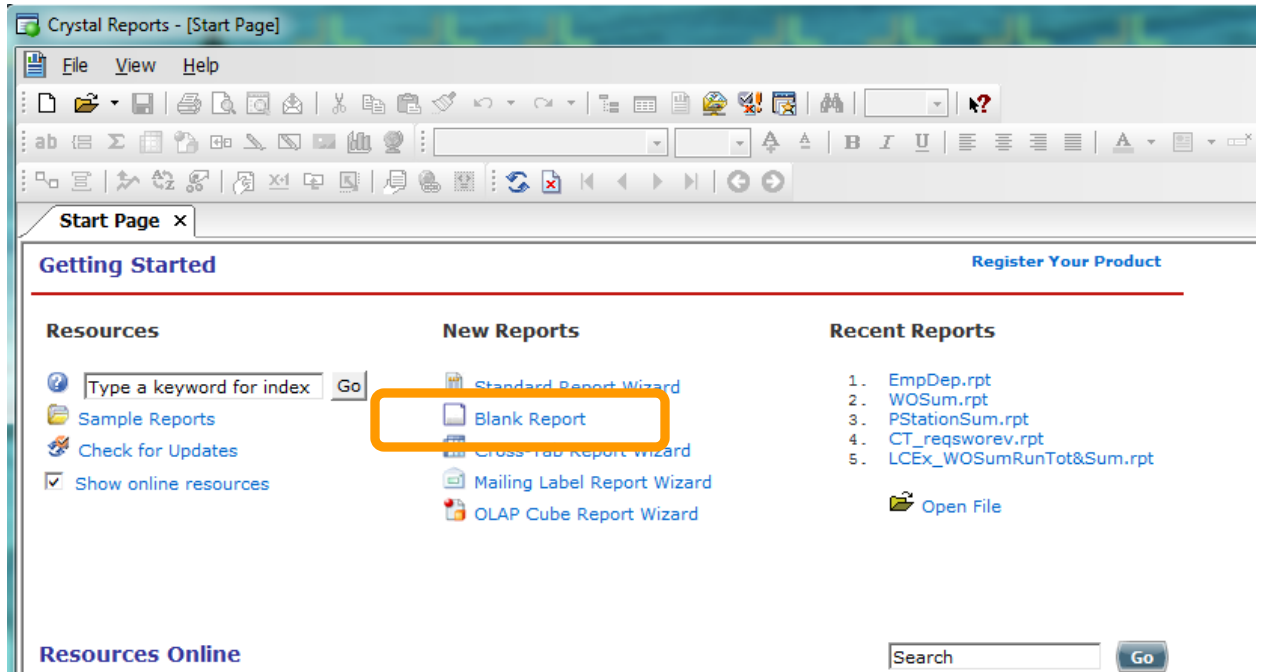
It will *show* the **Work Order Number, Category, Problem and End Date**.

It will *show* SubTask Task

It will *show* **Resource Type, Resource and Resource Total Cost**.

It will *group* on **Category, SubTask, Resource Type, Resource Text, Resource Code, Resource ID**.

1. Open *Work > Work Orders*
2. Control right click all fields to be used in the report to find the field names.
 - Table Name for Work Orders: **WKORDER**
 - Fields: Work Order Number: **WO_NUMBER**
 - Category: **WO_CAT_TY**
 - Problem: **WO_PROB_TY**
 - End Date: **WO_END_DT**
 - Table name for SubTask: **WKWOTSK**
 - Field: Task: **WT_TASK_TY**
 - Table name for Resource: **WKRESRCE**
 - Resource Type: **WR_RTYP_TY**
 - Resource Text: **WR_RSRC_TY**
 - Resource Code: **WR_RSRC_CD**
 - Resource Total Cost: **WR_TCST_GT**
 - Resource Record: **WR_ID**
3. Open **Crystal Reports** and click *Blank Report*.



Bring in Tables

4. Next, (Desktop report) open *Create New Connection >> ODBC (RDO) >> GBAWork001 >> Next >> (Data Source Connection info) >> Finish.*
5. Move the **WKORDER**, **WKWOTSK** and **WKRESRCE** tables to the *Selected Tables* section.
6. Click *OK*.

Link Tables

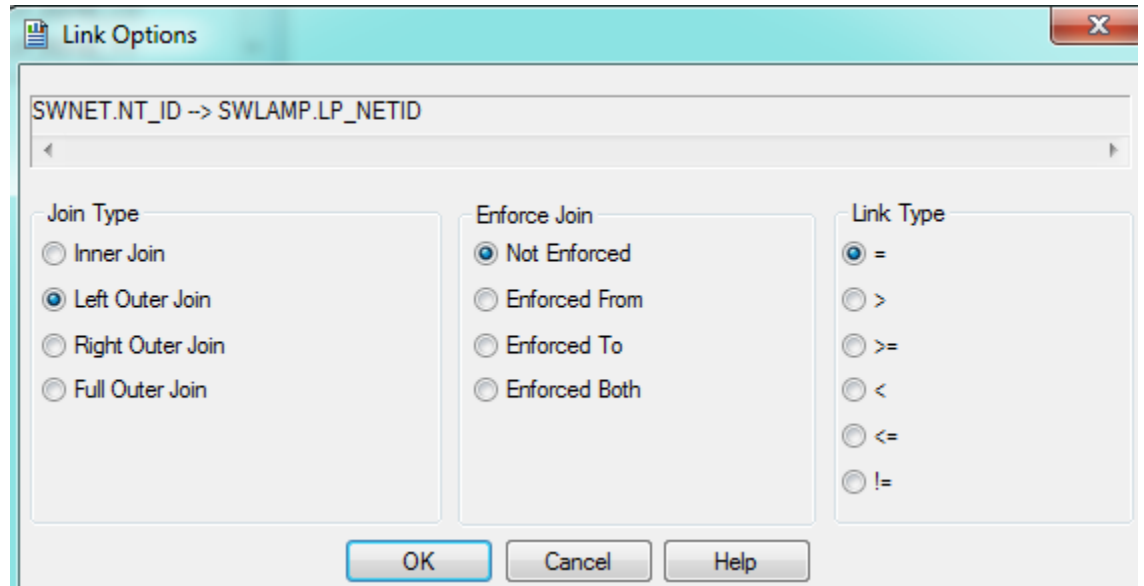
7. This should bring you to the *Links* section where the two tables will be connected.
 - a. Sometimes the link has already been added - this is Crystal's best guess and is usually incorrect, so delete it. Click and select *Clear Links*.
 - b. Find the common linking field. Typically, this would be an ID field with a common part. If this isn't obvious, check the Detail report that is provided with the module and see how the tables are connected.

WO_ID links to **WT_WO_ID**

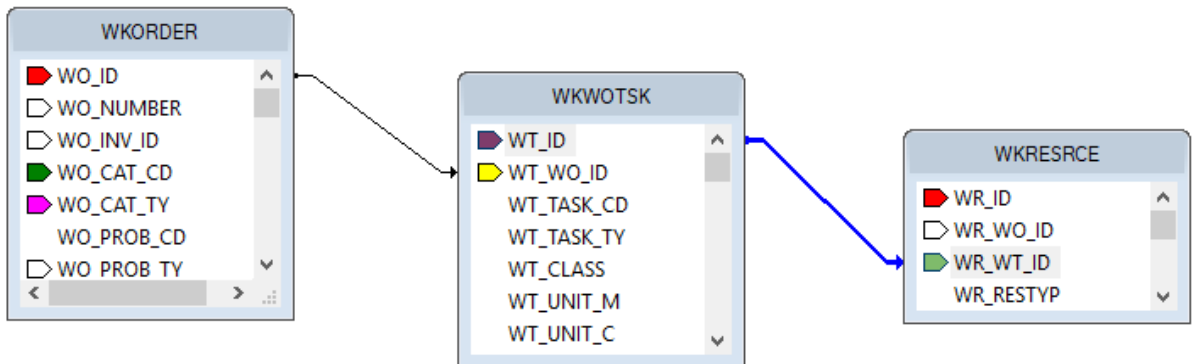
WT_ID links to **WR_WT_ID**

- c. Typically, it is good practice to have the main table (parent table, the table of the module you are running the report in) in the top left corner. Then additional tables are linked from there. The tables can be moved by clicking on the top bar of a table and dragging it to a new location.
 - Click on the Main ID of the parent table (**WO_ID**), hold and drag to the connecting field of the other table (**WT_WO_ID**), release.
 - A line has been created.
 - Right click on the line and select *Link Options...*

- d. The Join Type by default is *Inner Join* (both table values are equal to see a record). Most of the time this join should be **Left Outer Join** (It will show all records in the Parent table whether there are records in the linked table).
 - o Change to **Left Outer Join**.



- o OK
- e. When you click off the line, the line now has an arrow pointing from the parent table to the linked table.



8. Click *OK*.

You now have a blank page to create a report.



9. Give the report a name. *File >> Save As.*

- a. Make sure you save the report in the proper report folder. For our example, select the **Work** folder.
- b. The name for this report will be **LC_WOtaskResource.rpt.**

The report can be created using any of the previously discussed techniques.

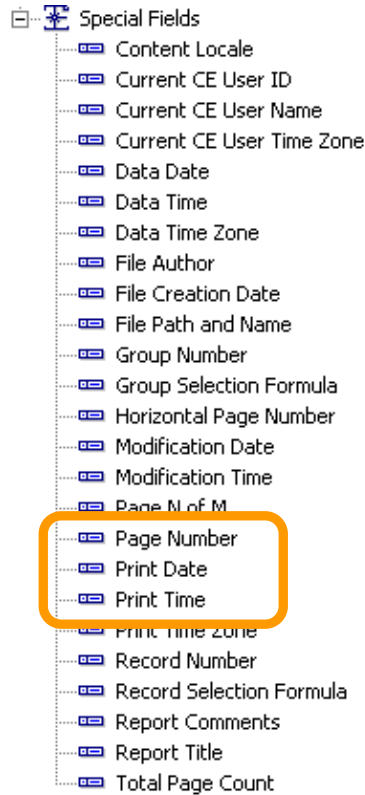
10. Insert a logo in the *Report Header.*



Special Fields

11. In *Field Explorer*, open *Special Fields*. There are several preset fields which aid in the report design.

- Drag in the **Page Number**, **Print Date**, and **Print Time** preset fields. (For a long report avoid the “Page N of M” option, it slows down the report run)

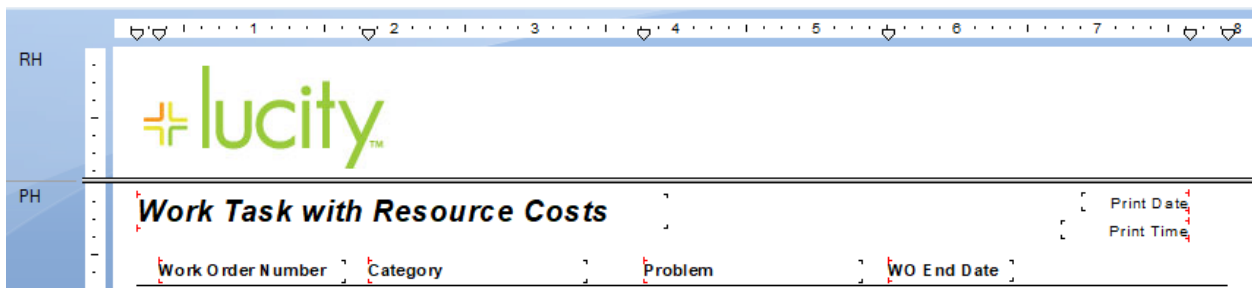


12. Create a report title in the *Page Header* section.

- Bring in a text object; we’ve titled this one, **Work Task with Resource Costs**.
- Increase the field size and format to font 16, *Italic* and **bold**.

13. Enter Column Titles with the *Insert Text Object* function.

- Add guide marks.
- Align tops of Column Titles.
- Add a line to the bottom of the *Page Header* section.



14. Insert Subtask Group (WT_TASK) - Group 1

- o Group Option - Repeat Group Header On Each Page

15. Insert Work Order Number Group (WO_NUMBER) - Group 2

- o Group Options - Keep Group Together and Repeat Group Header On Each Page

16. Drag the appropriate fields into the Group Header 2 section.

- o Create a formula to pull out the date portion of the WO End Date.
- o Align tops of fields.

	Work Order Number	Category	Problem	WO End Date
GH1	Group #1: WT_TASK_TY			
GH2	Group #2: WO_NUMBE	WO_CAT_TY	WO_PROB_TY	@WOEndDt

17. Insert Resource Type group (WR_RTYP_TY) - Group 3

- o Group Option - Repeat Group Header On Each Page

18. Add section to this Group Header - Group Header 3b

PH	Work Task with Resou			
	Work Order Number	Category		
GH1	Group #1: WT_TASK_TY			
GH2	Group #2: WO_NUMBE	WO_CAT_T		
GH3a	Group #3: WR_RTYP_TY			
GH3b				

19. Add Column Headers for the Resource information (Resource Name, Resource Cost)

GH3a	Group #3: WR_RTYP_TY			
GH3b	Resource Name			Resource Cost

20. Insert Resource Name group (WR_RSRC_TY) - Group 4

- o Suppress Group 4 Header and Footer sections

21. Insert Resource Code group (WR_RSRC_CD) - Group 5 (just in case there are two resources with the same name)

- o Suppress Group 5 Header and Footer sections

22. Insert Resource Unique ID group (WR_ID) - Group 6

- o Remove the Group 6 name Field

23. Bring in the Resource (WR_RSRC_TY) and cost (WR_TCST_GT) fields to the Group 6 Header section.

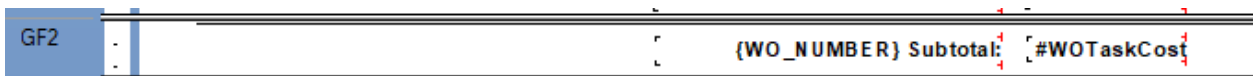
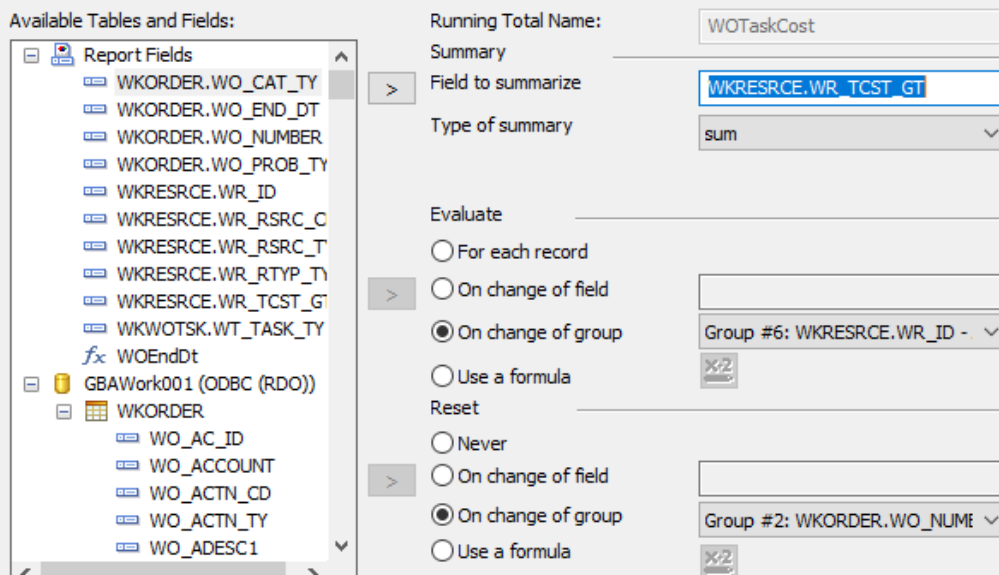
GH1	Group #1: WT_TASK_TY
GH2	Group #2: WO_NUMBE; WO_CAT_TY; WO_PROB_TY; @WOEndDt
GH3a	Group #3: WR_RTYP_TY
GH3b	Resource Name; Resource Cos
GH4	Group #4: WR_RSRC_TY
GH5	
GH6	WR_RSRC_TY; WR_TCST_GT

24. Suppress the *Detail* section
25. Suppress *Group Footer 6* section
26. Create a Running Total for the Resource Cost field (WR_TCST_GT) subtotal on Resource Type (WR_RTYP_TY)

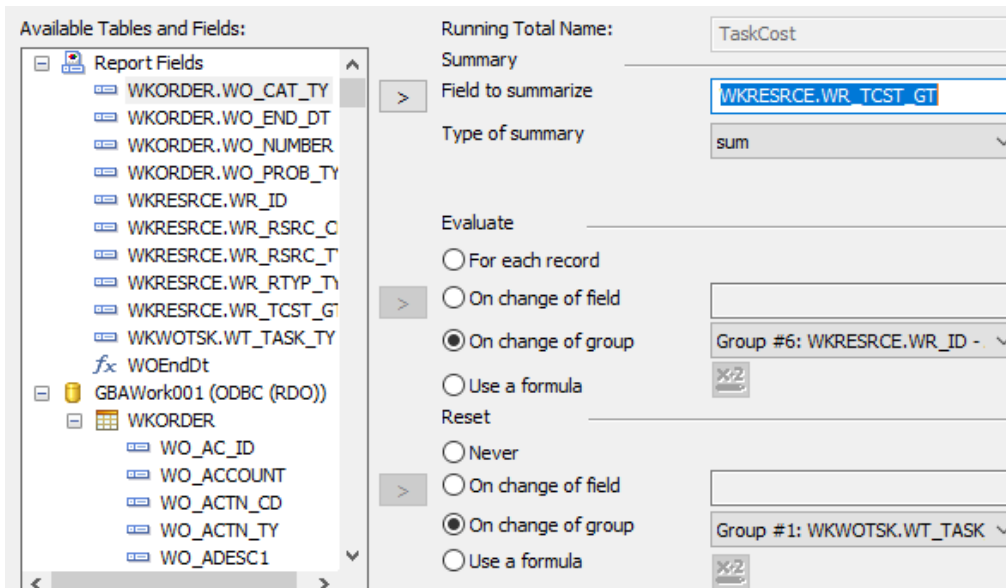
- a. Place Running Total in *Group Footer 3*.
- b. Add a text object for subtotal using the WR_RTYP_TY field.
- c. Align, make bold and add a line

GF4	
GF3	(WR_RTYP_TY) Subtotal; #ResTypeCost
GF2	

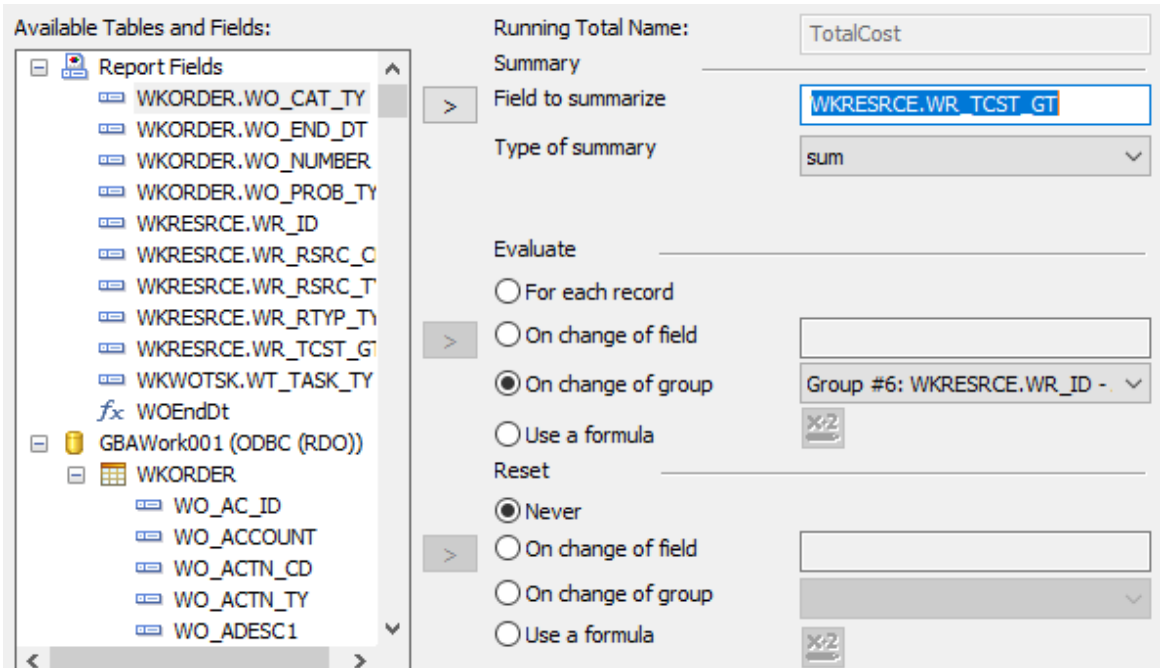
27. Create a Running Total for the Resource Cost field (WR_TCST_GT) subtotal on Work Order Number (WO_Number) using the process in the previous step 26. Place in *Group Footer 2*.



28. Create a Running Total for the Resource Cost field (WR_TCST_GT) subtotal on Subtask (WT_TASK_TY) using the process in step 26. Place in *Group Footer 1*.



29. Create a Running Total for the Resource Cost field (WR_TCST_GT) Total using the process in step 26. Place in *Report Footer*.




RF		Grand Total:	#TotalCost

Conditional Formatting

30. Conditionally format the @WOEndDt field to show red if it falls in the last week.
 - a. Right click @WOEndDt, select *Format Field...*
 - b. *Font* Tab, click the formula box next to *Color:*.
 - c. Enter the following formula:
If {@WOEndDt}>(printdate-7) then crRed else crBlack
 - d. *Save and close*
 - e. *OK*

Design

RH				
PH	Work Task with Resource Costs			Print Date Print Time
	Work Order Number	Category	Problem	WO End Date
GH1	Group #1: WT_TASK_TY			
GH2	Group #2: WO_NUMBE	WO_CAT_TY	WO_PROB_TY	@WOEndDt
GH3a	Group #3: WR_RTYP_TY			
GH3b	Resource Name		Resource Cos	
GH4	Group #4: WR_RSRC_TY			
GH5				
GH6	WR_RSRC_TY			WR_TCST_GT
D				
GF6				
GF5				
GF4				
GF3			{WR_RTYP_TY} Subtotal:	#ResTypeCost
GF2			{WO_NUMBER} Subtotal:	#WOTaskCost
GF1			{WT_TASK_TY} Subtotal:	#TaskCost
RF			Grand Total:	#TotalCost
PF	Page Number			

Preview



Work Task with Resource Costs

9/29/2019
12:22 pm

Work Order Number	Category	Problem	WO End Date
001 - AD - Trails Maintenance			
2006-02233	Park	Trespassing	10/26/2006
Employee			
	<u>Resource Name</u>		<u>Resource Cost</u>
	ALBERT ROYAL		0.00
	JEFF YOUNG		0.00
	JEFF YOUNG		53.69
	LOGAN DANIELS		0.00
	MIKEY MANG		0.00
	PUNITE SING		0.00
	ZACH BROWN		0.00
	Employee Subtotal:		53.69
2006-02233 Subtotal:			53.69
2006-02548	Park	PK - Miscellaneous	9/29/2019
Employee			
	<u>Resource Name</u>		<u>Resource Cost</u>
	CLAY HAGGARD		0.00
	CONNOR ONELL		93.29
	KAMRAAN HUSEIN		0.00
	MARK MALLOY		150.83
	MARK MALLOY		70.39
	MARK MALLOY		110.81
	MATT GILBERT		0.00
	MIKE SLAYING		70.77
	NANCY BOYDE		94.81
	PETER POTTER		0.00
	Employee Subtotal:		590.70
Equipment			
	<u>Resource Name</u>		<u>Resource Cost</u>
	Tractors- John Deere		99.00
	Tractors- John Deere		99.00
	Equipment Subtotal:		198.00
2006-02548 Subtotal:			788.70
2019-00049	Water Main		9/29/2019
Employee			
	<u>Resource Name</u>		<u>Resource Cost</u>
	FELIX OKERSTROM		58.53
	LYNN THOMAS		45.00
	Employee Subtotal:		103.53
Equipment			
	<u>Resource Name</u>		<u>Resource Cost</u>
	WTM0530 CHEVROLET SII		8.39
	Equipment Subtotal:		8.39
2019-00049 Subtotal:			111.92
001 - AD - Trails Maintenance Subtotal:			954.31

Example 16

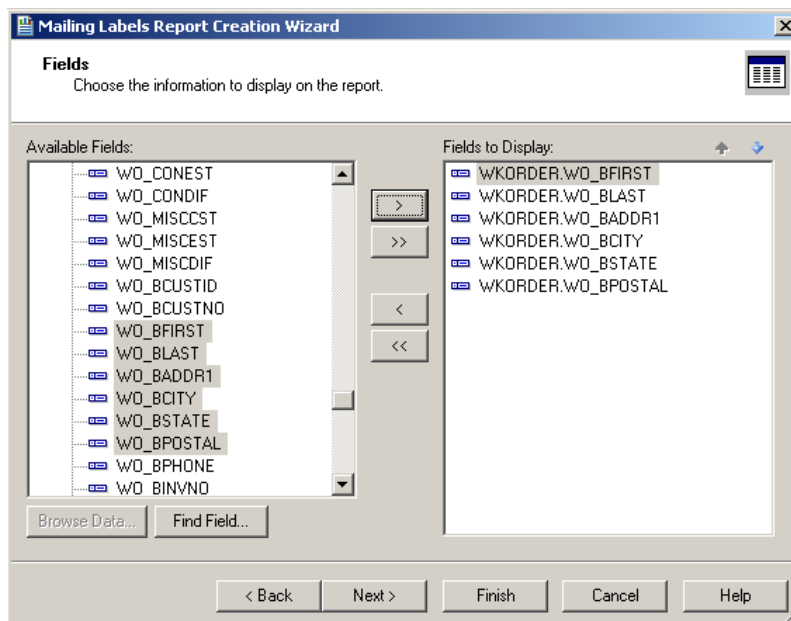
Mailing Labels

Another report option in Crystal Reports is a way to create a report for mailing labels. For our example, we will create a report for Work Order Billing labels.

1. Open Crystal Reports and click *Mailing Label Report Wizard*
2. Open *Create New Connection*.
3. Open *ODBC(RDO)*.
4. Select the required table(s). (**WKORDER**)

(If you are going to filter or select on any fields that are not in **WKORDER**, even if they are not used in the body of the report, then you will need to select these other tables and link them as previously discussed.)

5. Select the fields to be displayed.



6. Select the mailing label type from the drop-down box.

Mailing Labels Report Creation Wizard

Label
Choose the label type.

Mailing Label Type:
Address (Avery 5262)

Label Size:
Width: 4.000 in
Height: 1.333 in

Gap Between Labels:
Horizontal: 0.188 in
Vertical: 0.000 in

Page Margins:
Top: 0.833 in
Bottom: 0.833 in
Left: 0.156 in
Right: 0.156 in

Printing Direction:
 Across Then Down
 Down Then Across

Number of Labels:
Across Page: 2
Down Page: 7

< Back Next > Finish Cancel Help

- There are other options on this page to choose from.
7. Select *Next*. The next page allows you to select a filter field. After that step, the report will appear:

RH			
PH			
Da	WO_BFIRST	WO_BFIRST	
Db	WO_BLAST	WO_BLAST	
Dc	WO_BADDR1	WO_BADDR1	
Dd	WO_BCIDY	WO_BCIDY	
De	WO_BSTATE	WO_BSTATE	
Df	WO_BPOSTAL	WO_BPOSTAL	
RF			
PF			

- The second column in gray is automatically created.

Preview

Carol
Smith
123 Oak
Lenexa
KS
66224

Jane
Howe
456 Elm
Lenexa
KS
66225

City of Lenexa
789 Main
Lenexa
KS
66226

George
Rain
753 Willow
Lenexa
KS
66223

- The fields were each placed in their own *Detail* section, thus stacking the information. You could move the fields around placing the Last name after the First and the State after the City; however, this frequently creates awkward spaces.
8. You would probably want to concatenate some fields by creating formulas to combine the two name fields and the City and State fields.

Name Formula:

```
(If IsNull({WKORDER.WO_BFIRST}) Then " " Else {WKORDER.WO_BFIRST})&" "&
(If IsNull({WKORDER.WO_BLAST}) Then " " Else {WKORDER.WO_BLAST})
```

City/State Formula:

```
(If IsNull({WKORDER.WO_BCITY}) Then " " Else {WKORDER.WO_BCITY})&"", "&
(If IsNull({WKORDER.WO_BSTATE}) Then " " Else {WKORDER.WO_BSTATE})
```

Da	@Name	@Name
Db	WO_BADDR1	WO_BADDR1
Dc	@CityState	@CityState
Dd	WO_BPOSTAL	WO_BPOSTAL
RF		

Notes: _____

Preview

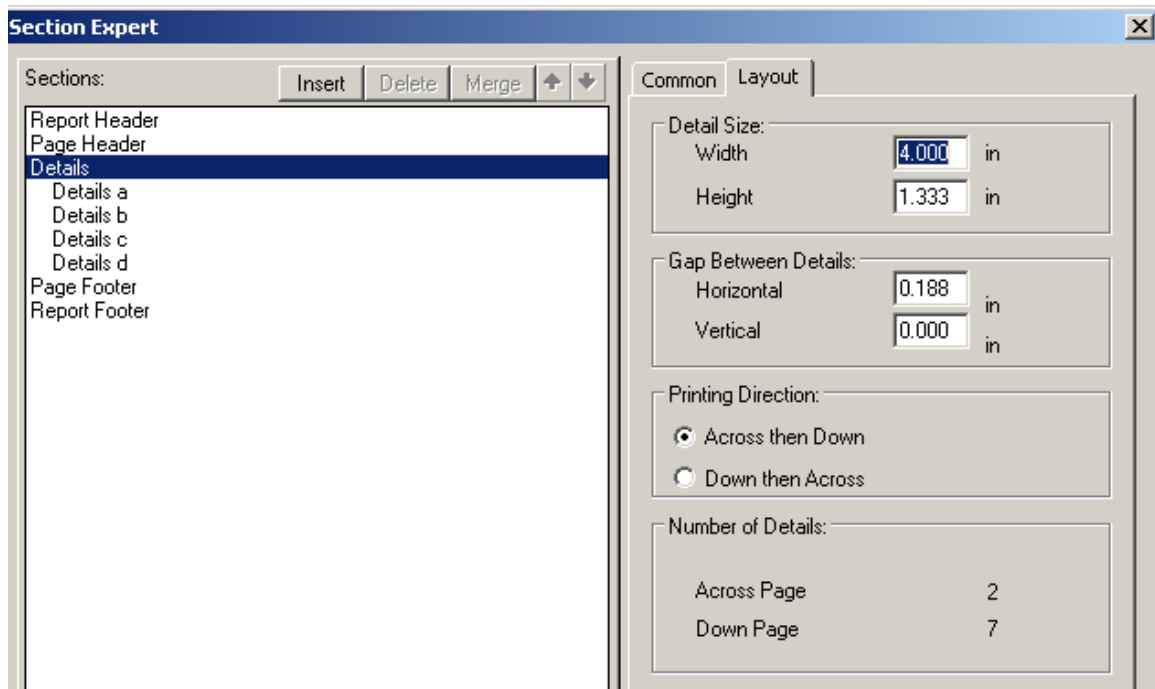
Carol Smith
123 Oak
Lenexa, KS
66224

Jane Howe
456 Elm
Lenexa, KS
66225

City of Lenexa
789 Main
Lenexa, KS
66226

George Rain
753 Willow
Lenexa, KS
66223

9. If any changes need to be made to the layout of the report, click on the *Section Expert*.
10. Click *Details* and a *Layout* tab will appear.
11. Click on the *Layout* tab and make the necessary changes.



Notes: _____

