lucity™

TRAINING GUIDE

Intermediate Crystal 1

Using Crystal Reports with Lucity

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**.

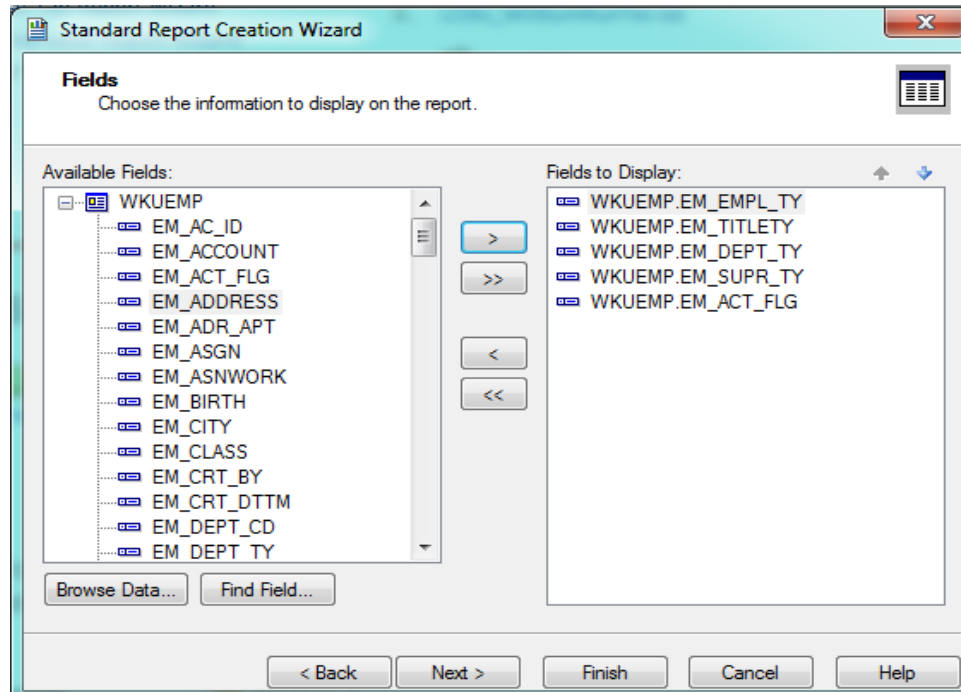4. Click on **Standard Report Wizard**.
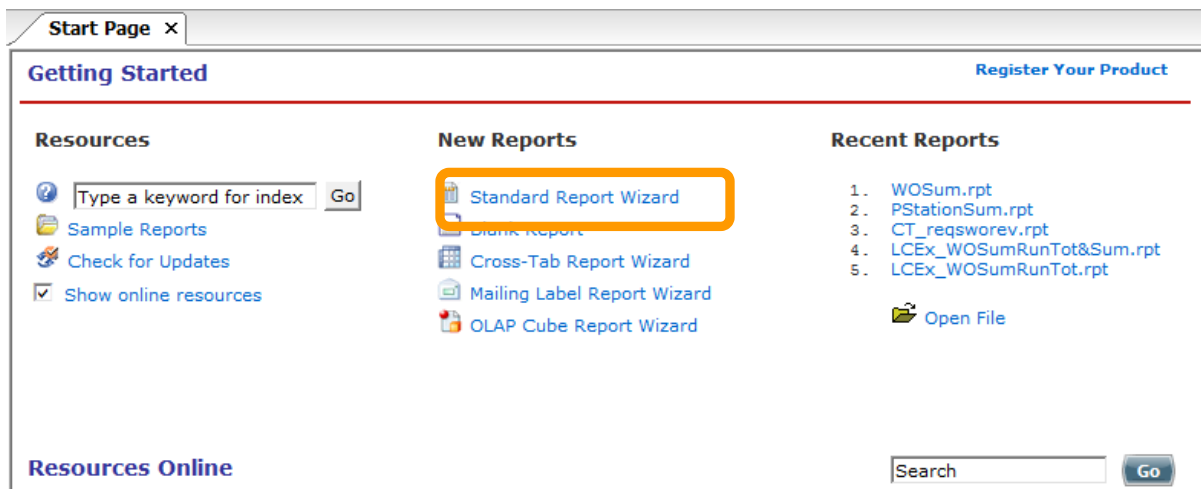
Bring in Tables

5. Open *Create New Connection >> ODBC (RDO) >> GBAWork001 >> Next >> Finish >> Tables*

6. Move **WKUEMP** under *Selected Tables* (right-hand side).

7. Click *Next*.
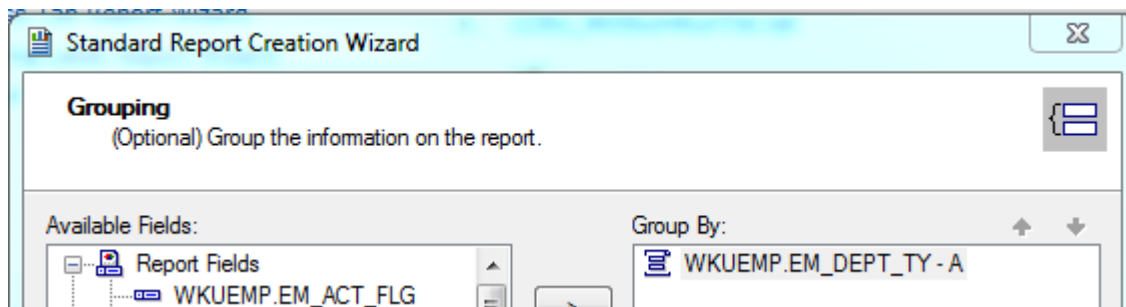
Bring in Fields

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*.

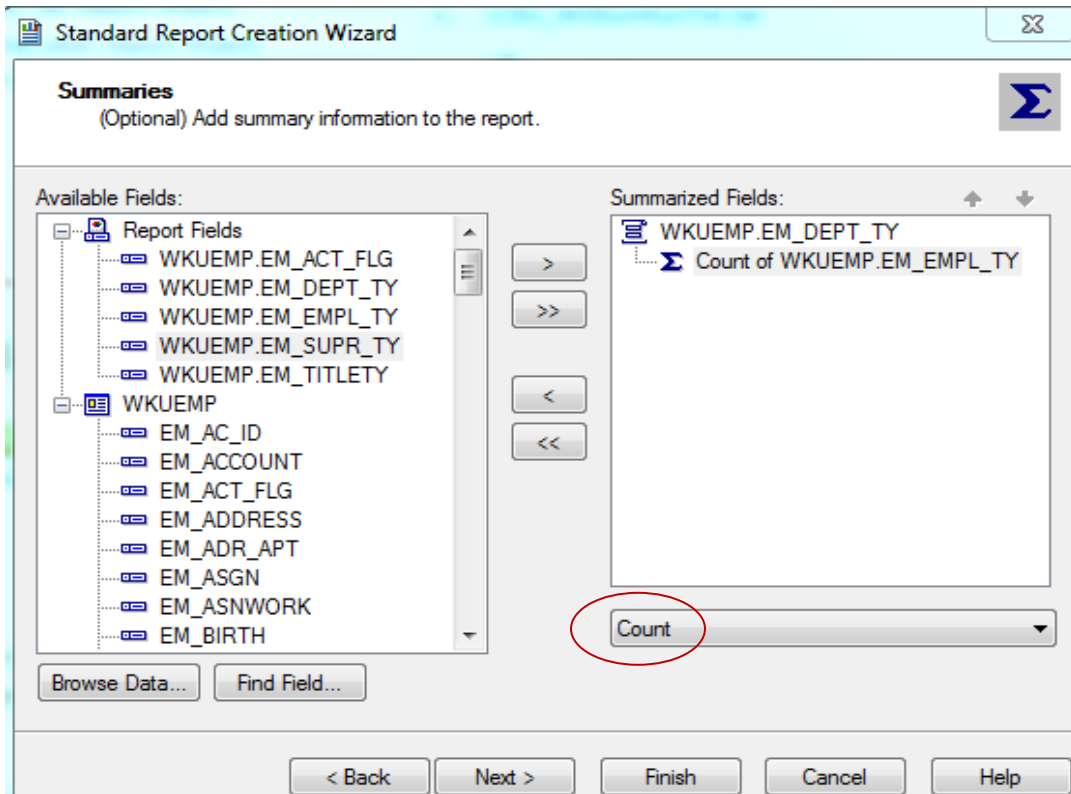   o Since we would like to group this report by **Department**, move the **EM_DEPT_TY** field to *Group By*.

11. Click *Next*.

Summaries

12. You may also choose fields to summarize.
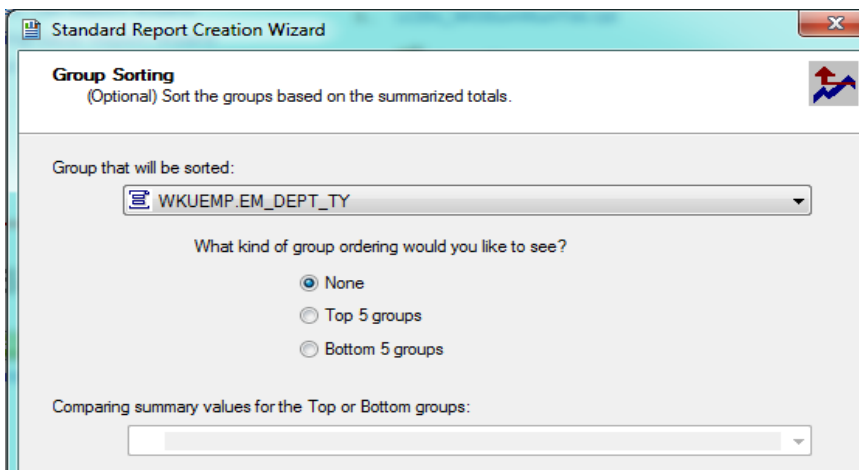
   o   For our example, we'd like to count the number of Employees (**EM_EMPL_TY).**

   o   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*.

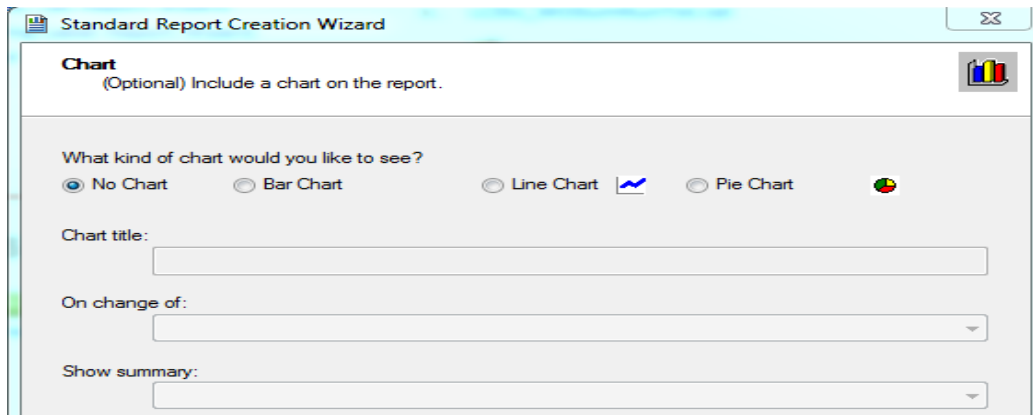13. Click *Next*.

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.

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.

   o   Move **EM_ACT_FLG** to the right side of the screen under *Filter Fields*.

   o   Use the drop down box to choose the selection criteria. For our example, we've selected *is True*.
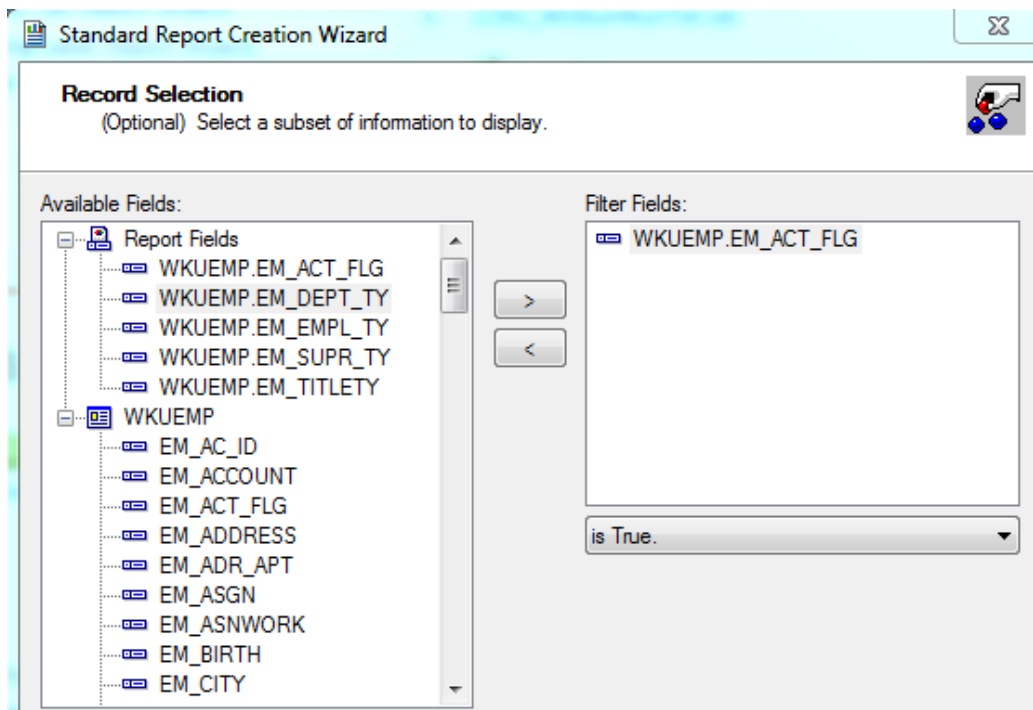
19. Click *Next*.

Template

20. There are a number of *Templates* available to choose from. Typically, you would choose *No Template*.
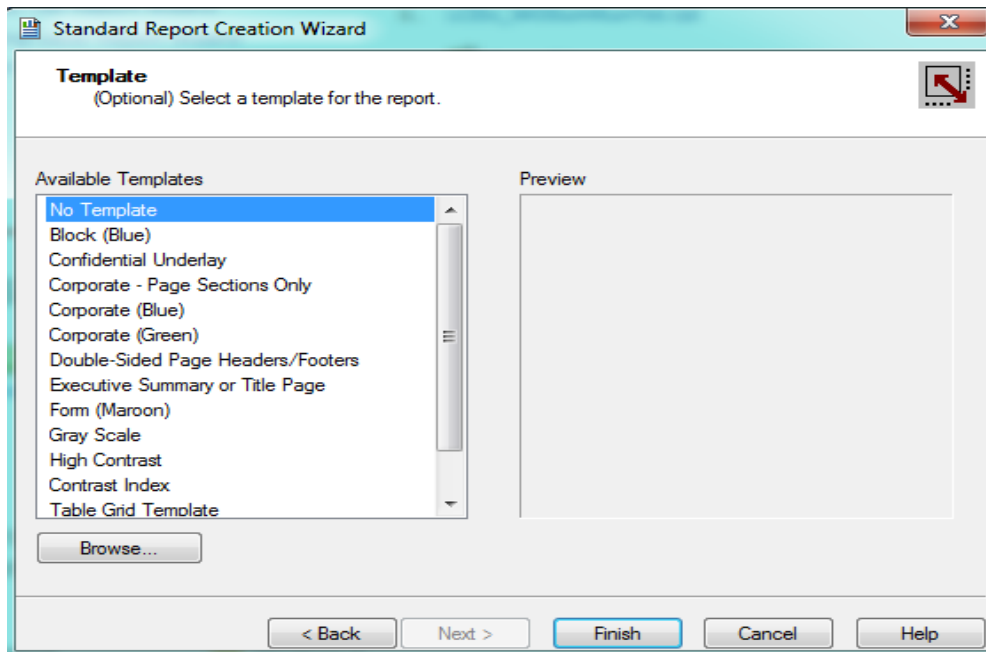
- The other options are worth looking at and playing with. It is easy to select one and preview the look.

21. Select *Finish* when you are done.

The Report Wizard has created the following:
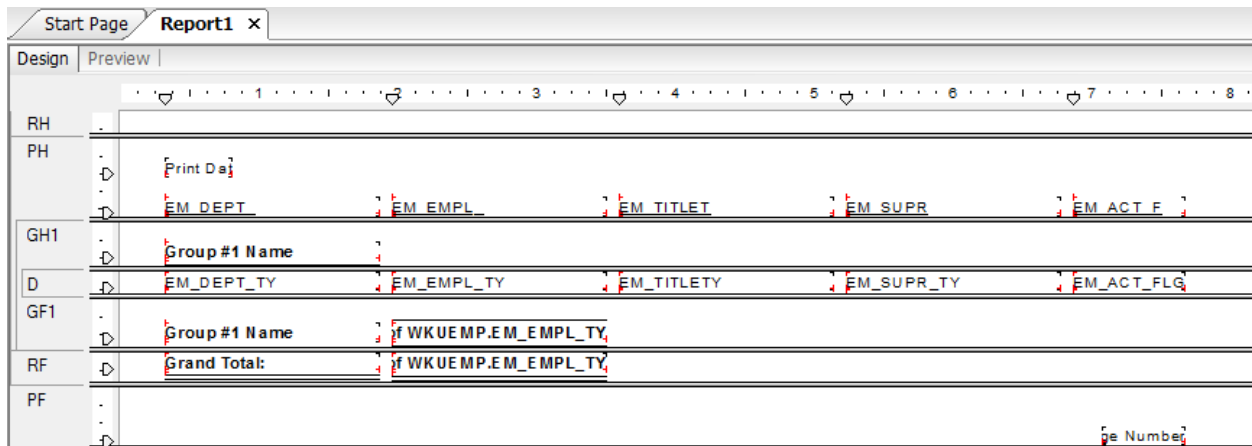
Preview
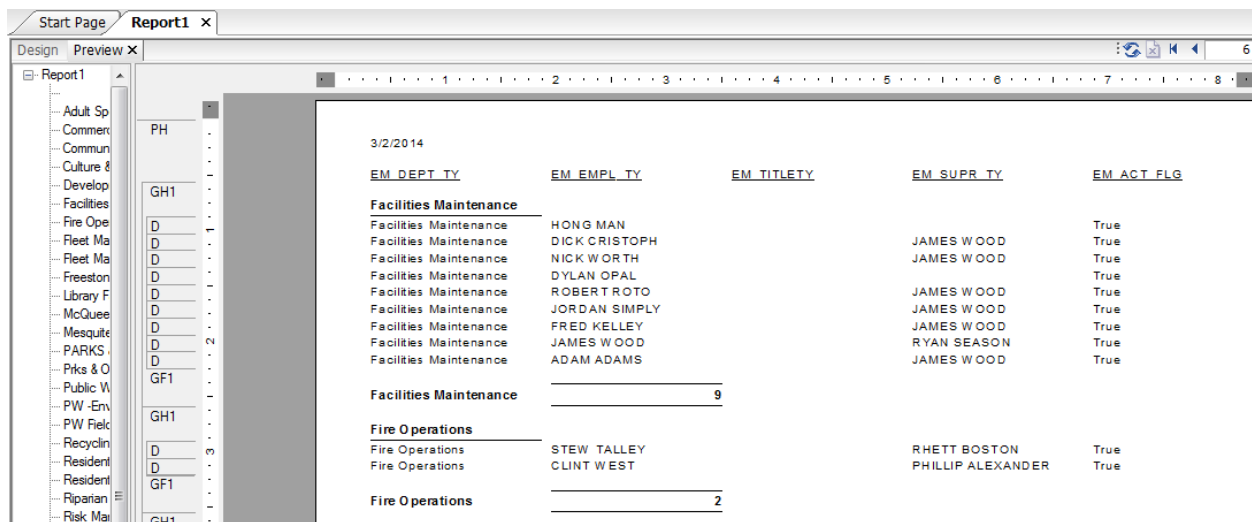
This report still needs modifications to make it presentable.

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.

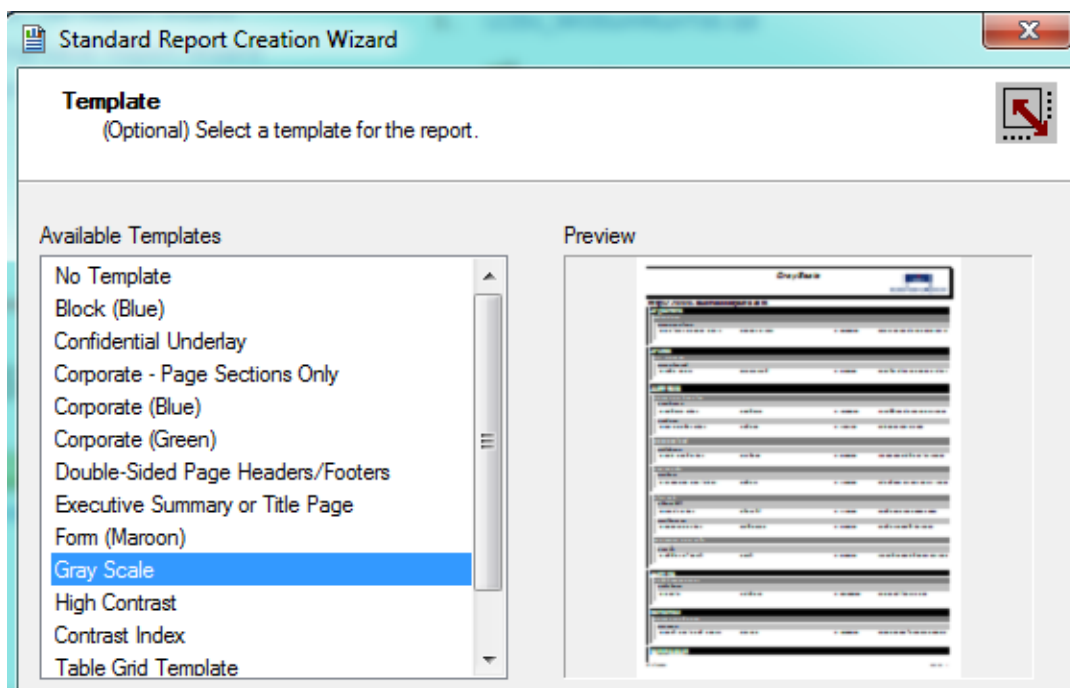24. Add a text object in the *Page Header* for the *Title* (**Employees By Department**).

    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*.

Employees By Department

| Name	Job Title	Supervisor
Facilities Maintenance		
NICK WORTH	COMM REFUSE SERVICE	JAMES WOOD
JAMES WOOD	FACILITIES MANAGER	
FRED KELLEY	SECRETARY	JAMES WOOD
HONG MAN	SENIOR CUSTODIAN WOF	
ADAM ADAMS	SENIOR MAINTENANCE W	JAMES WOOD
DICK CRISTOPH	OFFICE SUPERVISOR	JAMES WOOD
ROBERT ROTO	SENIOR CUSTODIAN WOF	JAMES WOOD
JORDAN SIMPLY	SENIOR CUSTODIAN WOF	JAMES WOOD
DYLAN OPAL	SENIOR MAINTENANCE W	
Facilities Maintenance 9		
Fire Operations		
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**).

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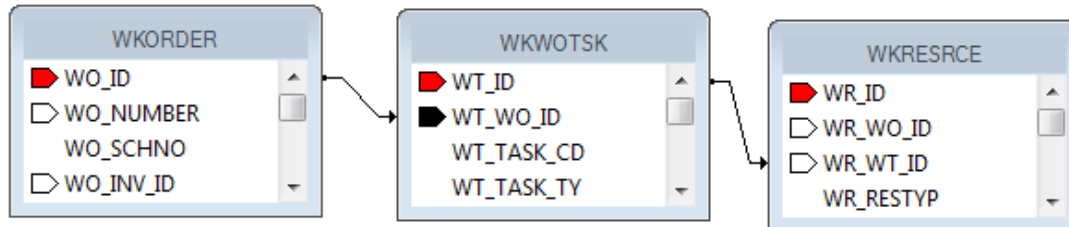
There would need to be a work order before you would pull task information. There would need to be a task before the resource information would show up.

There are some cases within Lucity 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:
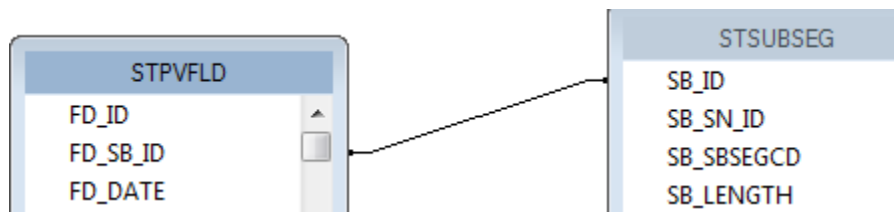
Now in order to see records both tables would need to have data where **FD_SB_ID** is equal to **SB_ID**.

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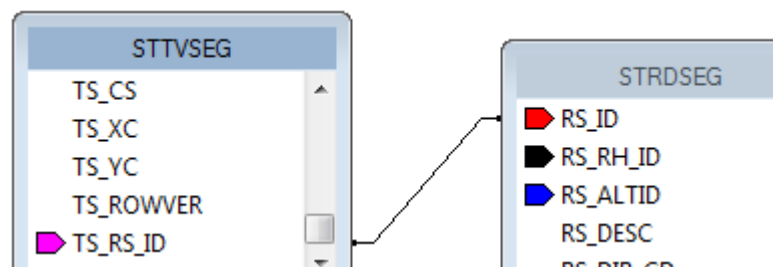
Blank Report

Reports can be made from a "blank slate". It will have the five sections open to add what you would like.

We will create a *Sewer Pipe* report with Lamping data. The Lamping data comes from a grid or child box. Usually there would be multiple lamping records to the one pipe, a one-to-many relationship. If pipe and lamping fields were brought into the same Detail section of a report then the line would show for every Lamping record which would also duplicate the Pipe information. This isn't a good way to present the data.

Alt Pipe ID:	US Structure:	DS Structure:	Lamp Date:	US or DS:
1000	113495	113497	3/1/2009	Up
1000	113495	113497	2/3/2008	Up
1000	113495	113497	2/9/2007	Down

Typically there would be at least one group on a field from the parent table and then at least one group on a field from the second table.

We would like a report to run from the *Sewer Pipe Inventory* module.

It will *show* the **Alt Pipe ID, US Structure, DS Structure, Size** and **Length**.

It will *show* **Lamping Date Inspected** (descending), **Time** (descending), **US** or **DS**, **Cleaning** and **Deposition**.

It will *group* on **Alt Pipe ID, Lamping Date** and **Time**.

It will *show* the most recent record (**LP_LATEST**) Lamping Date in red if it is not within the last year.

1. Open *Sewer > Inventory > Pipes*
2. Control right click all fields to be used in the report to find the field names.

    o   Table Name for Pipe: **SWNET**

        Fields: Alt Pipe ID: **NT_NUMBER**

                 US Structure: **NT_USMAN**

                 DS Structure: **NT_DSMAN**

                 Size: **NT_DIA**

                 Length: **NT_LENGTH**

    o   Table name for Lamping: **SWLAMP**

        Fields: Date Inspected: **LP_DT_INSP**

                 Time Inspected: **LP_TM_INSP**

                 US or DS: **LP_INMH_TY**

                 Cleaning: **LP_CLN_TY**

                 Deposition: **LP_DPO_TY**

3. Open **Crystal Reports** and click *Blank Report*.
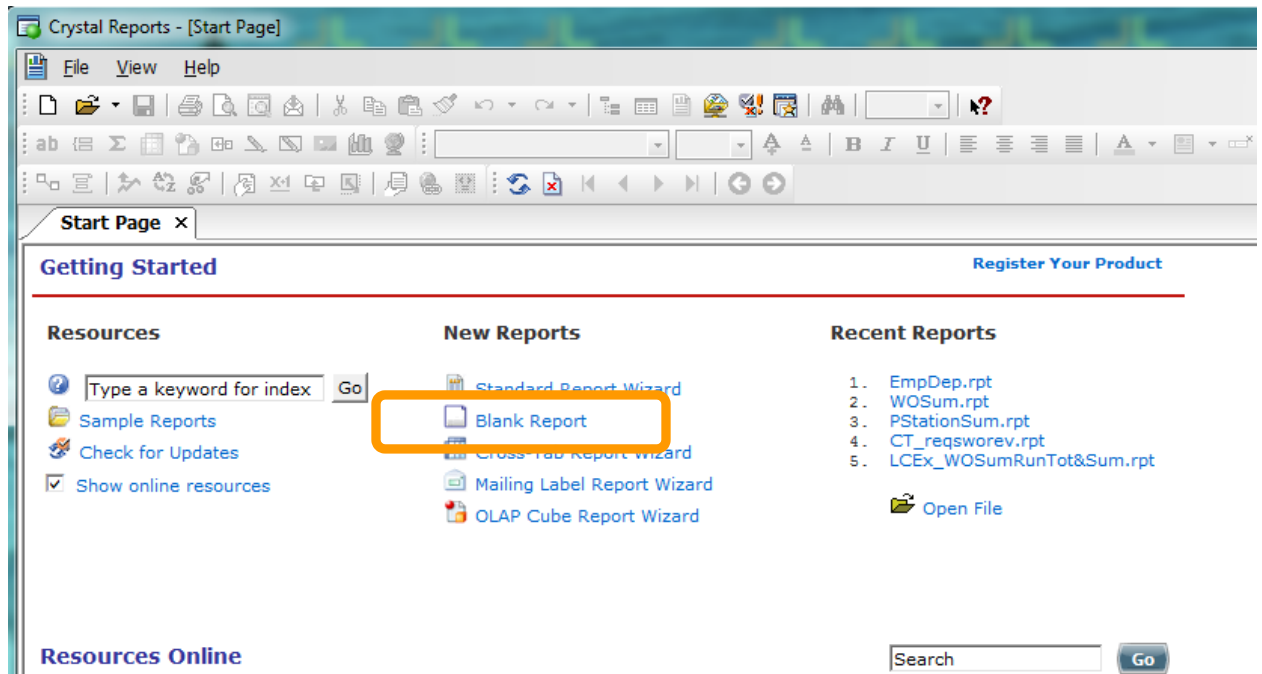
Bring in Tables

4. Next, open *Create New Connection >> ODBC (RDO) >> GBASewer001 >> Finish*.

5. Move the **SWNET** and **SWLAMP** 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.

      NT_ID links to **LP_NETID**

   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.

      o Click on the Main ID of the parent table (**NT_ID**), hold and drag to the connecting field of the other table (**LP_NETID**), release.

        ➢ A line has been created.

      o 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*).*
The majority 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**.
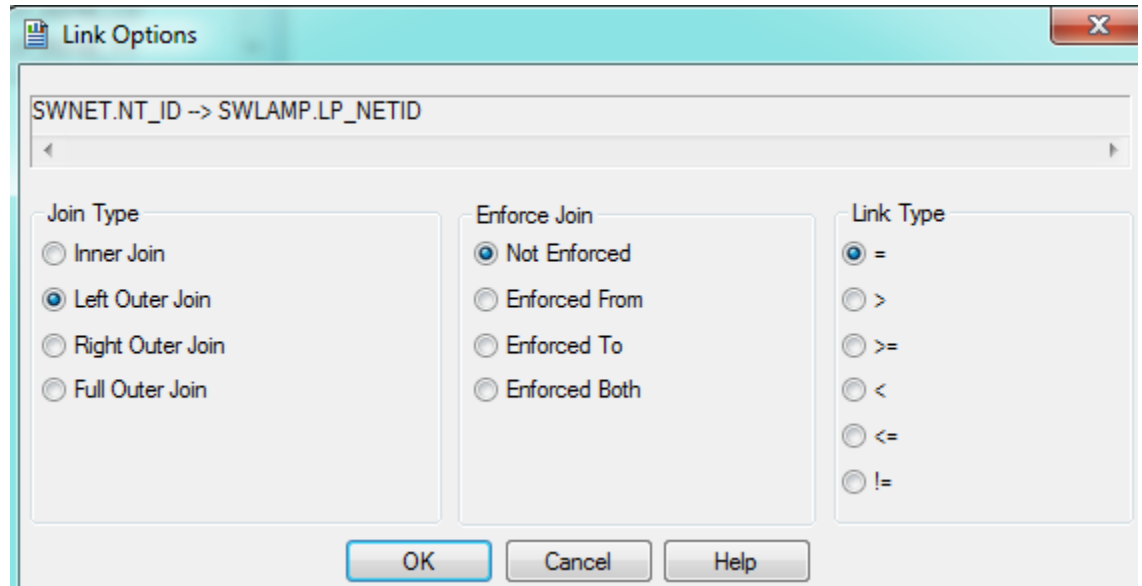
   o OK

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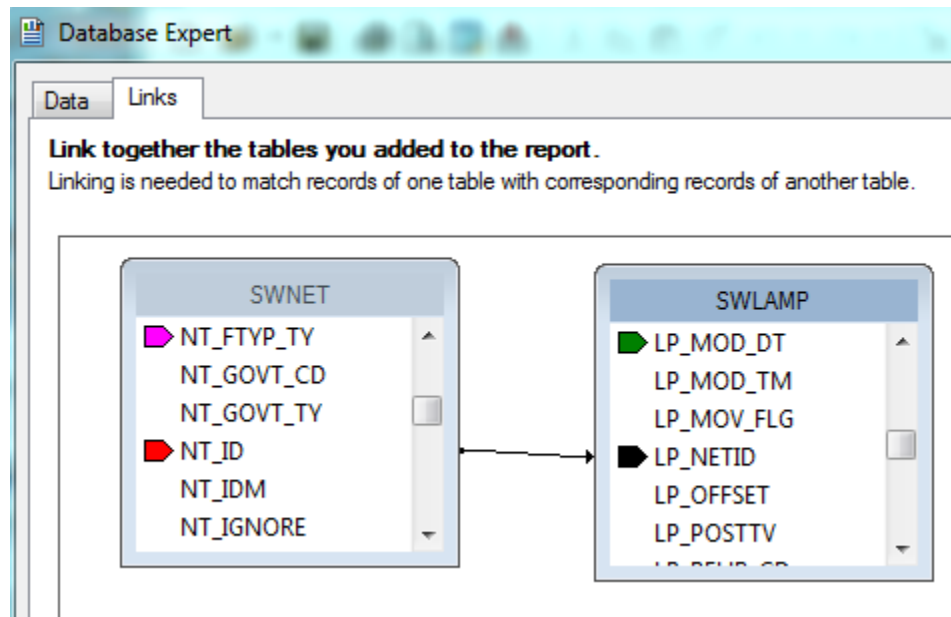
8. Click *OK*.

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 file. For our example, select the **Sewer** file.

   b. The name for this report will be **LC_SWPipeLamping.rpt**.

The report can be created using any of the previously discussed techniques.
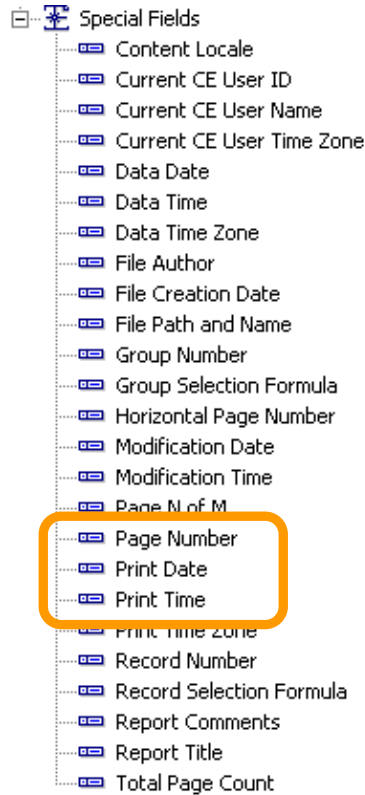
10. Insert a logo in the *Report Header*.

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Special Fields

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

    o   Drag in the **Page Number**, **Print Date**, and **Print Time** preset fields.

12. Place the report title in the ***Page Header*** section.

    a. Bring in a text object; we've titled this one, **Sewer Pipe Lamping Summary Report**.

    b.   Increase the field size and format to font 16, *Italic*.

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

    a. Right align **Size** and **Length**.

    b. Add guide marks.

    c. Align tops of Column Titles.

    d. Add a line to the bottom of the *Page Header* section.
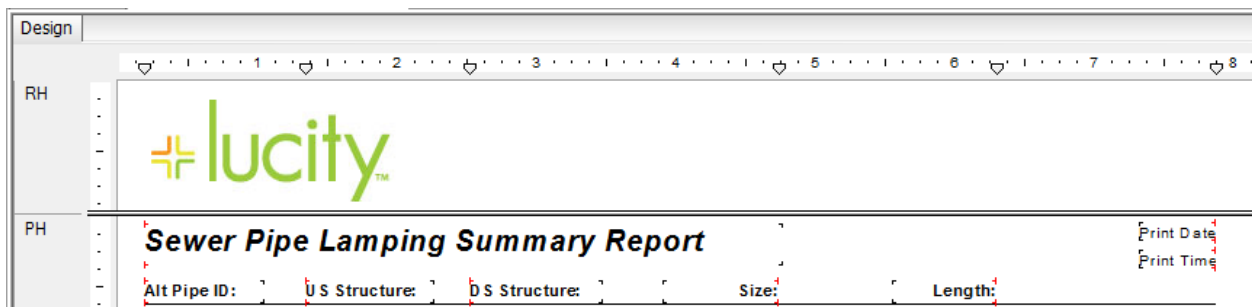
14. Insert Group (**NT_NUMBER**).

15. Drag the appropriate fields into the *Group Header 1* section.

    o   Align top of fields.

16. Suppress the *Group Footer 1* section.

    o   Right click in left margin next to *GF1*, select *Suppress*.

17. Add an additional section to *Group Header 1*.

    o   Right click in the left margin of *GH1*, select *Insert Section Below*.

18. Place Lamping Title and Column Titles in the *Group Header 1b* section.

    a.   Format Not Bold, *Italic* and Column Titles underlined.

    b.   Align Column Titles.

19. Insert Group on Pipe Lamping Inspected Date (**LP_DT_INSP**). *GH2*

    a.   Select from drop box *In descending order*.

    b.   Click *OK*.

    c.   Suppress the *Group Header 2* and *Group Footer 2* sections.

20. Insert Group on Pipe Lamping Inspected Time (**LP_TM_INSP**). *GH3*

    a.   Set up like the Date group - *In descending order*.

    b.   *Suppress* the *Group Header 3* and *Group Footer 3* sections.

21. Create formulas for the Lamping Date and Time fields.

    o   Date({SWLAMP.LP_DT_INSP})

    o   Time({SWLAMP.LP_TM_INSP})

22. Bring into the Detail section the newly created Date and Time formulas. Bring in the other desired Lamping fields.

    o   Align

Conditional Formatting

23. Conditionally format the **@LampDate** field.

    a. Right click **@LampDate**, select *Format Field…*

    b. *Font* Tab, click the formula box next to *Color:*.

    c. Enter the following formula:

    d. if ({SWLAMP.LP_LATEST} and {@LampDate} < printdate - 365) then crRed else crBlack

    e. *Save and close*

    f. *OK*

Alt Pipe ID:		U S Structure:		D S Structure:		Size:	Length:
1000		113495		113497		8	170.80
	Lamping Date	Time	US or DS		Cleaning	Deposition	
	3/1/2009	10:00 am	Up		No	N/A	
	2/3/2008	7:54 am	Up		Yes	Mud	
	2/9/2007	2:03 pm	Up		No	Rocks	
1001		113486		127237		8	412.00
	Lamping Date	Time	US or DS		Cleaning	Deposition	
	8/3/2013	8:52 am	Up				
	2/23/2006	10:52 am	Up		Yes	Mud	
1002		113487		113486		8	401.40
	Lamping Date	Time	US or DS		Cleaning	Deposition	
	5/23/2004	11:08 am	Up		N/A	Mud	
1003		113493		113494		8	49.10
	Lamping Date	Time	US or DS		Cleaning	Deposition	
1004		113625		113624		8	401.40

Blank Lines

In the previous example, Pipe 1003 shows the *Detail* section as empty space when there are no Lamping records. It also shows the Lamping Header Titles in *GH1b*.

These issues can be addressed in two ways.

- You could remove pipes that do not have Lamping records by changing the Table linking to Inner Join.

    OR

- If you want to keep the pipes and will use the report to find pipes that have no lamping records then suppress the *GH1b* and *Detail* sections when there are no records.

    a. Click on Section Expert .

    b. Click on *Group Header #1b* to highlight.

    c. Click on the formula box next to *Suppress*.

d. Enter the following formula:

e. isnull({SWLAMP.LP_NETID})

f. *Save and close* (formula box is now red)

g. Click on *Details* to highlight.

h. In the right box click to check the box next to *Suppress Blank Section*.

i. *OK*

1002		113487		113486		8	401.40

Lamping

Date	Time	US or DS		Cleaning		Deposition	
5/23/2004	11:08 am	Up		N/A		Mud	

| 1003		113493		113494		8	49.10
1004		113625		113624		8	401.40

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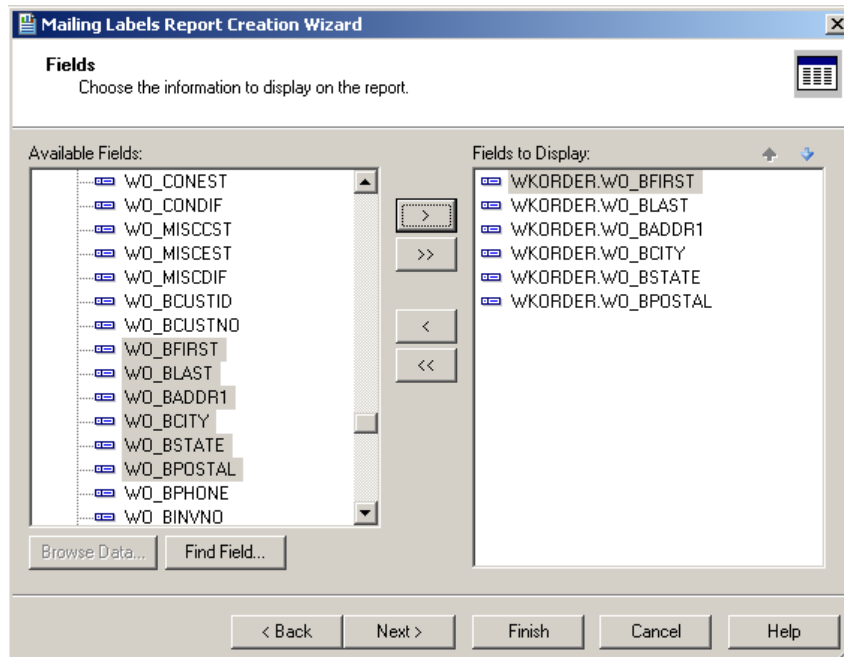
6. Select the mailing label type from the drop down box.

- 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:

- The second column in gray is automatically created.

Preview

```
Carol                                    Jane
Smith                                    Howe
123 Oak                                  456 Elm
Lenexa                                   Lenexa
KS                                       KS
66224                                    66225


City of Lenexa                           George
789 Main                                 Rain
Lenexa                                   753 Willow
KS                                       Lenexa
66226                                    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		

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Preview

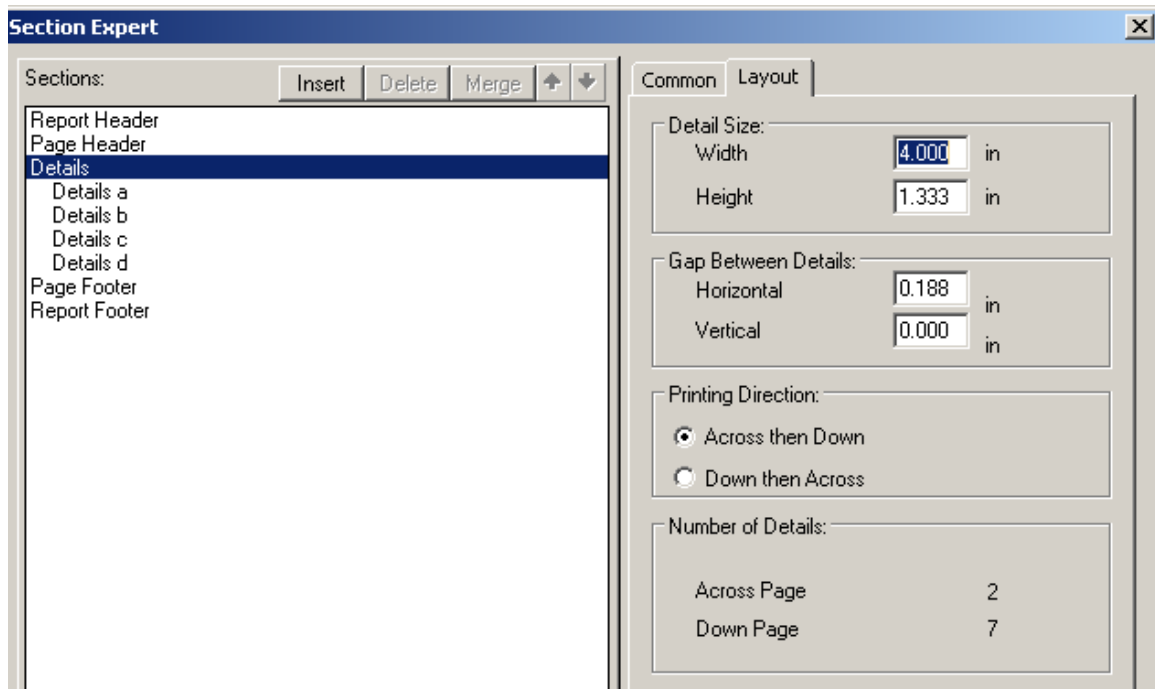|	
Carol Smith 123 Oak Lenexa, KS 66224	Jane Howe 456 Elm Lenexa, KS 66225
City of Lenexa 789 Main Lenexa, KS 66226	George Rain 753 Willow Lenexa, KS 66223

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.

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