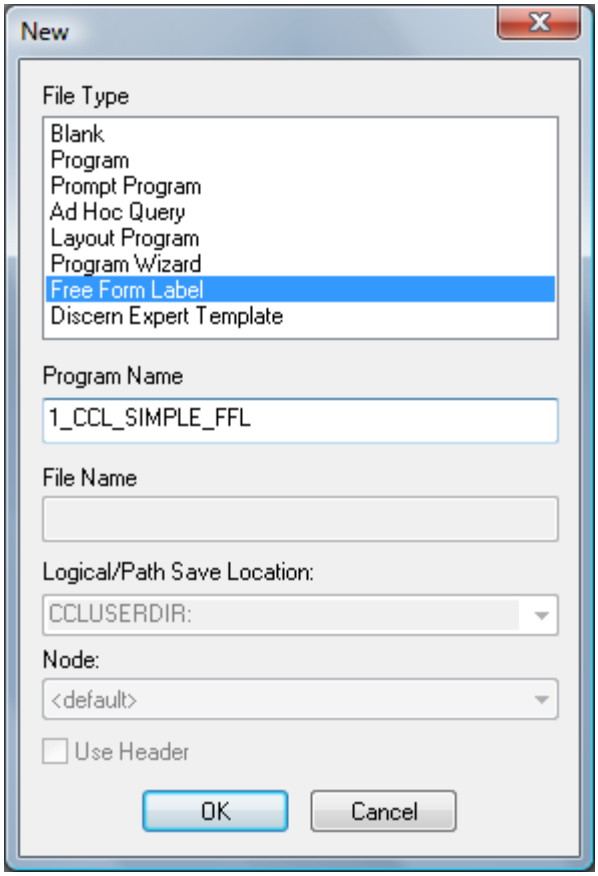
Creating a Free Form Label

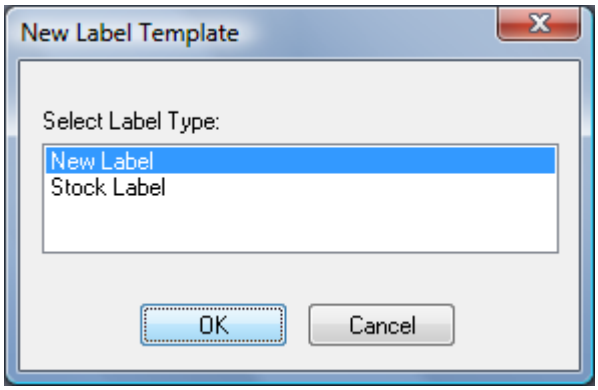
The simplest and most basic layout is a Free Form Label. A Free Form Label can be thought of as a single page output program. The page size can be customized to fit any size of paper or label stock. You can specify the number of labels on a sheet or use standard label stock. Layout Builder can generate PostScript, .PDF, Intermec, or Zebra outputs. The information displayed can be static text, selected fields or expressions, variables, items from a record structure, or values entered at prompts.

The following exercise creates a simple Free Form Label to look at some of the basic functionality of Layout Builder.

1. Open Discern Visual Developer (DiscernVisualDeveloper.exe) and from the File menu, select **New**. The New dialog box is displayed similar to the following:



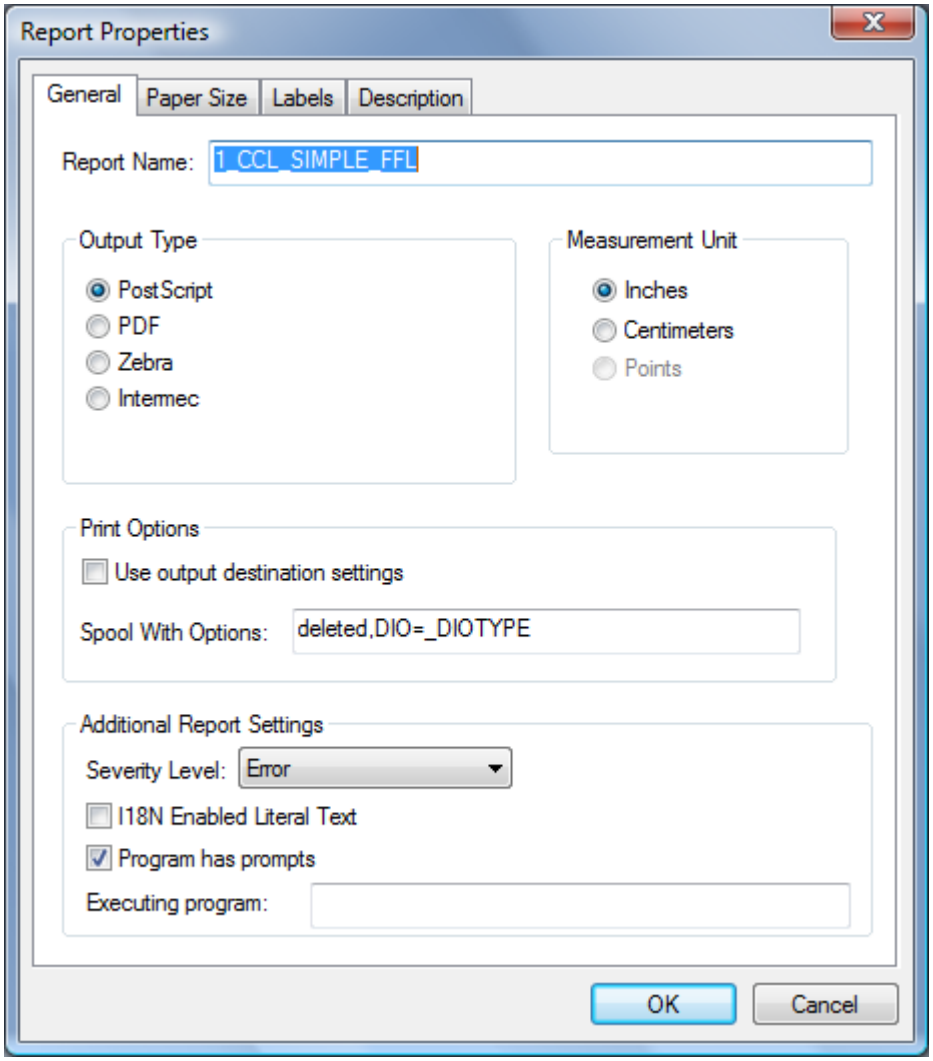
2. From the File Type list, select **Free Form Label**.
3. Enter a unique program name. For example, **1_*your_initials*_SIMPLE_FFL**.
4. Click **OK**. The New Label Template dialog box is displayed.



The New Label Template dialog box enables you to define a new label or pick from a list of standard stock labels. Stock labels are pre-manufactured labels that can have several sub-labels on a single page. For example, a CL-0100 or CL-0101 stock label has one 3.5 by 2.5, two 2.5 by 1.25, and four 1.25 by 1.25 inch sub-labels on a single page. For our example, we will create a new label and define its properties.

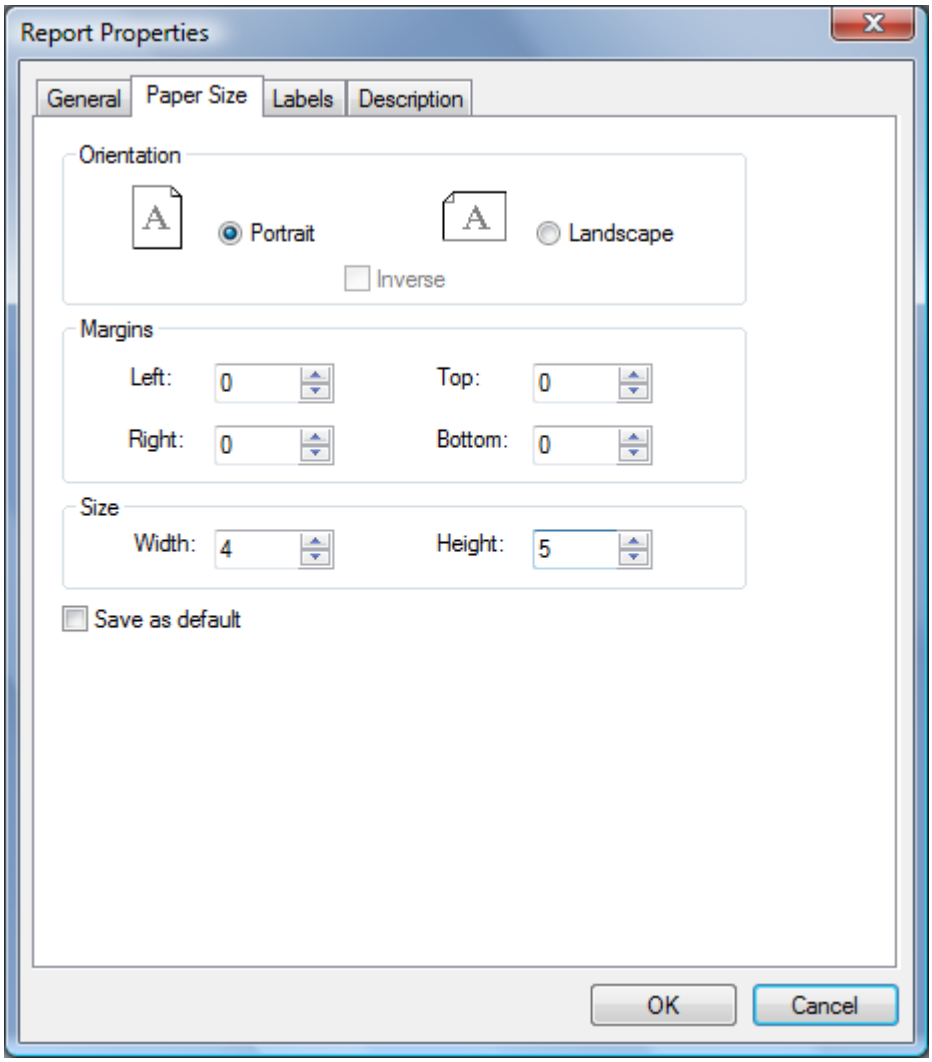
5. Verify **New Label** is selected in the New Label Template dialog box and click **OK**.

   The Report Properties dialog box is displayed. This dialog box enables you to set the properties of the report layout that you are creating. For information regarding the Report Properties dialog box, see the Report Properties Dialog Box help topic.

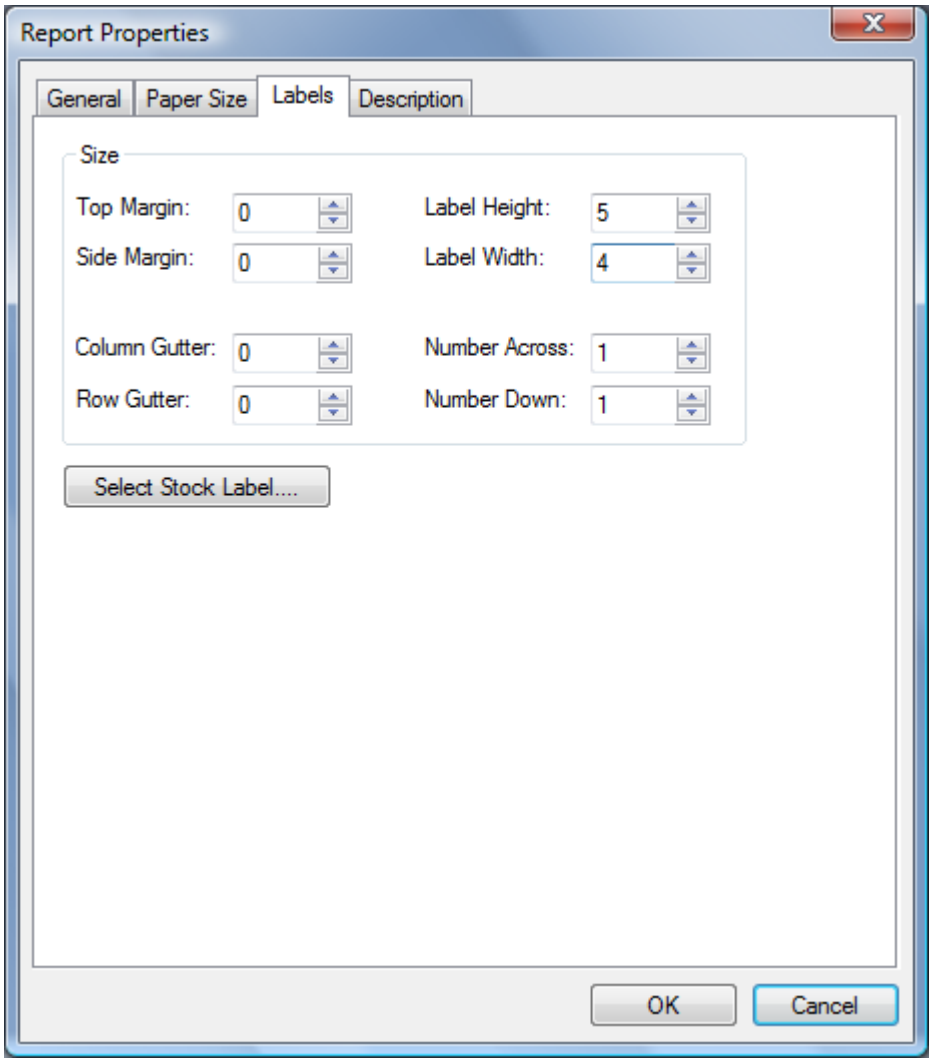


For our example, we will create a single 4-inch by 5-inch label on a 4-inch by 5-inch page. To display the output on the screen, we need to create the output using PostScript format.

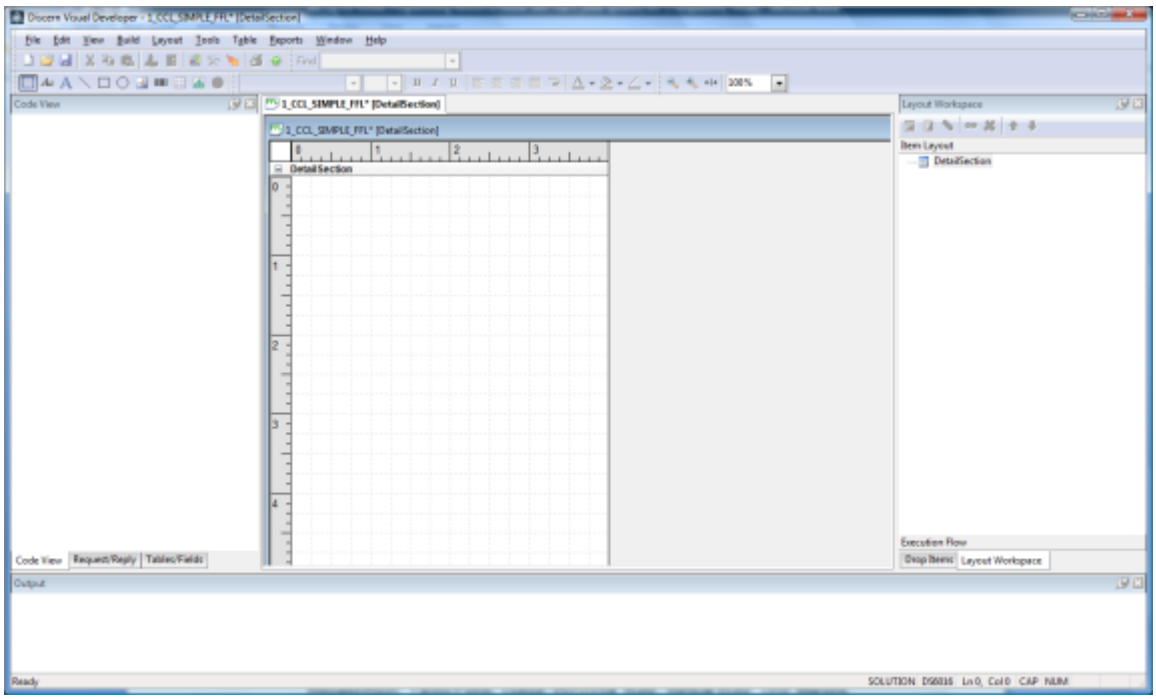
6. Verify the PostScript option is selected for the Output Type and select the **Paper Size** tab.
7. Set the width and height of the paper to 4 and 5 respectively. If this is the most common paper size you use for labels, you can select the **Save As Default** option; however, for this example, leave the option deselected. Your Report Properties dialog box should look similar to the following:



8. Select the **Labels** tab and set the Label Height to 5 and the Label Width to 4.
9. Verify that Number Across and Number Down both are set to 1. Your Report Properties dialog box should look similar to the following:



10. Click **OK** to close the Report Properties dialog box. A layout section named DetailSection is created and should look similar to the following:



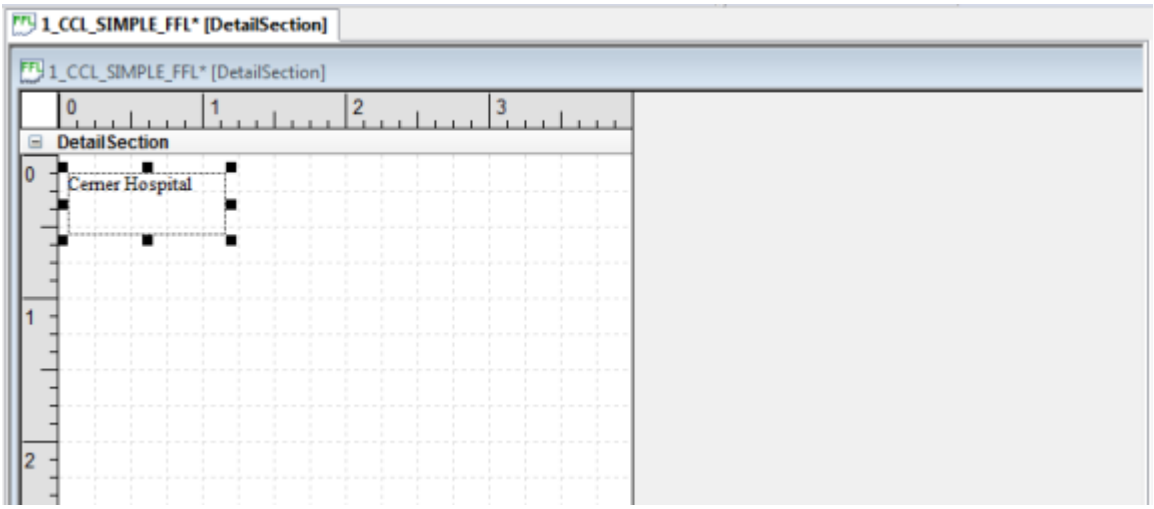
If your layout is displayed differently you might want to modify the display using the View menu. For the example above, the following items are selected

on the View menu: Standard Toolbar, Layout Toolbar, Formatting Toolbar, Zoom Toolbar, Code View, Request/Reply, Tables/Fields, Output, Horizontal Ruler, Vertical Ruler, Grid, Margins, and Section Title Bars.
Now that the layout section is created, we can create our label using the layout tools. The layout tools are on the layout toolbar shown below.

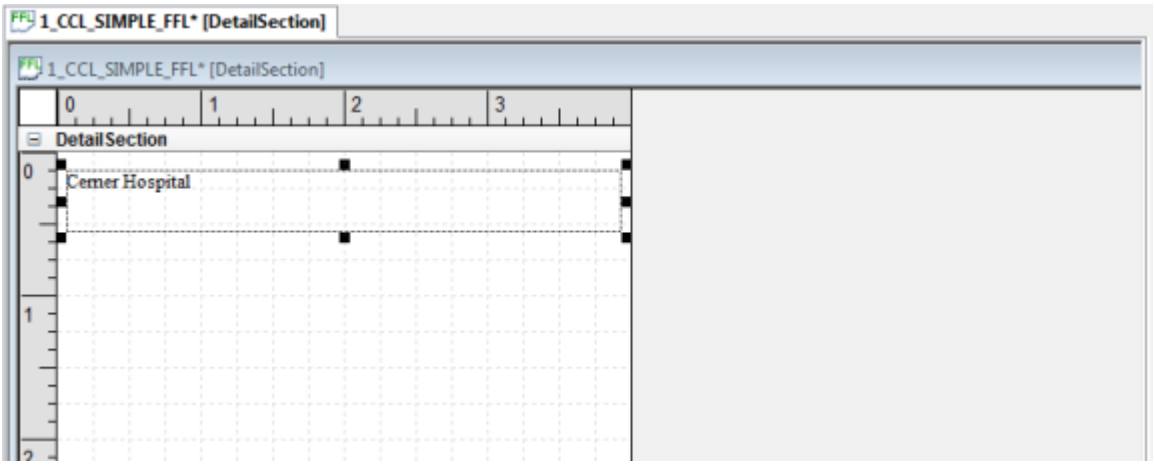
Label Tool

The Label tool  can be used to display static text in a rectangular area within a layout. Within the rectangular area, the text can be centered top and bottom, justified, or rotated. The rectangular area can be given a background color or border. The font, style, color, size, and many other properties can be set. For information regarding text properties, see the Properties Window help topic. The text is displayed using the properties you set in Layout Builder in WYSIWYG (what you see is what you get) fashion. However, some differences might exist between what is displayed in the layout and what is printed. These differences are generally the result of the printer not supporting properties that are available in Layout Builder.

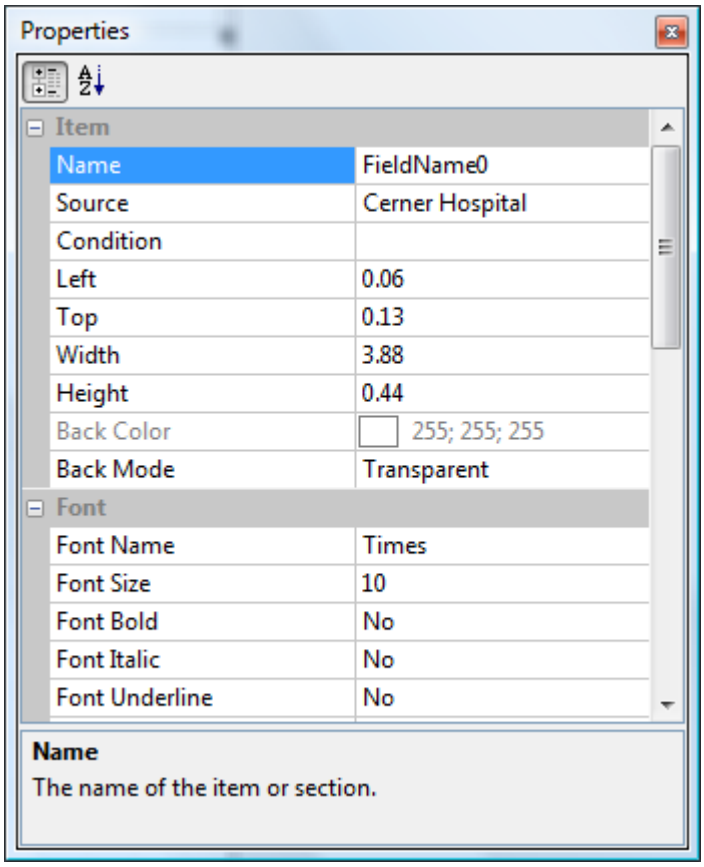
1. Select the Label tool, and then click in the upper left corner of the DetailSection to add an item to the layout. Enter the name of your organization in the Label item.



2. Drag the handles on the selected label item to expand the box to cover the top half-inch of the DetailSection.

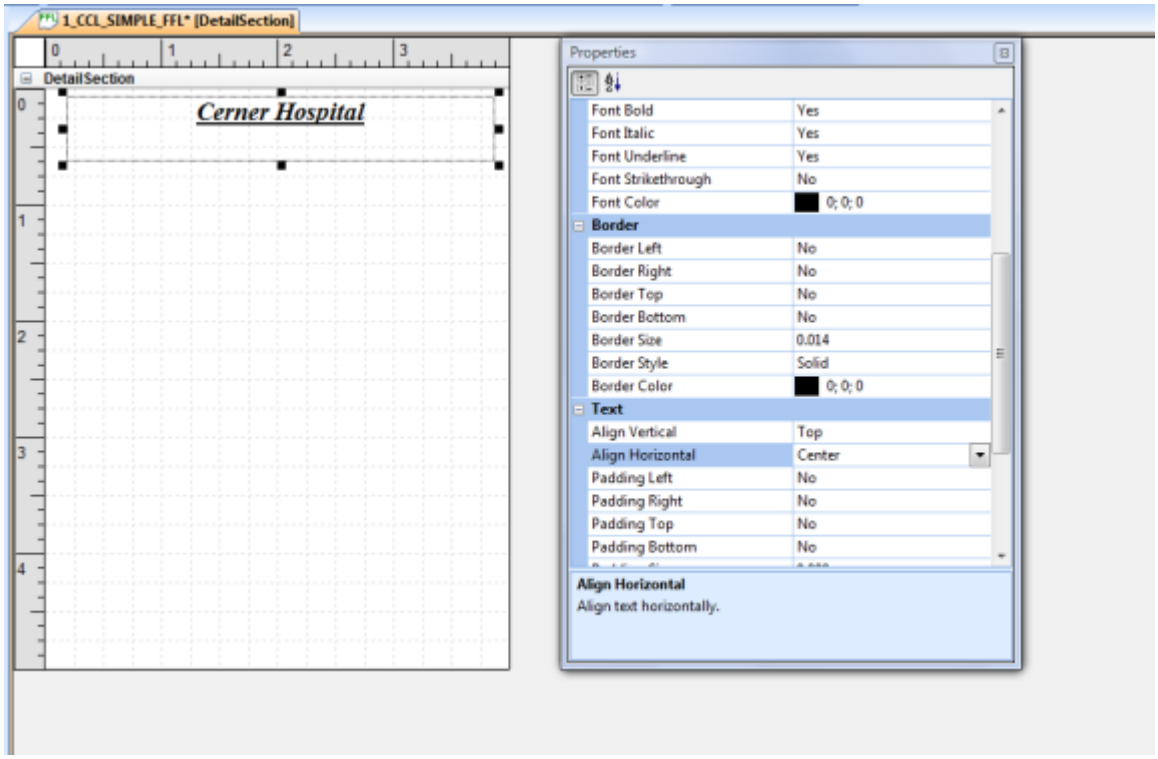


3. Open the Properties window, if it is not already open on the right hand side. If the Properties window is not open, press F4, or from the View menu, select **Properties**, or click somewhere on the layout to deselect the label item and then double-click the label item to open the Properties window. The Properties window displayed below is used to set the properties of the label item.



At the bottom of the Properties window, there is a brief description of each item within the box. Selecting the different items listed changes the description on the bottom of the window.

4. Make the following modifications in the Properties window:
    1. Change the font size to **16**.
    2. Turn on the **Bold**, **Italic** and **Underline** options.
    3. Modify the horizontal alignment (Align Horizontal) to center the text within the box. Your layout should look similar to the following:

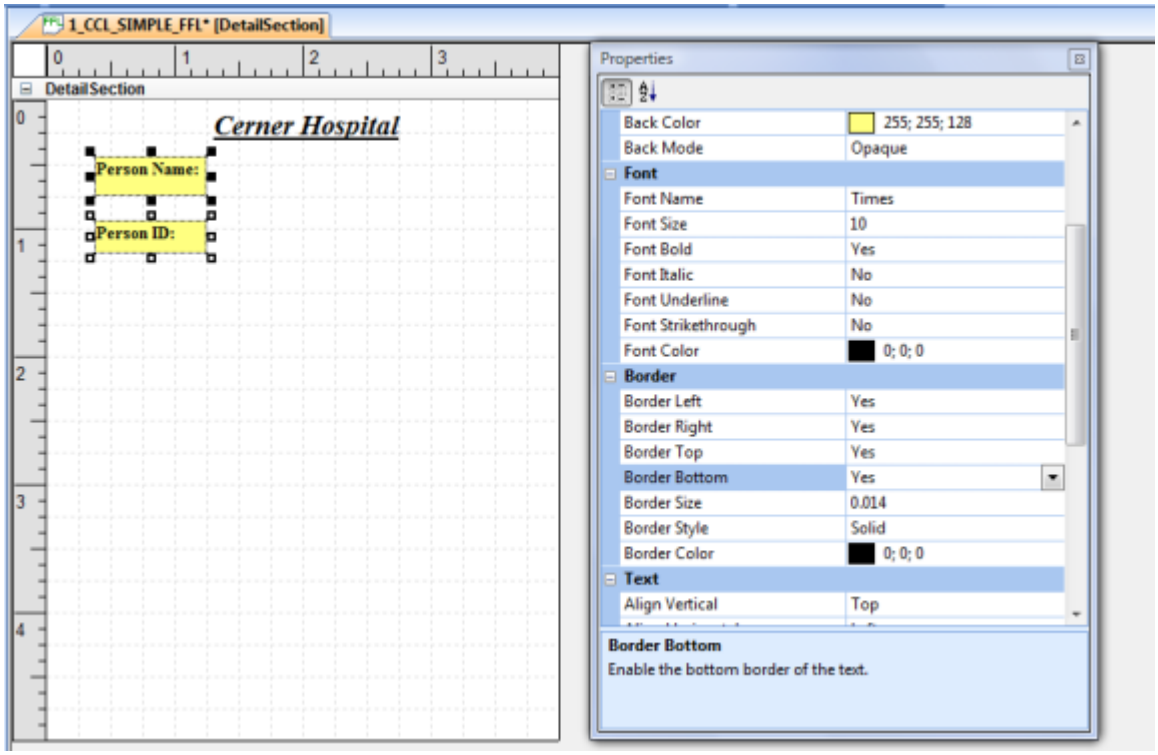


Note
Text is rendered within the rectangular box on the layout. If the height of the font exceeds the height of the box, the text is not rendered. To see an example, increase the size of the font to a larger number, such as 72. This most likely will cause the name of your organization to no longer be displayed. Text that does not fit within the width of the rectangular box is also clipped. To see an example of clipping, add some additional text to the end of your organization's name. When your text string gets too long, part of it is no longer displayed.

You can modify the properties on multiple items by pressing the CTRL or SHIFT key and selecting multiple items. Then, from the View menu, select **Properties** or press the F4 key to open the Properties window. Modifications made in the Properties window are applied to all selected items.
If you want the text displayed in a shaded or colored background, Layout Builder facilitates this functionality using the Back Mode and Back Color properties.

5. Use the Label tool to add the static text **Person Name:** to your layout. Place this item under your organization name on the left side of the layout.
6. Modify the size of the text area as necessary to ensure all of the text is displayed.
7. Use the Label tool to add the text **Person ID:** to your layout. Place this item under the Person Name item on the left side of the layout.
8. Modify the size of the text area as necessary to ensure all of the text is displayed.
9. Press CTRL, and select the **Person Name:** and **Person ID:** items.
10. With both items selected, from the Layout menu, select Align > **Left** to align the left side of the items.
11. With both items selected, set the Font Bold option to **Yes**.
12. Change the Back Mode to **Opaque** and set the Back Color to a light color.
13. Set Border Left, Border Right, Border Top, and Border Bottom options to **Yes**.

If adding the border causes your text to disappear, select the item and use the handles to increase the size of the box. Your layout should look similar to the following:



Text from Prompts, Queries, and System Variables

The Text tool  can be used to display information that is entered at a prompt during run time, selected from the Cerner Millennium database, or supplied by a Discern Explorer variable. Older versions of Layout Builder also use the Text tool to display static text.

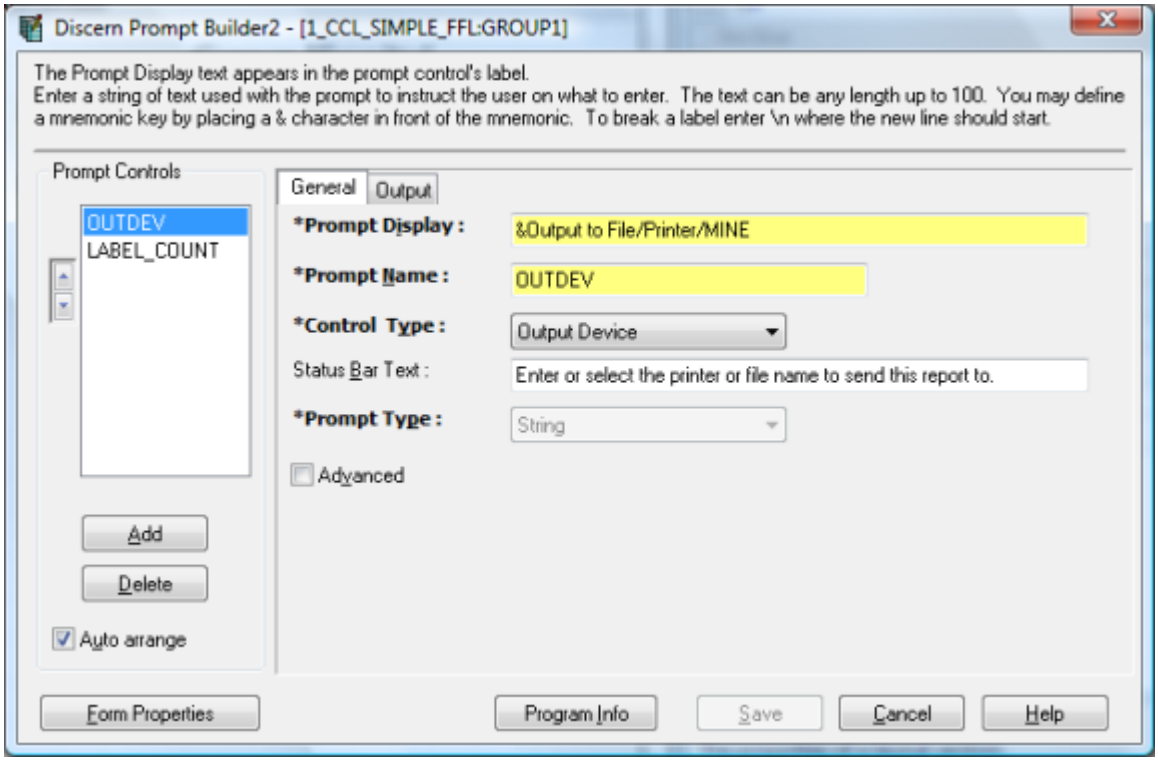
Text from Prompts

Suppose we needed to place a person's name and ID on our layout. You can add prompts to your program to have the user enter the name and ID, and then

display the information they enter on the layout.

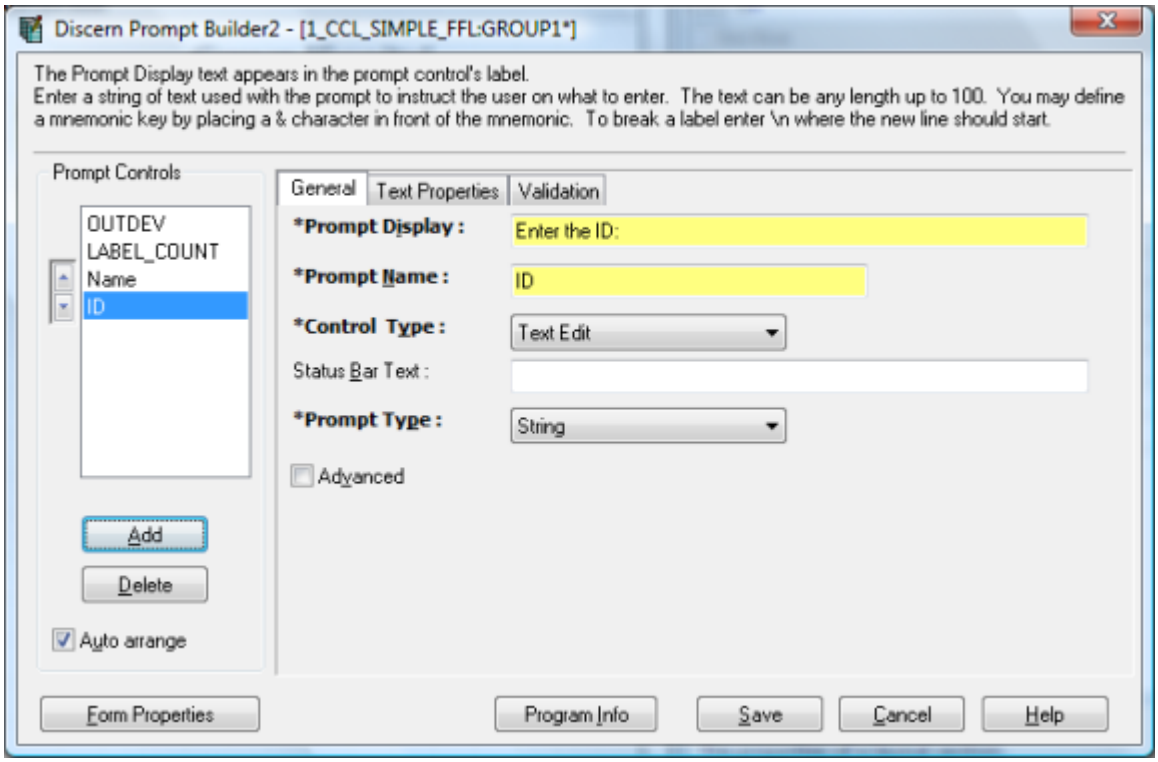
You can add prompts to a Free Form Label using the Prompt Builder tool. If you are not familiar with using the Prompt Builder, you might want to review Use Discern Prompt Builder. For our purposes we will create a couple of very simple prompts using some minimal functionality of the Prompt Builder.

1. From the File menu, select **Save** to save your Free Form Label program or click **Save** from the toolbar.
2. From the Tools menu, select **Prompt Builder** or click Prompt Builder from the toolbar to open the Prompt Builder. The Prompt Builder dialog box is displayed similar to the following example:



   Layout Builder creates a prompt for an output device and a prompt for the number of labels to create. We want to add a prompt for the person's name and a prompt for the person's ID.

3. Click **Add** on the Prompt Builder. A new Prompt Control entitled prompt1 is displayed.
4. Modify prompt1 in the Prompt Display to **Enter the Name**.
5. Modify prompt1 in the Prompt Name: to **Name**.
6. Click **Add**. The previous prompt1 is changed to Name and a new prompt1 is displayed.
7. Modify the new prompt1 in the Prompt Display to **Enter the ID**.
8. Modify the new prompt1 in the Prompt Name to **ID**. Your Prompt Builder dialog box should be displayed similar to the following example:



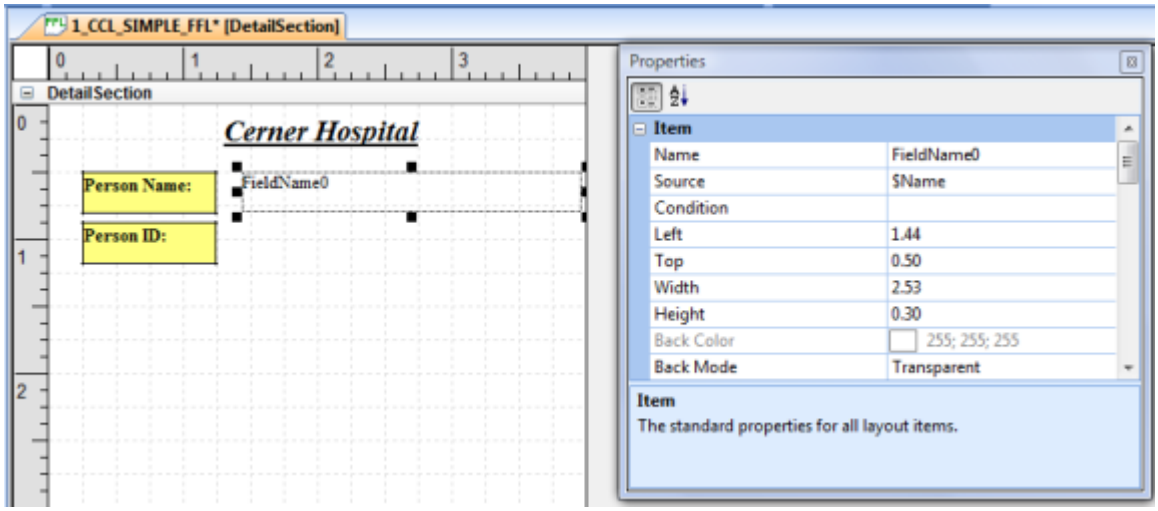
9. Click **Save** to save the Prompt Builder form.

   Using the Prompt Builder tool creates a prompt form that is opened when the Free Form Label program is executed. The prompt form assigns the value entered at the name prompt to the symbol $Name and assigns the value entered at the ID prompt to the symbol $ID. We can use the text tool to display these values on the layout.

10. Use the text tool  to place a text field to the right of the Person Name:.
11. Use the handles to expand the text field so that it takes up most of the space to the right of the Person Name:.

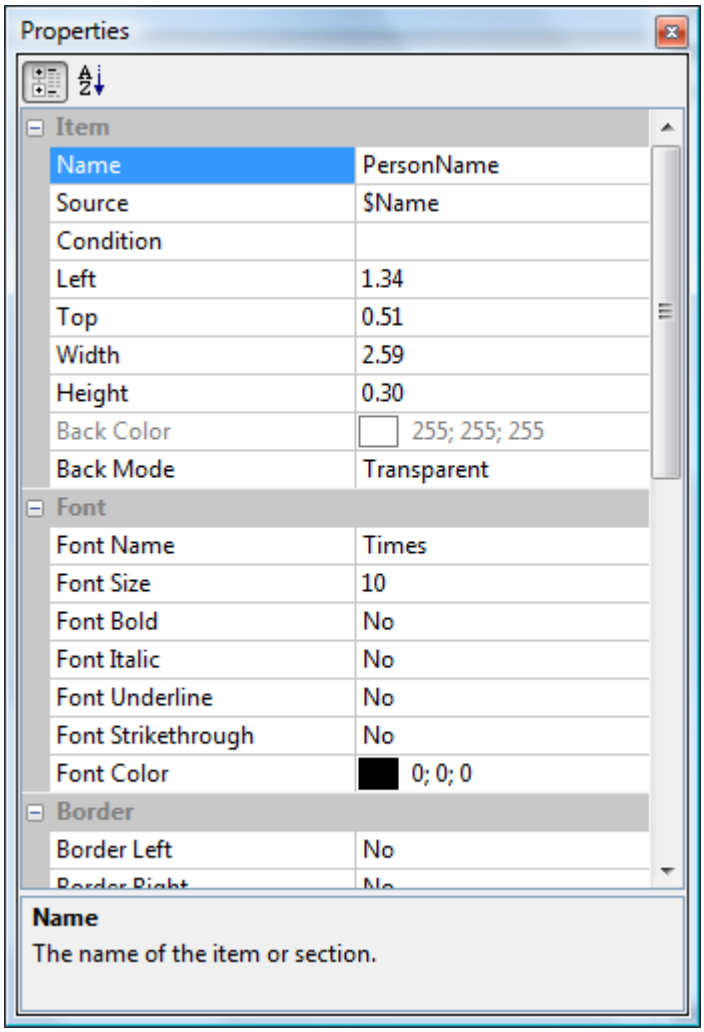
    One of the properties listed in the Properties window is Source. This property is used to indicate the value that is to be displayed on the layout. Entering text in quotes displays the literal text on the layout. Any value entered in the Source property that is not embedded in quotes is assumed to be a field name, a prompt value, or a variable.

12. In the Properties window, enter **$Name** in the Source property. Your layout should look similar to the following example:

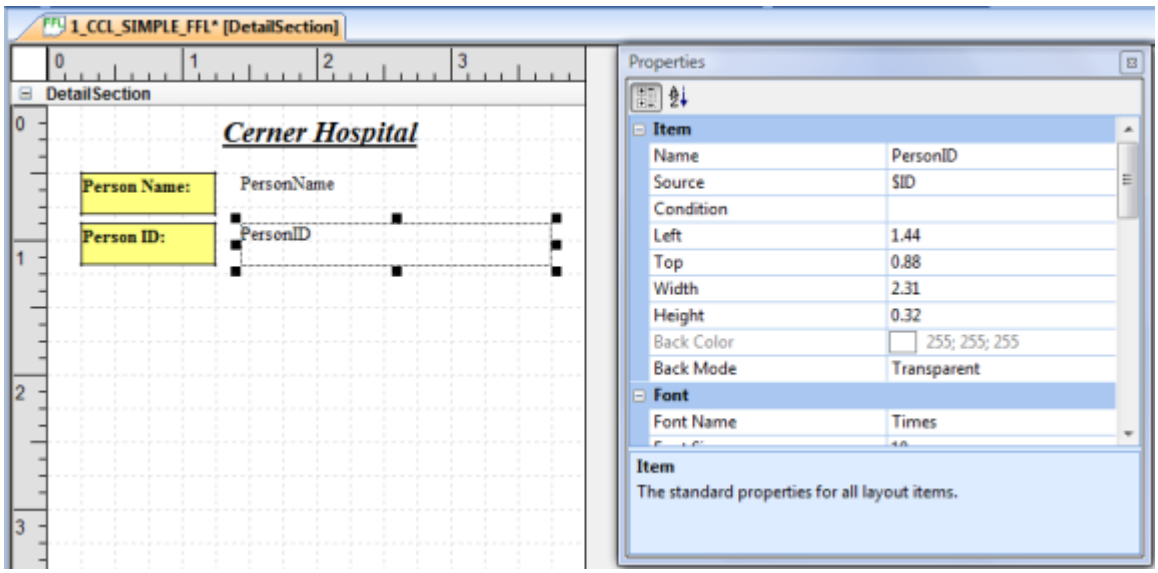


    Layout Builder creates generic names for the text fields that you place on the layout. In the example above, Layout Builder named the text field **FieldName0**. Layout Builder could have created a different name for the field you created. If you want a more meaningful name displayed on the layout, you can modify the value of the name property. This can make working with the layout easier. If the value entered as the Source is enclosed in quotation marks, then Layout Builder uses that value when it names the field.

13. Modify the value of the Name property for the text field you created above to **PersonName**. Your Text Properties should look similar to the following example:



14. Use the text tool  to place a text field to the right of the Person ID:.
15. Use the handles to expand the text field so that it takes up most of the space to the right of the Person ID:.
16. In the Properties window, enter **$ID** in the Source property on the Properties window.
17. Modify the value of the Name property for the text field you created above to PersonID. You can expect your layout to be similar to the following example:

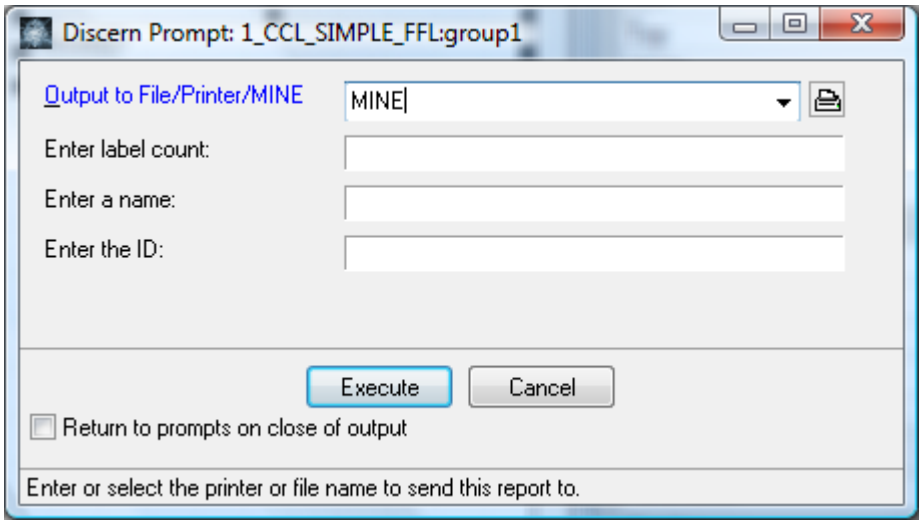


At this point it is a good idea to test the Free Form Label program to see what the output looks like.

18. From the Build menu, select **Run "*Your_Free_Form_Label*"** or press CTRL+F5 to execute your Free Form Label.

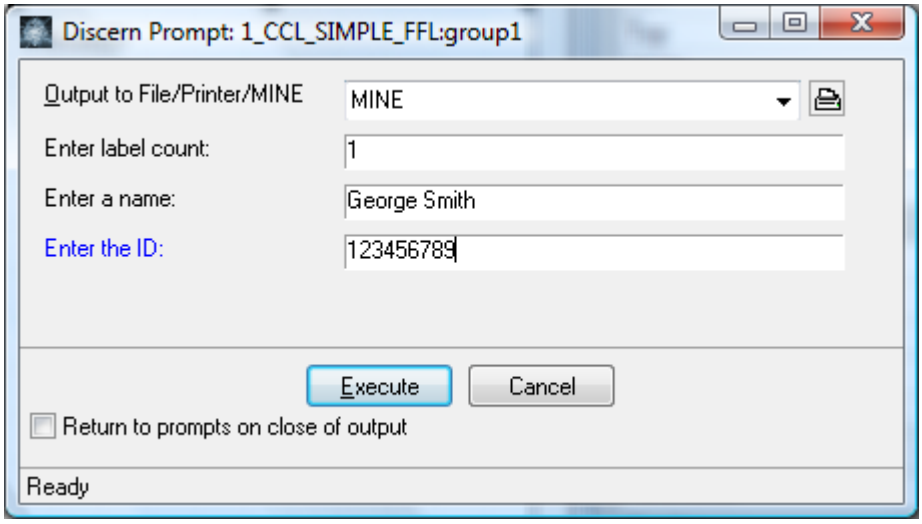
    In older versions of Layout Builder from the Task menu, select **View...** to execute the Free Form Label.

19. Click **Yes** when prompted to save the layout. A prompt form similar to the following example is displayed:

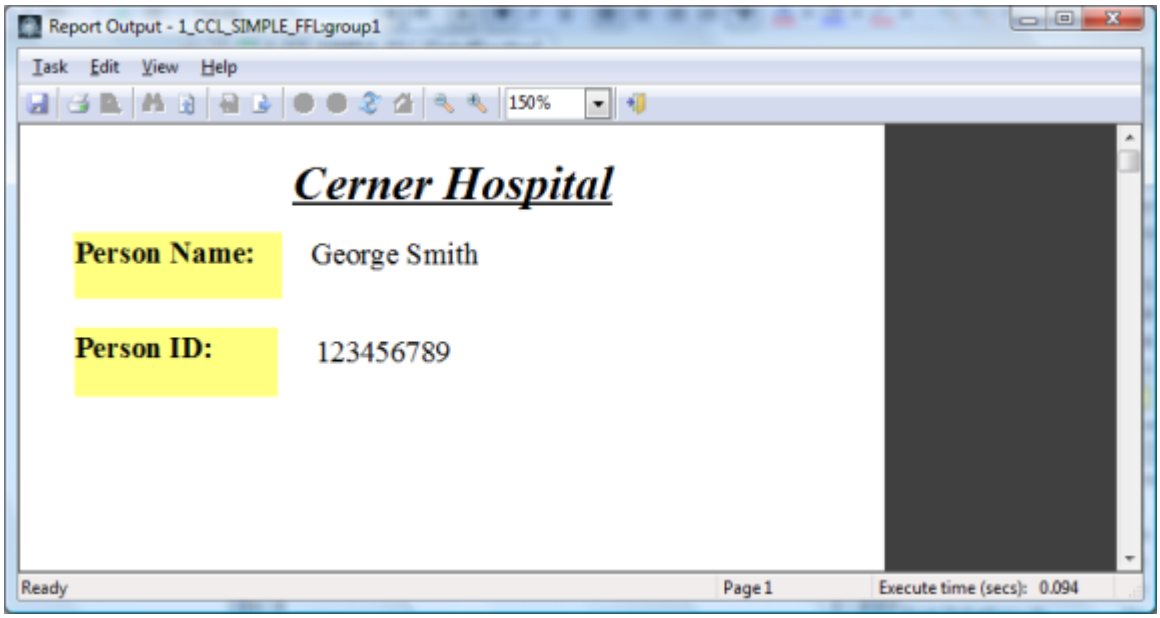


    The prompts for output device and label count were created by Layout Builder. You added the prompts for Name and ID above. The label count is used to determine how many copies of the label you want to produce.

20. Accept the default of MINE for the output device.
21. Enter **1** for the Label Count.
22. Enter a person's name in the name prompt.
23. Enter a person ID in the ID prompt (you can use any name and ID that you want). Your Prompt form should be similar to the following example:



24. Click **Execute** to test the Free Form Label program. The program is executed and something similar to the following output is displayed:



Remember that text is rendered within the rectangular box on the layout. If the height of the box is less than the height of the font, the text is not rendered. If items are not displayed in your output, select the box and drag the handles to enlarge it. Text that does not fit within the width of the rectangular box is clipped. You can click the text field and in the Properties window, set the Ellipsis property to Yes. This displays an ellipsis (...) at the end of clipped text to indicate the text was clipped. Set the Wrap property to Yes to allow longer text to wrap within the rectangular box. The height of the box must be large enough for at least two lines of text to fit in order for the wrapping to occur. When the Wrap property is set to Yes, the text is wrapped within the size of the box. Text that does not fit within the box is clipped. Set the Grow property to Yes to expand the box vertically down the page instead of clipping the text.

25. Close the output window to return to Layout Builder.
26. Before moving on to the next section, open the Prompt Builder and delete the prompts for Name and ID you added above. Also, delete the prompt for Label_Count.

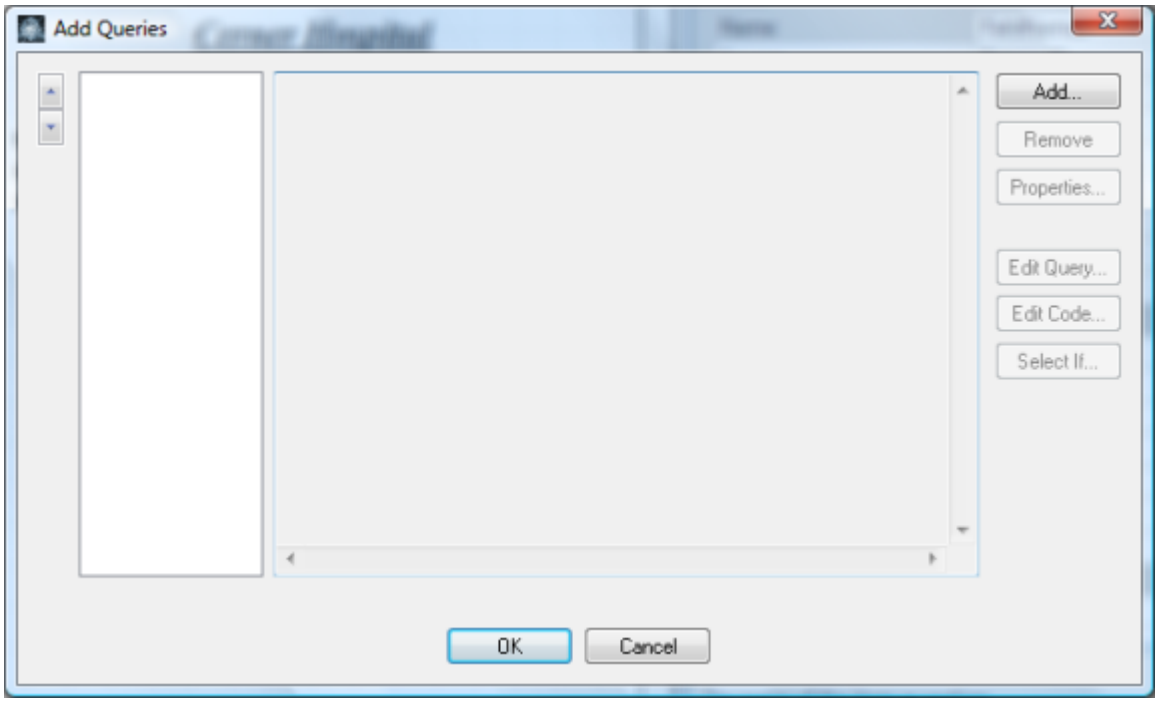
    Layout Builder creates a prompt for an output device and a prompt for the label count when you create a new Free Form Label. The prompt for the output device is required. The prompt for label count can be used to print multiple copies of a label. In the next section you will create and associate a query with the Free Form Label. When a query is associated with a Free Form Label the prompt for label count is ignored and one label is created for each row that is returned by the query.

27. Click **Save** to save the modifications to the prompts and close the Prompt Builder.

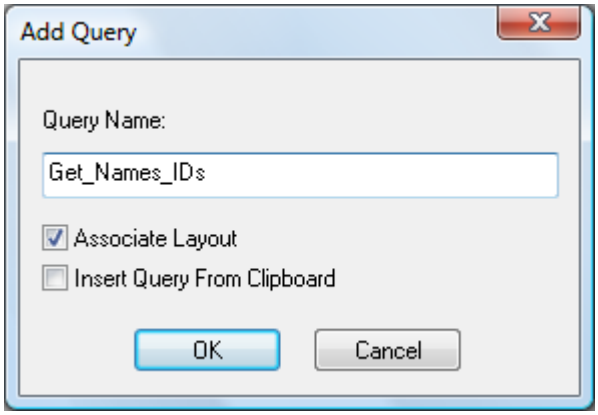
Text from Queries

The text tool  can be used to display text that is selected by a query on the Cerner Millennium database. Query Builder can be used to associate a query with a layout. Instead of entering a name and ID at the prompt, we want to modify our layout to display names and IDs selected from the Person table.

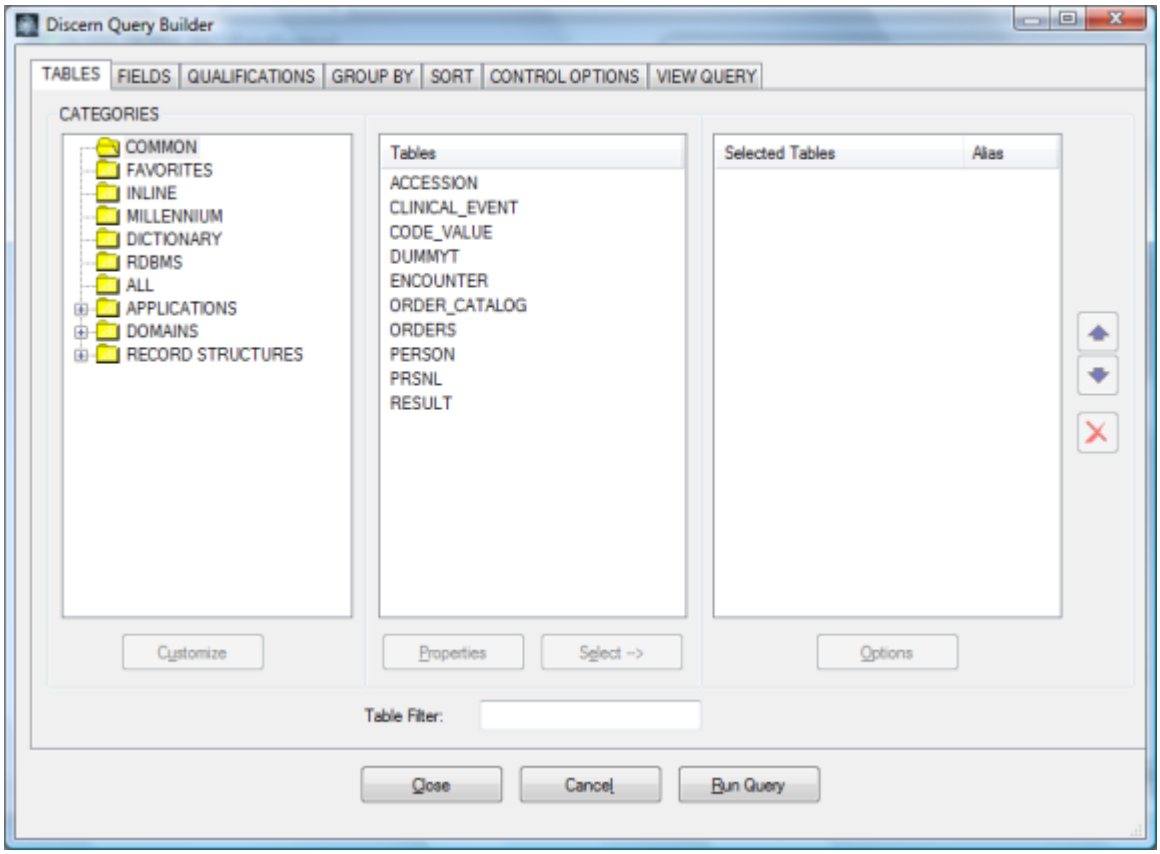
1. From the Tools menu, select **Query Builder**. The Add Query dialog box is displayed.



2. Click **Add** to add a new query.
3. Name your query **Get_Names_IDs**.
4. Note that the Associate Layout option is selected by default, which associates the new query with the layout. The Add Query dialog box is displayed similar to the following example:



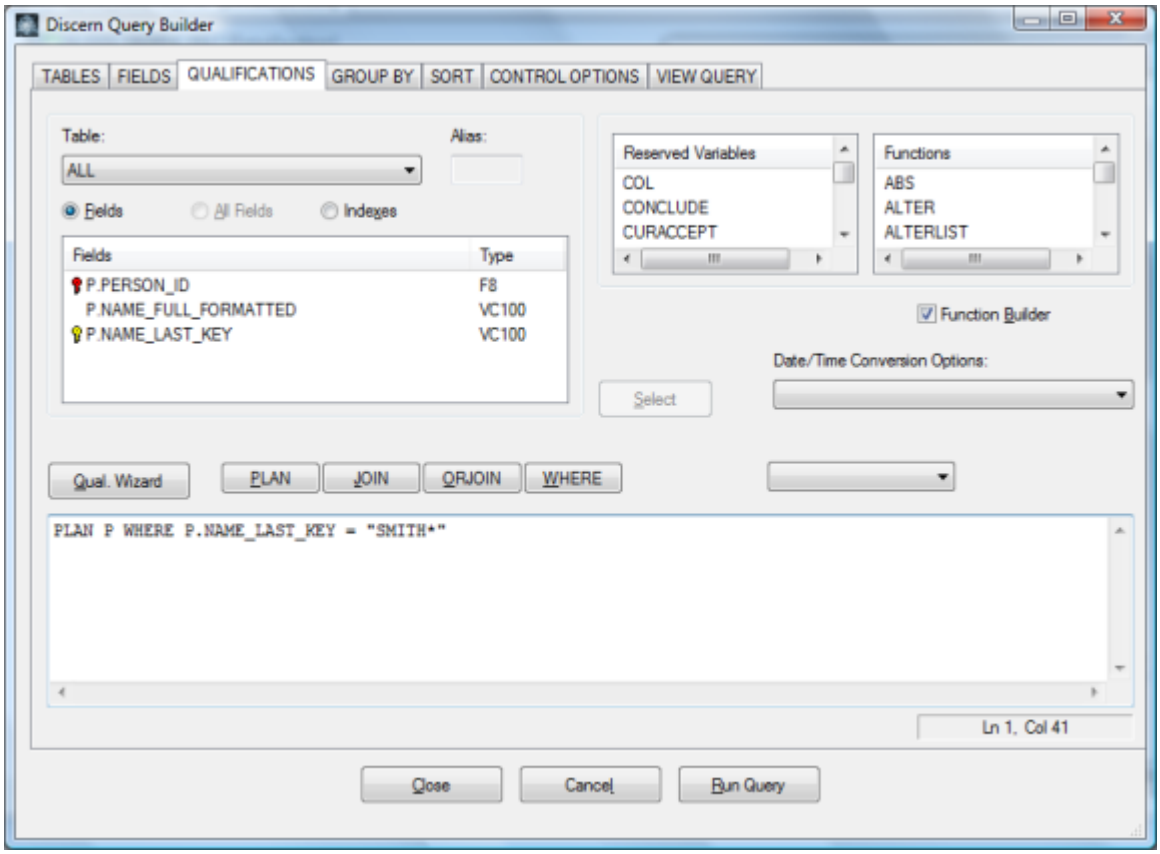
5. Click **OK** to add the new query to the Free Form Label program. The Discern Query Builder dialog box is displayed.



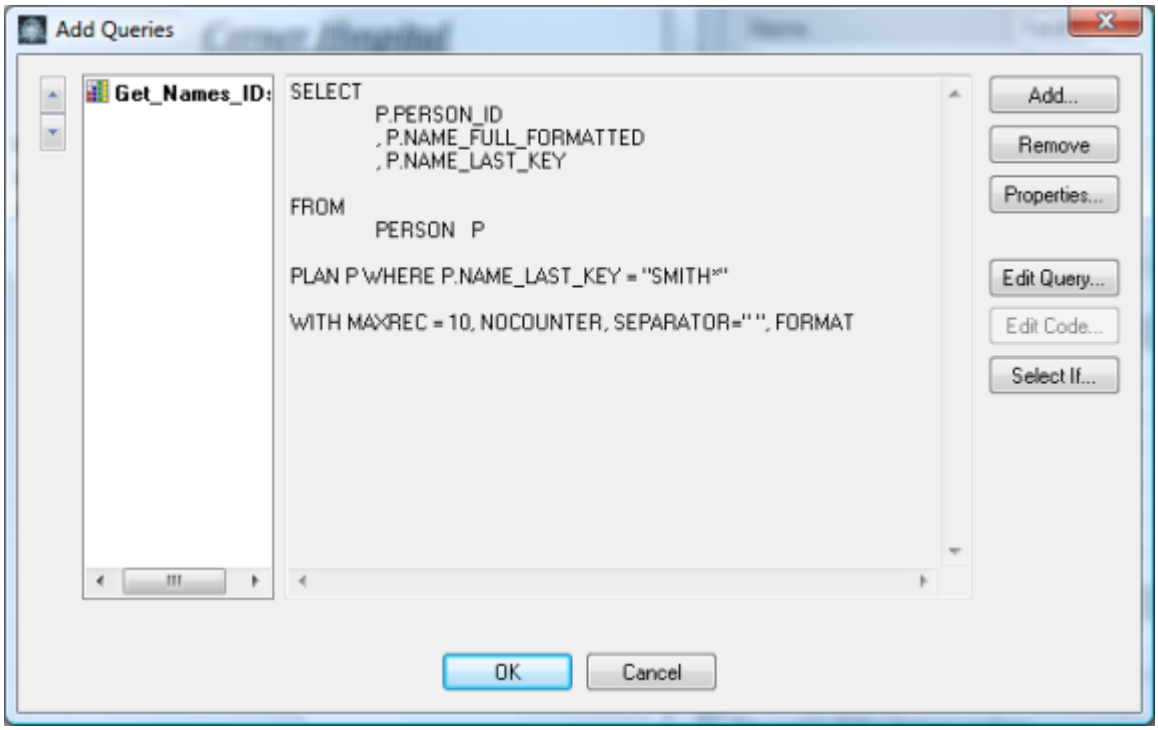
Query Builder is a component that is used in many places within the Discern Explorer applications to create select statements. We want to use Query Builder to create a simple select statement that retrieves person names and IDs from the PERSON table.

6. From the **Tables** tab, select the **Common** folder, and then double-click the **PERSON** table in the middle to move the PERSON table to the Selected Tables list.
7. From the **Fields** tab, double-click **PERSON_ID**, **NAME_FULL_FORMATTED** and **NAME_LAST_KEY** to move them to the Selected Fields list on the right.
8. On the **Control Options** tab, enter **10** in the Max Records field.
9. Enter **PLAN P WHERE P.NAME_LAST_KEY = "SMITH"** in the **Qualifications** tab.

The Discern Query Builder dialog box is displayed similar to the following example:



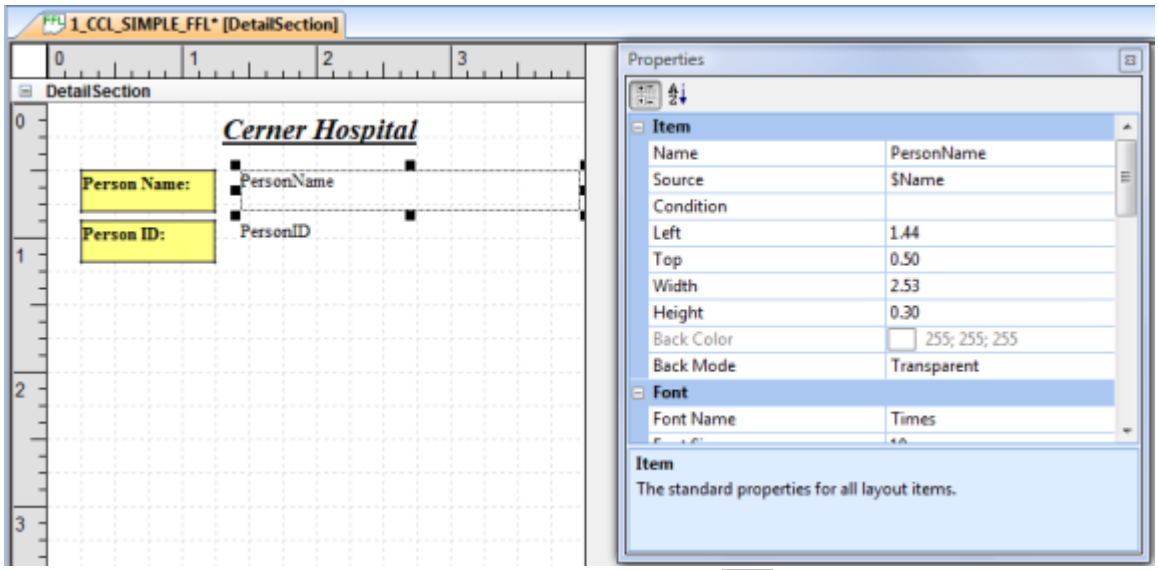
10. Click **Close** to exit Query Builder. This returns you to the Add Query dialog box:



11. Click **OK** to close the Add Queries dialog box.

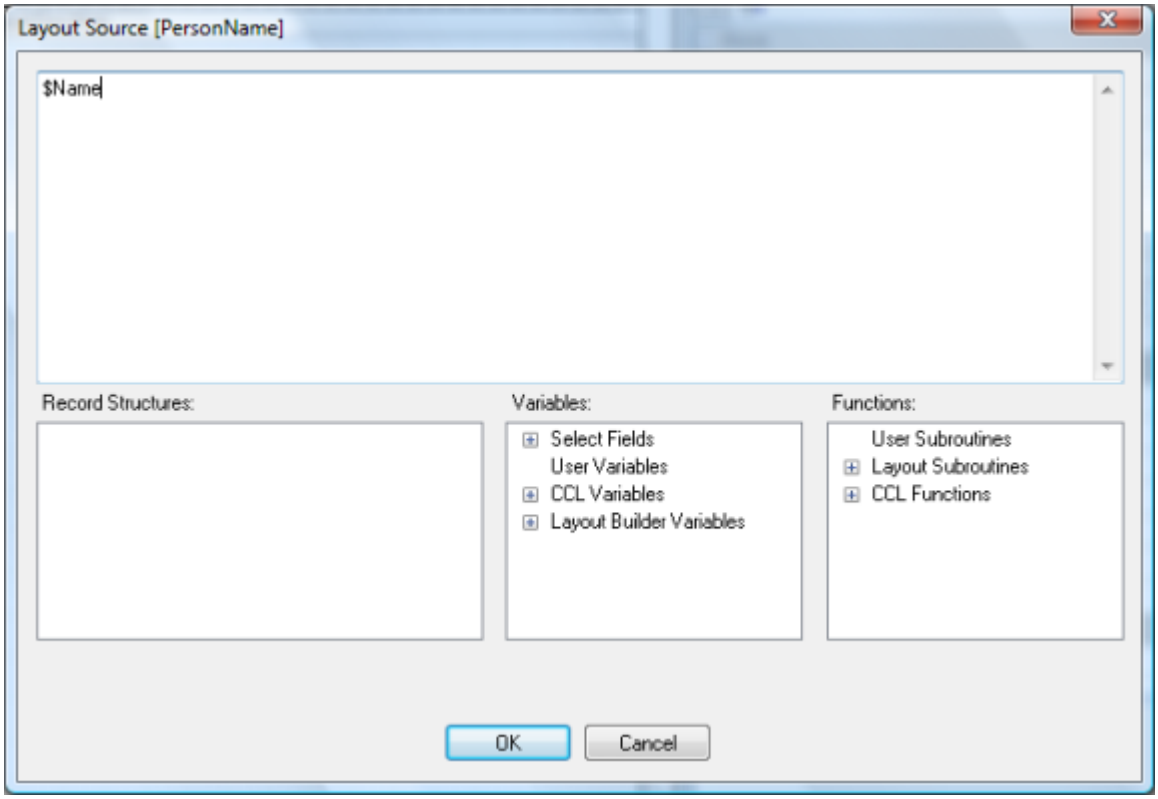
    The query you created using Query Builder will select the name and ID for ten people on the Person table. Since we associated this query with the layout, items from the query can be displayed in the layout using the Text tool. Currently our layout is written to display a name and ID that was entered at the prompts. We now want to modify those text fields on our layout to display the names and IDs that are selected using the query.

12. Click the **PersonName** field on the layout to display the PersonName information in the Properties window. Your layout should be displayed similar the following example:

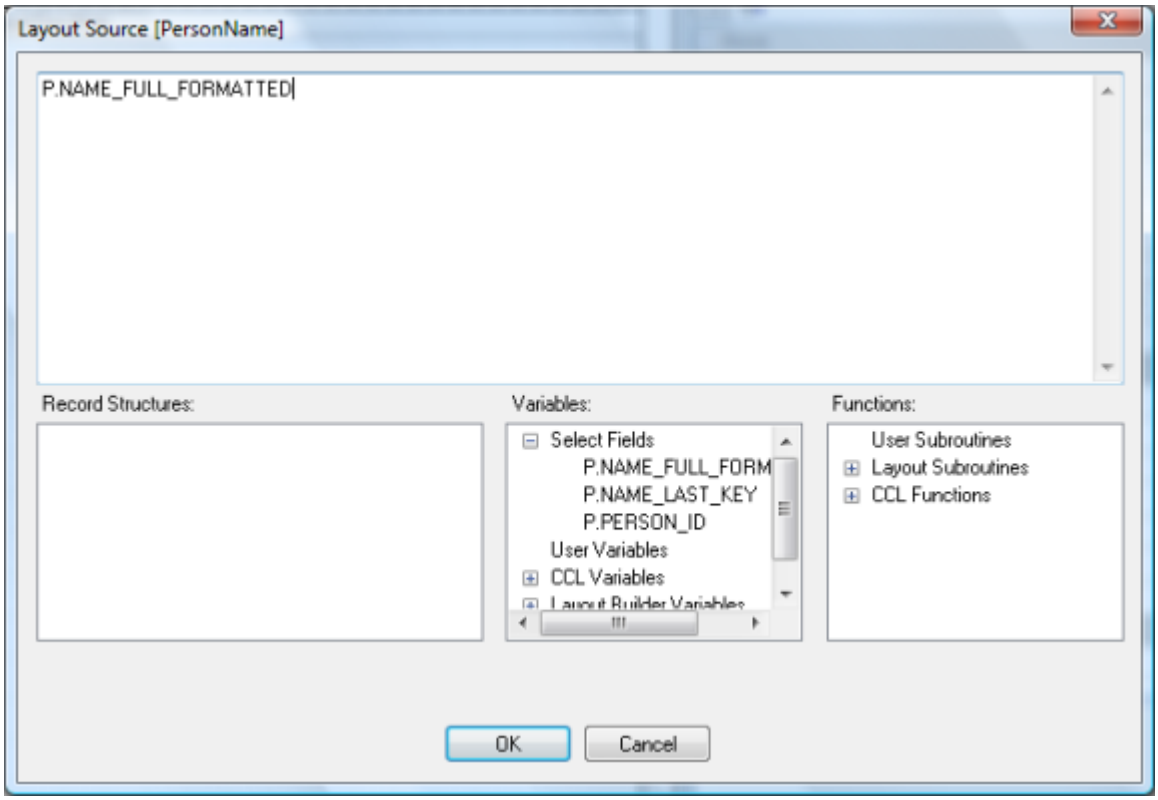


When the Source property on the Properties window is selected, the ellipsis  button is activated and you can click the ellipsis button to open the Layout Source dialog box. The Layout Source dialog box is used to reference record structures, variables, fields from selects, functions and subroutines that are available to the layout.

13. Click in the Source property for the PersonName item, and click the ellipsis  button to open the Layout Source dialog box. Your Layout Source dialog box should look similar to the following example:



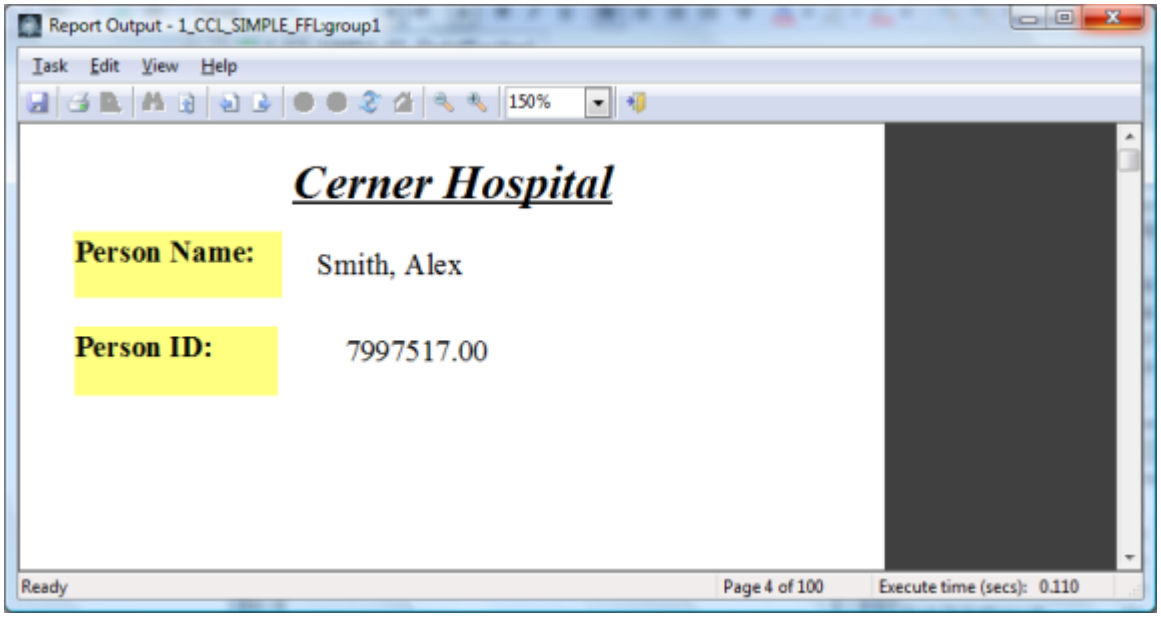
14. Delete the $Name value.
15. Expand the Select Fields list in the Variables area by clicking in the + sign.
16. Drag the P.Name_Full_Formatted field up into the source code area. Your Layout Source dialog box should be displayed similar to the following example:



17. Click **OK** to close the Layout Source dialog box. P.NAME_FULL_FORMATTED now is displayed as the Source for the PersonName text item.
18. Select the PersonID item on the layout and modify the Source property to the Person_ID from the query that is associated with the layout by either entering the table alias and field name (P.Person_ID) or selecting it from the Selected Fields list on the Layout Source dialog box.

    At this point it is a good idea to test the Free Form Label program to see what the output will look like.
19. From the Build menu, select **Run "Your_Free_Form_Label"** or press CTRL+F5 to execute your Free Form Label.
20. Click **Yes** when prompted to save the layout. The prompt form is displayed.
21. Accept the default of MINE for the output device.
22. Click **Execute** to run your Free Form Label.

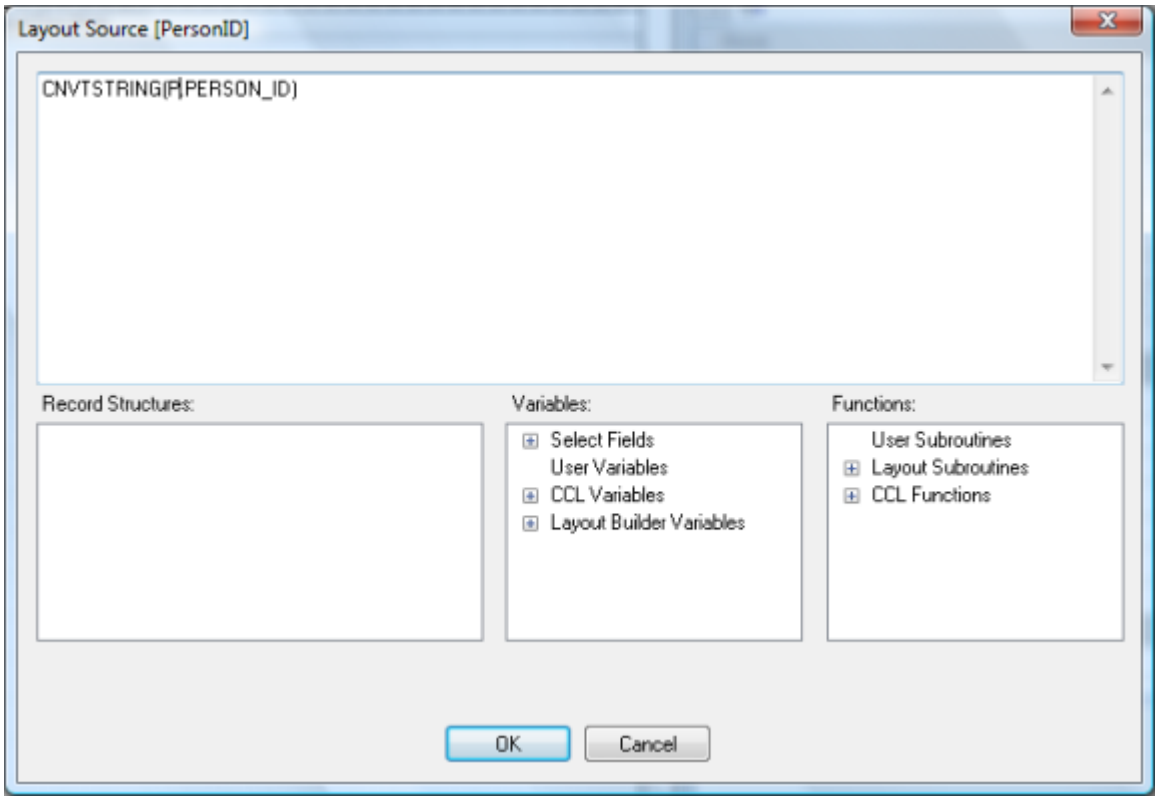
    Since a query is now associated with the Free Form Label, one label is created for each row that is returned in the result set of the query. Since your query is using 10 as the Max Records (MaxRec = 10), ten labels are created.
23. Press the PAGE DOWN key or click the **Next Page** button on the Report Output toolbar to scroll through the different labels. The output of your Free Form Label should look similar to the following:



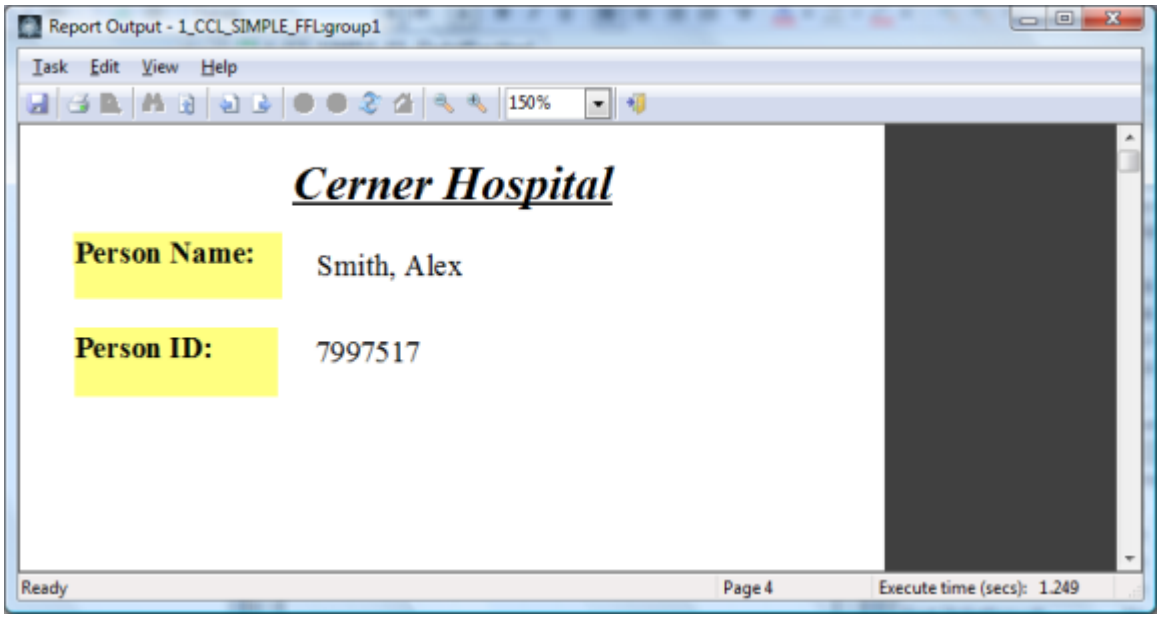
Layout Builder converts non-character data to character data before displaying it in a box. By default character data is left-justified. In the example above, the Person_ID field on the PERSON table is an F8 data type. When Layout Builder converts the Person_ID to a character data type it retains the

default display format for an F8 data type. This results in leading spaces being placed in front of the Person_ID and the Person_ID being displayed with two digits to the right of the decimal place. In some cases you will want to remove the leading spaces and decimals to the right of the decimal place. A simple method for doing that is to use the CnvtString() function around the field when setting the Source property.

24. Close the output window to return to Layout Builder.
25. Click the PersonID field on the layout to display the PersonID information in the Properties window.
26. Click in the Source property for the PersonID item, and click the ellipsis  button to open the Layout Source dialog box.
27. Place the cursor in front of the P.Person_ID.
28. Expand the CCL Functions list in the Functions: area by clicking in the + sign.
29. Scroll down and double-click the CNVTSTRING function.
30. Place a closing parenthesis at the end of the P.Person_ID. You can expect your layout to be similar to the following screen:



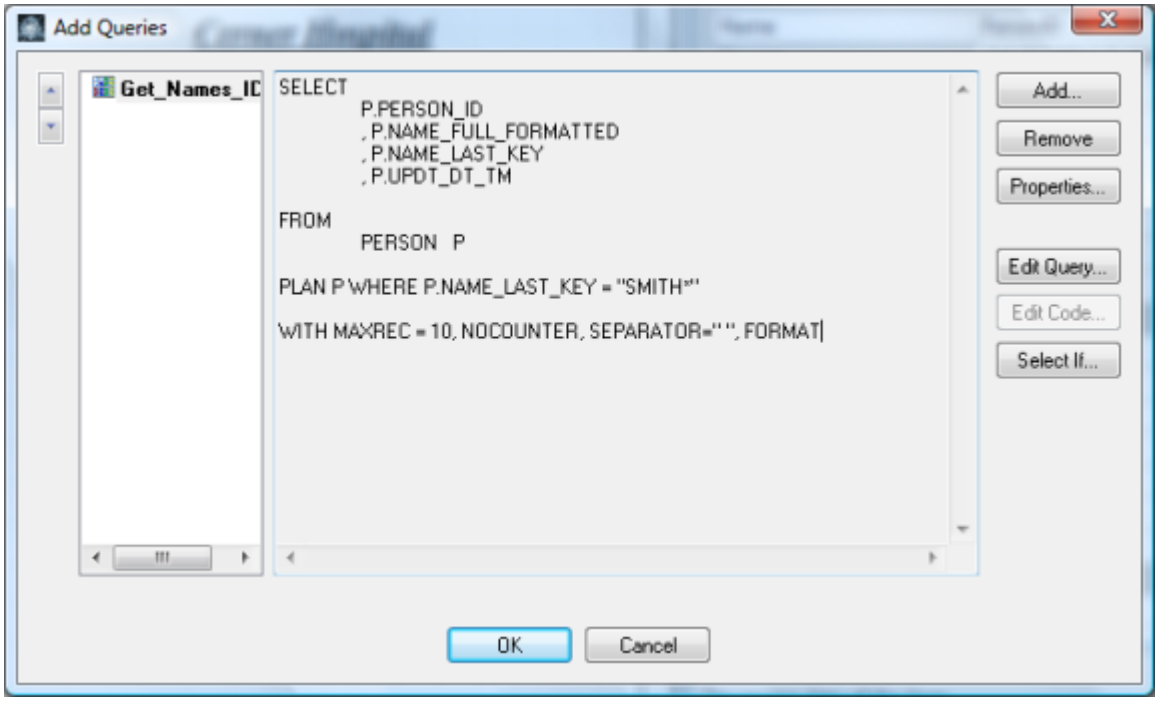
31. Click **OK** to close the Layout Source dialog box. CNVTSTRING(P.PERSON_ID) is displayed as the Source for the PersonID item.
32. From the Build menu, select **Run "Your_Free_Form_Label"** or press CTRL+F5 to execute your Free Form Label.
33. Click **Yes** when prompted to save the layout. The prompt form is displayed.
34. Accept the default of MINE for the output device.
35. Click **Execute** to run your Free Form Label. The output of your Free Form Label should be displayed similar to the following example:



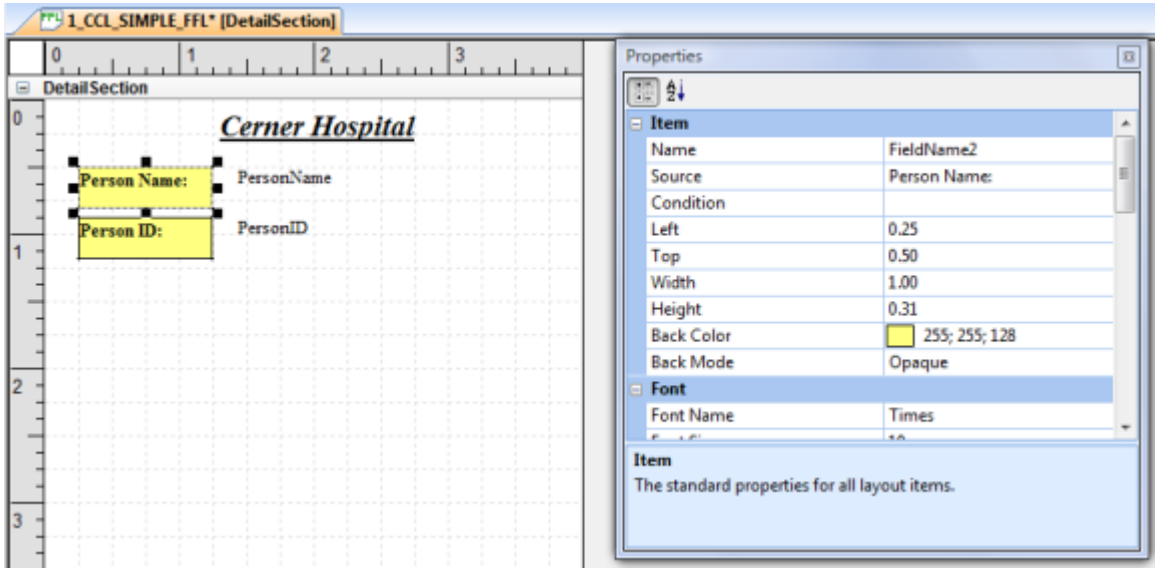
In the examples you completed above, you modified the source value for a text item to have it display data from a select field instead of data that was

entered at a prompt. Data from the query can be used as the initial source value for a text item on a layout as well. For example, if you wanted to add the date and time when the person information was updated, you could add the Uptd_DT_TM field from the PERSON table to the query and then have it displayed on the layout.

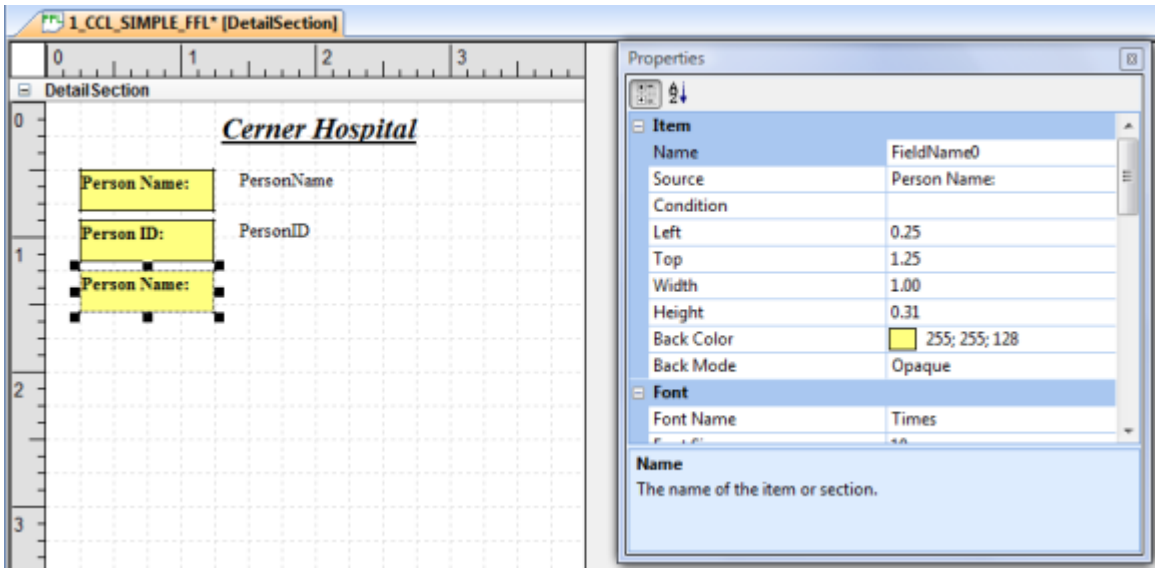
36. Close the output window to return to Layout Builder.
37. From the Tools menu, select **Query Builder** to open the Add Queries dialog box.
38. Ensure the Get_Names_IDs query is selected and click **Edit Query** to open the Query Builder dialog box.
39. On the **Fields** tab, double-click the UPDT_DT_TM field to add it to the Selected Fields column.
40. Click **Close** to exit the Query Builder dialog box. You are returned to the Add Queries dialog box. Your query should be displayed similar to the following example:



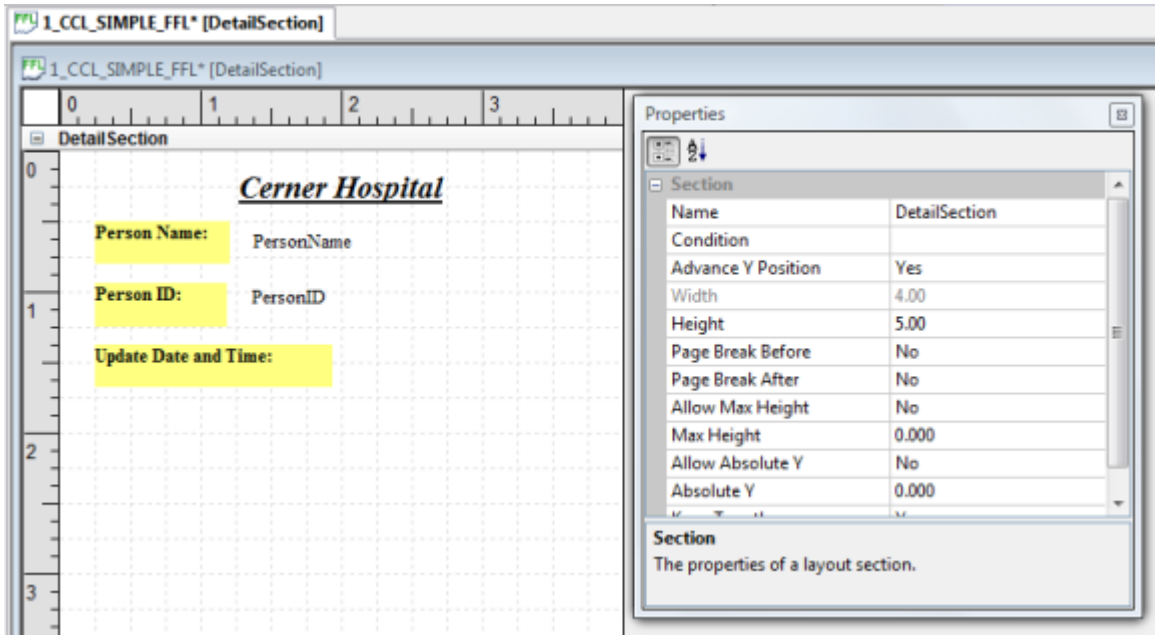
41. Click **OK** to close the Add Queries dialog box.
42. Click the **Person Name:** text on the layout to select it. Your layout should be similar to the following example:



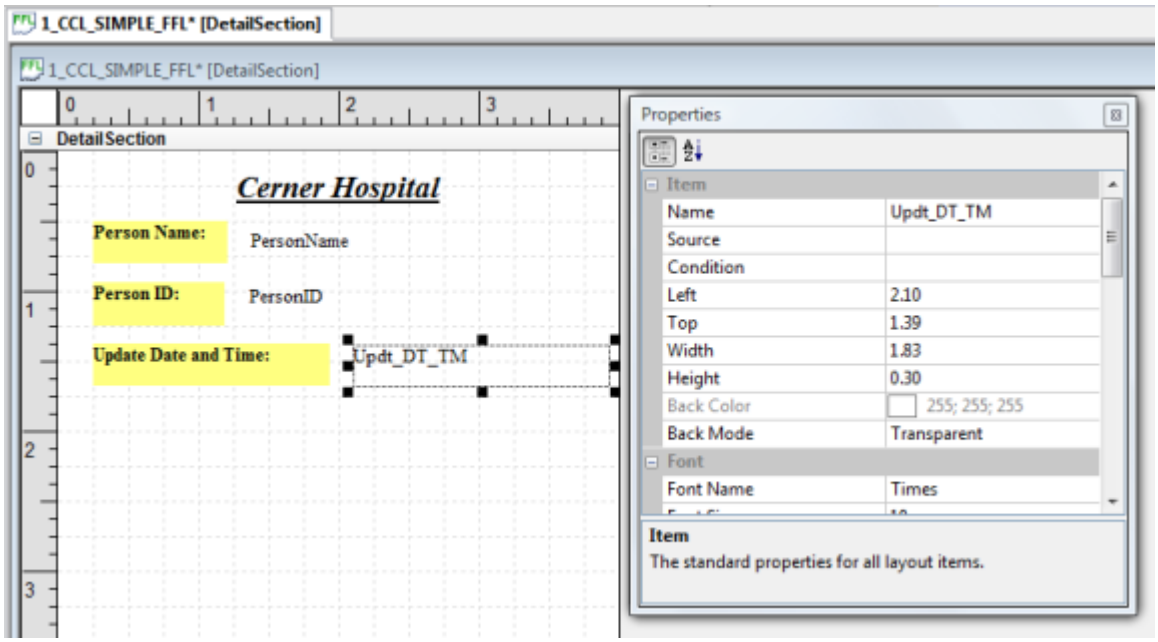
43. Use the Copy and Paste buttons on the toolbar, CTRL+C and CTRL+V, or the Copy and Paste options from the Edit menu to create a copy of the Person Name: text.
44. Drag the copy of the Person Name: text to a location below the Person ID: text. You can expect your layout to be similar to the following screen:



45. In the Properties window, modify the Source from Person Name: to **Update Date and Time:**.
46. Use the handles to make the text item large enough to display all of the text. Your layout should be similar to the following example:

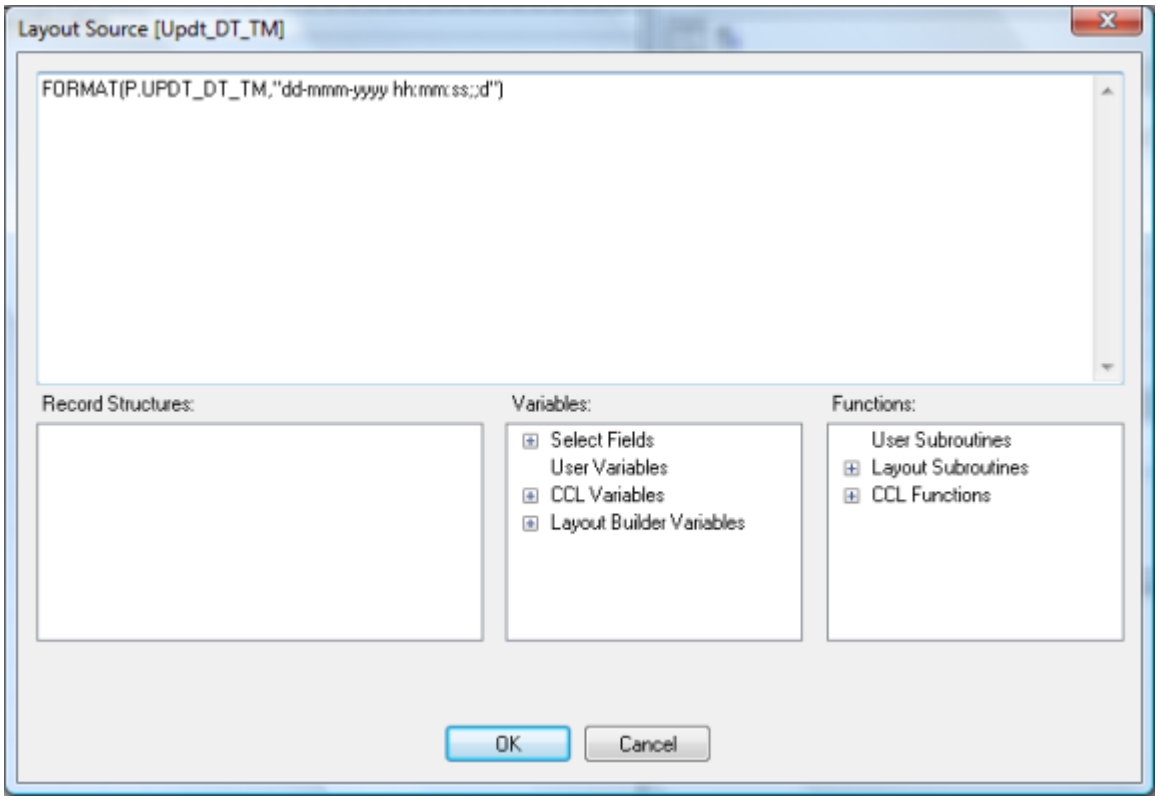


47. Use the Text tool  to place a text field to the right of the Update Date and Time: text that is currently on the layout.
48. Use the handles to expand the text field so that it takes up most of the space to the right of the Update Date and time text that is currently on the layout.
49. In the Properties window, modify the value of the Name property for the text field you created above to Updt_DT_TM. Your layout should be similar to the following example:

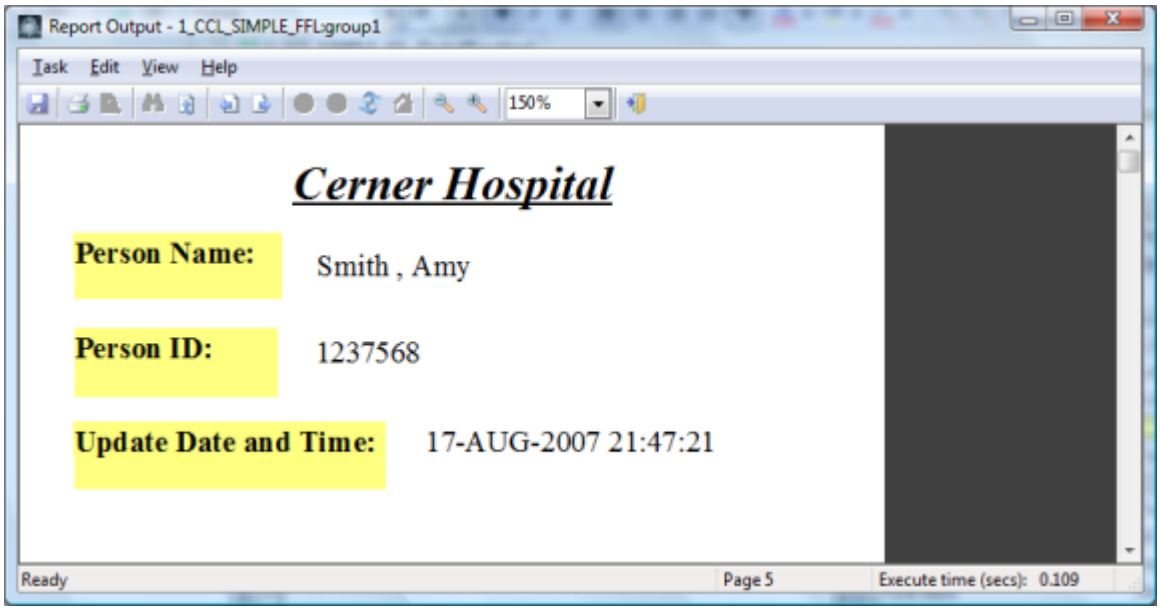


The default format for displaying a date time field is MM/DD/YY. To display both the date and time when the person information was updated, we need to override the default format for a date time field. We can accomplish this by using the format function.

50. Click the Source property and click the ellipsis  button to open the Layout Source dialog box for the Updt_DT_TM item.
51. Double-click the **FORMAT** function on the CCL Functions list.
52. Double-click the **P.UPDT_DT_TM** field from the Selected Fields list.
53. Place the cursor at the end of the P.UPDT_DT_TM field.
54. Enter a comma and place a display option in quotation marks that you would like to use when the P.Updt_DT_TM field is displayed. For example, **"dd-mmm-yyyy hh:mm:ss"** or **"@SHORTDATETIME"**. Then enter a closing parenthesis to finish the Format function. Your Layout Source dialog box should be similar to the following example:



55. Click **OK** to close the Layout Source dialog box.
56. From the Build menu, select **Run "*Your_Free_Form_Label*"** or press CTRL+F5 to execute your Free Form Label.
57. Click **Yes** when prompted to save the layout. The prompt form is displayed.
58. Accept the default of MINE for the output device.
59. Click **Execute** to run your Free Form Label. The output of your Free Form Label should be similar to the following example:



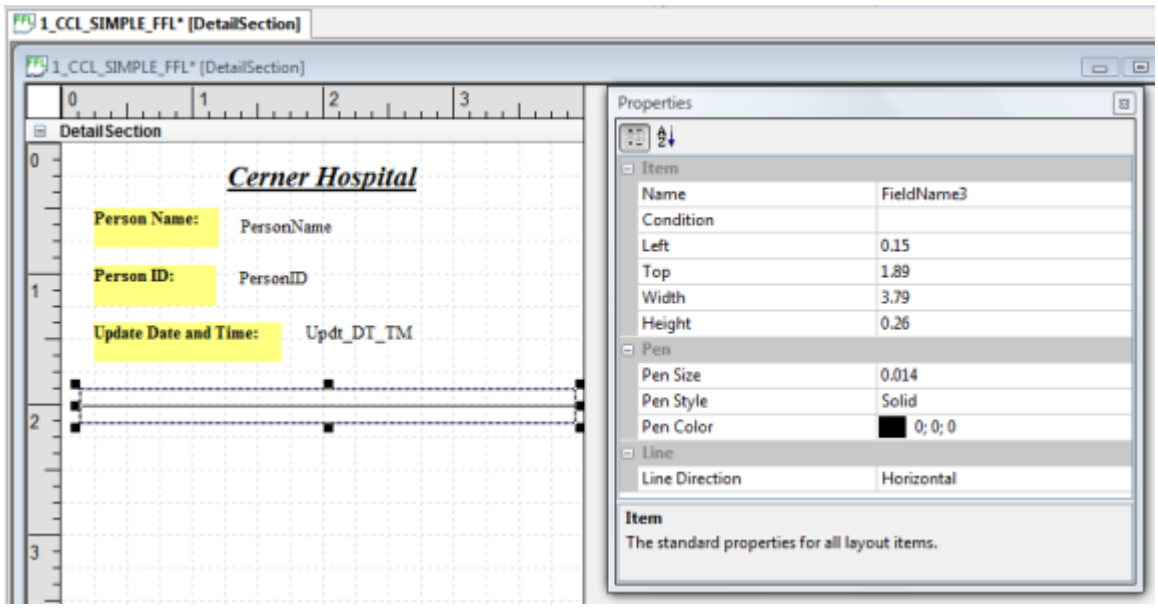
When displaying fields or expressions from the query that is associated with the layout, it is important to know that Layout Builder uses the default display format based on the data type of the item. Display options (field formats) added in the selection list of a query are ignored by Layout Builder. For example, if you had select p.updt_dt_tm "dd-mmm-yyyy;;d" and executed the query, the date would be displayed in dd-mmm-yyyy format. However, if you added p.updt_dt_tm to the layout, the display format of dd-mmm-yyyy would be ignored and the default display format for date-time fields of mm/dd/yy would be used. To override the default display format, you can either create an expression in the selection list using the Format() function or use the Format() function in the Layout Source.
For example, you could use Updt = format(p.updt_dt_tm, "dd-mmm-yyyy;;d") in the selection list of the query and then use Updt as the Layout Source or use p.updt_dt_tm in the selection list and use format(p.updt_dt_tm, "dd-mmm-yyyy;;d") as the Layout Source.

60. Close the output window to return to Layout Builder.

Drawing Objects

Layout Builder provides tools for drawing lines  , rectangles  , and ovals  . Lines, rectangles, and ovals are displayed within a rectangular area in a layout. The properties of lines, rectangles, and ovals are similar, so these items use similar dialog boxes for setting the properties. For information regarding the properties of lines, rectangles, and ovals, see the Layout Toolbar help topic.
The drawing objects can be used to enhance the appearance of the output. Suppose you wanted to use a line to divide the layout into two distinct areas. You can accomplish this using the Line tool.

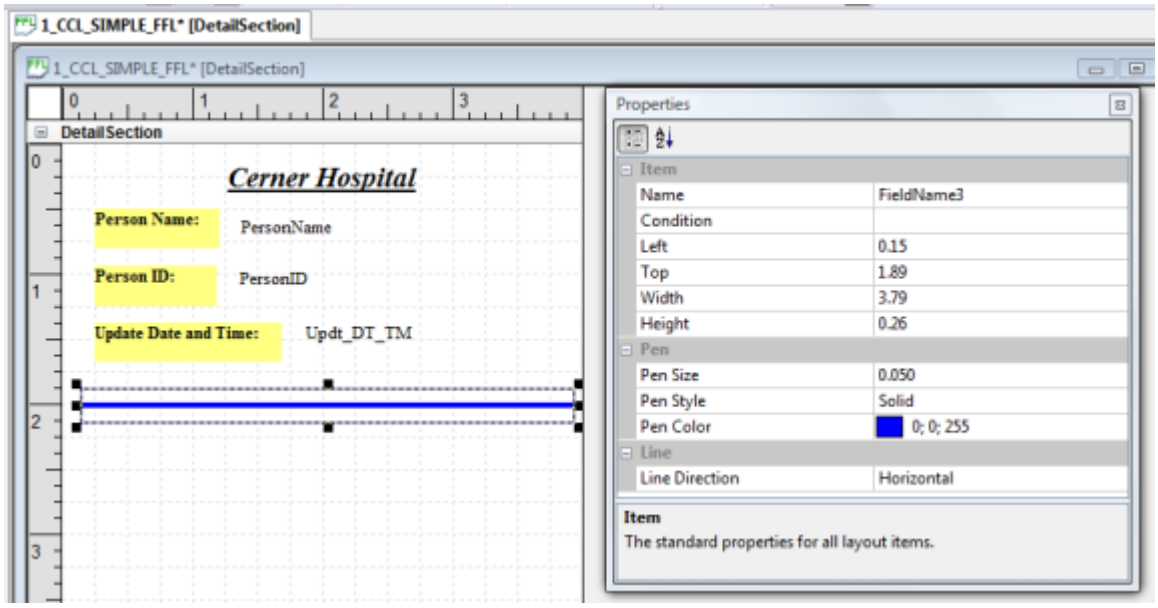
1. Select the Line  tool and click the left side of the layout.
2. Drag the handles on the line box to expand the line across the layout. Your layout should be similar to the following example:



3. In the Properties window, the Pen properties can be used to modify the appearance of the line. The Pen Color is used to modify the color of the line. Pen

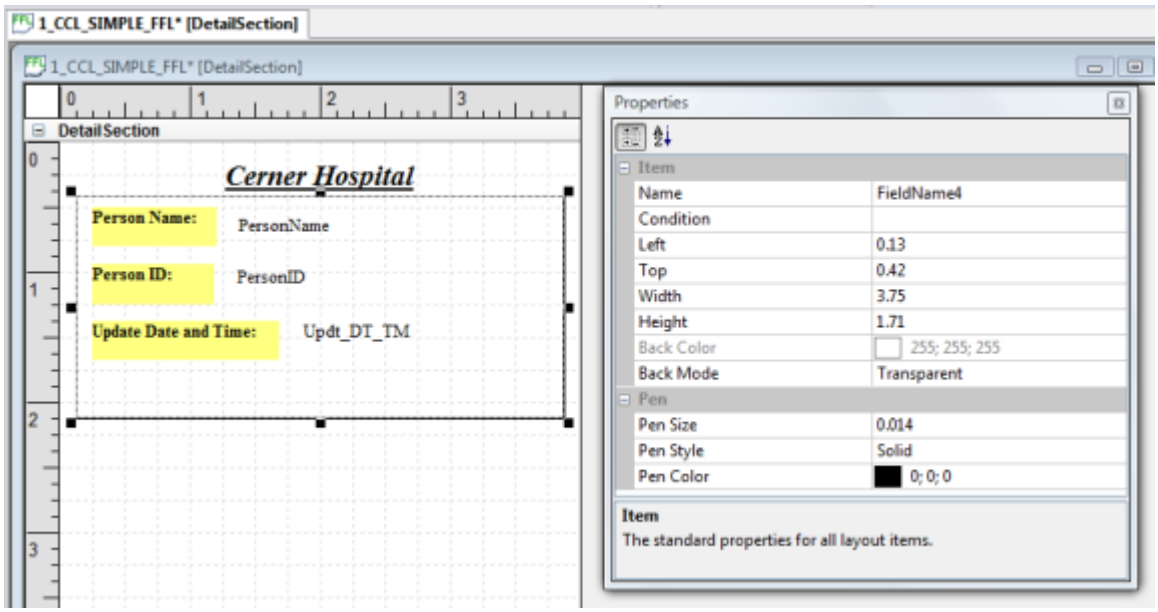
Size modifies the thickness of the line. Pen Style can be used to modify the line from a solid line to a dashed line. Line Direction can be used to draw a horizontal, vertical, or diagonal line.

4. Modify the Pen Size of the line to **0.05**.
5. Modify the color of the line. Your layout should be similar to the following example:



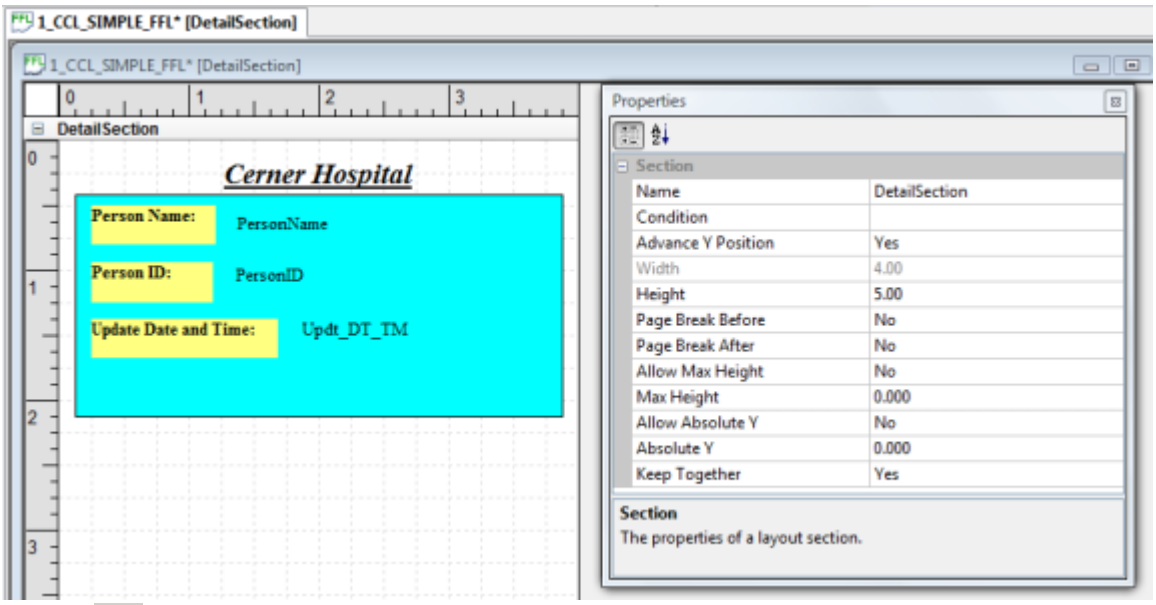
Rectangles can be used to draw boxes in a layout. For example, you could draw a box around the Person Name:, Person ID:, and Update Date and Time: items placed on the layout in earlier steps.

6. Click the line you created in the steps above and press DELETE to remove it from the layout.
7. Select the Rectangle  tool and then click the left side of the layout.
8. Drag the handles on the rectangle box to make the rectangle large enough to surround the Person Name:, Person ID:, and Update Date and Time: items on the layout. Your layout should look similar to the following example:



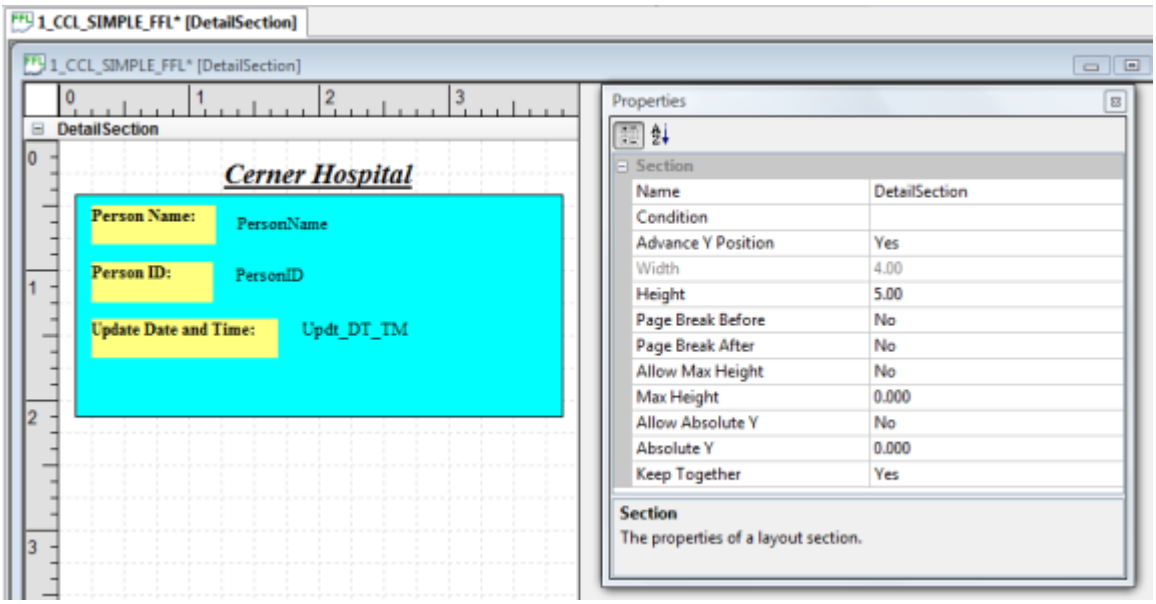
In the Properties window, the Pen properties can be used to modify the appearance of the rectangles outline. The Pen Color is used to modify the color of the line. Pen Size modifies the thickness of the line. Pen Style can be used to modify the line from a solid line to a dashed line. Back Mode and Back Color can be used to fill the rectangle with a specific color.

9. Modify the Back Mode to Opaque and select a light color for the Back Color. Your rectangle now is filled with the default color. The other items on your layout are hidden behind the rectangle.
10. Verify your rectangle is selected, and from the Layout menu, select **Send To Back**. Your layout should now look similar to the following:



The Oval  tool can be used to draw circles and ovals in a layout. The Oval tool functions just like the Rectangle tool except that it creates circles and ovals instead of rectangles.

11. Experiment with creating and setting the properties of ovals and rectangles.
12. When you are ready to move on, delete the items you created while experimenting to restore your layout to display similar to the following example:

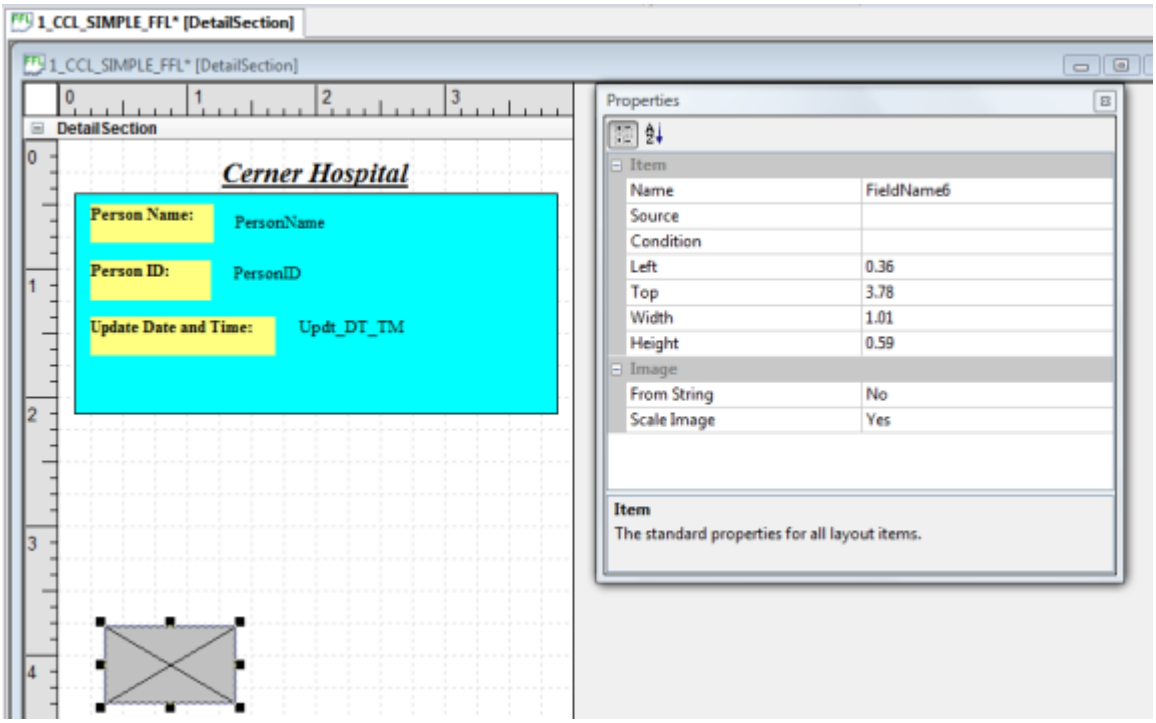


Graphic Images

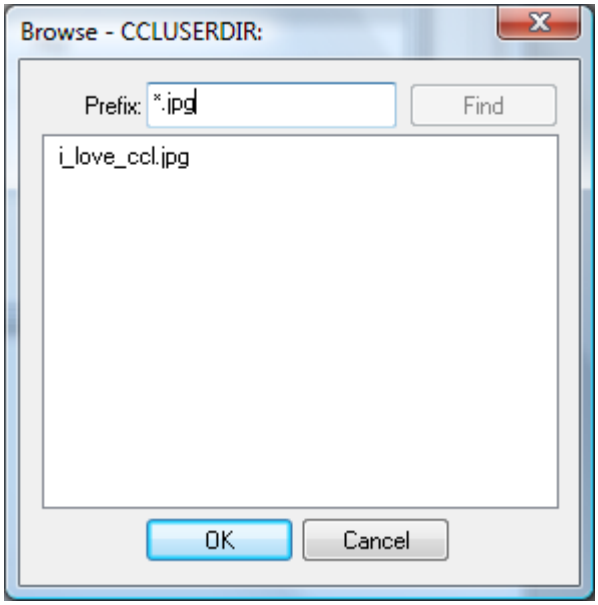
JPEG (.JPG) and Bitmap (.BMP) graphic objects can be placed in layouts using the Image  tool. JPEG and Bitmap files are scaled to the rectangular area designated in Layout Builder for Postscript and .PDF output types. The width of monochrome Bitmap files must be a multiple of 32. Label printers only support monochrome Bitmap files and they will render to the physical bitmap size or scale in multiples of the width or height. Layout Builder does not currently facilitate sizing the image on the layout for label printers. The resolution for the label printers is 203 DPI. The resolution for Postscript and .PDF are 72 DPI (pixel per point). This difference in resolution can cause the size of the image to modify when the printer type is modified. Not all Bitmap format variations are supported and only base JPEG formats are supported.
Image files must exist on the back-end host system and must have read privileges enabled for the world. On multi-node systems that do not share directories the image file must exist on each node in a directory using the same naming structure. Binary FTP must be used to transfer image files to the host. The following examples assume that the image files exist in the CCLUSERDIR: on the host system. For actual production layouts, a standard location like CUST_SCRIPT:, should be used for the image files. Creation of image files and the use of FTP to place them on the host system is outside the scope of this documentation. However, simple image files can be created using Microsoft Paint and transferred to the host using a common binary FTP process. The image files referenced in this section were created using this method.

1. Select the Image  tool and click in the lower portion of your layout to create a rectangular area to display an image. Then use the handles to resize

your image. Your layout should look similar to the following screen:

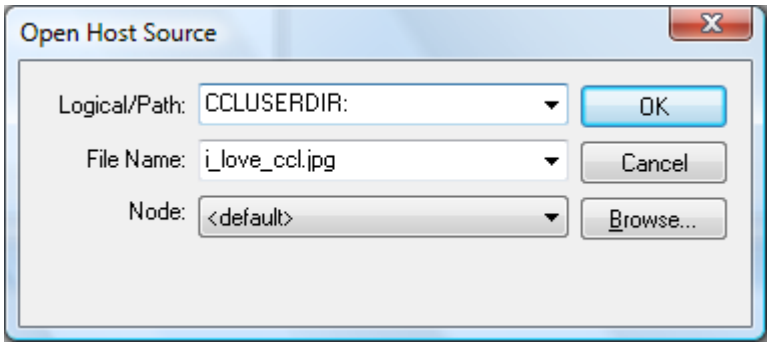


2. In the Properties window, click in the Source property and then click the ellipsis  button to open the Open Host Source Dialog box. Browse can be used to check for existing image files on the host.
3. Enter **CCLUSERDIR:** in the Logical/Path field on the Open Host Source dialog box and click **Browse...**.
4. In the Browse dialog box enter ***.JPG** in the Prefix field and click **Find**. Any files with an extension of .JPG that exist in the CCLUSERDIR: are displayed. You can expect your Browse dialog box to be similar to the following screen:

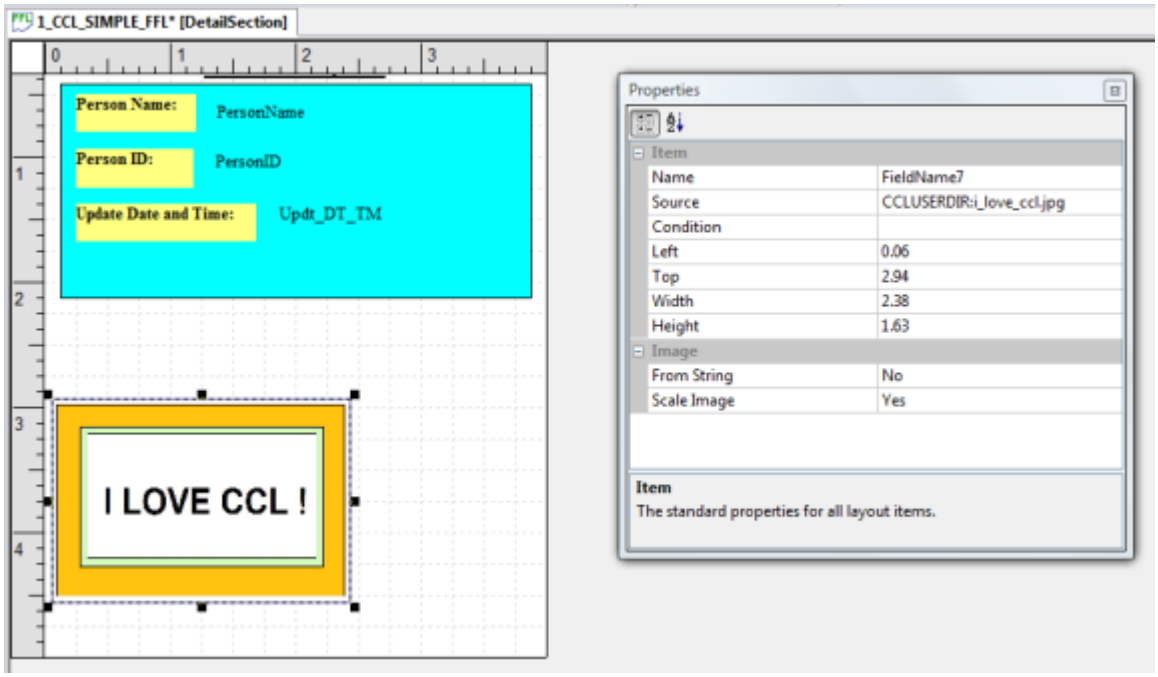


It is highly unlikely that you will have the i_love_ccl.JPG file in the CCLUSERDIR: on your host. The author created the i_love_ccl.JPG using Microsoft Paint and transferred it to the host using a common binary FTP process in order use it for this example. If you do not have any .JPG files in CCLUSERDIR: try looking for .BMP files. You also might want to look in other common directories like CCLSOURCE: and CUST_SCRIPT: for image files. If you do not have any image files on your host, you need to create and FTP an image file to the host before proceeding.

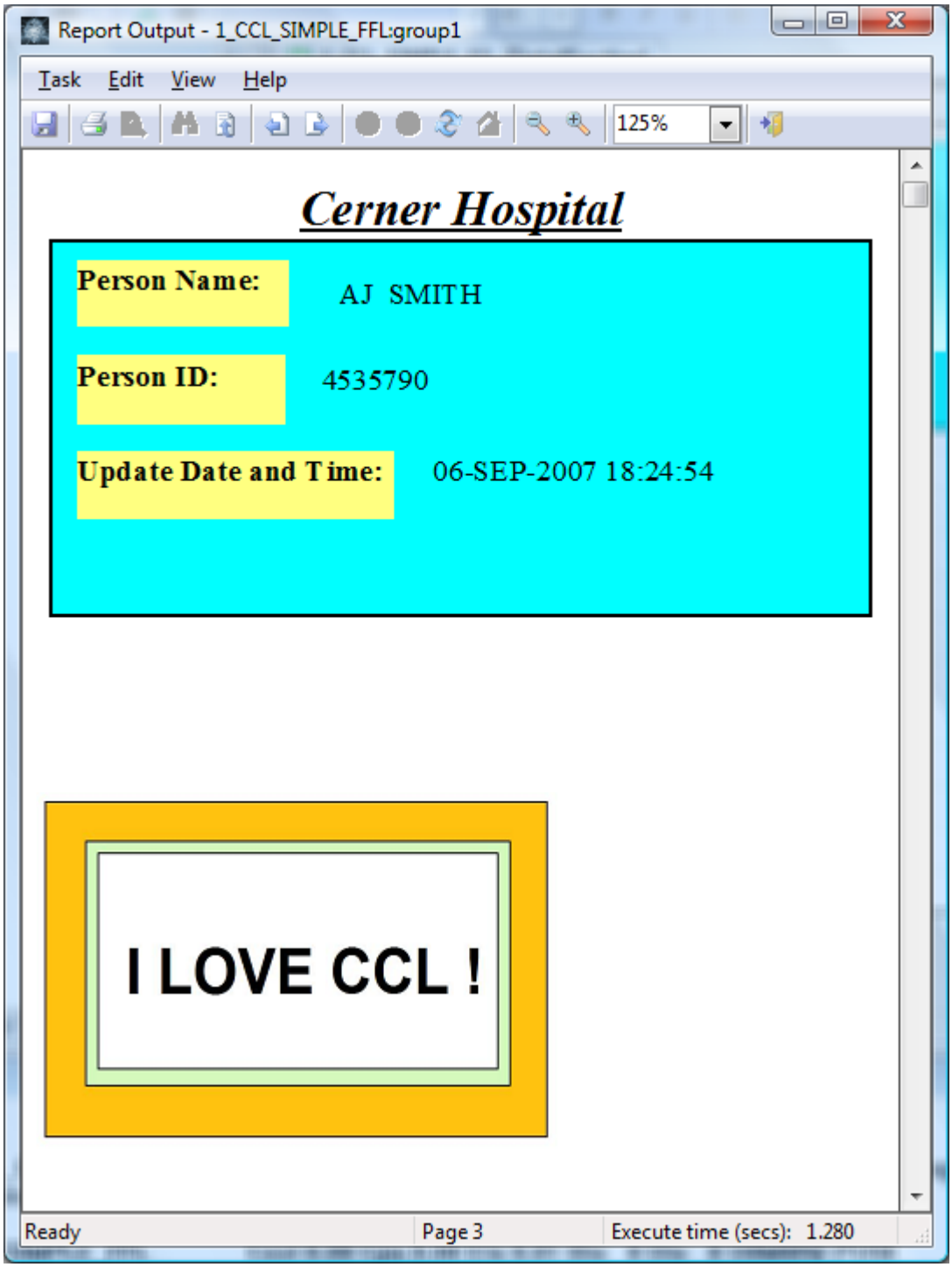
5. Select one of the image files displayed in the Browse dialog box and click **OK**. The filename now is displayed in the File Name: field on the Open Host Source dialog box.



6. Click **OK**. Your layout should resemble the following example, except the image file displayed is the one you selected instead of the i_love_ccl.JPG image.



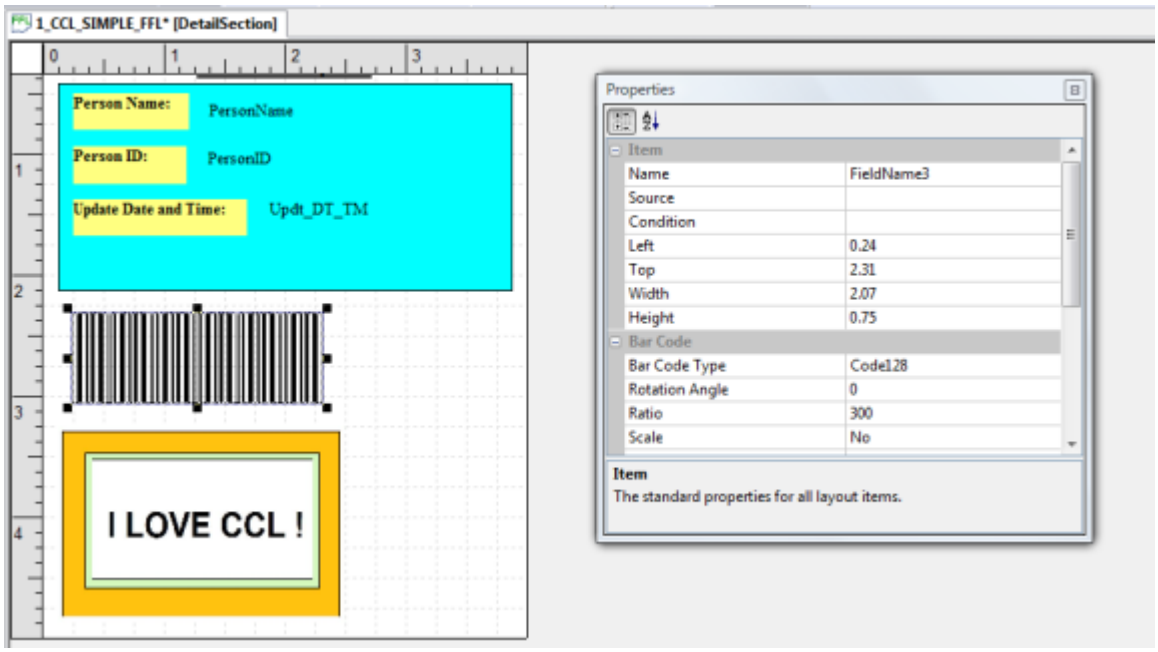
7. From the Build menu, select **Run "*Your_Free_Form_Label*"** or press CTRL+F5 to execute your Free Form Label.
8. Click **Yes** when prompted to save the layout. The prompt form is displayed.
9. Accept the default of MINE for the output device.
10. Click **Execute** to run your Free Form Label. The output of your Free Form Label should be displayed similar to the following example:



Bar Codes

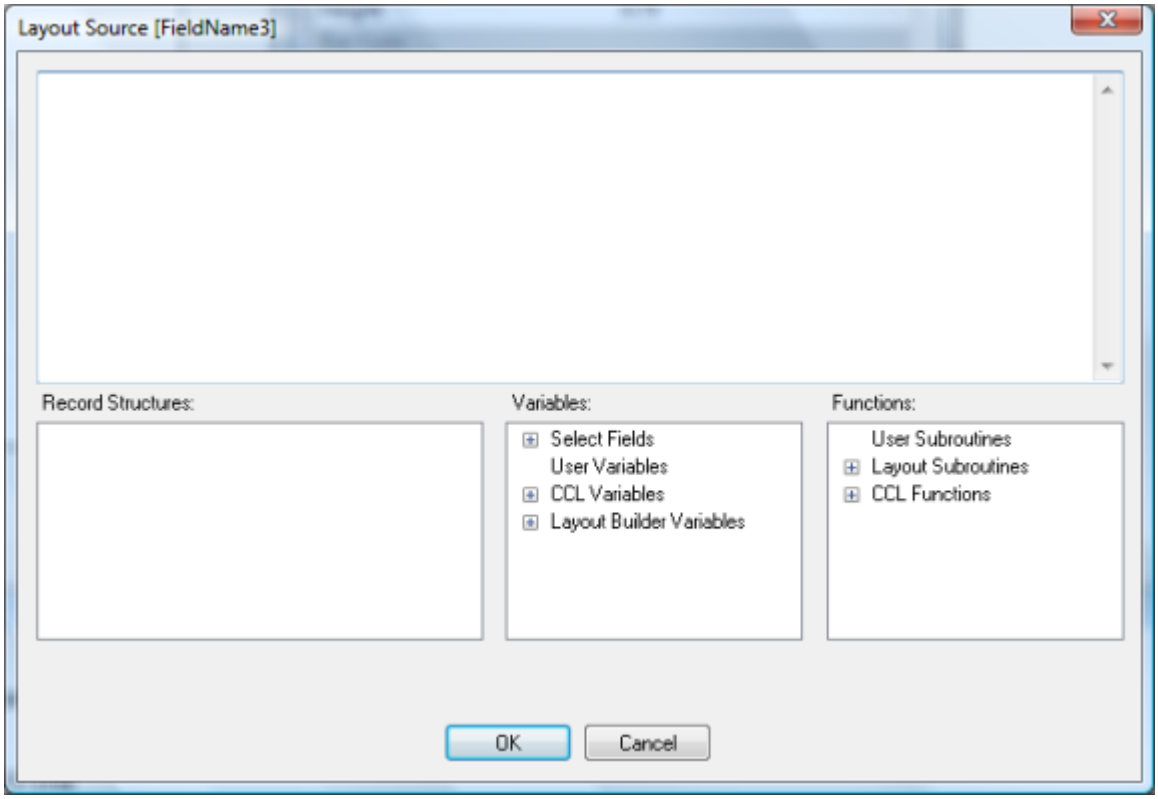
You can place bar codes in layouts using the Bar code tool.

1. Select the Bar Code tool and click in the middle portion of your layout to create a rectangular area to display a bar code. Your layout should look similar to the following screen:



The properties you can set on the Properties window vary based on the Bar Code Type and the Output type. To set the output type, from the Edit menu, select **Report Properties**. For example, PostScript and .PDF output types do not support the Print Interp property. The Print Interp property displays a textual representation of the barcode source. Label printers support the Print Interp property and automatically print the textual representation of the barcode source. The textual representation does not display in the layout but is printed by the label printer. For information regarding bar code properties see the Bar Code Types help topic.

2. In the Properties window, click in the Source property and then click the ellipsis  button to open the Layout Source dialog box.

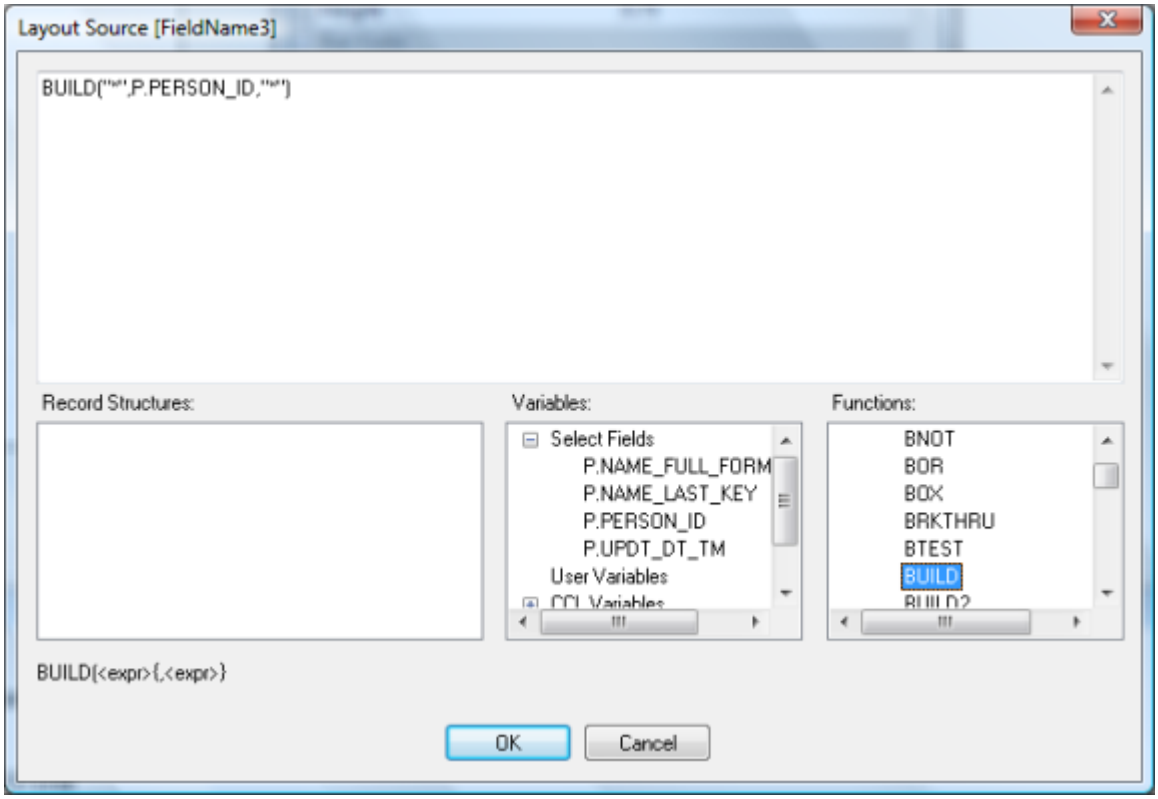


The Layout Source dialog box can be used to select or create a value that is rendered as a barcode.

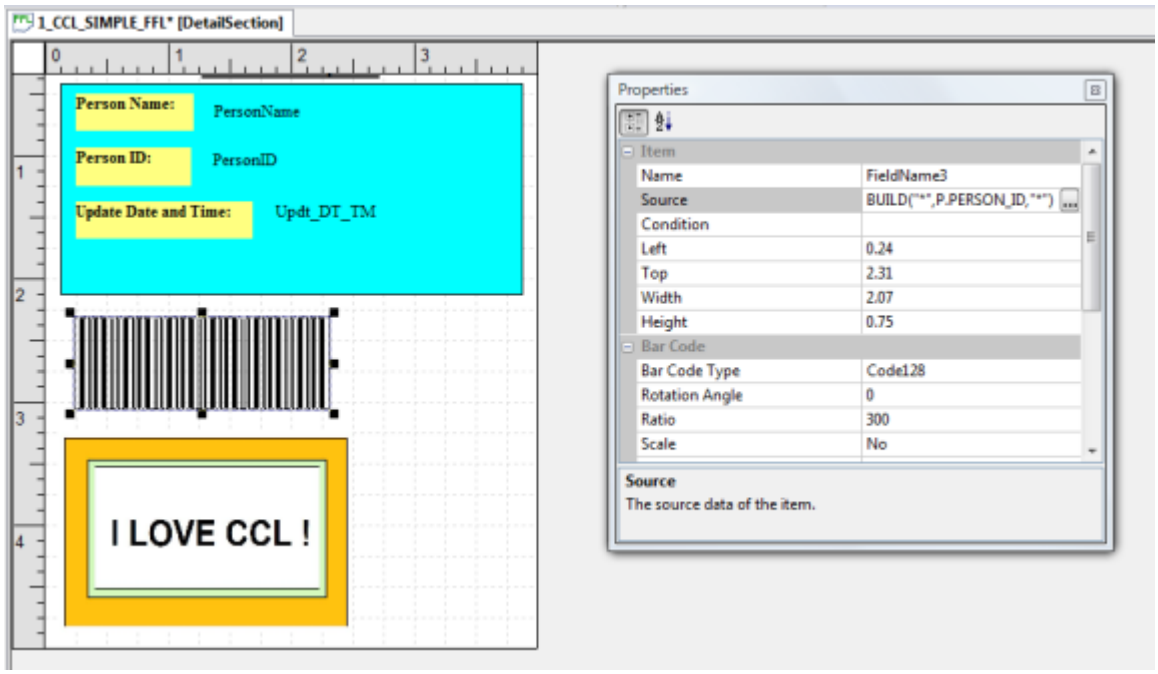
3. Expand the **Select Fields** list in the Variables area by clicking the plus sign (+) .
4. Double-click the **P.PERSON_ID** field.

   Using the P.PERSON_ID field as the source for the bar code item causes the value of the PERSON_ID to be displayed as a bar code in the output. The Bar Code Type property defaults to Code 128. This bar code type requires an asterisk as a start and stop character for some printers. (Label printers might not need the start and stop characters but postscript printers generally do.) If the value used for the source does not already have the start and stop characters, you might need to add them. You can accomplish this by using the BUILD() function.
5. Place your cursor before the P.PERSON_ID.
6. Expand the CCL Functions list in the Functions area by clicking the plus sign (+) .

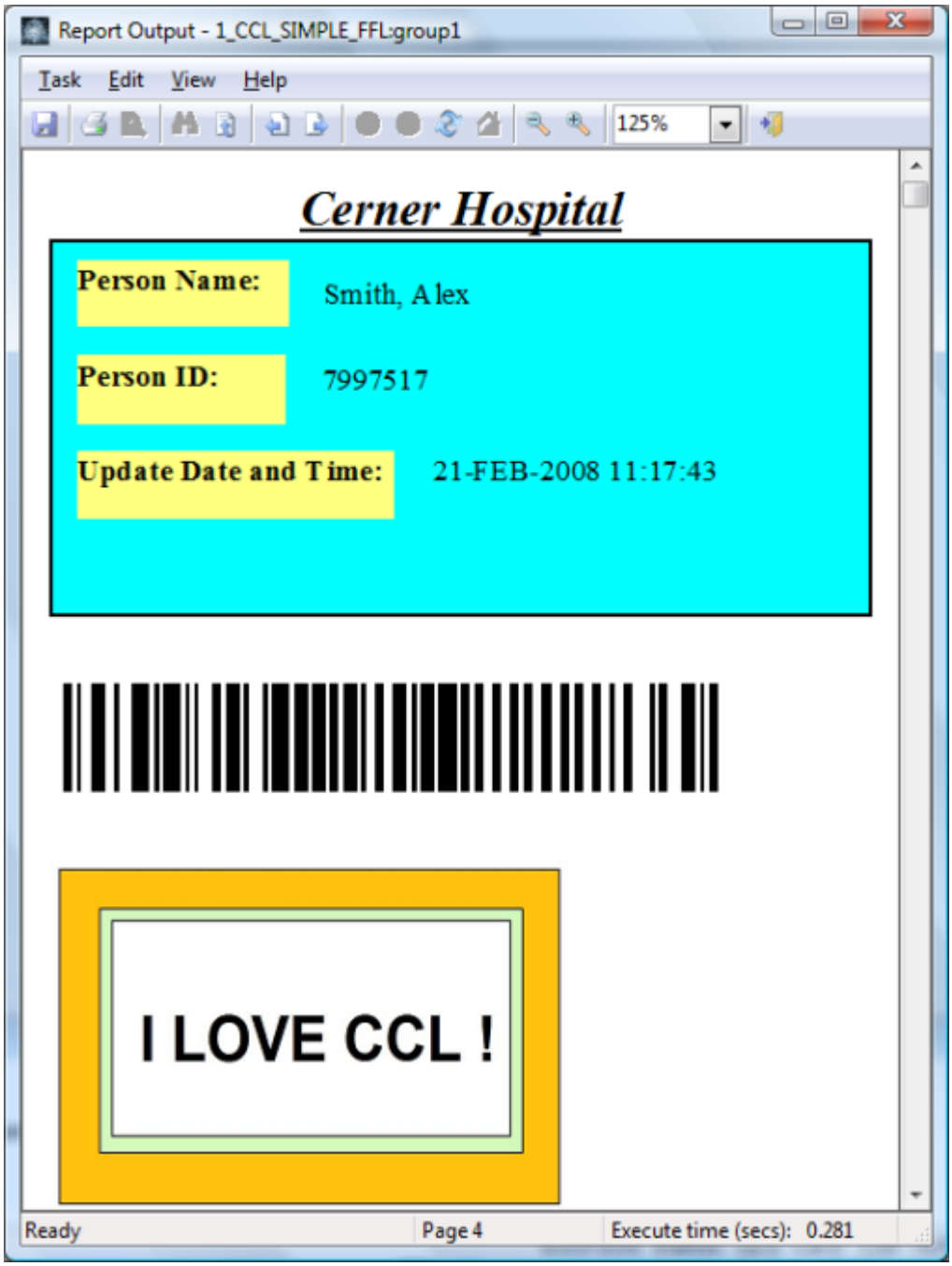
7. Double-click the BUILD function and place **""***, between the opening parenthesis and the P.PERSON_ID.
8. Place ,**""*** and a closing parenthesis after the P.PERSON_ID field. Your Layout Source dialog box should be displayed similar to the following example:



9. Click **OK** to make the Person_ID from the query that is associated with this layout the source of the barcode item. Your layout should look similar to the following screen:



10. From the Build menu, select **Run "*Your_Free_Form_Label*"** or press CTRL+F5 to execute your Free Form Label.
11. Click **Yes** when prompted to save the layout. The prompt form is displayed.
12. Accept the default of MINE for the output device.
13. Click **Execute** to run your Free Form Label. The output of your Free Form Label should look similar to the following example:



All output types support bar codes, but an output device only supports certain bar code symbologies. The Bar Code Type property is used to set the barcode symbology that is used. The label printers support the vast majority of the bar code symbologies embedded in the printer. Postscript and .PDF are currently limited to five bar code symbologies: Code 128 (subsets A, B and C), Code 39, CodaBar, PostNet, and Aztec.
Layout Builder represents bar codes using a bitmap placeholder in which only the height of the bar code corresponds to the actual bar code to be rendered. This is true as long as the symbology does not have an enforced height specification. PostNet is an example of a symbology that enforces a height specification. When the Bar Code Type property is set to PostNet, the height of the rendered bar code is adjusted to the enforced height. Therefore PostNet renders to the specified height, regardless of the designated area height represented in Layout Builder. The exception to this rule is with the Zebra driver which does not allow this to be enforced and requires the bar width and height to be properly set by the user.
Barcodes in Postscript and .PDF have the option to scale, with PostNet being the exception. PostNet renders an 11-digit barcode if a literal is not used for the source since it is the longest possible representation.
Bar code properties are representative when the symbologies support such a property. Scaling is not supported on label printers since the bar code symbology generation is directly related to the narrow bar width and the barcode ratio expressed in terms of 100.
2D bar code symbologies PDF417 and Code49 have additional properties that are only valid for the 2D symbologies. They only are enabled when one of these symbologies is selected as the Bar Code Type property.

Table and Graph Tools

The Table  and Graph  Tools are used to add tables and graphs to a layout. Although these items can be placed on Free Form Labels, their

functionality is not practical in the context of a Free Form Label. These tools are discussed later in this document.

Executing Free Form Labels

Up until this point you have selected **Run "*Your_Free_Form_Label*"** from the Build menu or pressed CTRL+F5 to execute your Free Form Label. Most likely you will create Free Form Labels that need to be executed by people who do not have access to Discern Visual Developer. When Layout Builder is used to create a Free Form Label it generates a Discern Explorer program in the object library. This program can be executed from Explorer Menu (ExplorerMenu.exe) like any other Discern Explorer program. Simply use the name of your Free Form Label as the program name when adding a program item to the Explorer Menu.

Copying Free Form Labels

You might want to use an existing Free Form Label as a starting point when creating a new Free Form Label. In Discern Visual Developer, from the Tools menu, select **Transfer Objects...** from to copy an existing Free Form Label to a Free Form Label with a different name. Enter the name of the object you want to copy in the Source Object control or use the **Browse** button to select the object you want copy. Then from the Task menu, select **Copy Object** to create a copy of the object.

Moving Free Form Labels to another Environment

Cerner recommends creating and testing all new Free Form Labels in a non-production environment. After the Free Form Label has been created and tested, you can move it into the production environment. Moving a Free Form Label to a different environment requires you to export the label from the source environment and import it into the target environment.

If you have a front-end file share that can be accessed from both environments, an easy way to move the Free Form Label is to open the existing Free Form Label in Discern Visual Developer.exe (DVDev) and from the File menu, click **Export** to export the label to the front-end file share. A file with a .FFL extension is created during the export. Close DVDev and reopen it in the environment in which you want to move the label (target environment). From the File menu, select **Import** to import the .FFL file from the common front-end file share. When the import process is completed, click **Save** on the toolbar or from the File menu, select **Save**.

If you do not have a front-end file share that can be accessed from both environments but can access a different front-end file share from each environment, the process requires an additional step. From the File menu select **Export** to export the existing Free Form Label to a front-end file share. Again a .FFL file is created. Next, copy the .FFL file to the front-end file share that can be accessed from the target environment. Open DVDev in the target environment and from the File menu, select **Import** to import the .FFL file from the common front-end file share. When the import process is completed, click **Save** from the toolbar or from the File menu, select **Save**.

If you cannot access front-end file shares you can move the Free Form Label to a different environment using the back-end end file structure. To use this method, from the Tools menu, select **Transfer Objects** to open the Transfer Objects dialog box. Ensure that the Free Form Labels category is selected under Layouts in the tree on the left side of the Transfer Objects dialog. Enter the name of your Free Form Label in the Source Object: field. From the Task menu, select **Save to Backend...** to save the Free Form Label to a backend file with a .FFL extension. Copy the .FFL file to a directory in the target environment. Open DVDev in the target environment and from the File menu, select Open > **Source** to open the .FFL file. Opening the .FFL source file opens Layout Builder and imports the layout. The import process prompts you to import the prompt form. After the import process completes, click Save on the toolbar or from the File menu, select **Save**.

Once you complete these steps, continue on to the next part of Use Discern Layout Builder 2007.18, Creating a New Layout Program