

Rational Developer for i Sandbox for IBM i Lab Exercise Workbook

Rational Developer for i

Lab 05 – Screen designer

This lab introduces the screen designer function of Rational Developer for i.

Version 6, May 2021

The most up to date version of this document can be found on Rational Developer for i - Hands-On Labs at http://ibm.biz/rdi_labs.

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LAB 05 – SCREEN DESIGNER	4
Overview	4
Learning objectives	4
Skill level and prerequisites	4
Conventions used in this workbook	5
Client System requirements	5
Host System requirements	5
1 EXPLORING THE SCREEN DESIGNER PERSPECTIVE	6
1.1 Open a DDS Display file member using RSE	6
1.2 The views of the Screen Designer perspective	6
1.3 The Outline View	8
1.4 The Properties view	11
2 THE SCREEN DESIGNER EDITOR	13
2.1 Design page screen controls	13
2.2 Working with Screen Designer Screens	14
3 CREATING NEW RECORD FORMATS	17
3.1 Creating a new Screen Designer screen	17
3.2 Creating a new Standard Record Format	17
3.3 Adding constants to the record format	19
3.4 Adding named fields to the record	24
3.5 Adding more fields	29
3.6 Compiling your DDS	32
4 CREATING A SUBFILE	33
4.1 Adding fields/columns to a subfile	34
4.2 Adjusting the subfile control record properties	37
4.3 Hiding or showing records in the design area	38
4.4 Switching between multiple records	39
4.5 Copy and paste	39
4.6 Working with the preview	41
4.7 Adding new keywords	44
4.8 Creating the display file	45
CONGRATULATIONS!	46
APPENDIX A NOTICES	47
APPENDIX B TRADEMARKS AND COPYRIGHTS	49

Lab 05 – Screen Designer

Overview

Using an editor to create and maintain DDS source for your display files can be a frustrating and difficult task. What would be great is a graphical design tool that lets you design your screens visually and then generates the DDS source for you. That is exactly what Screen Designer does for you!

Learning objectives

Upon completion of this tutorial, you should be able to work with the RDi Screen Designer to create and maintain DDS display files for IBM i.

1. Start the Screen Designer and explore the Screen Designer Perspective.
2. Learn how to work with Screen Designer screens.
3. Create new record formats with Screen Designer.
4. Add constants and fields to records.
5. Add attributes and conditioning indicators to fields.
6. Work with the Screen Designer source editor.
7. Compile Display File source.
8. Create subfiles with Screen Designer.
9. Work with subfile records and subfile control records in Screen Designer.

Skill level and prerequisites

Introductory.

Important!



You should complete **RDi Lab01** 'Getting started' before you work on this lab. Lab01 contains the following information and instructions:




- Which IBM i server to connect to
- Which User ID to use
- How to start RDi, create a connection and connect
- How to setup the correct library list for this lab

Knowledge of basic Microsoft Windows operations such as working with the desktop, mouse operations such as opening folders and drag-and-drop is assumed. It will also be helpful if you understand DDS and ILE RPG.

Conventions used in this workbook

Bold font	is used to highlight user interface controls
Mono-spaced font	is used for user input text and code blocks
<i>Italic font</i>	is used for variable names and glossary terms

The following icons are also used to identify categories of information:

Icon	Purpose	Explanation
	Important!	This symbol calls attention to a particular step or command. For example, it might alert you to type a command carefully because it is case sensitive.
	Information	This symbol indicates information that might not be necessary to complete a step but is helpful or good to know.
	Trouble-shooting	This symbol indicates that you can fix a specific problem by completing the associated troubleshooting information.

Client System requirements

The labs require IBM Rational Developer for IBM i (RDi) to be installed on your workstation. If you do not yet have this, you can download it for free from http://ibm.biz/rdi_trial.

Host System requirements

The easiest way to ensure you have everything you need, is to use the demonstration IBM i server that is set up and ready to use with these lab exercises. These labs use the RSELABxx library on that system. For those who want to run these labs on to their own system, you can load a SAVF with the RSELABxx library from rselabxx.savf.

1 Exploring the screen designer perspective

Screen Designer helps the novice DDS programmer create screens quickly and easily without worrying about the details of the DDS language, while at the same time letting the expert DDS programmer get access to all the features and power of the language. You will now step through each part of the interface to learn how to work with DDS-based screens.

1.1 Open a DDS Display file member using RSE

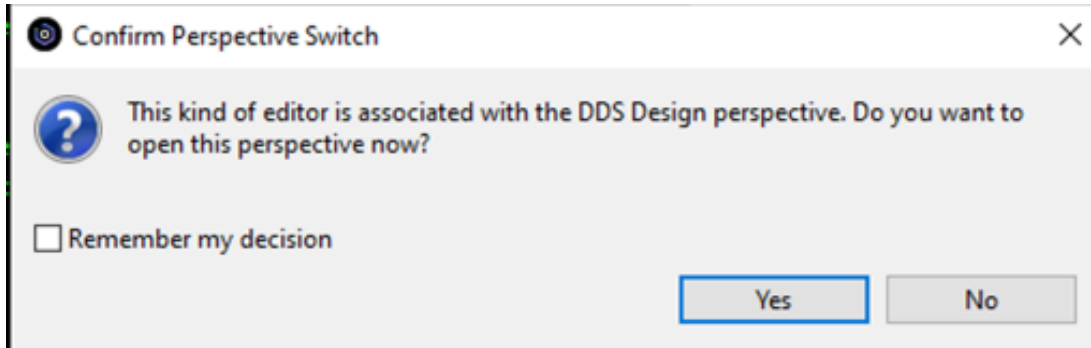
In the workbench, in the Remote System Explorer (RSE) Perspective, use the connection that you created in **Lab01**.

In the Remote Systems view:

- __1. Ensure that the **Library List** filter is expanded.
- __2. Expand the **QDDSSRC** file in library **RSELABxx**.
- __3. Right-click the **MSTDSP** member and select **Open With --> Screen Designer**.

The member **MSTDSP** will be downloaded to the workstation and opened in the Screen Designer Perspective.

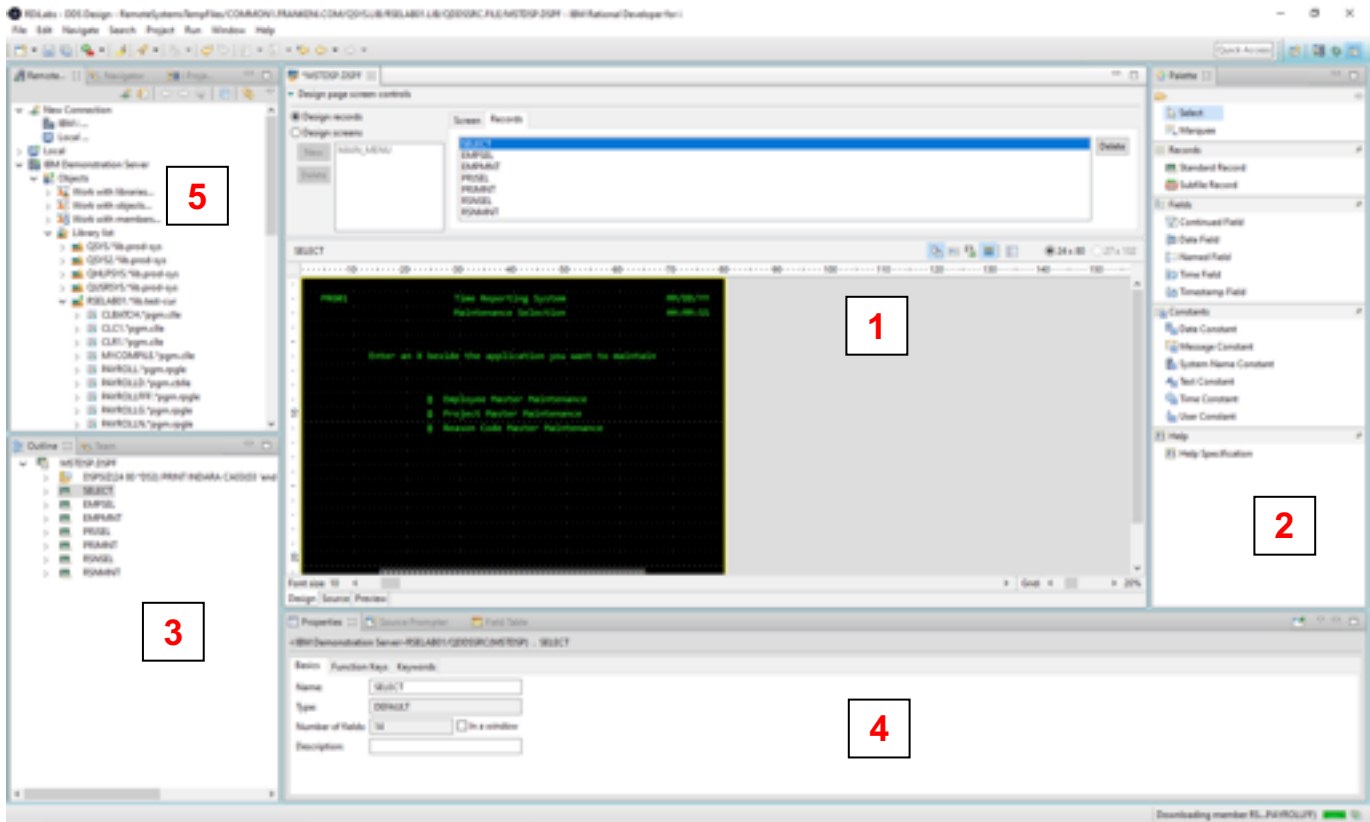
A Confirm Perspective Switch dialog may appear:



- __4. If so, confirm by clicking **Yes**.

1.2 The views of the Screen Designer perspective

Before you use Screen Designer for editing, let's look at the five views of this perspective.

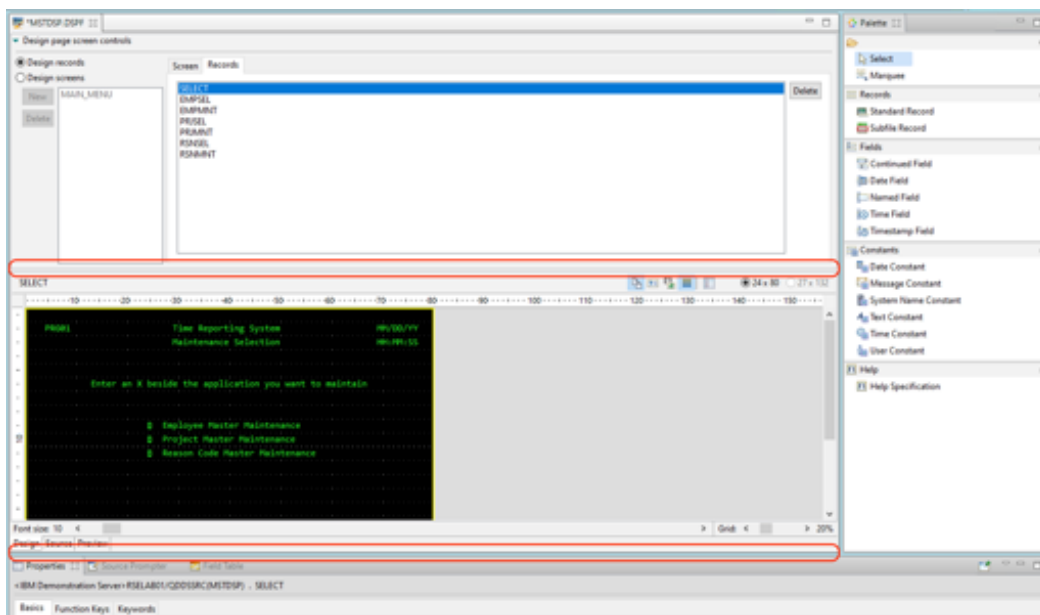


The five views are:

1. The Screen Designer Editor, which allows you to design screens.
2. The Palette, which contains the controls available in DDS.
3. The Outline View which shows a tree view of the DDS source.
4. The Properties View, which allows you to work with properties of a selected control in the Design Page, Source Editor, or Outline View.
5. The Remote Systems View, which allows you to work with IBM i objects.

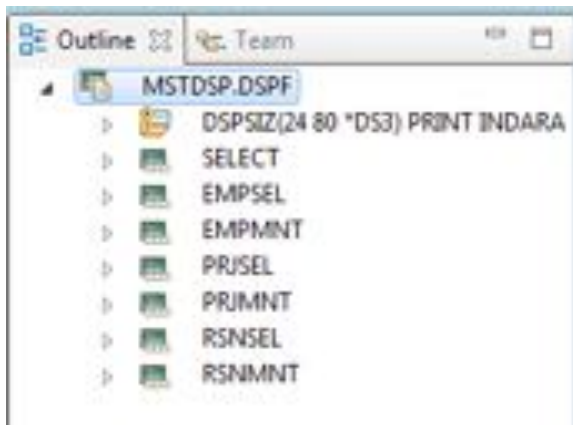


Note: To complete some of the steps of this lab it may be helpful to resize the views of the Screen Designer Perspective at various times. In particular, it may be helpful to expand the size of the Design page screen controls area of the Screen Designer Editor, the design area of the Screen Designer Editor, or the Properties View. (These components are described in detail in succeeding sections.) These components may be resized by placing the cursor over the appropriate box in the figure below, holding down the left mouse key, and dragging the cursor up or down to either increase or decrease the size of the component.



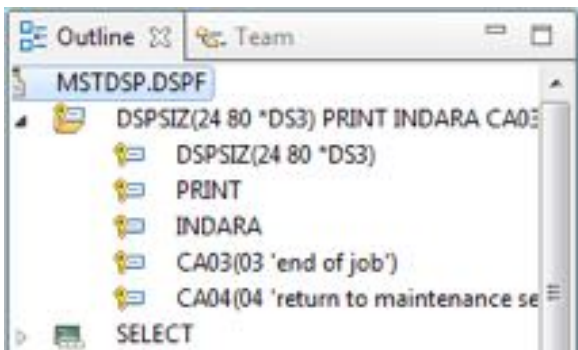
1.3 The Outline View

1. Click on the Outline View in the lower left corner of the perspective.



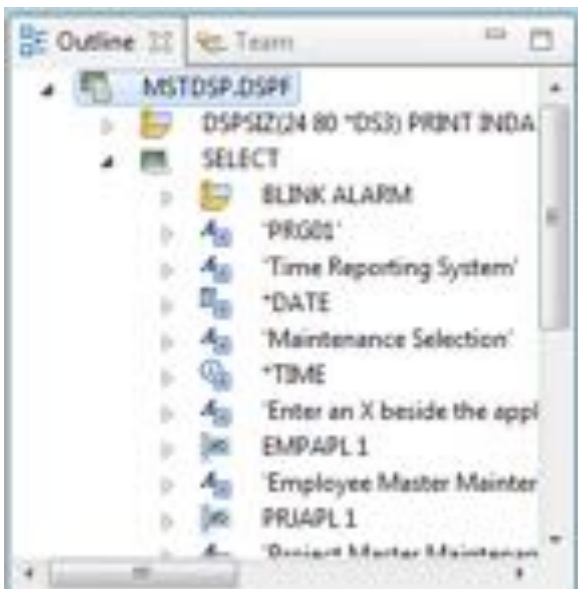
What you are looking at now is basically an explorer view of the DDS source. The DDS tree view displays the DDS source in its file, record, field, and keyword hierarchy. It is a familiar and intuitive way to see the overall structure of the DDS source and to navigate through it quickly. Do not worry if you are not a DDS expert - we'll explain everything you need to know.

- __2. Expand the container **DSPSIZ(24 80 *DS3)** by clicking the arrow beside the container.



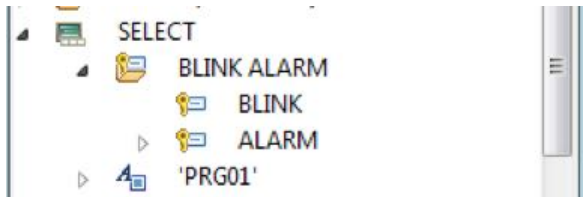
This is the container for the file level keywords. Its name is created from all file level keywords used in the display file. You now see the file level keywords in the tree.

- __3. Expand the **SELECT** record.



The record level controls and keywords are displayed.

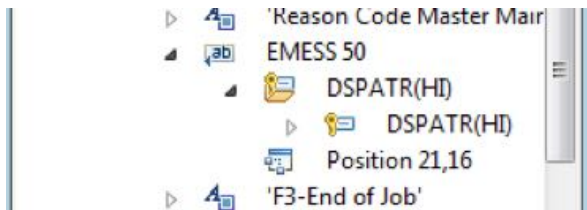
- __4. Expand the **BLINK ALARM** container. The name of this container is created from all record level keywords used in record **SELECT**.



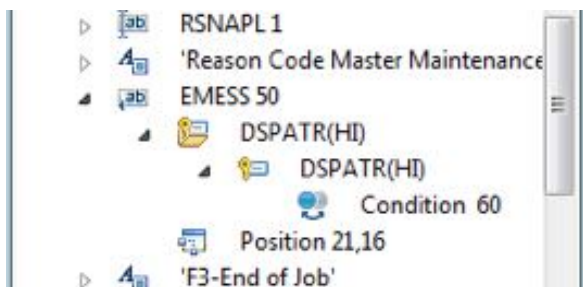
- __5. Expand the field **EMESS 50**.



- __6. Expand the **DSPATR(HI)** container in the **EMESS 50** field.



- __7. Finally, expand the keyword **DSPATR(HI)**.



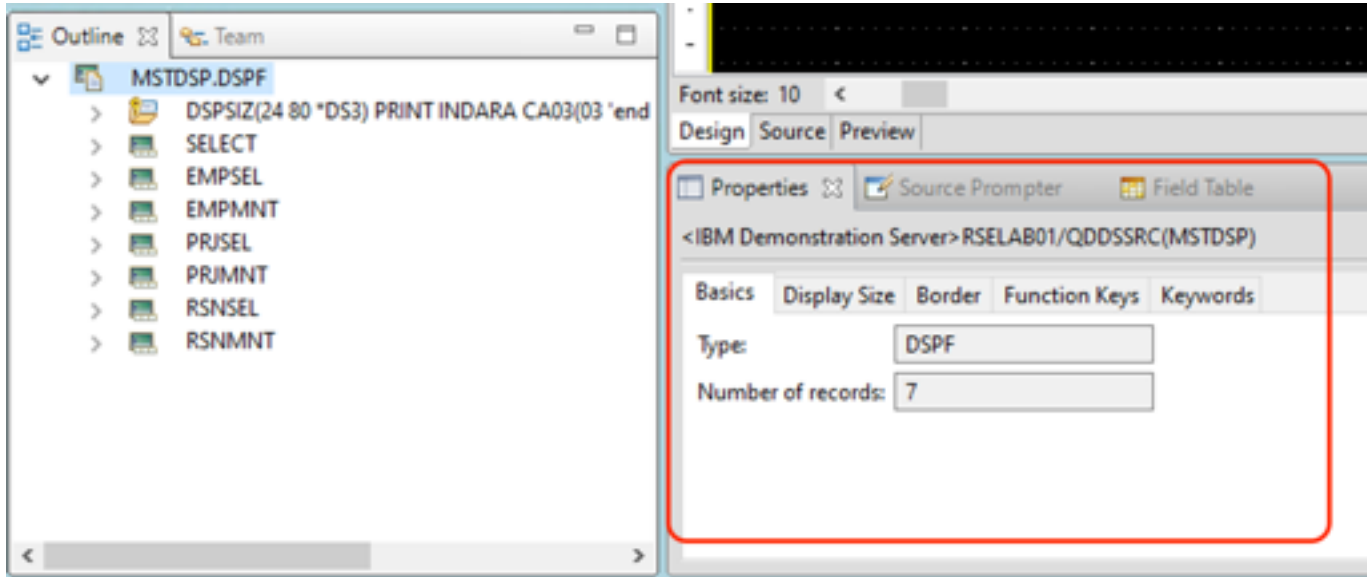
Now you can see the properties of the keyword. It is conditioned by indicator 60. You can also see the detail information for field **EMESS 50**, which shows that the field is positioned on line 21, column 16.

The DDS Tree is now showing you a nice summary of the file-level keywords and the **SELECT** record.

1.4 The Properties view

The Properties View allows you to view and edit the properties of a currently selected control.

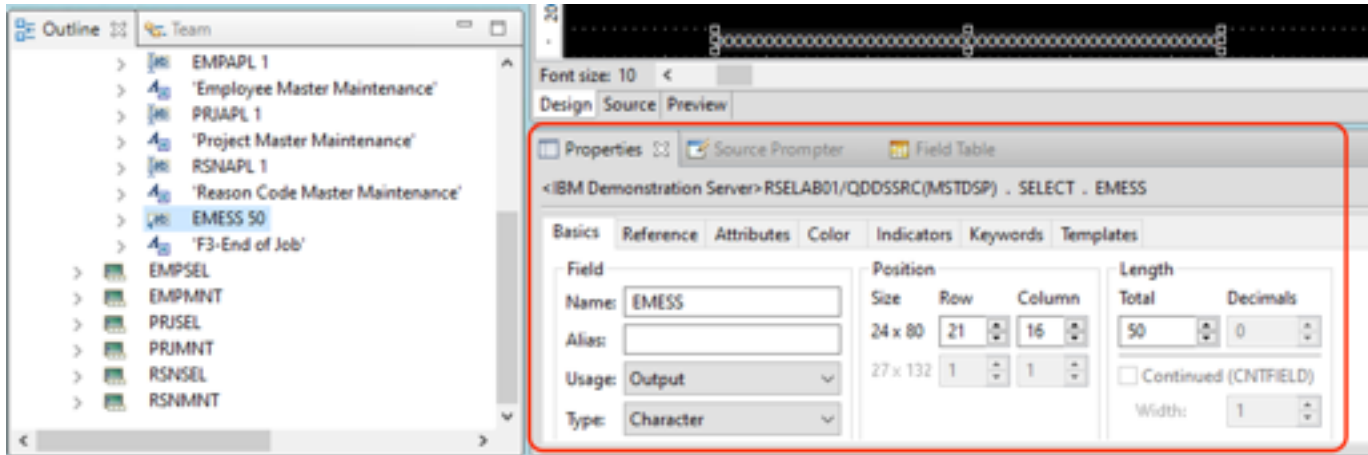
1. In the Outline View, click the display file **MSTDSP** node. The Properties View will display the properties for this file.



You can see that the tabs of the Properties View reflect the property types for the selected control/part, in this case the display file. Feel free to click on some of the tabs to look at the existing properties for this display file.

Let's see how the Properties View changes when you select the **EMESS 50** field in the Outline View.

- 2. In the Outline View, select field **EMESS 50** under SELECT. The Properties View will change to reflect the properties available for a field.



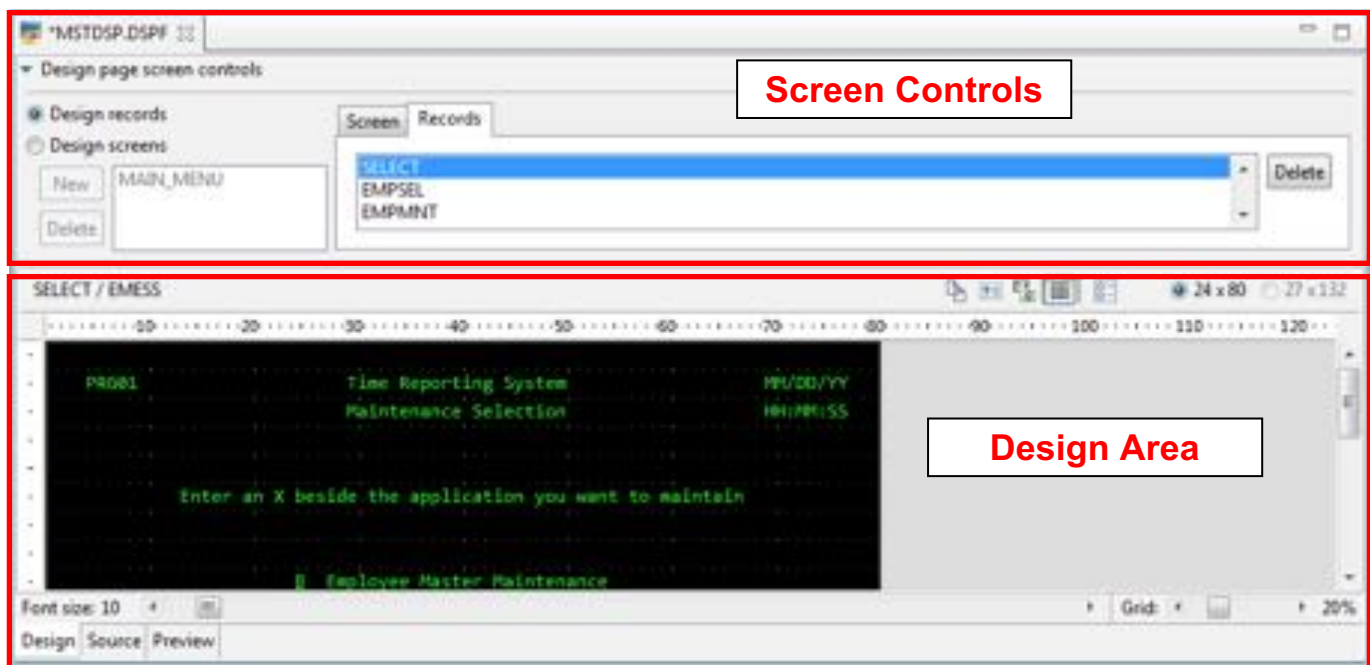
Notice the different tabs. Feel free to explore the field properties and select different tabs in the Properties View. After reviewing the Outline and Properties Views, let's now explore the Screen Designer Editor.

2 The Screen Designer Editor

You will spend most of your time creating, updating, and designing your DDS screens in the Screen Designer Editor. The editor has two major sections, the screen controls and the design area.

The design area has three pages (lower left corner of the area):

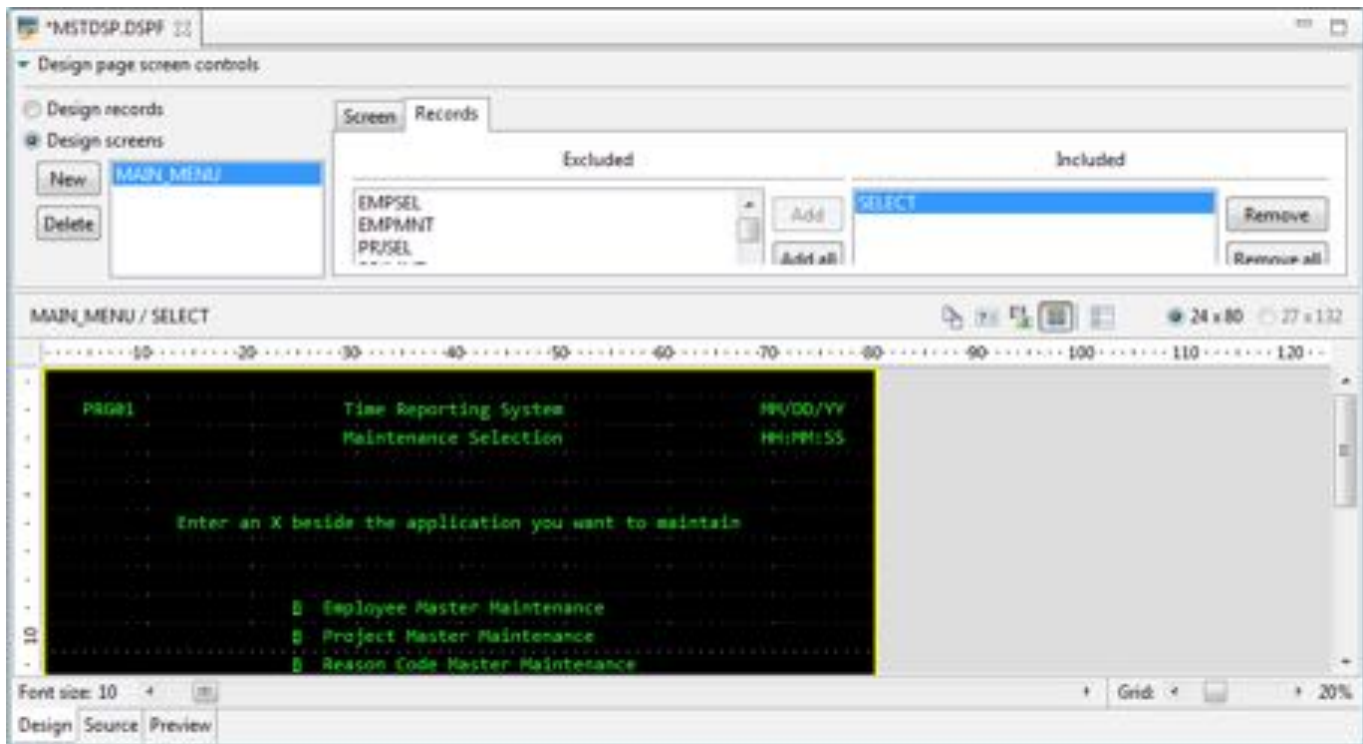
- The Design Page allows you to design screens visually using a graphical user interface.
- The Source Page allows you to view and edit the DDS source directly.
- The Preview Page provides a preview of what the screen will look like when executed by a user



2.1 Design page screen controls

The screen controls area has two radio buttons in the upper left corner of the area. In the figure above, the Design records radio button is selected. When this button is selected and the Records Tab of the screen controls area is selected, a list of all available record formats that can be used for a screen is presented in the Records Tab.

- __1. In the screen controls area, select the **Design screens** radio button.



Notice that the Records Tab has changed its structure. It now contains a list of Excluded record formats and a list of included record formats for the screen MAIN_MENU. The Excluded list presents the record formats that are not used by the MAIN_MENU screen. The Included list presents the record formats that are used by the screen.

In order to understand how the screen MAIN_MENU was created, you need to understand the concept of a screen. A screen is simply a collection of one or more DDS record formats that represent how a screen will be assembled at runtime. Screen Designer allows you to work with screens at development time as they would appear when they get assembled by your programs at runtime. To work with screens in Screen Designer you need to tell Screen Designer which record formats belong to each screen.

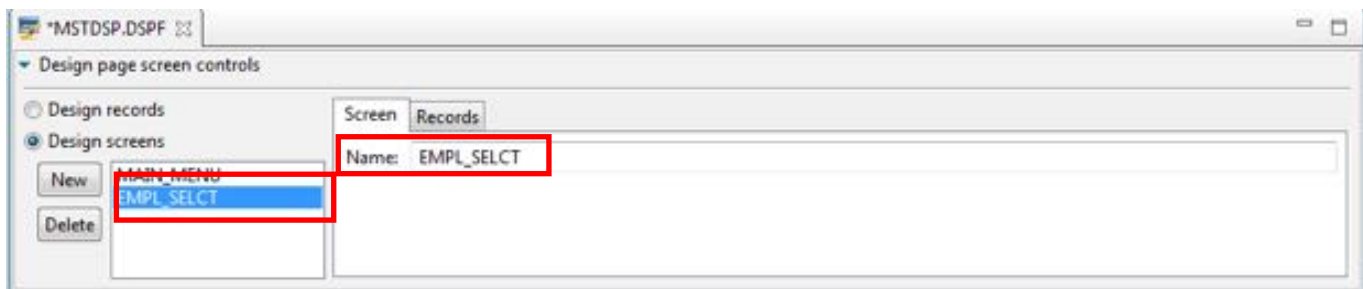
In this case a screen named MAIN_MENU was created, and Screen Designer saved this information in the DDS source in comment lines. Any screens that you create are persisted as comment lines in the DDS source member so that you can re-use these screens in subsequent Screen Designer sessions.

2.2 Working with Screen Designer Screens

As explained in the previous section, a screen in Screen Designer is a collection of records that reflects the runtime environment for display file records.

If you are working with existing DDS, you will want to create screens that will correspond to how the records are being used at runtime. In this lab you will create a new screen that is used when a user selects which employee in the payroll database to maintain. The screen will consist of one record format, EMPSEL.

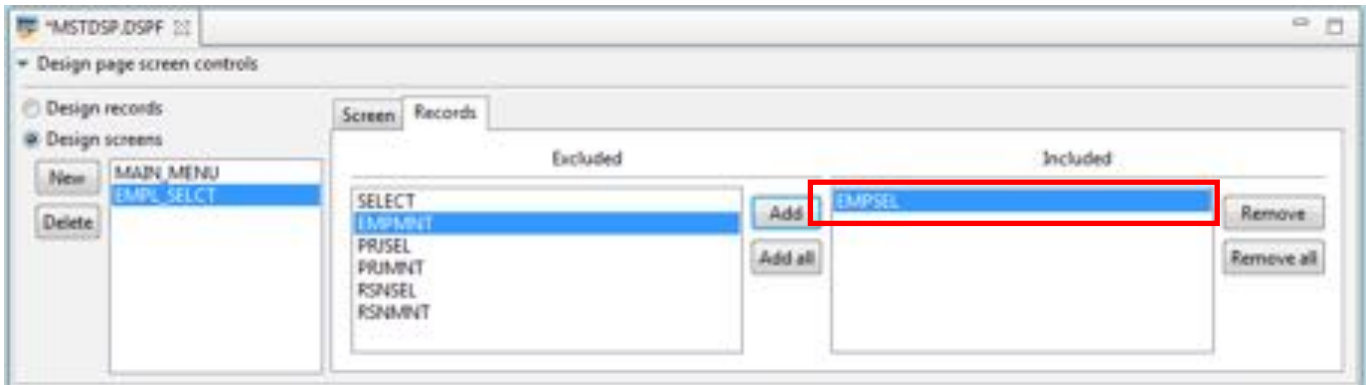
- __1. Click the **New** button in the Design page screen controls area.
- __2. Enter **EMPL_SELECT** as the name for the screen.



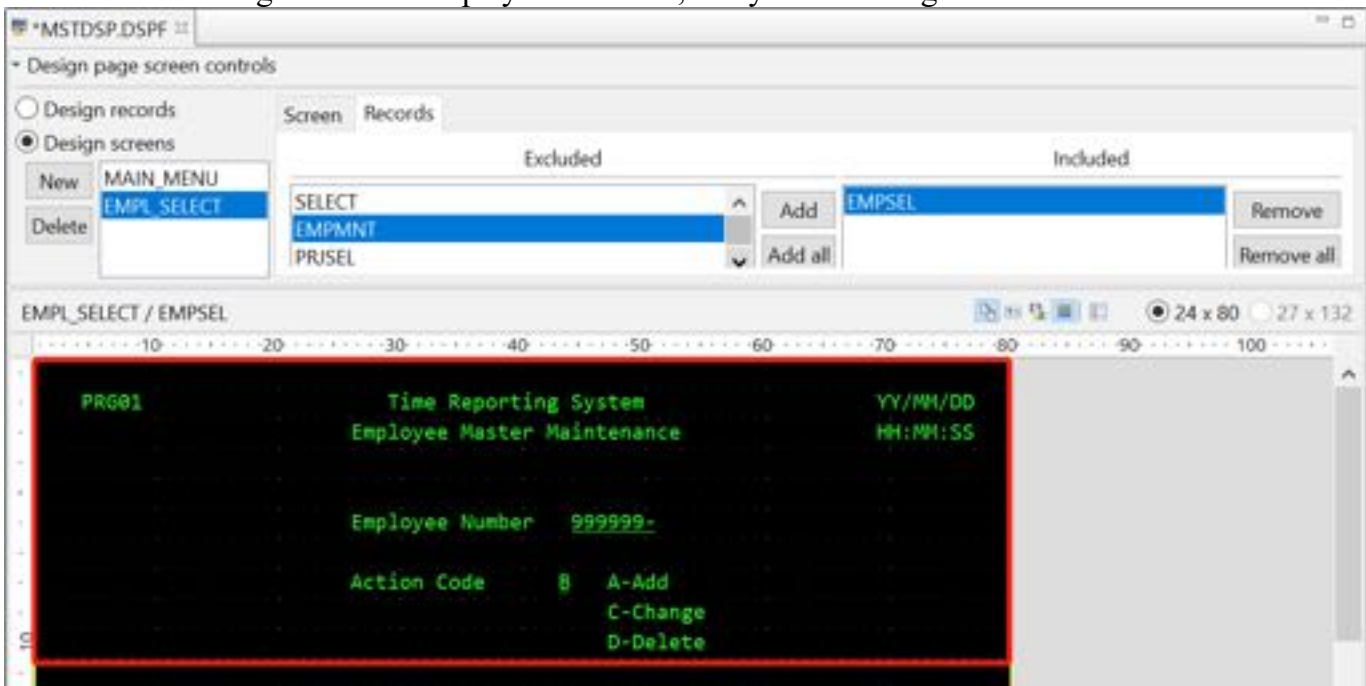
Now add the record format to this screen.

- __3. Click the **Records** Tab to select it.
- __4. Select the **EMPSEL** record in the Excluded list.

- 5. Click the **Add** button to move the record format to the Included list.



Notice that the design area now displays this screen, and you can change it in the editor.

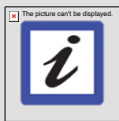
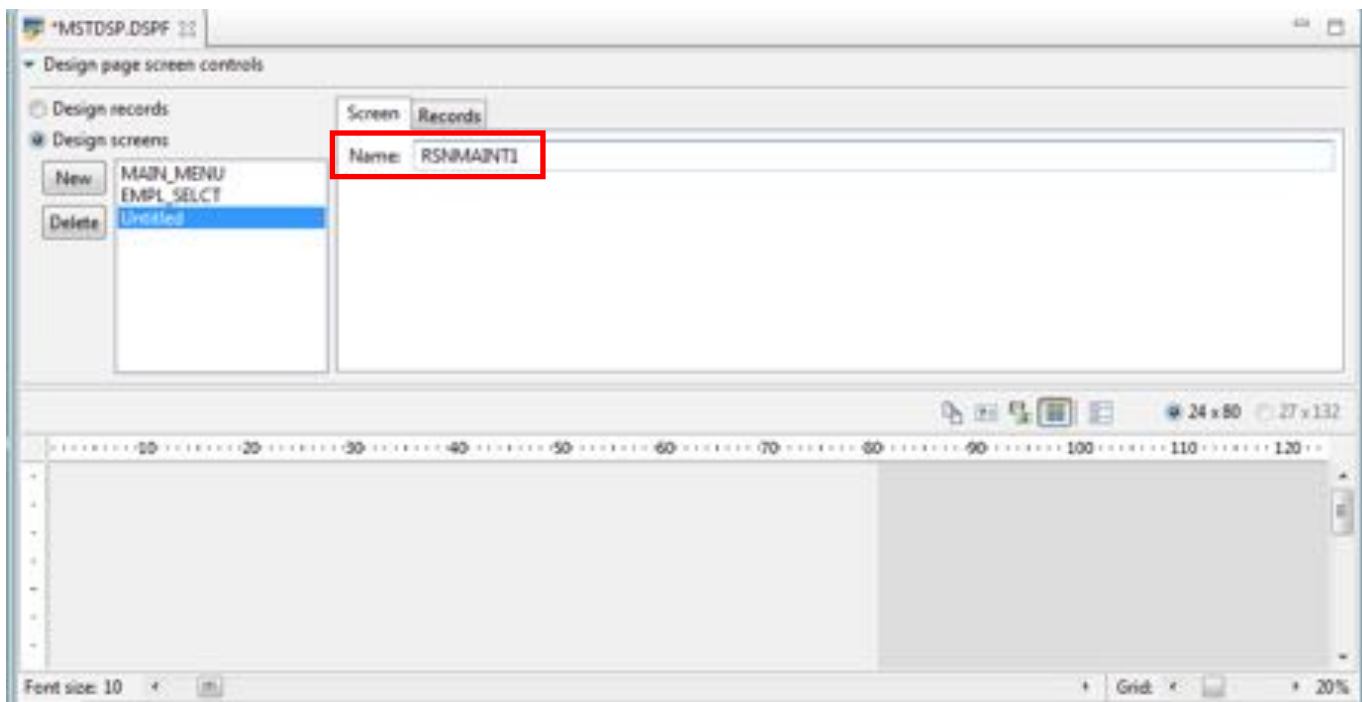


3 Creating new record formats

3.1 Creating a new Screen Designer screen

In order to create a new 5250 screen and work with its record formats in the design area you need to create a Screen Designer screen first.

1. Click the **New** button in the Design page screen controls area.
2. Enter the name **RSNMAINT1** in the entry field on the Screens pane.



Note: It is a best practice to periodically save your work. This can be accomplished by entering the control key sequence Ctrl-S, by selecting File -> Save from the main RDi menu, or by clicking the file save icon on the RDi toolbar.

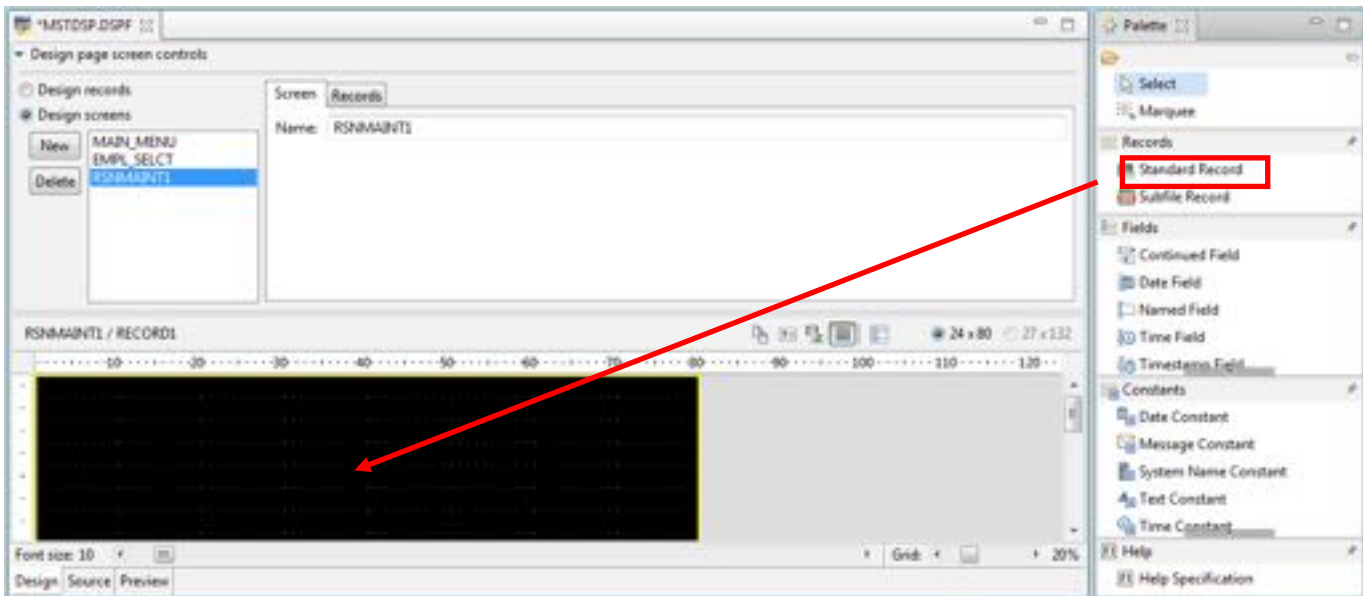
3.2 Creating a new Standard Record Format

At the moment the design area does not show anything because no record format is specified for screen **RSNMAINT1**. Let's change that.

- __1. In the **Palette** view on the right side of the work bench select the **Standard Record** icon by clicking it.



- __2. Move the cursor to the design area (you don't need to drag the cursor).
- __3. Click in the design area to add the record format.



The design area now contains an empty record format.

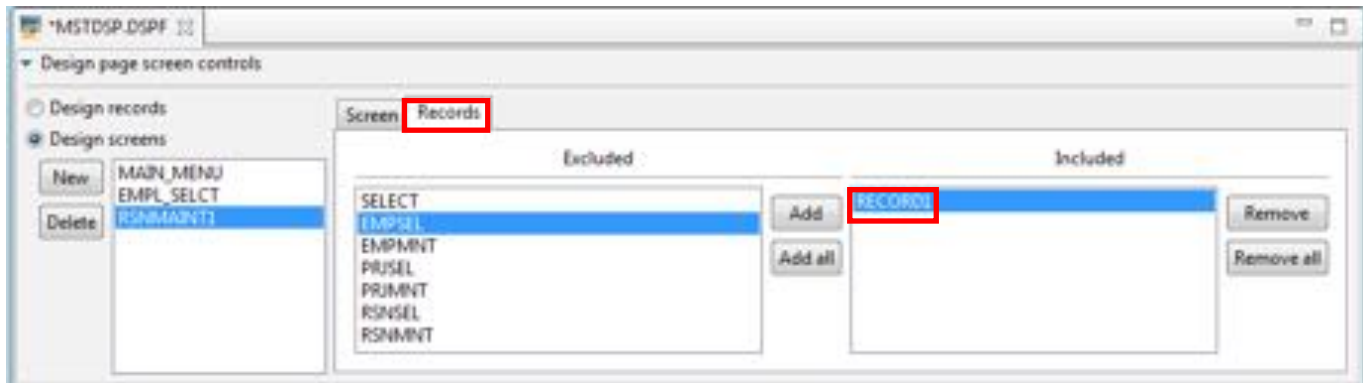
You have created a new screen with the name **RSNMAINT1**, containing a new record format. Notice that the **Palette** changed and now contains more controls. It shows all controls that are valid to be used at this point. New drawers in the palette containing different control types have been added:

- __i. Fields
- __ii. Constants
- __iii. Help

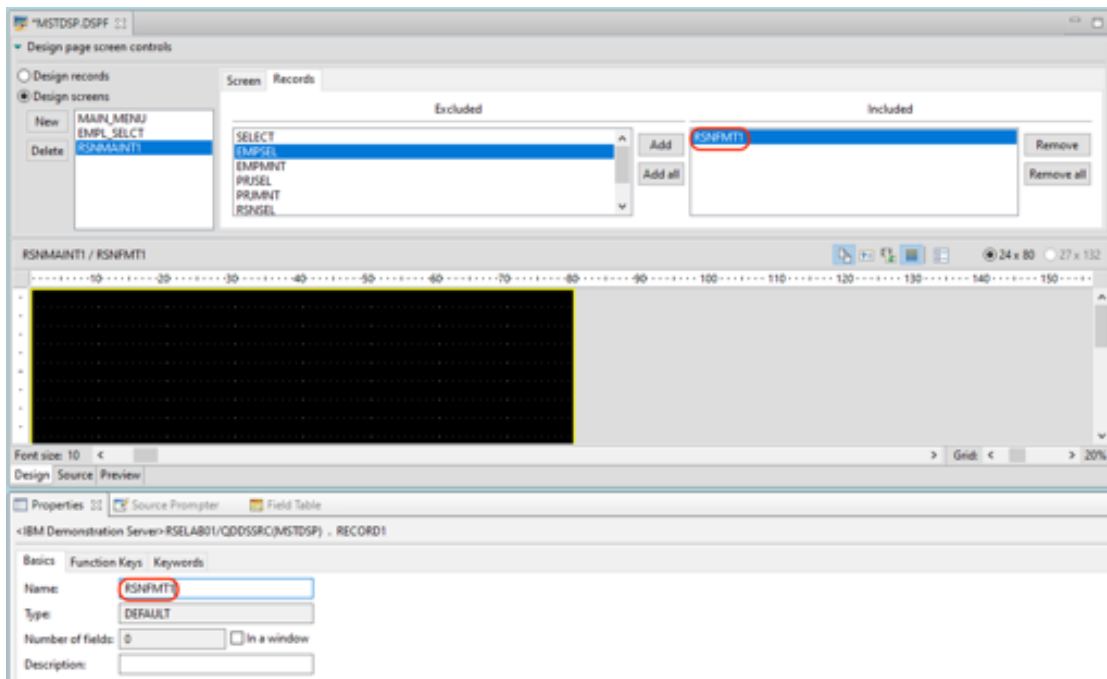
To change the name of the record from its default name **RECORD1** to something meaningful:

- __4. Select the **Records** Tab in the Design page screen controls area.

5. Select the **Record1** record format in the Included list.



6. Click the **Properties** View in the area underneath the screen design editor.
 7. Click the **Basics** Tab.
 8. Enter **RSNFMT1** in the name field. The name is changed in the record list when you click somewhere else in Screen Designer.

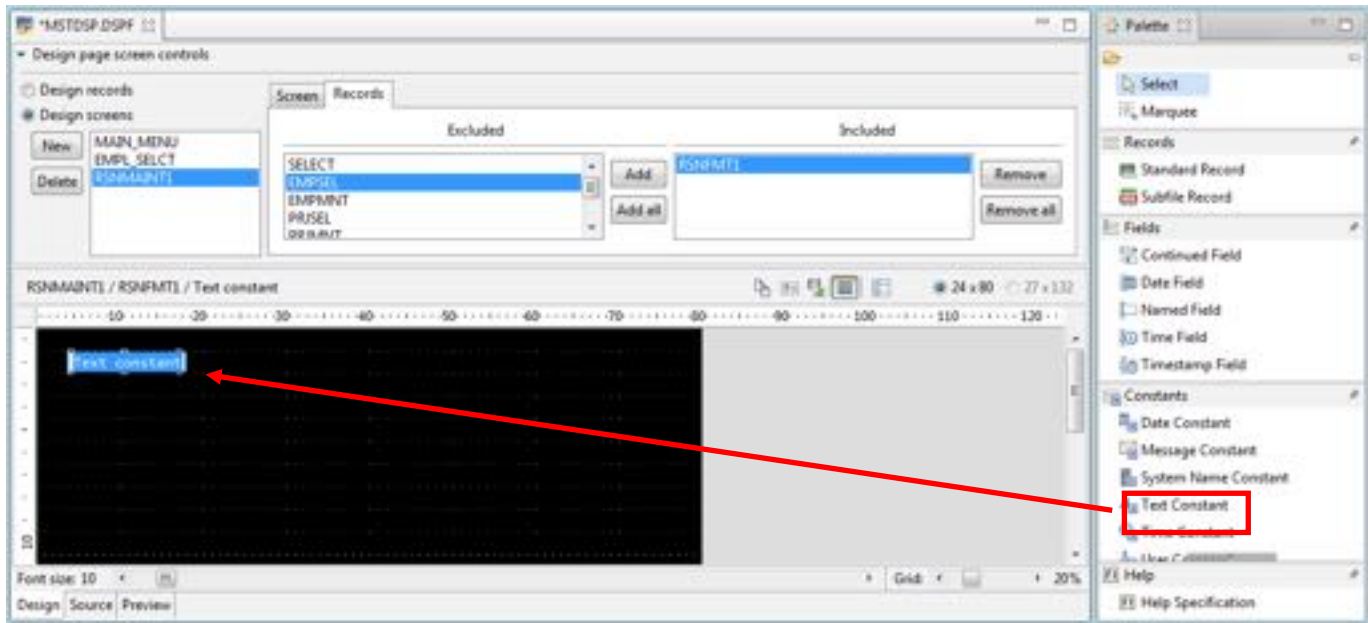


Now you can design your screen using the controls from the palette by adding them to the record format in the design area.

3.3 Adding constants to the record format


1. In the Palette, select the **Text Constant** control.
 2. Move the cursor onto the design area until the hover text states row 2, column 5.

- __3. Click at this point in the design area to place the text constant onto the record format.



Notice that the Properties View has changed and reflects the properties of the currently selected control, which is the new text constant.

- __4. Change the constant text by clicking in the object in the design area and entering **PRG01**.

 **Tip:** You could also change the name of the constant in the Properties View.

- __5. Click somewhere other than the design area to apply the change.

Notice that you can change the location of the constant on the record format by dragging it around or by using the spin button on the Properties View; you will experiment with these features in the next steps. Let's look at the source that was created.

- __6. At the bottom lower left of the Screen Designer Editor select the **Source** Page.

```

Line 249 Column 1 Replace 12 changes
.....T.Name+++++.....Functions+++++
000239 A          11 36'Year To   Prior'
000240 A          12 27'Month'
000241 A          12 38'Date     Year'
000242 A          RSHRC   R      O 13 26REFFLD(RCRSN/RSHRC "LIBL/RSNPST)
000243 A          RSHRY   R      O 13 35REFFLD(RCRSN/RSHRY "LIBL/RSNPST)
000244 A          RSHRP   R      O 13 46REFFLD(RCRSN/RSHRP "LIBL/RSNPST)
000245 A          EMESS   50    O 21 16
000246 A  50          DSPATR(HI)
000247 A          23 7'F3-End of Job'
000248 A          23 25'F4-Maintenance Selection'
000249 A          23 54'F7-Reason Code Selection'
000250 A          R RSNPHT1
000251 A          2 5'PR001'
000252 A*XR+S+<record-sequences>
000253 A*XR+S+ <sequence name="MAIN_MENU">
000254 A*XR+S+ <device type="display" width="80" height="24" />
000255 A*XR+S+ <record-write record-format="SELECT" />
000256 A*XR+S+ </sequence>
000257 A*XR+S+ <sequence name="EMP1_SELECT">
000258 A*XR+S+ <device type="display" width="80" height="24" />
000259 A*XR+S+ <record-write record-format="EMPSEL" />
000260 A*XR+S+ </sequence>
000261 A*XR+S+ <sequence name="RSMPAINT1">
000262 A*XR+S+ <device type="display" width="80" height="24" />
000263 A*XR+S+ <record-write record-format="RSMPHT1" />
000264 A*XR+S+ </sequence>

```

The DDS source is displayed in the LPEX editor. You can see the two statements the editor added to the source member.

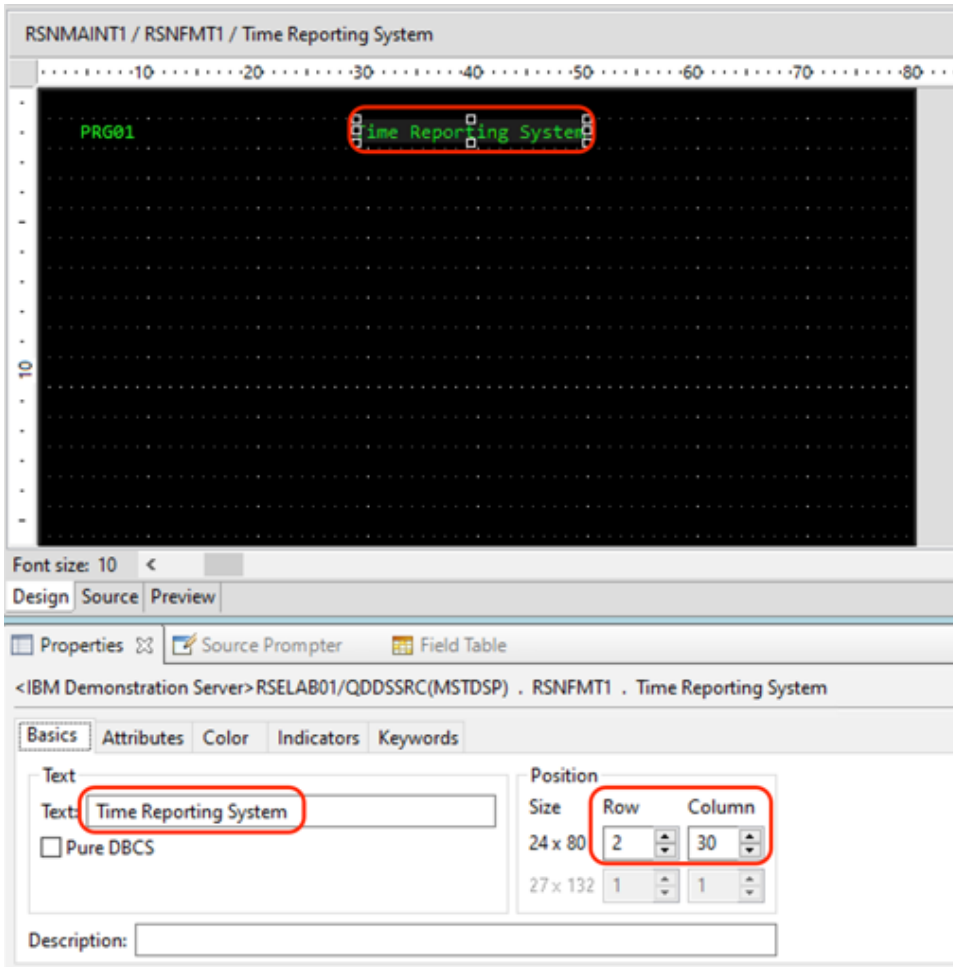
Let's create some more constants and fields on the record format. You could use the Source Editor, but for this exercise you will use the Design Editor.

- __7. Select the **Design** Page at the bottom of the editor.

Now add another text constant. This time you will use the Properties View to position the constant to the correct location.

- __8. Click the **Text Constant** control in the Palette View to select it.
- __9. Position the cursor anywhere in the design area and click to create the text constant.
- __10. Select the Properties View.
- __11. Change the text to **Time Reporting System**.
- __12. Use the **Row** spin button to move the constant to row 2.

- __13. Use the **Column** spin button to move the constant to column 30.



- __14. Add another text constant control anywhere on the design area and rename the constant **Employee Master Maintenance**.
- __15. Select the constant in the design area.
- __16. Hold the left mouse button and drag the constant until the hover text indicates its position is row 4, column 27.

__17. Release the mouse.



- __18. Add the text constant **Reason Code** to row 5, column 30.
- __19. Add the text constant **Description** to row 7, column 9.
- __20. Add the text constant **Reason Code History** to row 9, column 31.
- __21. Add the text constant **Current** to row 11, column 26.
- __22. Add the text constant **Month** to row 12, column 27.
- __23. Add the text constant **Year To Prior** (5 spaces between “To” and “Prior”) to row 11, column 36.
- __24. Add the text constant **Date Year** (6 spaces) to row 12, column 38.
- __25. Add the text constant **F3-End of Job** to row 23, column 7.
- __26. Add the text constant **F4-Maintenance Selection** to row 23, column 25.

- __27. Add the text constant **F7-Reason Code Selection** to row 23, column 54.

Your screen should look like this:

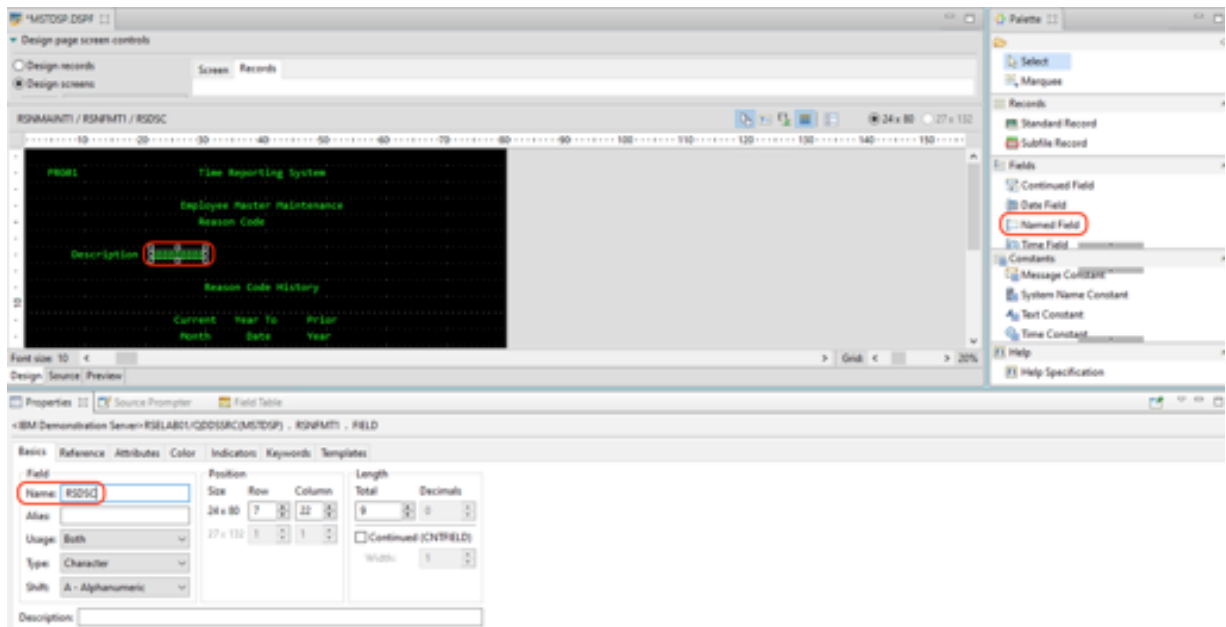


3.4 Adding named fields to the record

Adding fields to a record is very similar to adding constants. You select the named field control in the palette and drop it onto the design area.

- __1. Click the **Named Field** control to select it.
- __2. Move the cursor to row 7, column 22 in the design area.
- __3. Click at this position to create the field.
- __4. Click the Properties View.

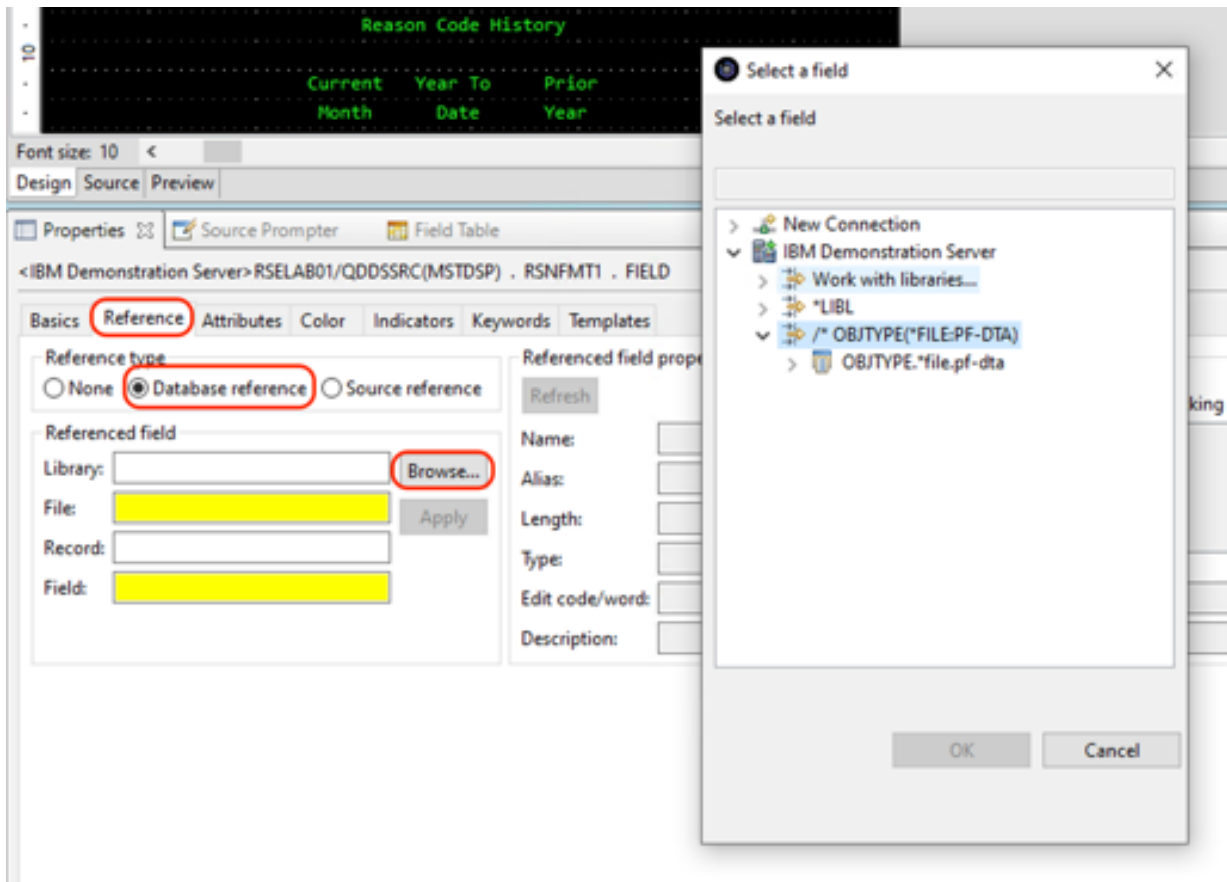
- __5. On the **Basics** Tab, rename the field **RSDSC**.



To enter the field reference information:

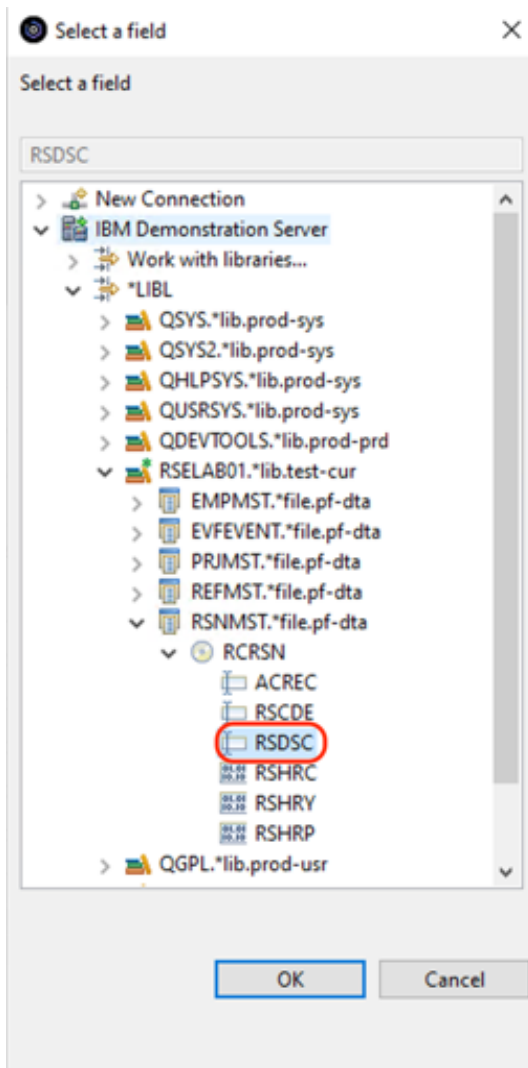
- __6. Click the **Reference** Tab of the Properties View.
 __7. Select the **Database Reference** radio button.

__8. Click the **Browse...** button.

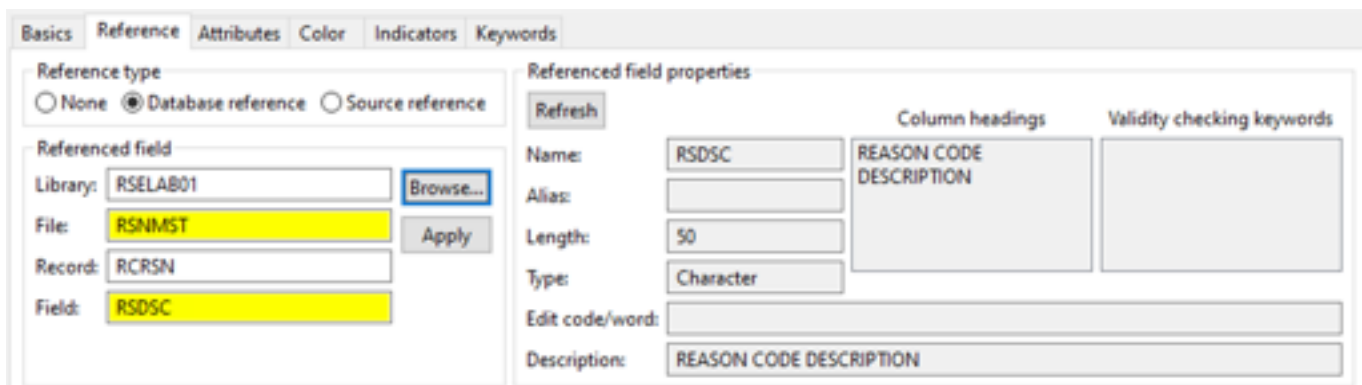


- __9. In the **Select a field** dialog, expand ***LIBL**.
- __10. Expand library **RSELABxx**.
- __11. Expand file **RSNMST**.
- __12. Expand record **RCRSN**.
- __13. Select field **RSDSC**.

__14. Click the **OK** button.

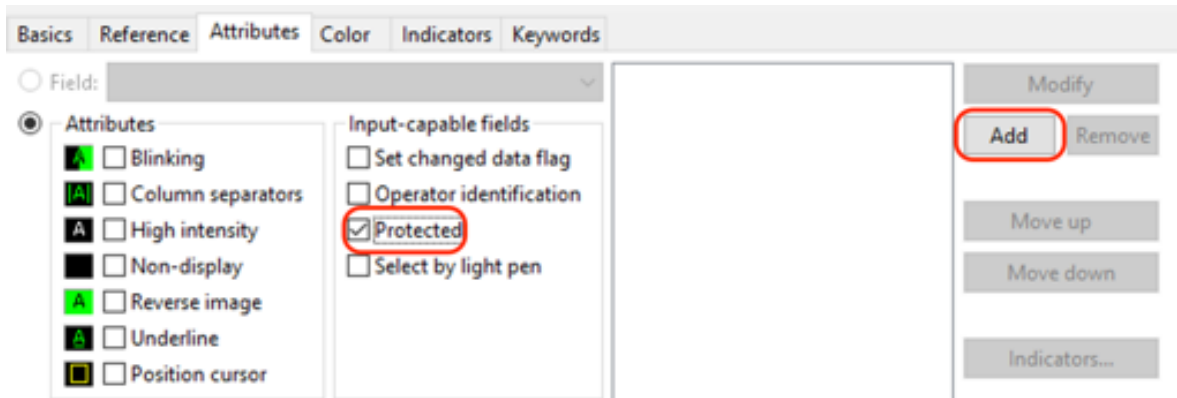


Notice that the Referenced field properties have been added to the Properties View.



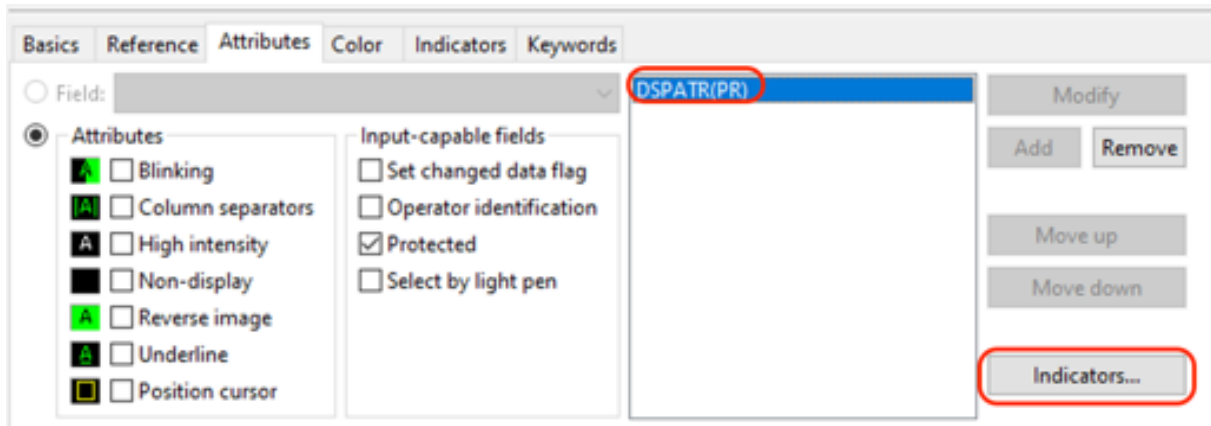
Now you will add the Protected attribute for this field to protect it under the condition that indicator 90 is On.

- __15. In the Properties View, click the **Attributes** Tab.
- __16. Click the **Protected** check box to select the Protected attribute.
- __17. Click the **Add** button on the right side of the list box.



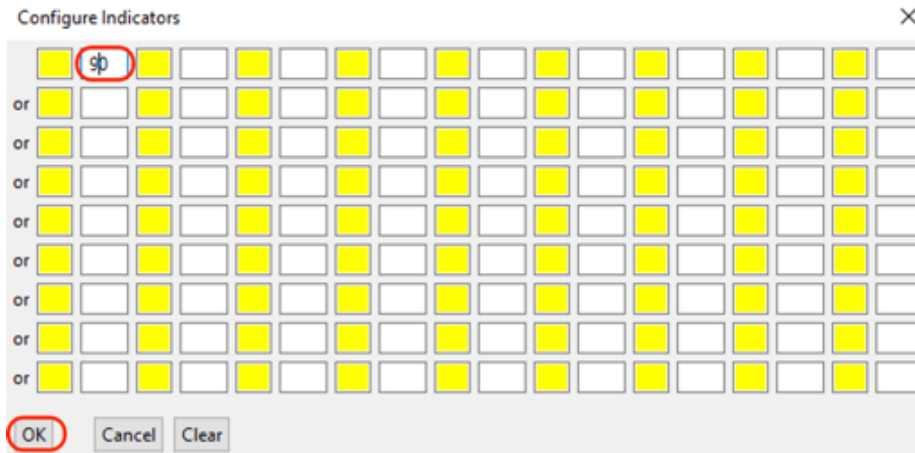
To condition the Protected attribute:

- __18. Click the **DSPATR(PR)** entry in the attribute list.
- __19. Click the **Indicators...** button on the right side of the list.

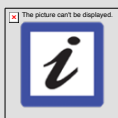
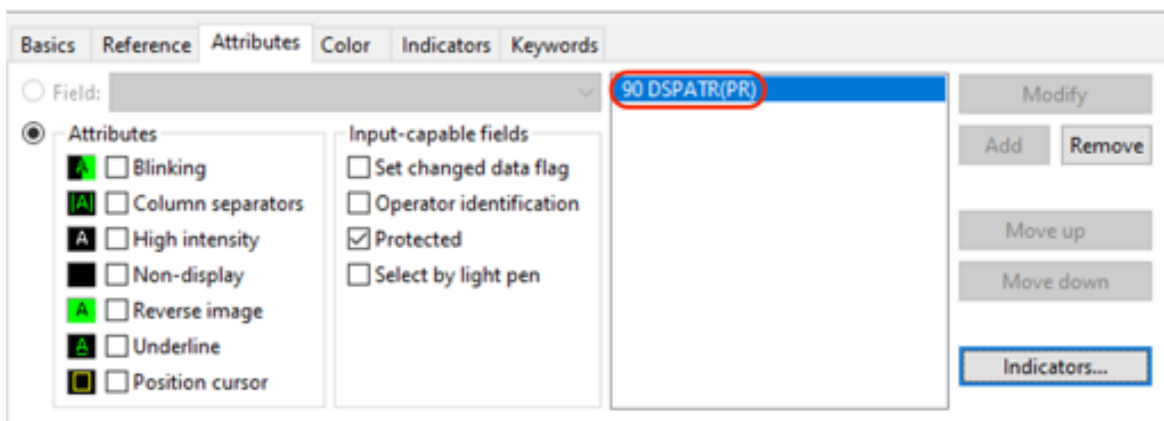


- __20. Enter **90** in the first white indicator box, to specify indicator 90 as the conditioning indicator for this attribute.

- __21. Click the **OK** button.



The attribute list now shows indicator 90 for the Protected attribute.



Note: If you want to negate an indicator, enter any character in the yellow field in front of it and the tool will add an N in this field.

3.5 Adding more fields

- __1. In the Palette View, select the **Named Field** control.
- __2. Click the design area to put this named field in row 5, column 43.
- __3. In the Properties View, click the **Basics** Tab and change the field name to **RSCDE**.

__4. Change the usage to **Output**.

__5. Click the **Reference Tab**.

__6. Select the **Database Reference** radio button.

__7. Click the **Browse** button.

__8. Select ***LIBL --> RSELABxx --> RSNMST --> RCRSN --> RSCDE**.

__9. Click the **OK** button.

__10. Add another **Named Field** to the record at row 13, column 26.

__11. Change the field name to **RSHRC.0**

__12. Change usage to an **Output** field.

__13. To add reference information, click the **Reference Tab**.

__14. Select the **Database Reference** radio button.

__15. Click the **Browse** button

__16. Select ***LIBL --> RSELABxx --> RSNMST --> RCRSN --> RSHRC**.

__17. Click the **OK** button.

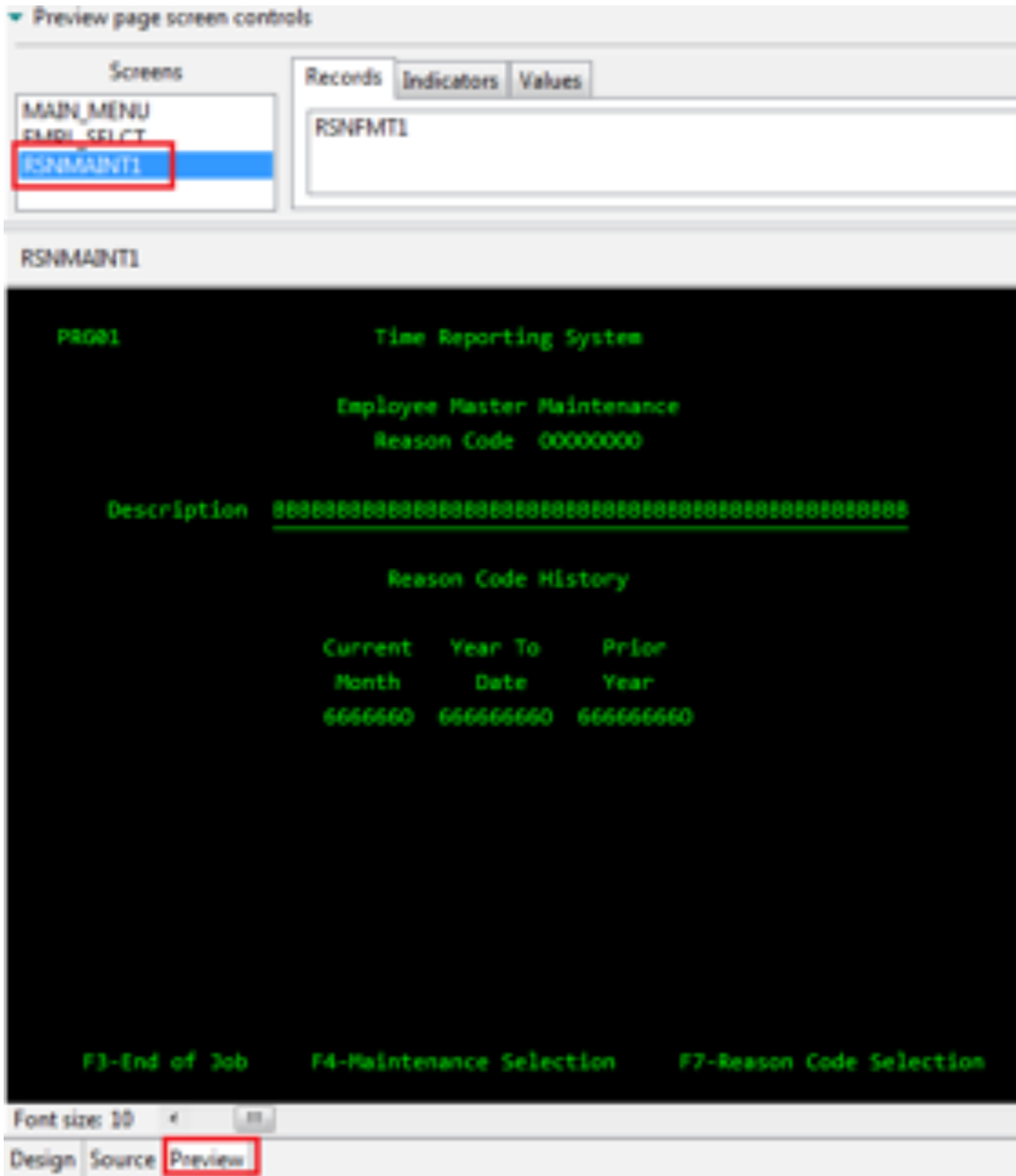
__18. Add an output field named **RSHRY** at row 13, column 35.

__19. Add the reference information for the field in the same way that reference information was added for the previous named fields.

__20. Add an output field named **RSHRP** at row 13, column 46.

__21. Add the reference information for the field.

22. Click the **Preview** Page in the design editor to preview what your screen will look like. You can select RSNMAINT1 in the Preview page screen controls for the newly created screen.

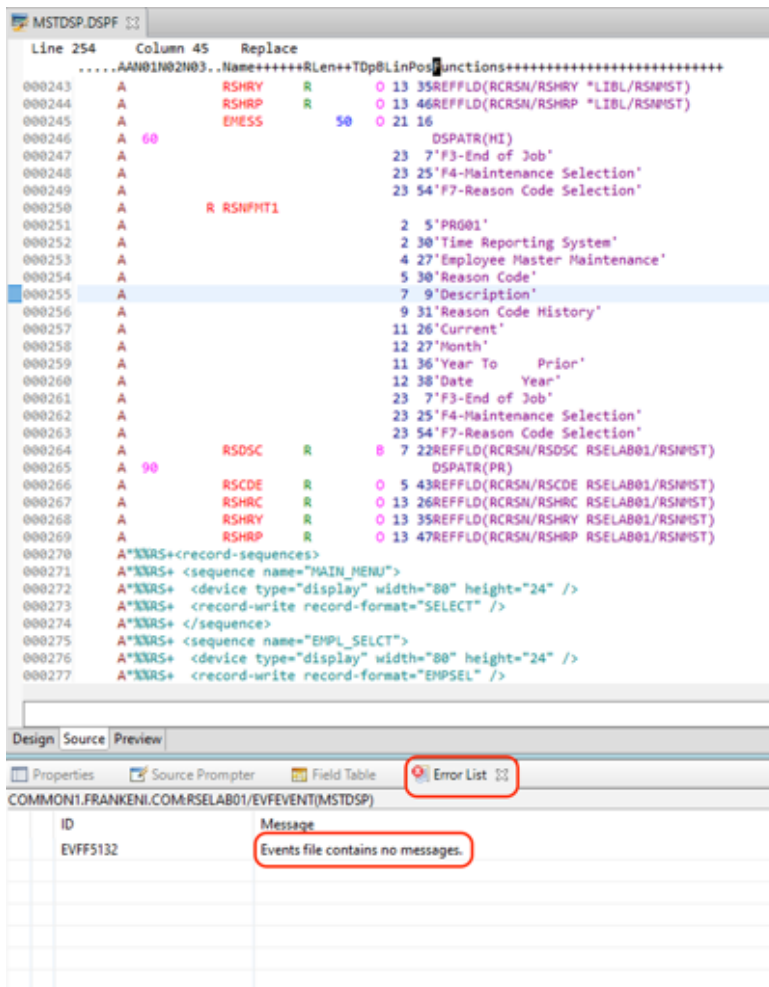


Now it is time to compile what you have created.

3.6 Compiling your DDS

In order to enable the compile options on the workbench menu bar you need to switch to the Source Editor, which by default will add the compile menu actions.

1. Click the **Source** Page in the design editor.
2. From the RDi main menu select **Compile -> CRTDSPF**. (You may be prompted to save the MSTDSP file before compiling.)
3. Select the **Error List** View in the lower middle part of the perspective. You should see a message similar to the following, indicating that your file compiled without errors.

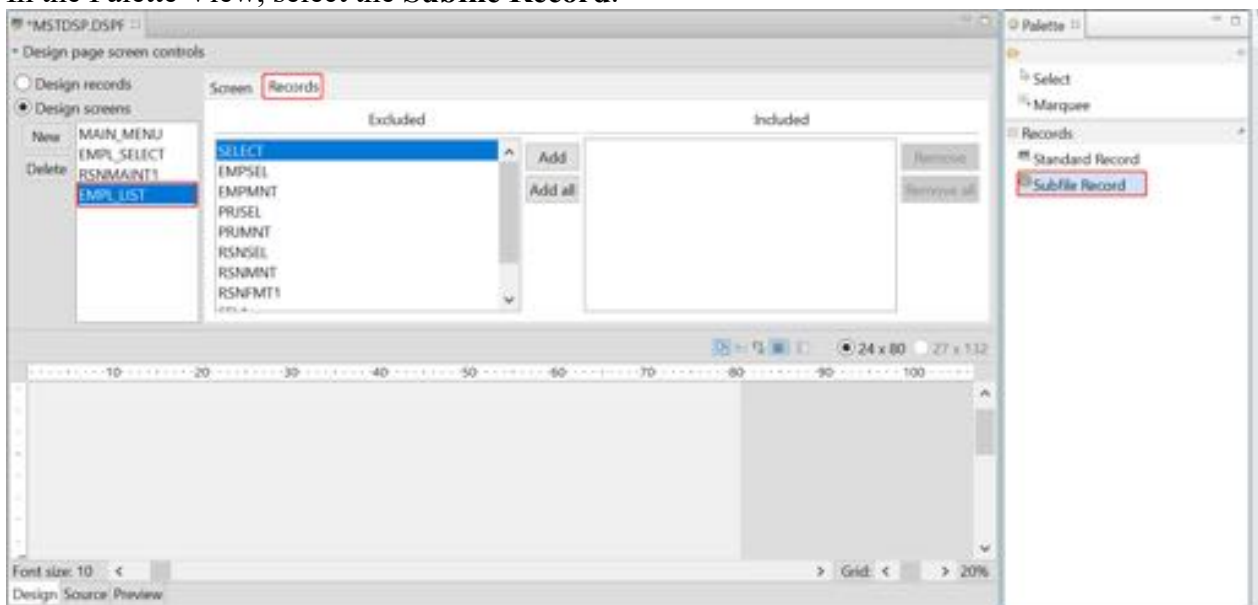


4 Creating a Subfile

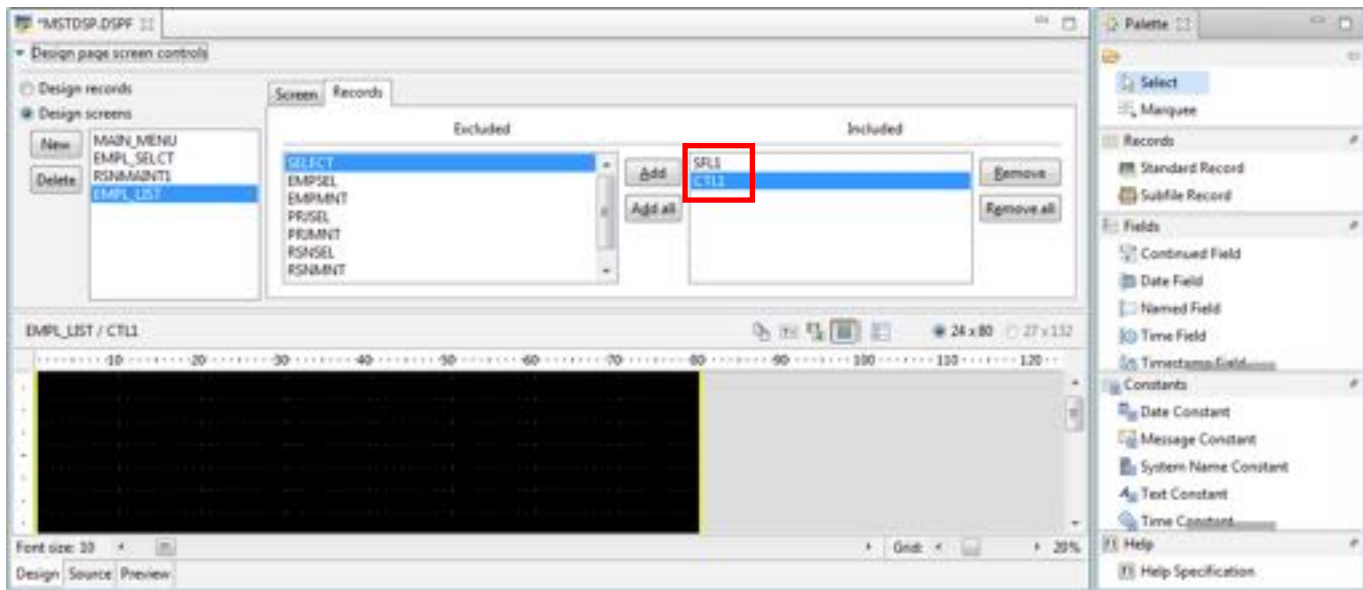
A subfile requires a different record type. Instead of using the Standard record control on the palette you use the Subfile record control.

As before, first identify the screen to add the record to, or create a new screen in the Design page screen controls area.

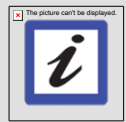
- __1. Select the **Design Page** of the design editor.
- __2. Select the **Design screens** radio button.
- __3. Click the **New** button.
- __4. Enter **EMPL_LIST** as the screen name.
- __5. Click the **Records** Tab.
- __6. In the Palette View, select the **Subfile Record**.



- __7. Move the cursor anywhere in the design area and click to create the subfile record.



You will notice that the Included records list in the screen control area is filled with two new records, a subfile record and a subfile control record. To work with either of these records, click one of them to bring it into focus in the design area. Notice also that the new record names by default are **SFL1** and **CTL1**. You will want to change the names to something more meaningful.



Note: You can also use the Outline view to bring different controls into focus.

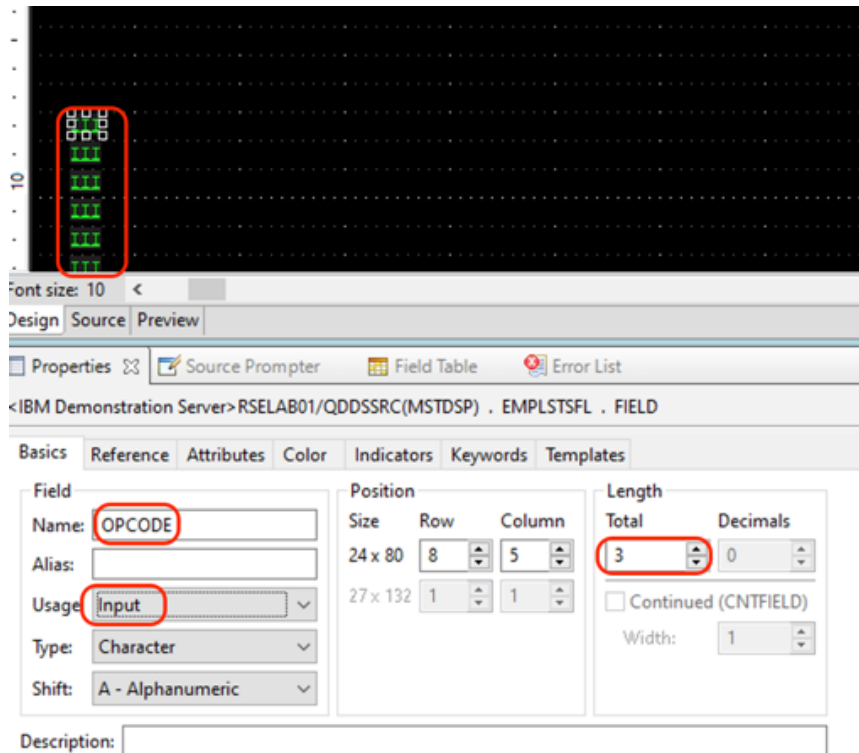
- __8. Select the control record **CTL1** in the Included list.
 __9. In the Properties View, change the name of the record to **EMPLSTCTL**.
 __10. Change the name of the **SFL1** record in the Included list to **EMPLSTSFL**.

4.1 Adding fields/columns to a subfile

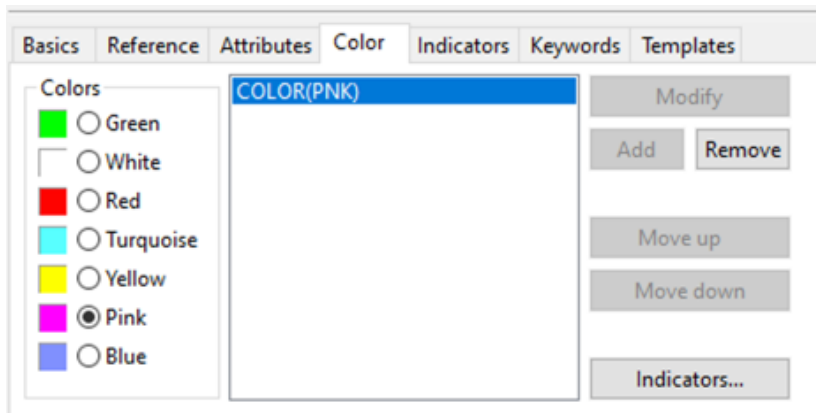
You add fields to a subfile record the same way that you add fields to a standard record.

- __1. Select the **EMPLSTSFL** record.
 __2. In the Palette View in the Fields drawer, drag a **Named Field** control to row 8, column 5 of the design area. A column will be created with the default of 6 rows.
 __3. In the Properties View change the field name to **OPCODE**.
 __4. Change the length of the field to **3**.

- __5. Change the usage of the field to **Input**.

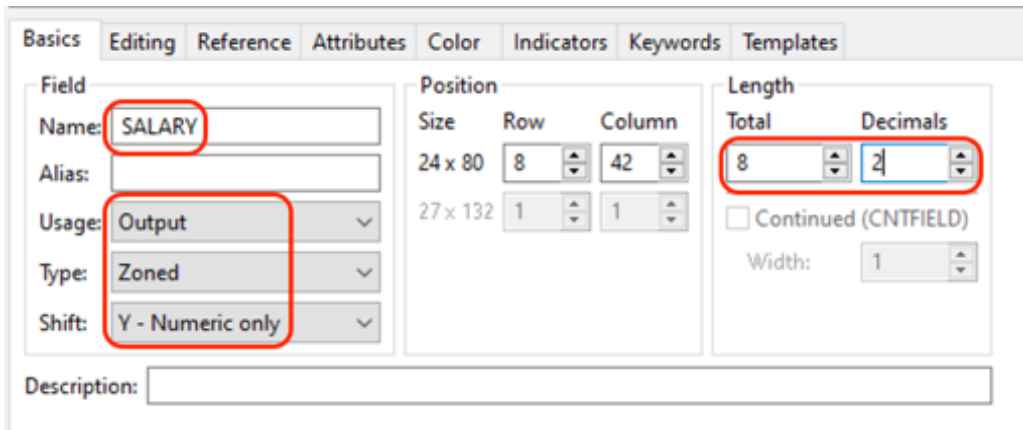


- __6. Select the **Color** Tab in the Properties View.
 __7. Select the **Pink** radio button.
 __8. Click the **Add** button on the right-hand side of the Color Tab.



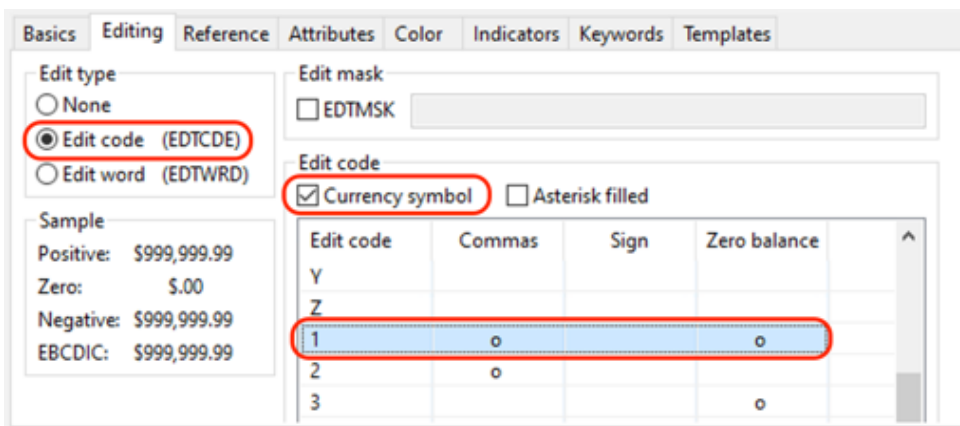
- __9. Create a Named Field at row 8, column 9.
 __10. Name the field **ENAME**. Change the length to **30**. Change the usage to **Output**.
 __11. Create a Named Field at row 8, column 41.

- __12. Name the field **SALARY**. Change usage to **Output**. Change the type to **Zoned**. Change Shift to **Y – Numeric only**. Change the Length to **8**. Change the decimals to **2**.



The edit code needs to be changed so that the number will look readable and a \$ sign is added before the number.

- __13. Click the **Editing** Tab in the Properties View.
- __14. Select the **Edit code** radio button.
- __15. Select the **Currency symbol** check box.
- __16. Select edit code **1** from the list of edit codes.



Notice that a sample of the formatting is displayed on the Editing Tab, to show you how the resulting field will look when the selected editing is applied. This can come in handy if you are not sure which editing code you need to use.

- __17. Apply the color yellow to this column.

4.2 Adjusting the subfile control record properties

We want to add 3 more rows to the subfile page size so that the end user sees some more data and we want to change the subfile size to 300.

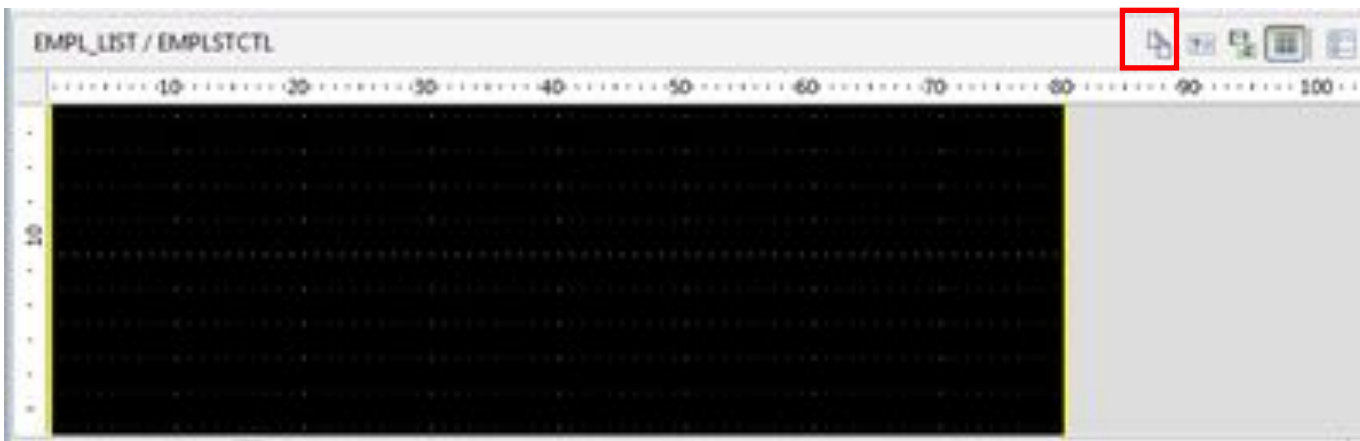
- __1. In the Design page screen controls area, select the sub file control record **EMPLSTCTL** in the Included records list to give it focus on the design editor.
- __2. In the Properties View, select the **Subfile Control** Tab.
- __3. Increase the **Number of entries (SFLSIZ)** property to **300**.
- __4. Increase the **Entries per displayed page (SFLPAG)** size to **9**.

The screenshot shows the 'Subfile Control' tab in the Properties View. The subfile name is 'EMPLSTSFL'. The 'Number of entries (SFLSIZ)' property is set to 300, and the 'Entries per displayed page (SFLPAG)' property is set to 9. Both values are highlighted with red boxes. Other properties like 'Display' and 'Spaces between records (SFLLIN)' are also visible.

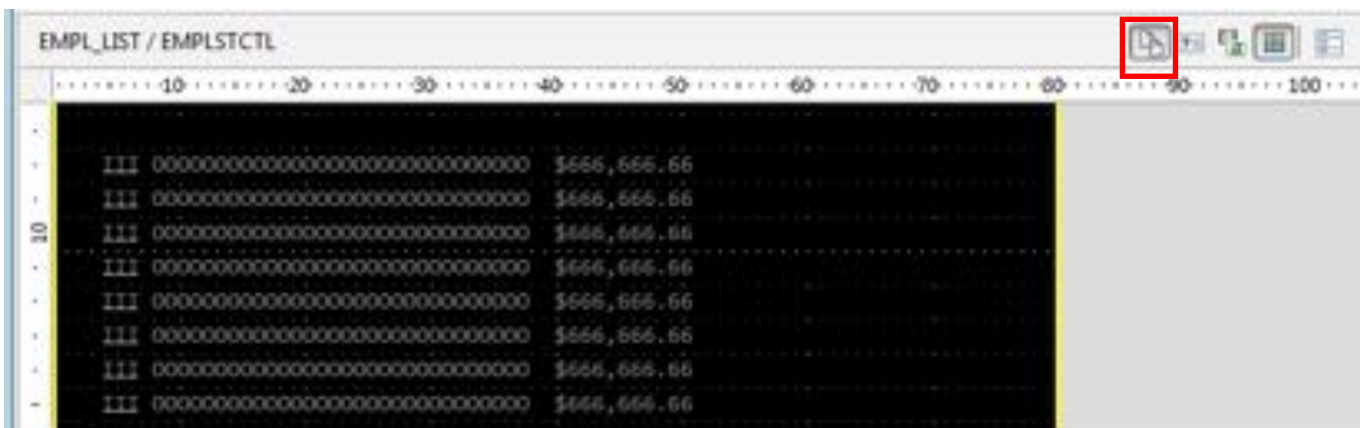
Let's explore some more features of the Screen Designer. One of these features is the ability to view multiple records on a screen, or to hide all records except the one that is in focus.

4.3 Hiding or showing records in the design area

1. In the button toolbar at the top of the design area, click the **Draw records transparent** button. This button toggles between transparency and non-transparency. Below is what the design area should look like with the button turned off.



Below is what the design area should look like with the button turned on.



The subfile control record has focus, but you still can see the subfile record columns in the design area. All the records of the screen are shown, since transparency is set on. Your subfile control record does not have any content at the moment. That is the reason it appears empty.

2. Click the transparency button again, to hide all records except the subfile control record.

Now the design area is empty. Only the content of the subfile control record is shown with the transparency setting switched off.



Note: In the Screen Designer, you can only work with the fields and constants of the record that has focus at the moment. These fields and constants are shown highlighted in the design area. The other controls of records not in focus are shown dimmed.

Working with transparency on gives you a better view of the impact that changes in one record have, in relation to the other record formats on the same screen. On the other hand sometimes it might be confusing to see all of the fields of all records on the same screen; in this case transparency off might work better for you. Use the transparency setting that works best for you.

- __3. Set transparency on so that you can more easily work with the subfile control record in relation to the subfile record.

4.4 Switching between multiple records

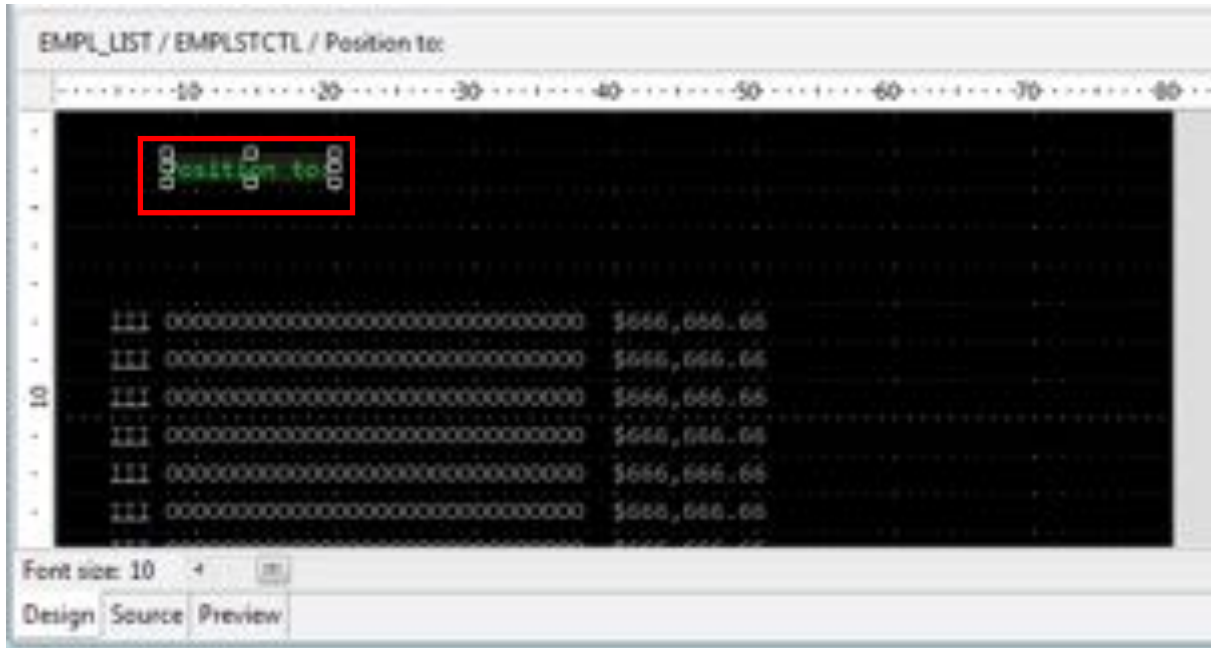
As you already noticed in the previous exercise, selecting a record in the Design page screen controls area allows you to switch focus between records. There are actually three different areas that allow you to select the record that you want to work with in the design area:

1. The Design page screen controls area
2. The Outline View
3. The Source Editor

4.5 Copy and paste

- __1. Make sure that the **EMPLSTCTL** record is selected and in focus.
- __2. Add a **Text Constant** to the record at row 4, column 9.

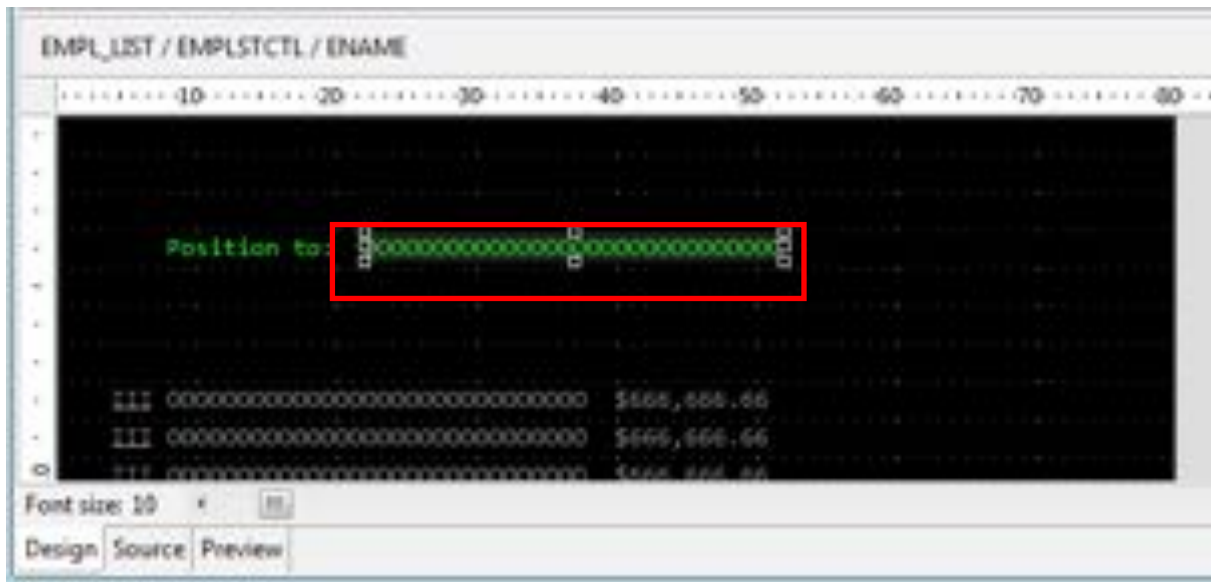
- __3. Change the text of the constant by clicking it in the design area and replacing the default text with the string **Position to:**



Now you will add an employee name input field to this heading. You could do this by adding a Named Field control from the palette. Instead, you will use copy/paste in the Screen Designer Editor.

- __4. Click the subfile record **EMPLSTSFL** in the Design page screen controls area.
- __5. Select the top row of the second column in the subfile (the **ENAME** column).
- __6. Right click and select the **Copy** action.
- __7. Now click the subfile control record **EMPLSTCTL** in the Design page screen controls area to bring the control record into focus.
- __8. Right click in the design area and select the **Paste** action. This adds the field to the control record.

- __9. Select the field and drag it to row 4, column 23.



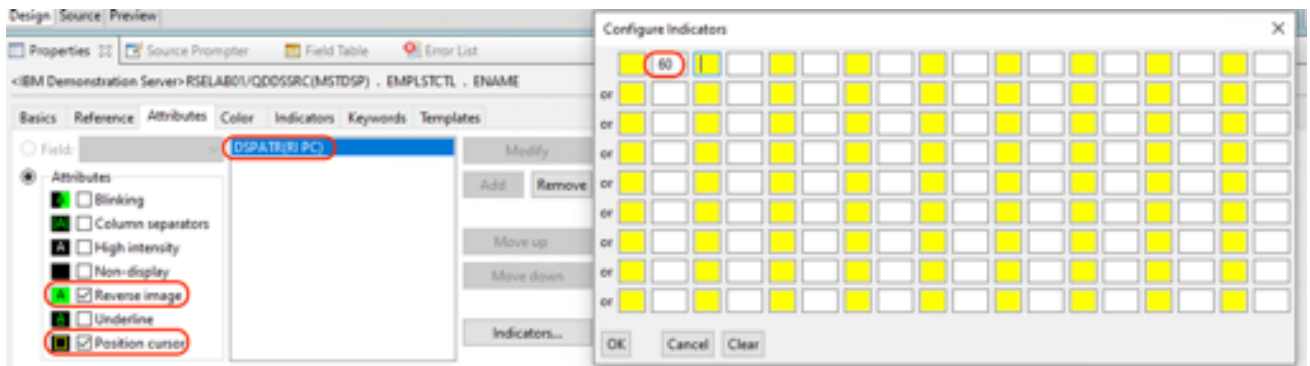
4.6 Working with the preview

Now you will work with the Preview Page in the Screen Designer to see how it can help you with your screen design tasks. To make this exercise more meaningful, you will add some conditioning to the ENAME field in the subfile control record. You will add some color and display attributes and condition these with an indicator. Then you will create an indicator set in preview mode to see how setting the indicators on or off will change the screen in preview mode. This will give you a good sense of how the preview mode can help you simulate the runtime screen behavior.

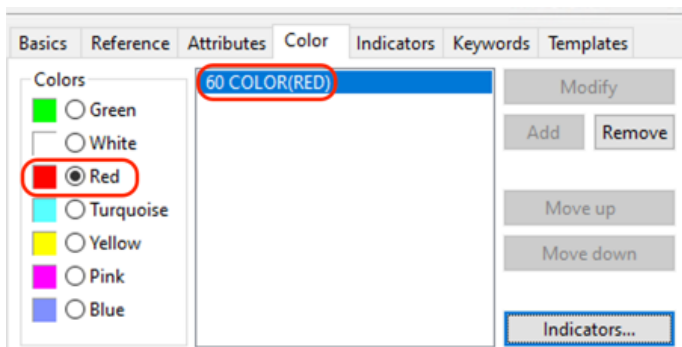
You will add some error handling for the Position to: Employee name field. If the employee name is not found in the database, the program will turn on indicator 60. The screen should display the field in red, reverse image and position the cursor to the field.

- __1. Make sure the **EMPLSTCTL** record is selected.
- __2. Select the **ENAME** field.
- __3. Select the **Attributes** Page in the Properties View.
- __4. Select the **Reverse Image** check box.
- __5. Select the **Position Cursor** check box.
- __6. Click the **Add** button.
- __7. Click the **DSPATR(RI PC)** entry in the list of attributes, to select it.
- __8. Click the **Indicators...** button on the right side of the Attributes Page.
- __9. Enter **60** in the first white input field in the **Configure Indicators** dialog.


__10. Click the **OK** button.



- __11. Click the **Color** Tab in the Properties View.
- __12. Select the **Red** radio button.
- __13. Select the **COLOR(RED)** attribute in the attributes list.
- __14. Click the **Indicators...** button.
- __15. Enter **60** in the indicators dialog
- __16. Click the **OK** button.

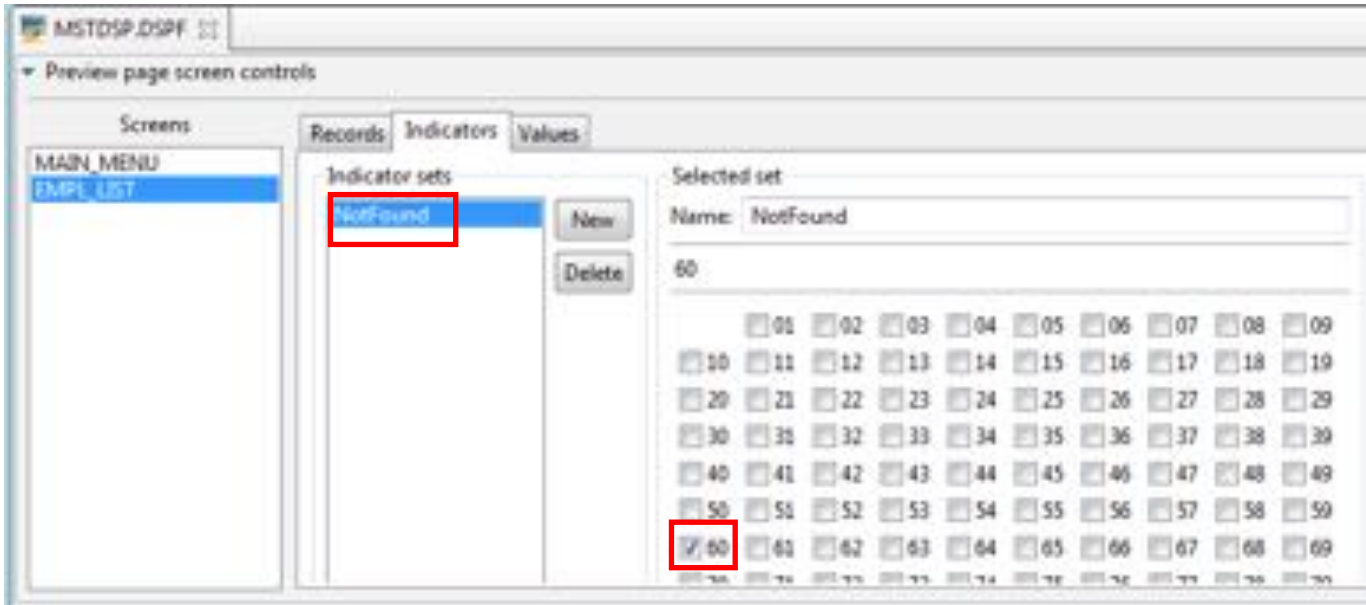


- __17. In the Design page screen controls area, select the **EMPL_LIST** screen.
- __18. Click the **Preview** Page at the bottom of the Screen Designer Editor.
- __19. In the Preview page screen controls area click the **Indicators** Tab.
- __20. Click the **New** button to create a new indicator set.
- __21. Name the indicator **NotFound**.



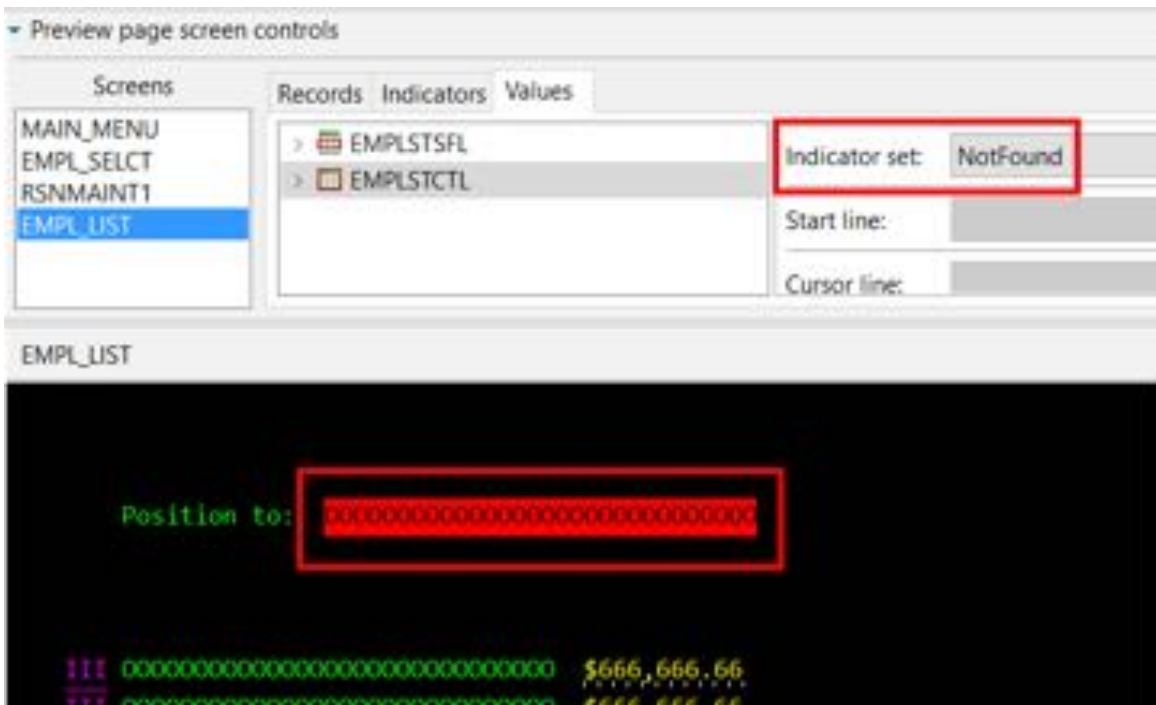
Tip: You can create multiple named Indicator Sets to simulate the runtime behavior of the screen. To make these most useful give the sets meaningful names that are easy to remember, in case you or somebody else needs to re-use them at a later time.

- 22. Select the check box for indicator **60**.



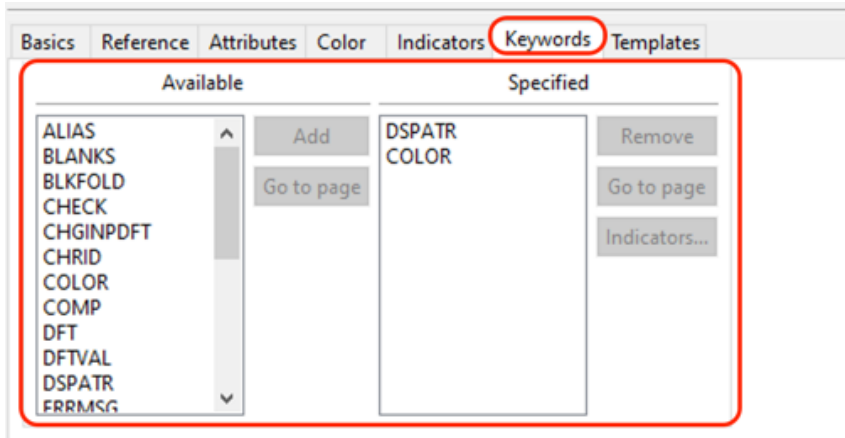
- 23. In the Preview page screen controls area click **Values** Tab.
- 24. Select **EMPLSTCTL**.
- 25. Select **Not Found** in the indicator set.

Notice that ENAME field change from green to reverse red in screen design area.



4.7 Adding new keywords

If you want to add keywords to a specific control in your display file, select the control in the design area, the Outline View, or the Source Editor. In the Properties View, click the Keywords Tab and select the keyword you want from the list of keywords.



You can see a list of specified keywords for the selected control and a list of available keywords. You can remove already specified keywords or add new keywords to the control.

4.8 Creating the display file

Now you need to re-create the display file to add your changes.

1. Switch to the Source Editor by clicking the **Source Page**.
2. Select the **Compile --> CRTDSPF** action.

The error list should show no error messages.

The screenshot displays the source code for the display file MSTDSP.DSPF. The code is structured as follows:

```

Line 305      Column 32      Replace
.....+A*...1.....2.....3.....4.....5.....6.....7.....8
000273      A          SALARY          8Y 20  8 42EDTCDE(1 $)
000274      A          COLOR(YLW)
000275      A          R EMPLSTCTL          SFLCTL(EMPLSTSFL)
000276      A          SFLDSPCTL
000277      A          SFLDSP
000278      A          SFLPAG(9)
000279      A          SFLSIZ(300)
000280      A          4 10'Position to:'
000281      A          ENAME          30          4 23
000282      A 60          DSPATR(RI PC)
000283      A 60          COLOR(RED)
000284      A*%R%R%S+<record-sequences>
000285      A*%R%R%S+ <sequence name="MAIN_MENU">
000286      A*%R%R%S+ <device type="display" width="80" height="24" />
000287      A*%R%R%S+ <record-write record-format="SELECT" />
000288      A*%R%R%S+ </sequence>
000289      A*%R%R%S+ <sequence name="EMPL_SELCT">
000290      A*%R%R%S+ <device type="display" width="80" height="24" />
000291      A*%R%R%S+ <record-write record-format="EMPSEL" />
000292      A*%R%R%S+ </sequence>
000293      A*%R%R%S+ <sequence name="RSNMAINT1">
000294      A*%R%R%S+ <device type="display" width="80" height="24" />
000295      A*%R%R%S+ <record-write record-format="RSNFMT1" />
000296      A*%R%R%S+ </sequence>
000297      A*%R%R%S+ <sequence name="EMPL_LIST">
000298      A*%R%R%S+ <device type="display" width="80" height="24" />
000299      A*%R%R%S+ <record-write record-format="EMPLSTSFL" />
000300      A*%R%R%S+ <record-write record-format="EMPLSTCTL" indicator-data="NotFound"
000301      A*%R%R%S+ />
000302      A*%R%R%S+ </sequence>
000303      A*%R%R%S+ <named-data>
000304      A*%R%R%S+ <indicator-data id="NotFound" indicators="60" />
000305      A*%R%R%S+ </named-data>
000306      A*%R%R%S+ </record-sequences>

```

The error list at the bottom of the editor shows the following message:

ID	Message
EVFF5132	Events file contains no messages.

Congratulations!

You have successfully completed the Introduction to Screen Designer lab exercises.

We recommend that you move on to the next lab in the sequence; or browse the list of labs on Rational Developer for i - Hands-On Labs at http://ibm.biz/rdi_labs to choose a lab of interest.

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