

Rational Developer for i Sandbox for IBM i Lab Exercise Workbook

Rational Developer for i

Lab 09 – Report Designer

This lab covers creating and maintaining print files with Report Designer.

Version 6, January 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 09 – Working with Report Designer

Overview

This module teaches you how to use Report Designer to create a printer file. You learn how to create a new DDS member. You use the design page in Report Designer to create new records and to layout text constants and fields.

Learning objectives

- Create a new DDS prtf member
- Create a new record
- Add constants to a report.
- Add fields to a report.
- Add virtual records to preview the report.

Skill level and prerequisites

Introductory.

Important!



You should complete **RD*i* 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 RD*i*, 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. As of version 9.5, RDi includes a built-in emulator so you will not need any additional software. If you are using a previous version, then any 5250 emulator will work. The [IBM i Access Client Solutions](#) contains a best of breed emulator that is freely available to those who have an IBM i that is V6R1 or later.

Host System requirements

The easiest way to ensure you have everything you need, is to use the EM Sandbox demonstration IBM i server that is set up and ready to use with these lab exercises.

Tip

If this is **not** an instructor led class with PC's provided, you may need to install and setup the IBM software on your PC first.



120 day Trial of Rational Developer for i can be downloaded here:

http://ibm.biz/rdi_trial

Page to request userid for IBM i demonstration system:

http://ibm.biz/rdi_labs_getuserid

1 Creating a Printer File

You will layout a report and create a new PRTF file from the DDS generated from your report design. The data for the report will be contained in reference fields from an existing physical file.

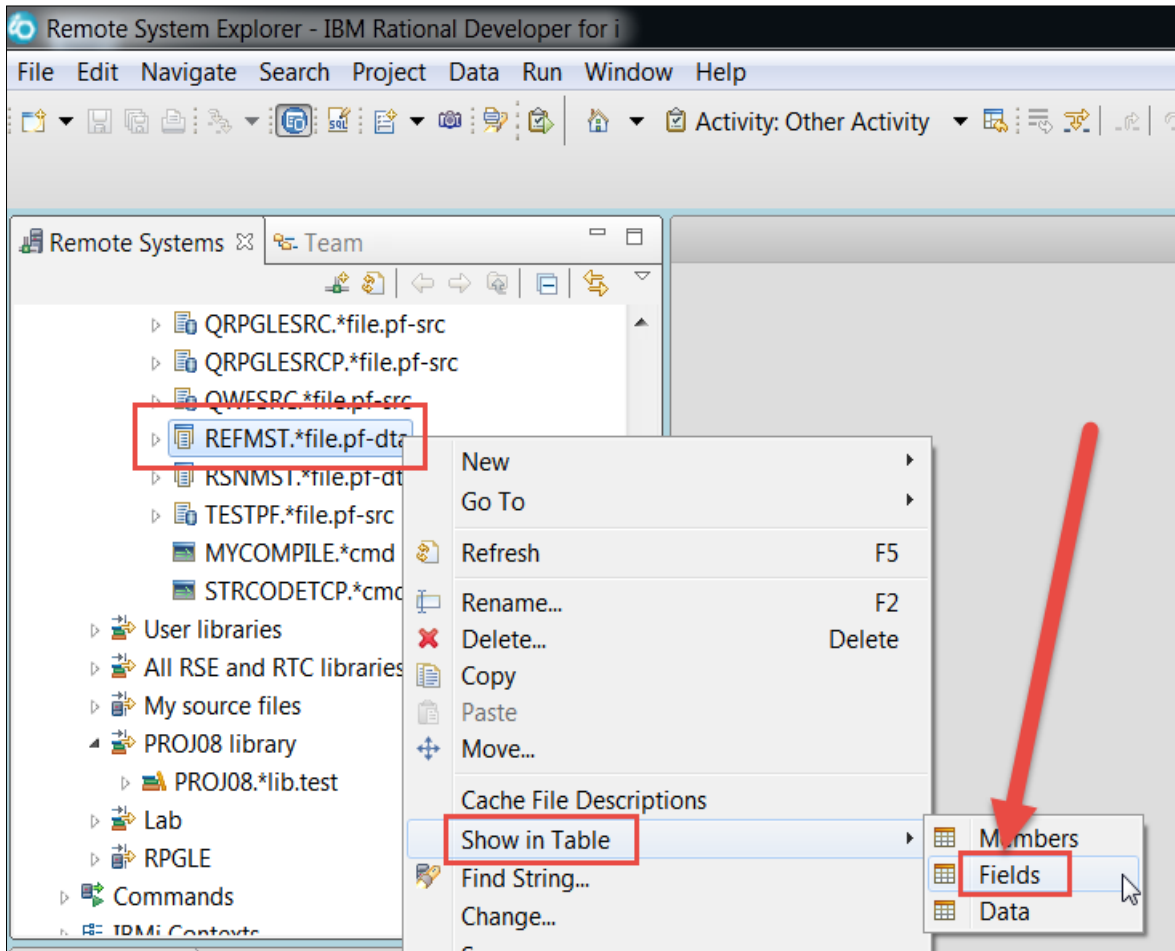
1.1 Using the Field Table view

First let's have a look at the reference fields in the REFMST file. You will use the fields in this file in the new report you are going to create. The fields contained in files can be easily shown from the RSE in the table view.

Make sure your assigned team library **RSELABxx** is part of the library list (right click on Library list and add if needed) and you are in the Remote Systems Explorer perspective (Window / Open Perspective...):

- __1. Expand the library list filter in your connection
- __2. Expand the library RSELABxx
- __3. Select file REFMST and right click it
- __4. Use actions **Show in table --> Fields**

5. The field table view opens and shows all fields in REFMST.



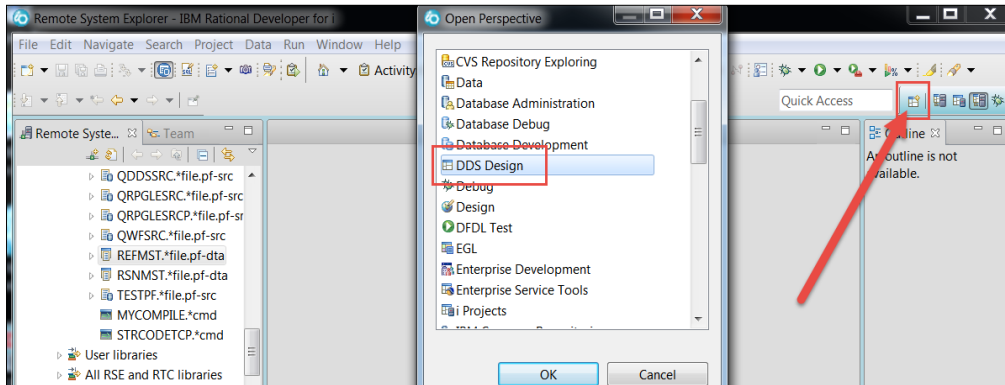
Name	Record	Type	Length	Text	Alias
ACREC	RCREF	Character	1	ACTIVE RECORD CODE	
DATFL	RCREF	Packed Decimal	6.0	DATE FIELD	
EMPNO	RCREF	Packed Decimal	6.0	EMPLOYEE NUMBER	
ENAME	RCREF	Character	30	EMPLOYEE NAME	
EMCAT	RCREF	Character	1	EMPLOYEE CATEGORY	
EDEPT	RCREF	Character	5	EMPLOYEE DEPARTMENT	
ELOCN	RCREF	Character	30	EMPLOYEE LOCATION	
EUSRI	RCREF	Character	8	EMPLOYEE USRID	
ENHRS	RCREF	Packed Decimal	3.1	EMPLOYEE NORMAL WEEK HOURS	
EPHRC	RCREF	Packed Decimal	5.1	PROJECT HOURS CURRENT MONTH	
FPHRY	RCREF	Packed Decimal	7.1	PROJECT HOURS YEAR TO DATE	

Now that you are familiar with the fields in file REFMST, it's time to begin creating a printer file.

1.2 Creating a Printer File member

Switch to the **DDS Design** perspective by:

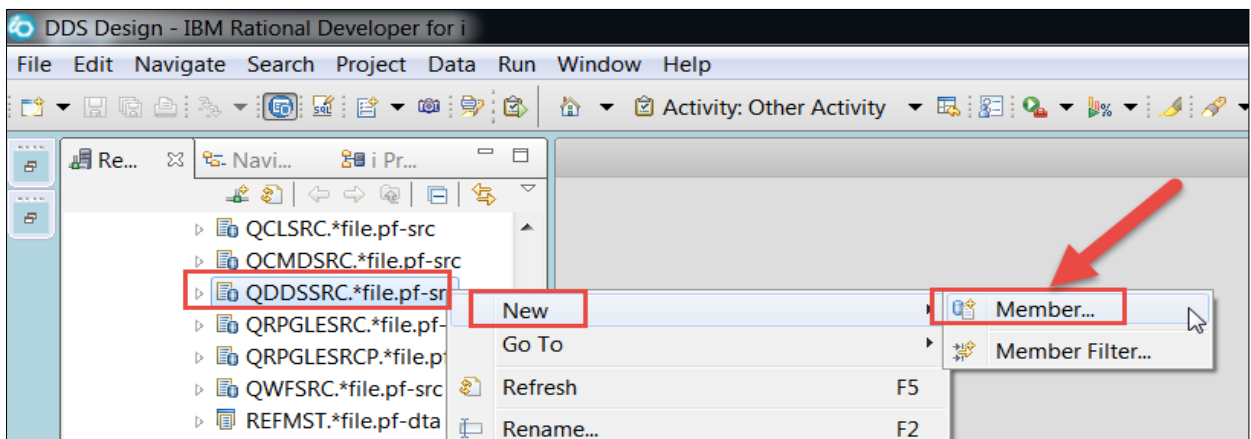
- __1. Clicking on the **Open Perspective** button, located at the upper right corner of the workbench if you didn't change the workbench defaults
- __2. The Open Perspective dialog shows
- __3. Select **DDS design** from the **Open Perspective** dialog
- __4. Click the **OK** button.



To create a new member go through the following steps.

In the RSE view:

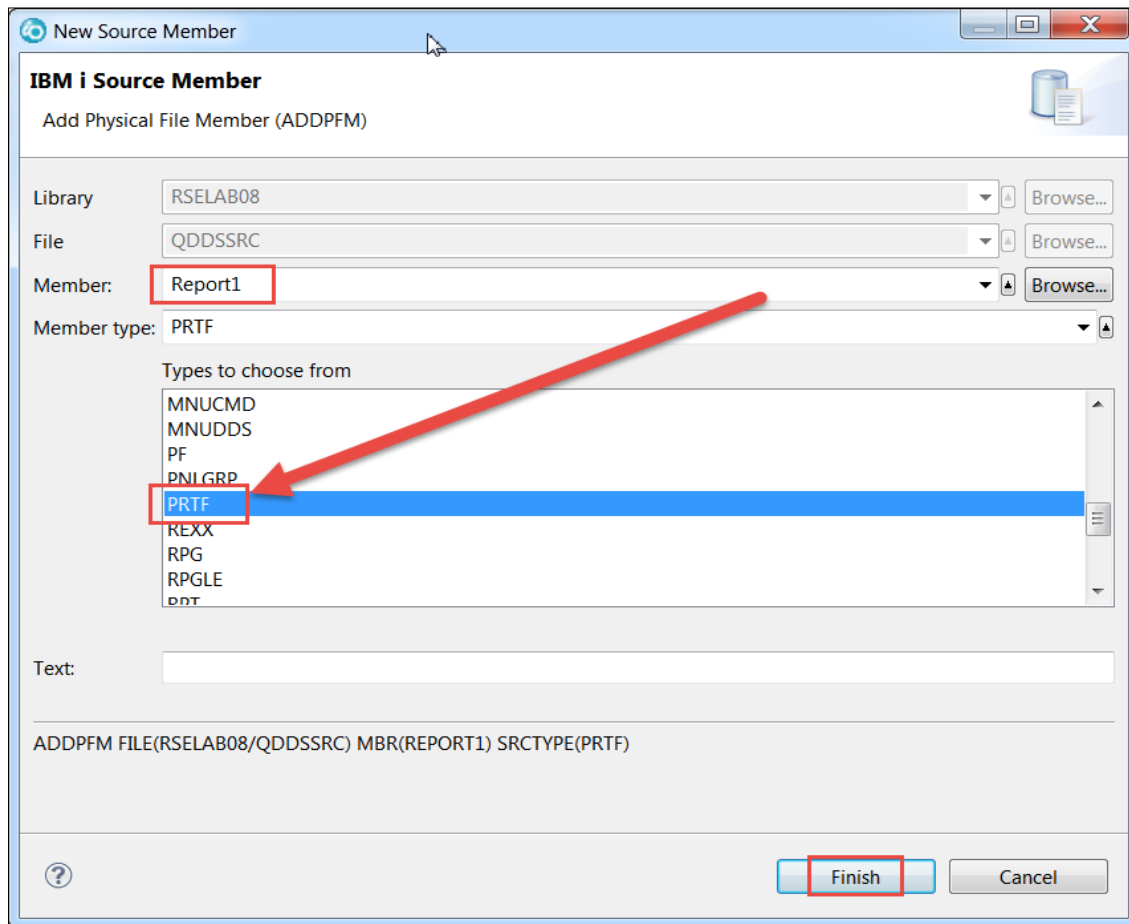
- __5. Expand your library **RSELABxx** (xx = your team number)
- __6. Right click Source file **QDDSSRC**
- __7. Select the **New** action from the context menu
- __8. Select the **Member** action



The **New Source Member** dialog appears.

- __9. Enter **Report1** in the Member field.
- __10. Select **PRTF** as Member Type

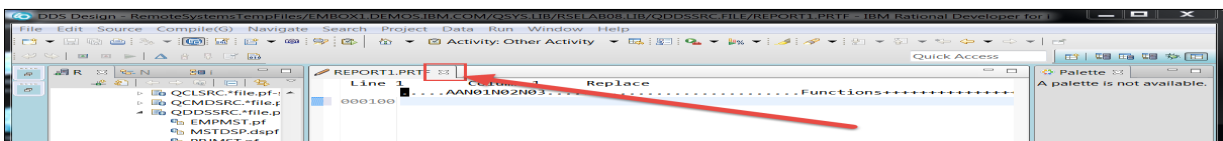
__11. Click the **Finish** button.



The member gets created and the editor for DDS source opens automatically.

If **Report Designer** has not opened automatically:

__12. You may see the screen below; close it by clicking the **X** on its tab.

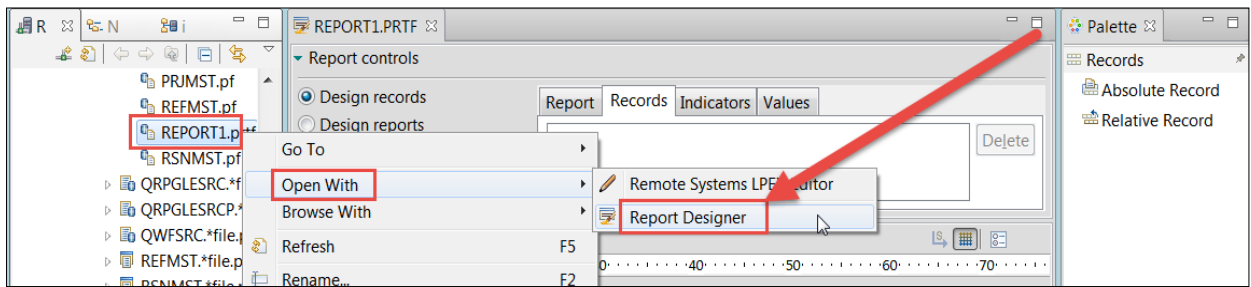


To open the member with **Report Designer**.

__13. Right click the new **Report1** member in the the RSE view

__14. Select **Open with**

15. Select **Report Designer**.

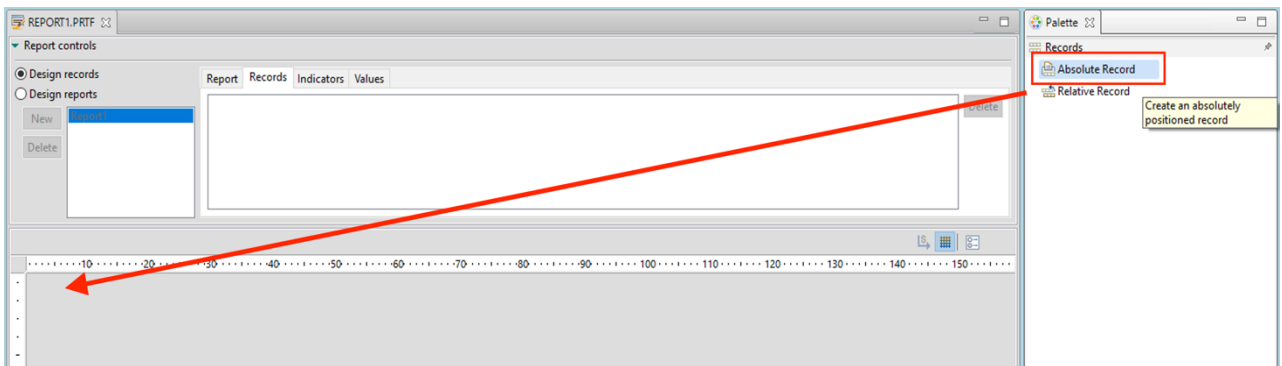


Report Designer opens.

1.3 Creating a new record

First you will create an absolute record to be able to put some text and fields onto this record. Notice the **Palette view** on the right hand side of the editor. The Palette view contains the controls that can be placed on the the printer file like, Records, Fields, Constants. The Palette view is context sensitive and its content changes depending on what is allowed to be placed on the design window at the moment. You will notice that only record format controls are currently available to be added to the printer file.

1. Click the **Absolute Record** control in the **Palette view**
2. Move the cursor onto the **design page** and click on **Row 1 column 1** to position the record

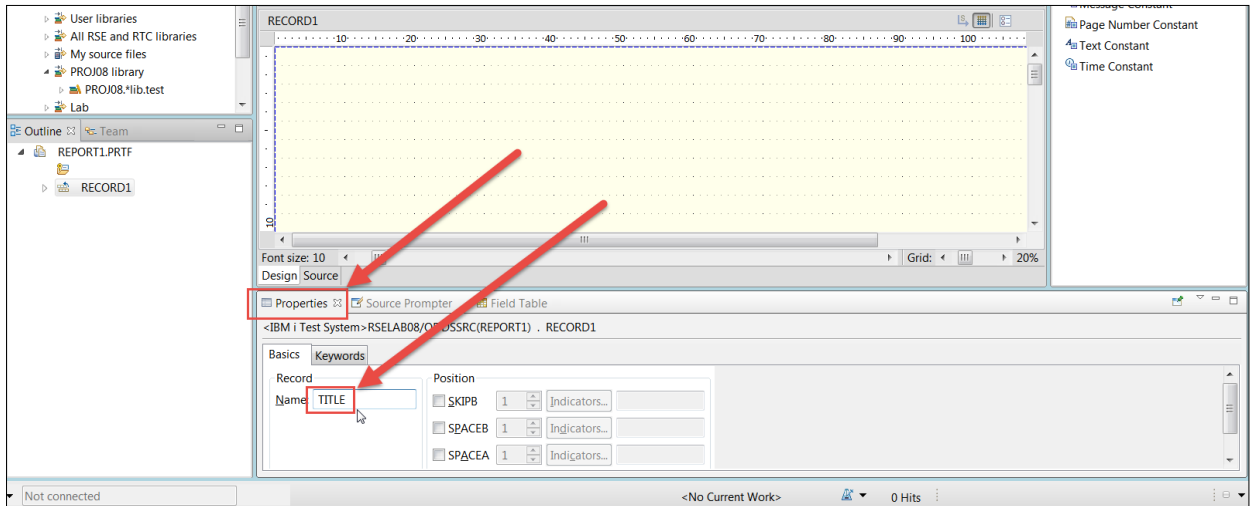


The properties view at the bottom of the workbench is being updated with the record format property values. Notice the default record name.

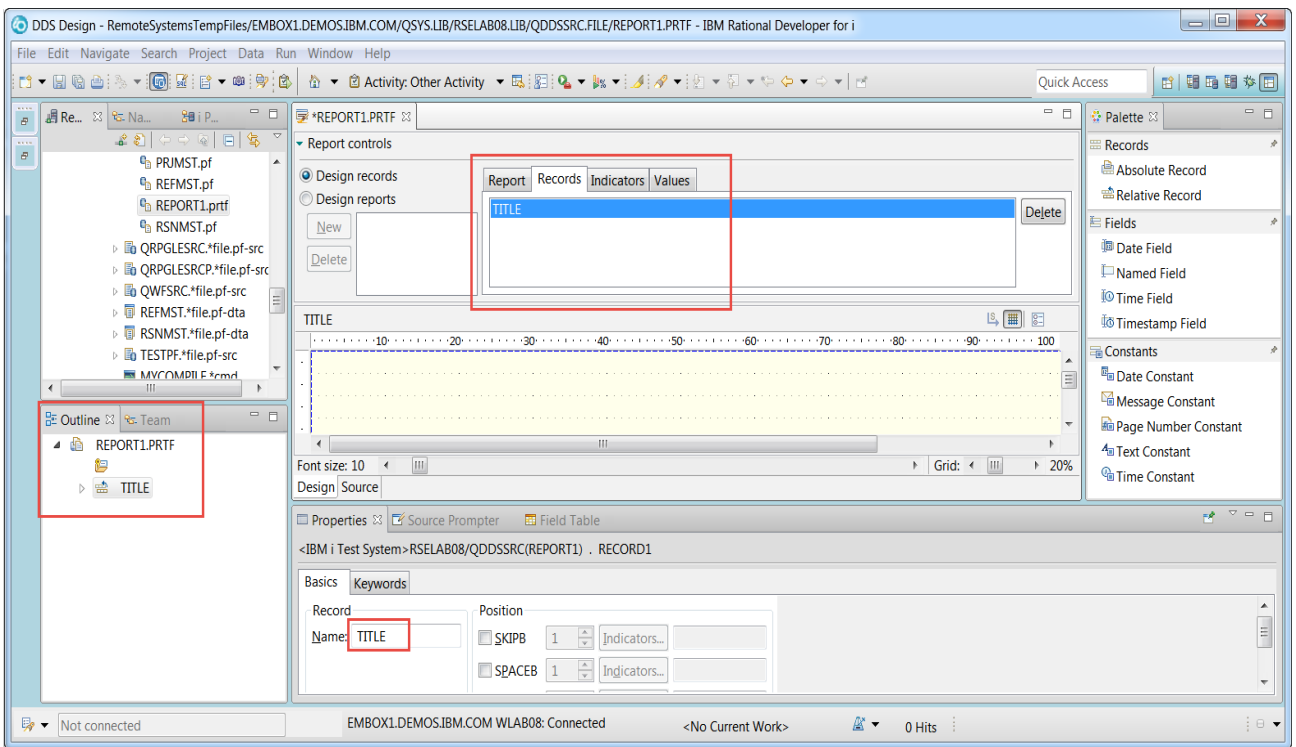
To change the record name:

3. Locate the **Properties view** and click on the Record name entry field to select it

4. Key **Title** as the name for the record. (if your screen does not look like below, Window / Reset Perspective once in DDS Design perspective)



You will see the changes both in the Outline tree view and in the design page of the workbook.

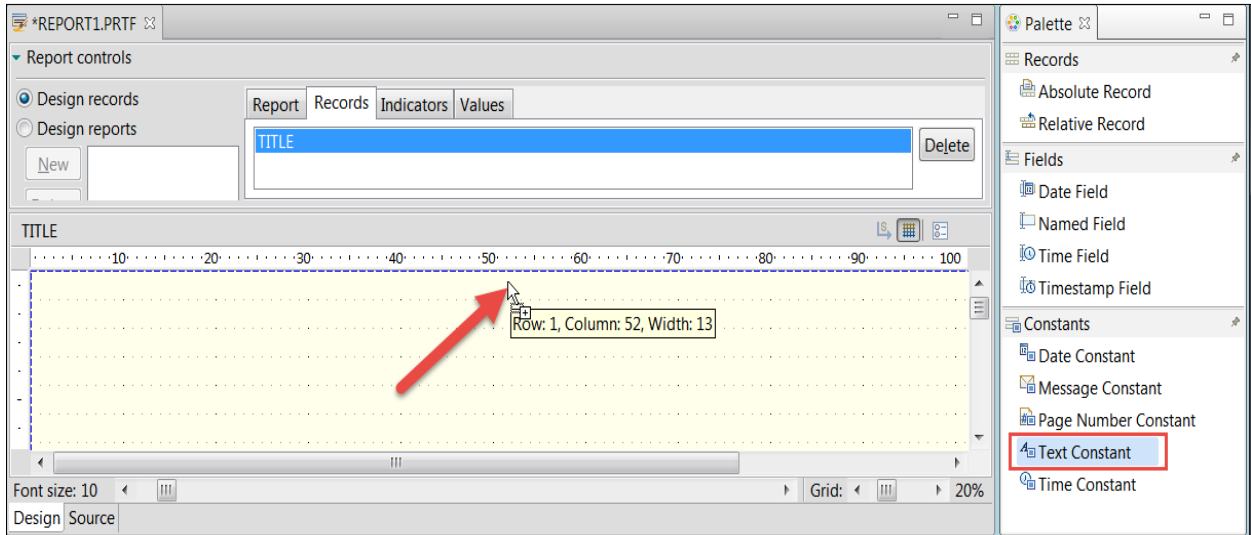


Now let's add some content to this record.

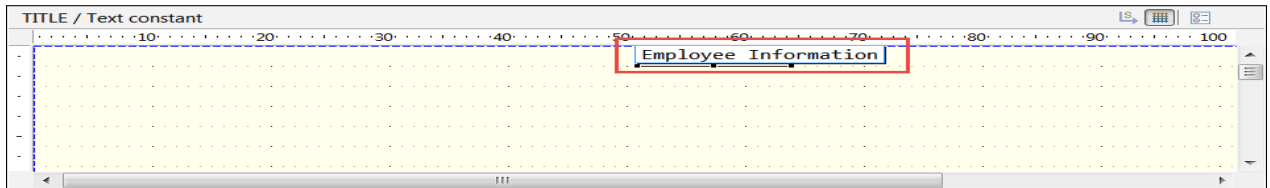
1.4 Adding content to the record

First add a heading to this empty record, to start:

1. Select the **Text Constant** control first on the Palette view.
2. Move the mouse to the **Design** page over **Row 1 column 52** to position the constant, click to drop it at that point.

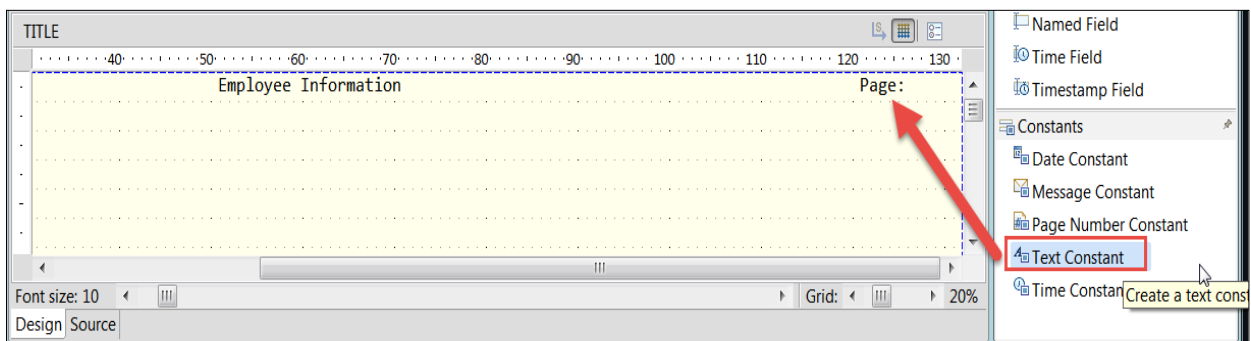


3. Click on this new **heading** to position the cursor on it.
4. Enter the text **“Employee Information”** in the constant that got created on the design page.



Add another text constant for a heading for the Page counter:

5. In the **Palette**, select the **Text Constant** control.
6. Click on the design page at **row 1, column 122**
7. Enter the text **“Page:”** in the constant on the design page.

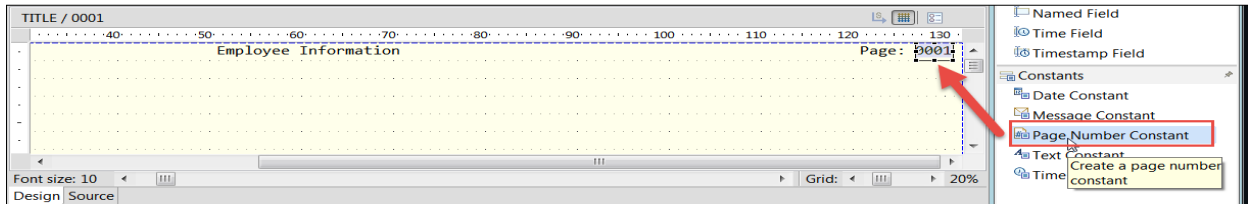




Tip: You can always use your mouse to drag and drop a field wherever you'd like it. Click on the control you want to move, to select it, then move the cursor until it changes to four arrows. Then click and move the cursor. When you do this, you will see the current position of your field next to your cursor.

Now create a page number constant beside the Page: constant.

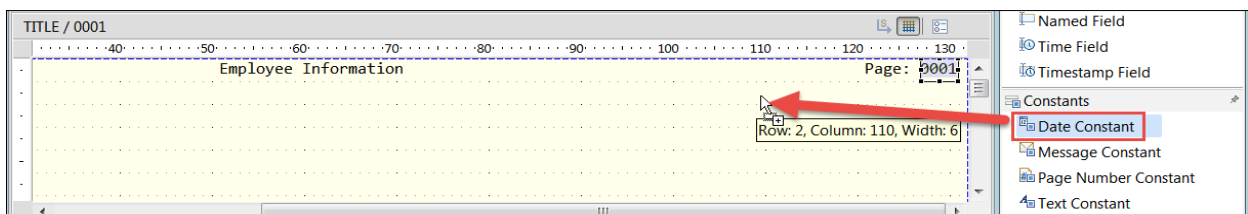
8. Select the **Page number constant** control on the **Palette** view.
9. Click at the **empty space** after the text field you added in the previous step (**about column 128**).



The page number constant will be added to your Title record.

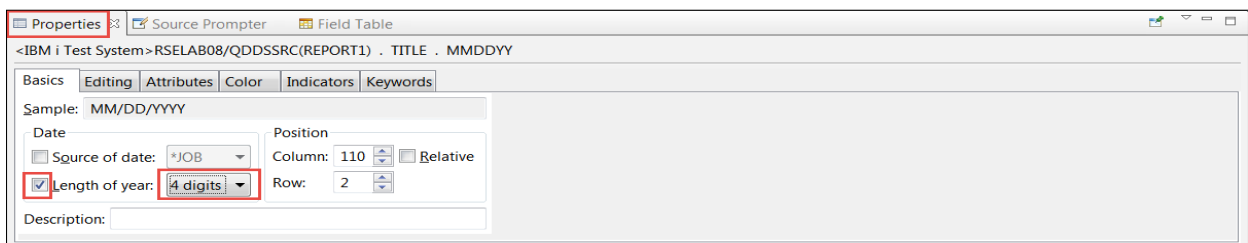
Now create a date constant.

10. Select the **Date Constant** control on the **Palette** view.
11. On the **Design** page click on **row 2, column 110**, to add a the date constant.



You want to print a date that shows four digits, use the properties view to apply this change.

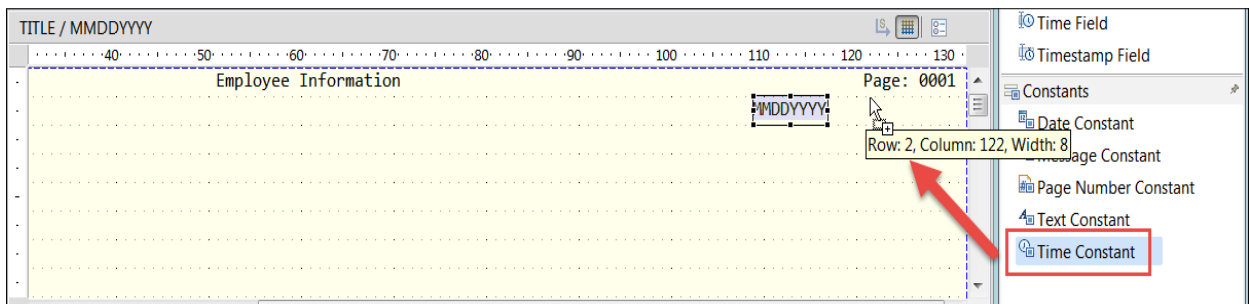
12. Go to the **properties** view
13. Select the **Length of year check box**.
14. Change the **Length of year:** drop down to the value **4 digits**.



Now add a Time constant.

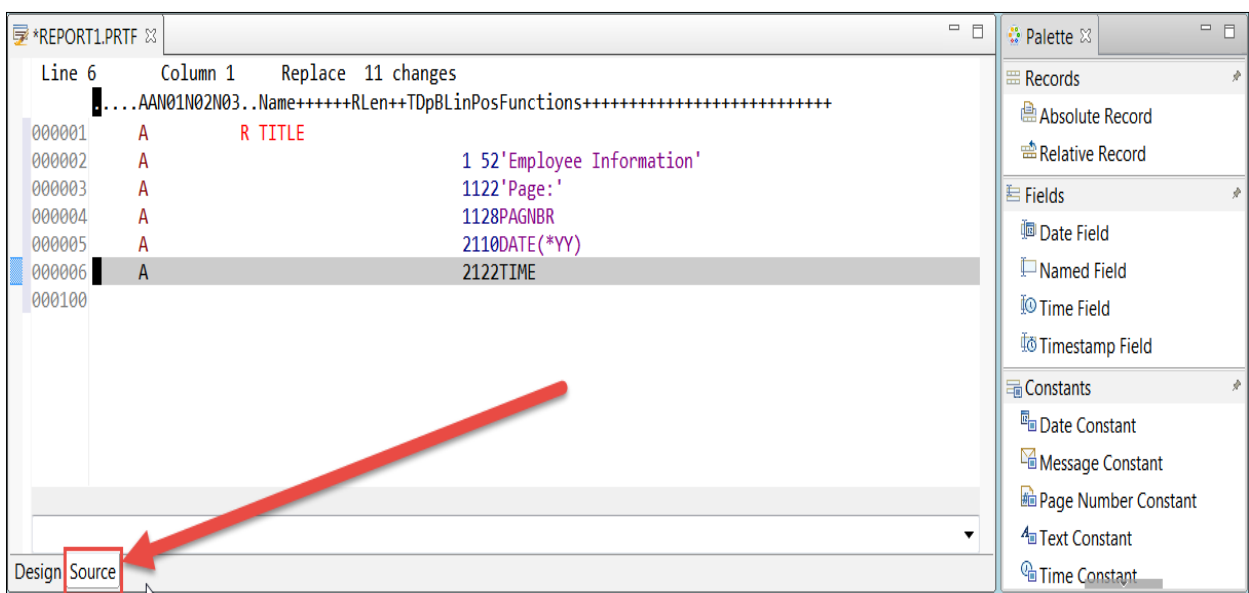
15. Select the **Time Constant** control on the **Palette** view.

- __16. Click on **row 2, column 122**, on the Design page to add a time constant to the report.



You can always go into the source editor and work with the generated DDS directly. To do that:

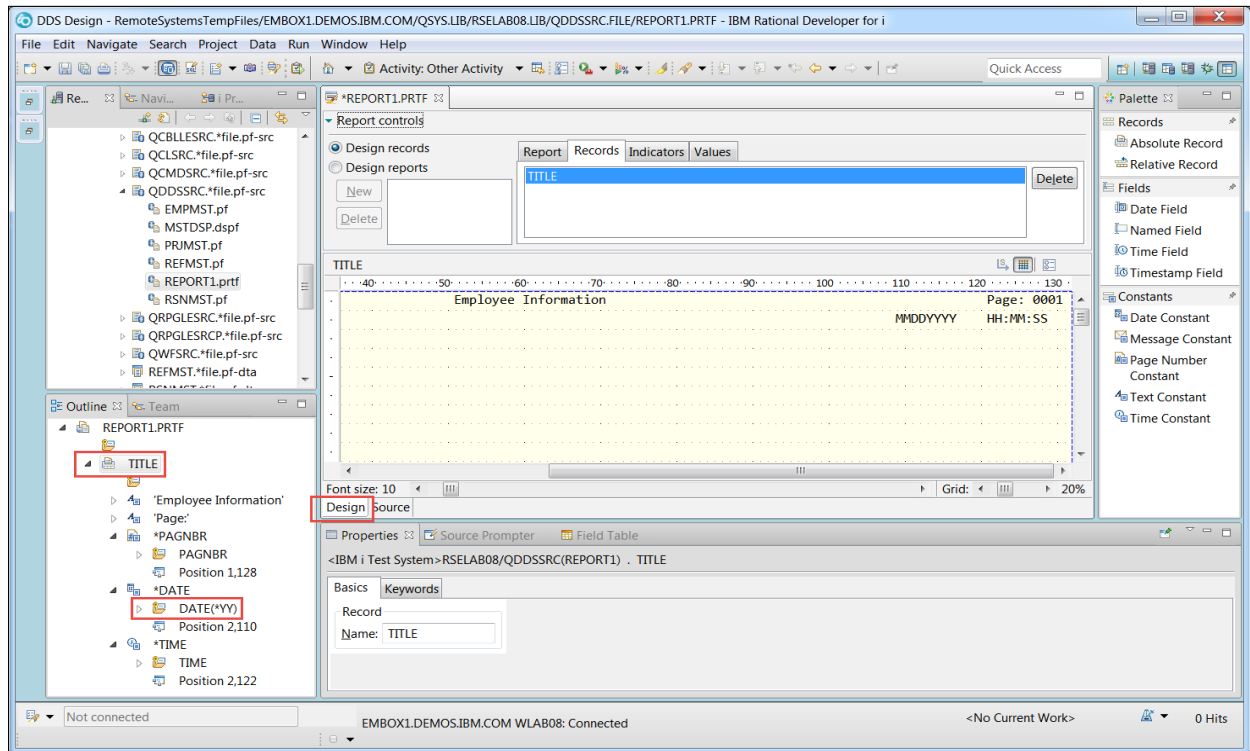
- __17. Click the **Source** tab at the bottom of the Design page.



In the source editor, you can see the source that has been generated so far, you can add or change values and then go back to the Report Designer, the changes will be reflected in there.

- __18. Save the source member by using **CTRL+S** or click the **Save button** on the workbench toolbar.

Your report so far should look something like this:

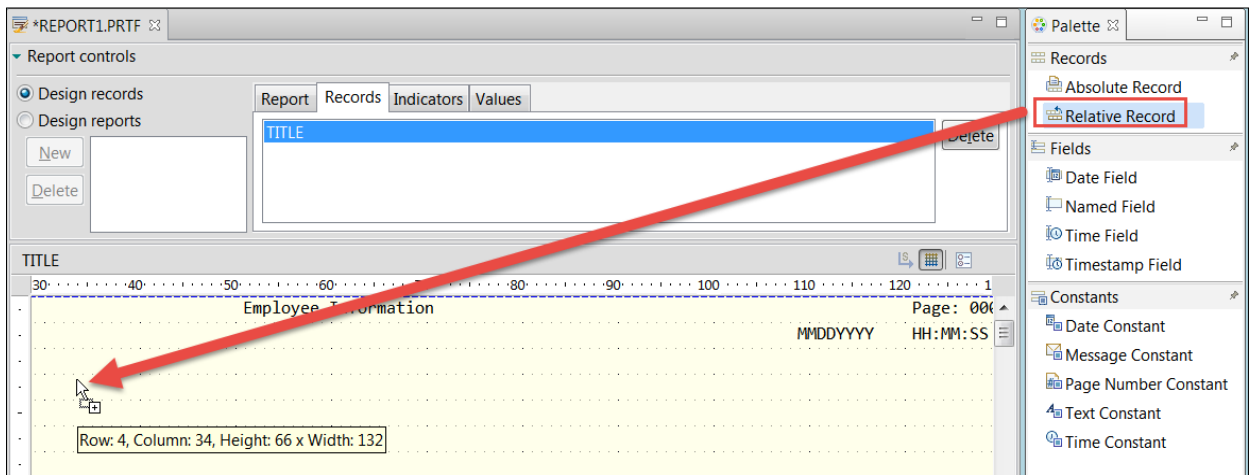


1.5 Adding a header record

The record that you have added so far doesn't really do much, except set up the header for your report. You will now add a couple more records so that this report shows some data stored in the database. You will add a **column heading** record; this record will be a relative record.

- __1. Click the **Relative record** control on the Palette view to select it

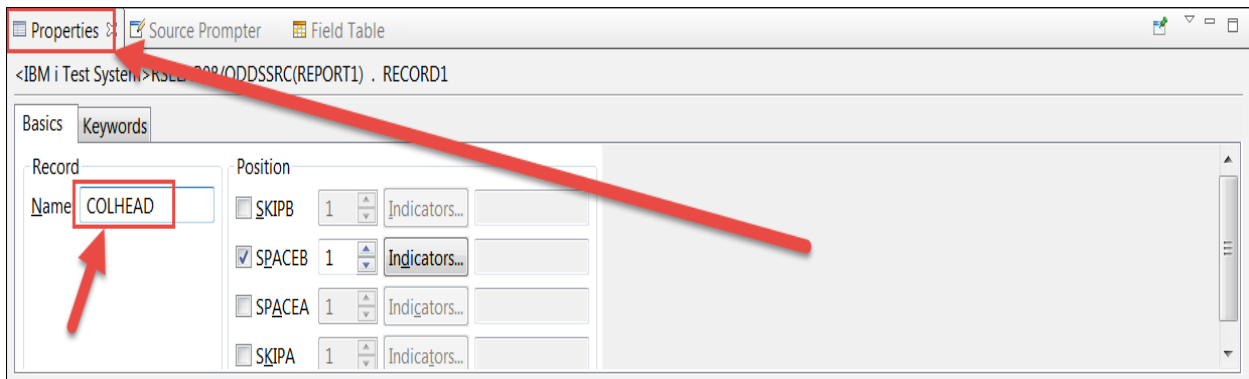
2. Click on the design page, somewhere after **row 3**



The record will be added and you will see it in the Outline view. Change the record name to COLHEAD.

3. Go to the **Properties** view

4. Click on the **Record name** field and change it to COLHEAD.

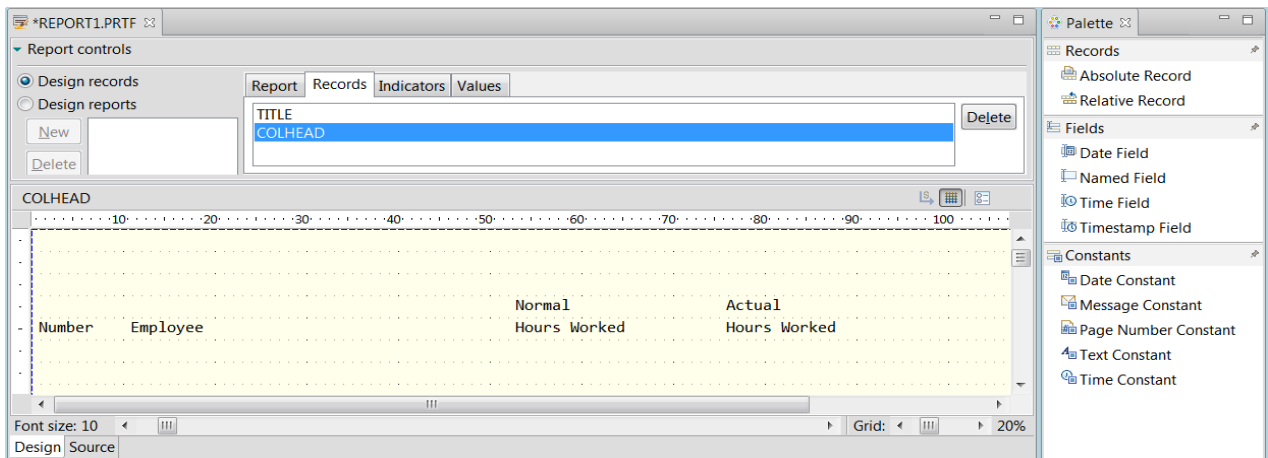


You will see your change in the Design Controls pane. The record shows in the records list as well as in the Outline view.

Now add the following text constants to this record using the **Text Constant** control from the Palette view:

- (1) In **row 5, column 2** add the text “**Number**”
- (2) In **row 5, column 12**, add the text “**Employee**”
- (3) In **row 4, column 54**, add the text “**Normal**”
- (4) In **row 5, column 54**, add the text “**Hours worked**”
- (5) In **row 4, column 77**, add the text “**Actual**”
- (6) In **row 5, column 77**, add the text “**Hours worked**”.

Your design page should look similar to the figure below:



Now after all this work, it is a good idea to save it.

- __5. **Save** the member.

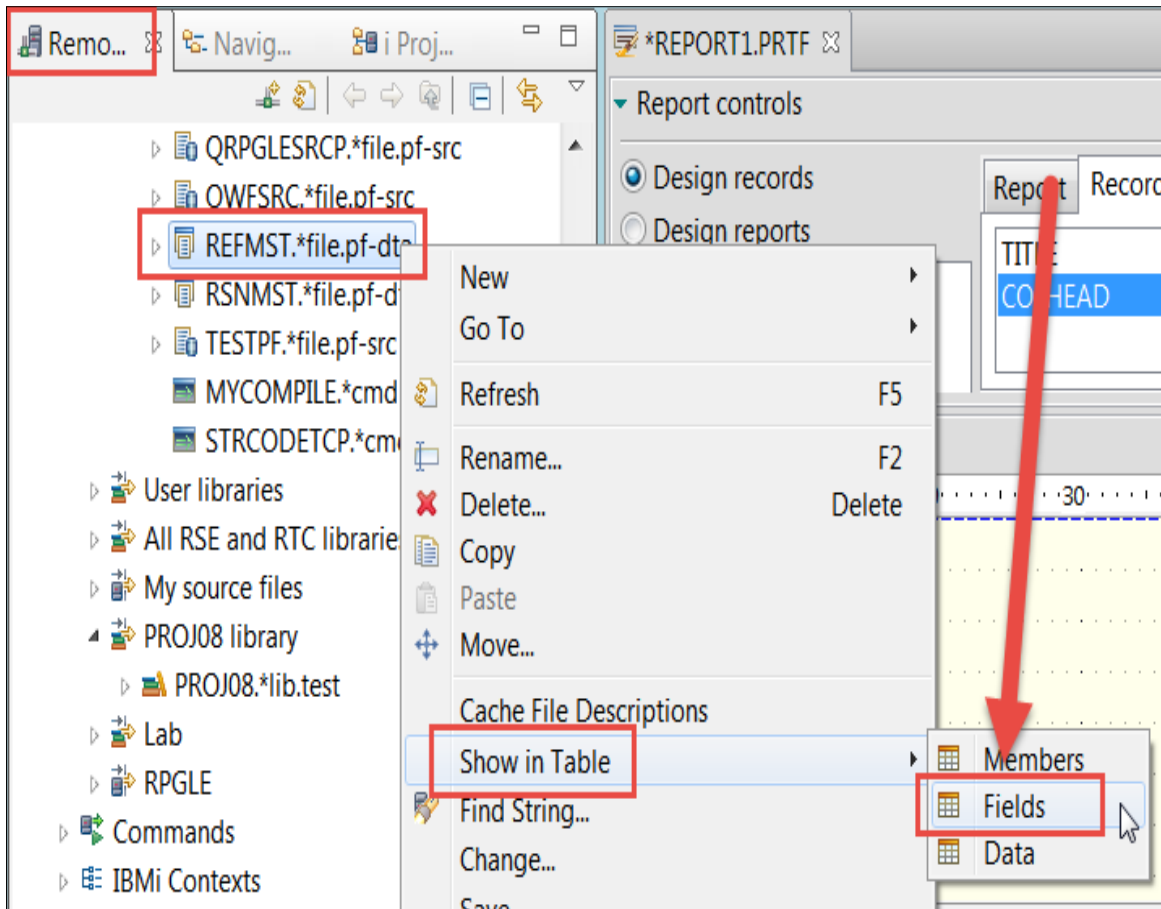
1.6 Adding a record containing the data to be printed

Now you will add the record which contains the fields to be printed. The easiest is to drag the fields from the **Fields list** of the reference file onto the design page.

In order to do this, you need to open the fields table view for REFMST, if you closed it after the first step in this Lab go thru these steps again:

- __1. In the RSE view in library RSELABxx, right click file **REFMST**

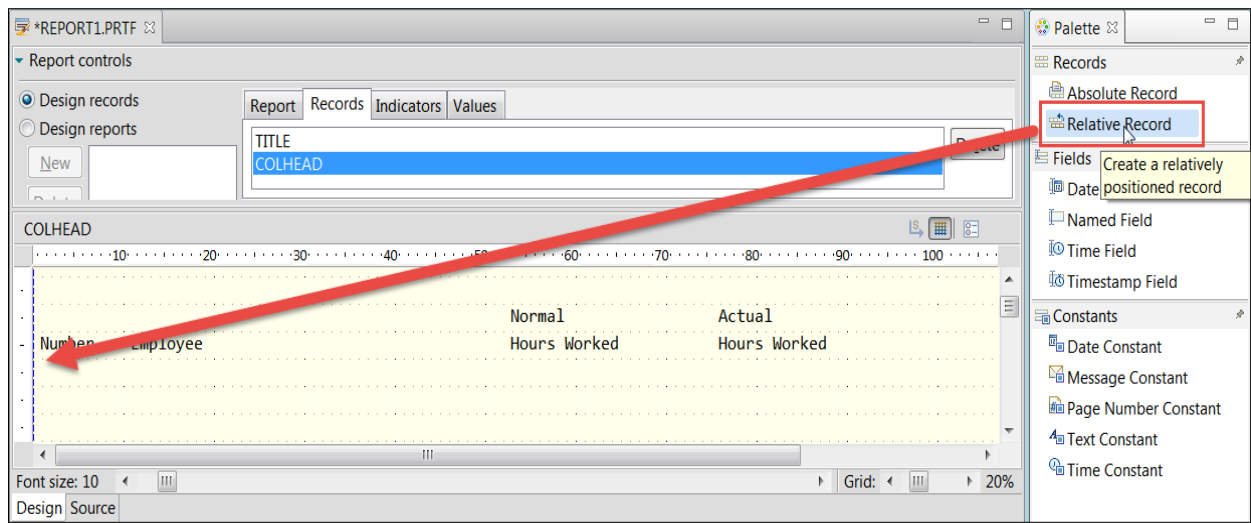
2. Select **Show in Table --> Fields**.



Before adding the fields you will need a new **Relative** record.

3. Select the **Relative Record** control on the Palette view

- __4. Click the **Design** page somewhere to add a new relative record there.

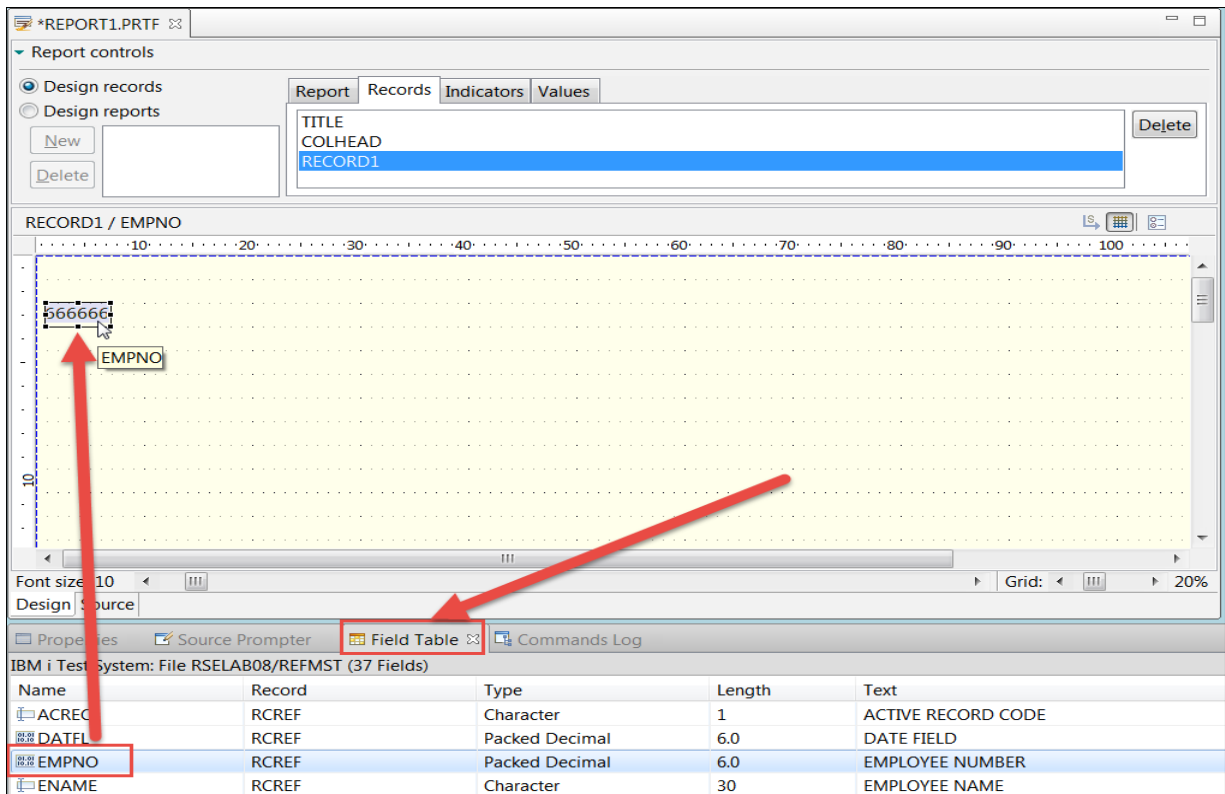


This record will contain the employee detail information.

Now you will drag and drop the database fields onto the report.

- __5. Select field **EMPNO** from the Field list below the designer
- __6. Drop it anywhere on the Design page, then Drag the field to **Row 3 Column 2**.

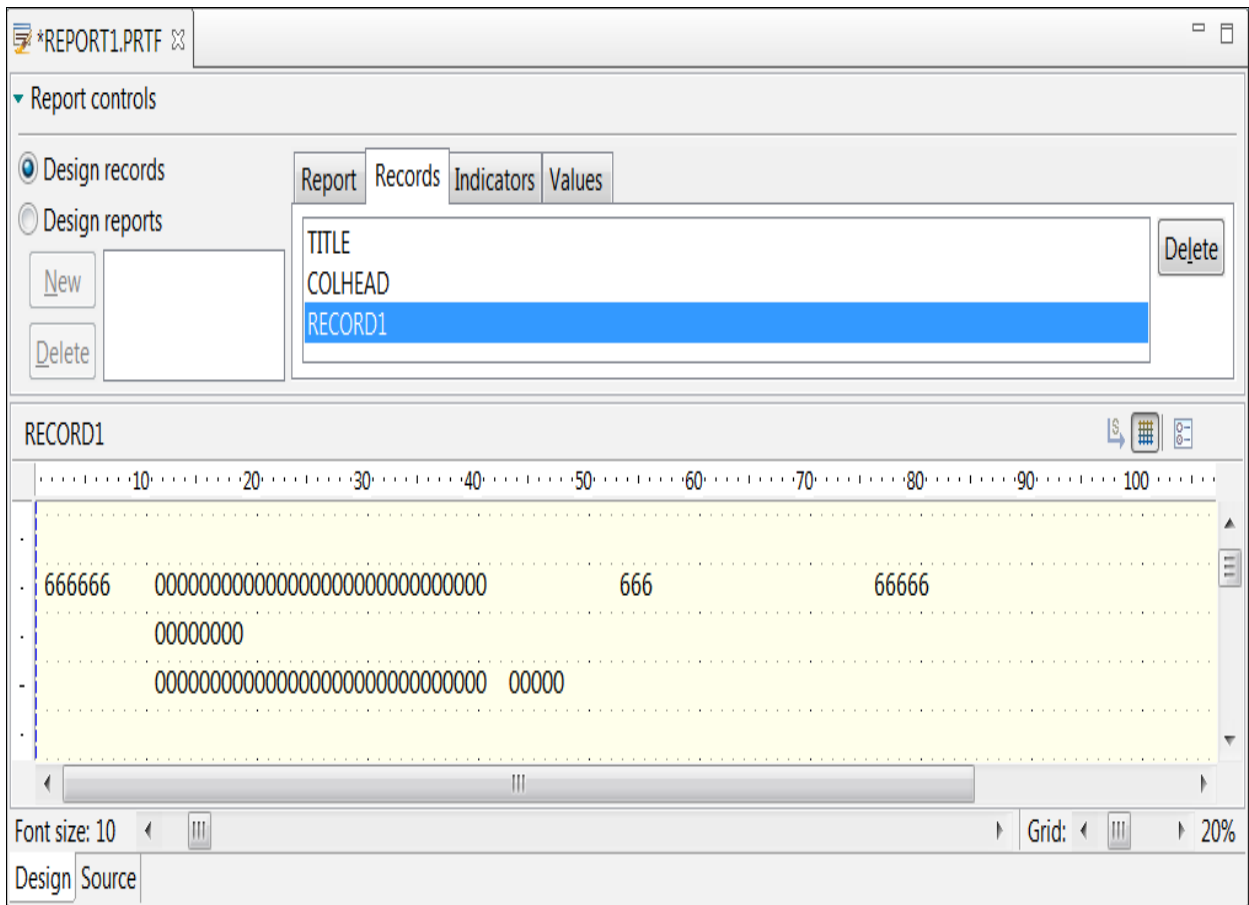
- __7. Should you see an error, you may not have recently saved **REPORT1.PRTF**, dismiss the error and **FILE / SAVE** then try again.



The **EMPNO** field gets created on the design page.
 Now do the same for the following fields.

- __8. Drag and drop **ENAME** to **row 3, column 12**
- __9. Drag and drop **EUSRI** to **row 4, column 12**.
 You will need to add proper spacing here, using the **Properties view**.
 In the Properties view with field **EUSRI** selected:
- __10. Select the **SPACEA** checkbox and leave the spinbox at **1**.
- __11. Drag and drop **ELOCN** to **row 5, column 12**.
- __12. Drag-and-drop **EDEPT** to **row 5, column 44**.
- __13. Drag-and-drop **ENHRS** to **row 3, column 54**,

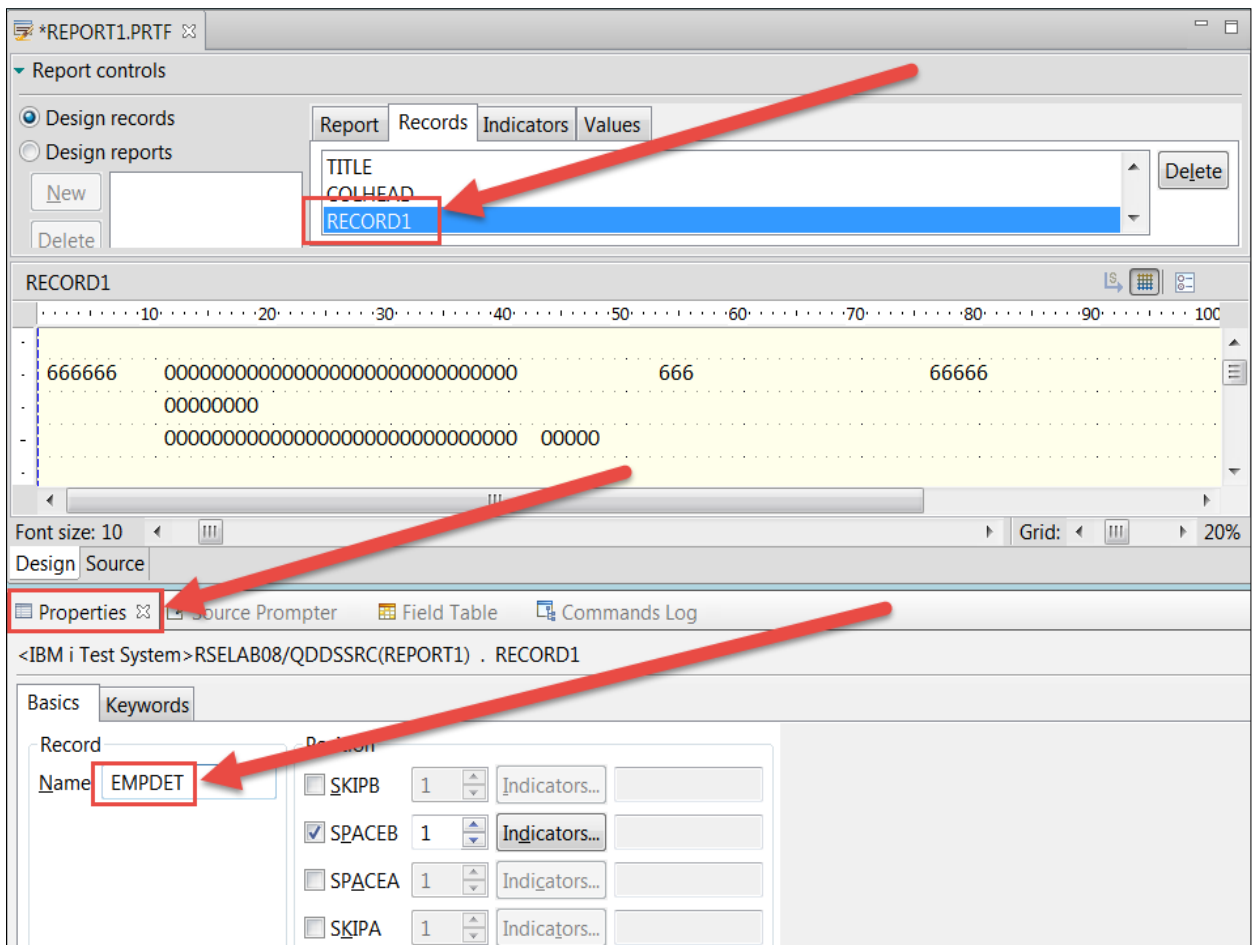
- __14. Drag-and-drop **EHWRK** to **row 3, column 77**,
Your design page should look something like this:



Instead of using the default record name, change the record name to **EMPDET**.

- __15. Click **Record1** in the record list in the Design Control Panel
- __16. Go the **Properties** view

__17. Change the record name to **EMPDET**.



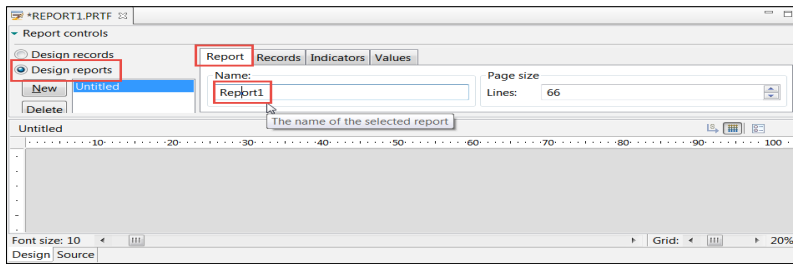
1.7 Creating a report view

Instead of looking at a single record let's look at the Report instead. You need to create a new report in the Report Designer and then add the records to be used in this report.

You see one default report in the list of reports, its name is **untitled**, you will use this report and your records to it.

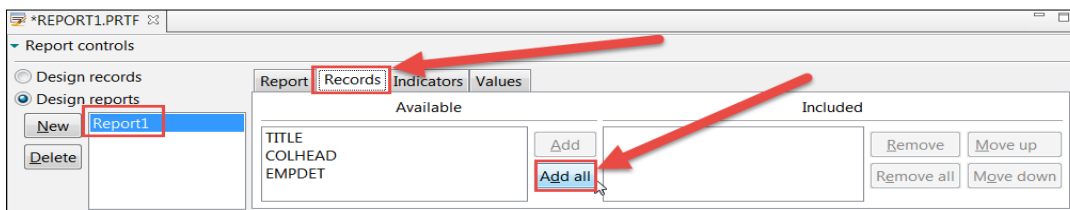
- __1. In the Screen Design Control pane, click the **Design Reports** radio button
- __2. Click the **Report** tab
- __3. Change the name from **untitled** to **Report1**

4. Hit Enter



To add the records you created to this report:

5. Click the **Records** tab
6. Press the **Add all** button.

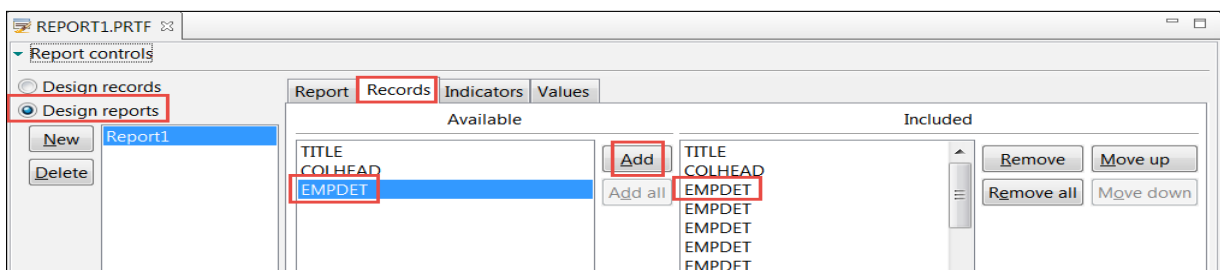


Now that you have a report designed let's see how you can get a better visual experience how this report will look like when you run it.

1.8 Increasing the number of sample records

It is hard to get a good idea of how a report will really look like when you can't see the repeated records that make up a listing report like this one you just created. To get a better idea, you can increase the number of sample records, they are created as virtual records pointing to the same record in your DDS.

1. On the Design Control pane make sure the **Design reports** radio button is selected
2. Click the **Records** tab, if it is not already selected
3. Click the **EMPDET** record in the **included** list to select it
4. Click the **EMPDET** record in the **available** list to select it
5. Click the **Add** button **10 times** or **20 times**, this will add these records to the **Design page** so you can actually see how the report would look like when it gets filled.



The result should look similar to the figure above.

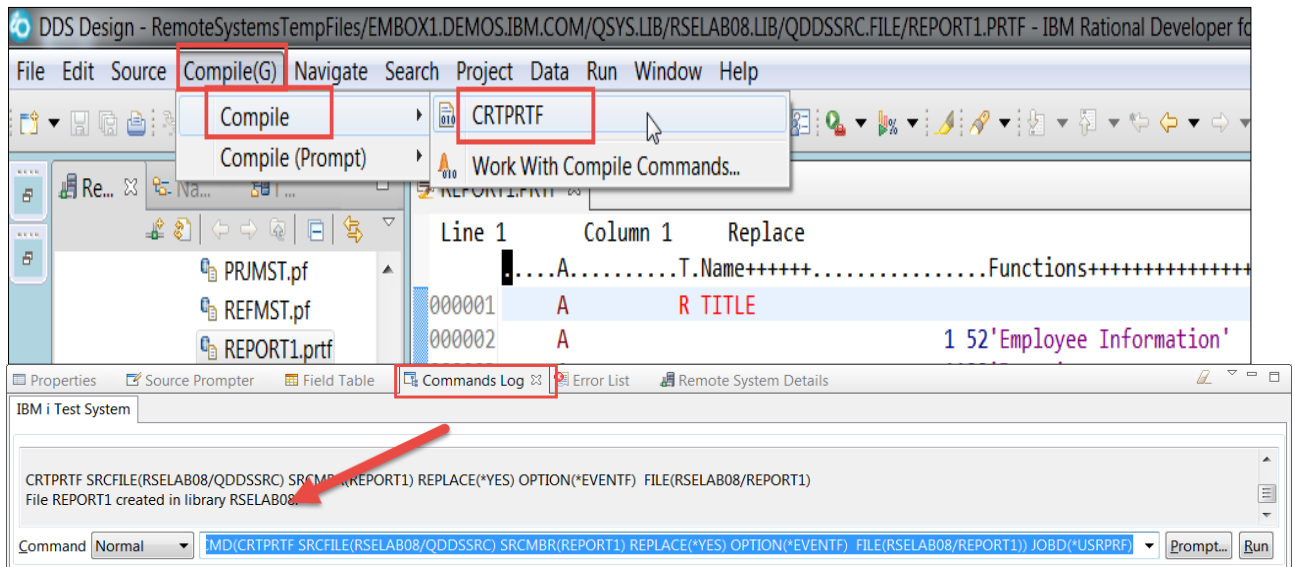
1.9 Saving and compiling

At this point you should ensure that you save your source and create the printer file for this report.

1. Press **Ctrl-S** to save. Your changes will be save to the host.

In order to get 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.

2. Click the **Source** tab in Screen Designer
3. In the workbench menu click the **Compile** action.
4. On the pull down menu click the **Compile** action.
5. Click the **CRTPRTF** action.
6. After a short while check the Commands Log to see if REPORT1 created



Congratulations!

You have successfully completed the RDi Report Designer lab exercises.

In this module you learned how to work with the Report Design tool. You have created a new PRTF member. You created records for the Report. You used the Palette view to select control to be added to the report. You used reference fields to be added to the report.

You added virtual records to the report layout to get a visual representation of the report as it would look like at runtime. You used the source editor to directly work with the DDS source, you saved the changes and finally compiled the DDS member into a printer file.

We recommend that you move on to the next lab in the sequence; 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.

More information, material and opportunities to discuss the product can be found at our RDi Hub:

http://ibm.biz/rdi_hub

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