# DA2 Data Source/Report Parameters

Friday, June 01, 2018 1:43 PM

## Summary

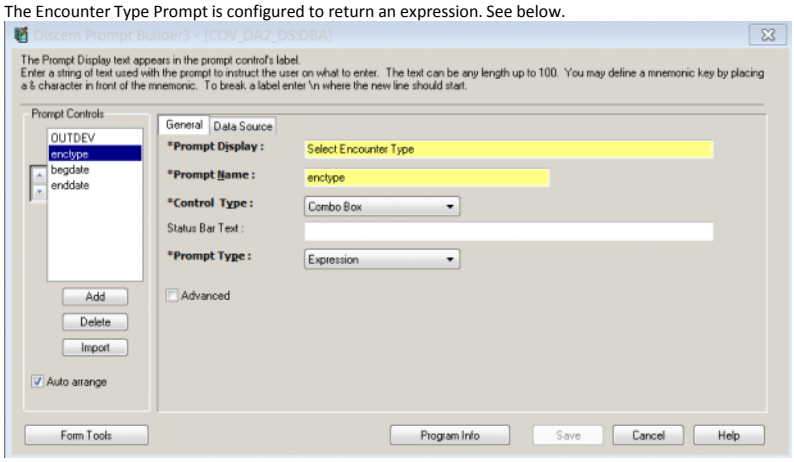
This document will explain how to write a CCL data source program that can be used in DA2. We will also cover how to build a report using that data source and what you will need to do to pass parameters back and forth between DA2 and the original data source program.

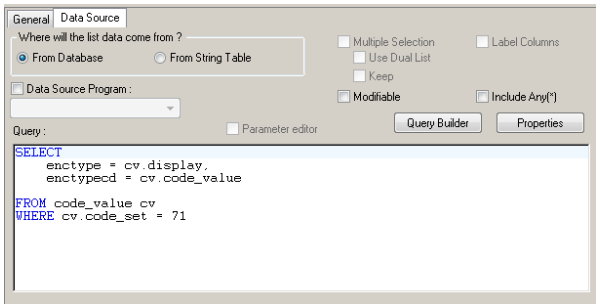
### Create a CCL Data Source program.

1. Open Visual Developer and create a new program worksheet.
2. For this example we will create a small ccl that selects patients with a specific encounter type and that were registered within the date range we will pass to the query.
3. The name of the program we will use is **cov_da2_ds.prg**. The code is available in the cust_script directory and also in Subversion under the reports folder for each domain.
4. Copy the program and rename it to a new name so you can follow along and customize it for your needs.

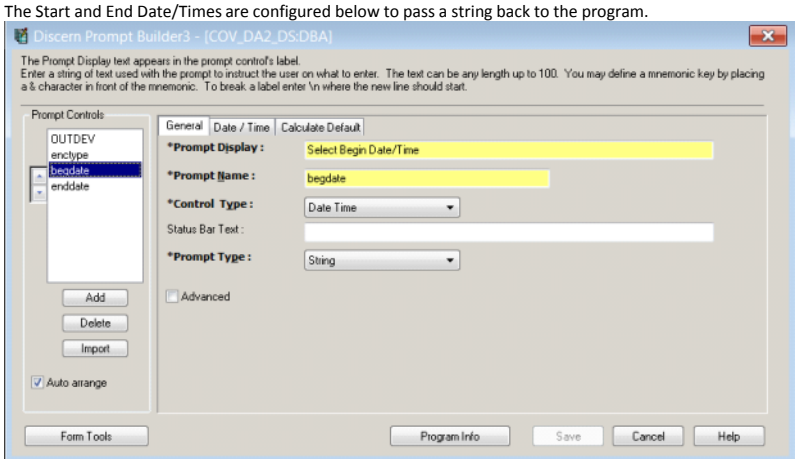
#### Define Prompts.

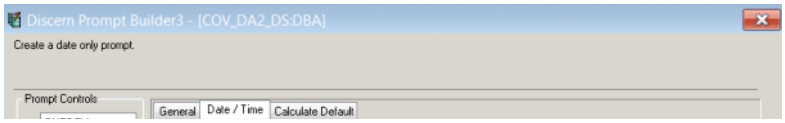
a. We don't need to use an $Outdev for a data source program. However for training/testing purposes I have left one in this script.
b. There are 3 prompts we will define. An encounter type, A begin Date/Time and an End Date/Time.
c. The Encounter Type Prompt is configured to return an expression. See below.

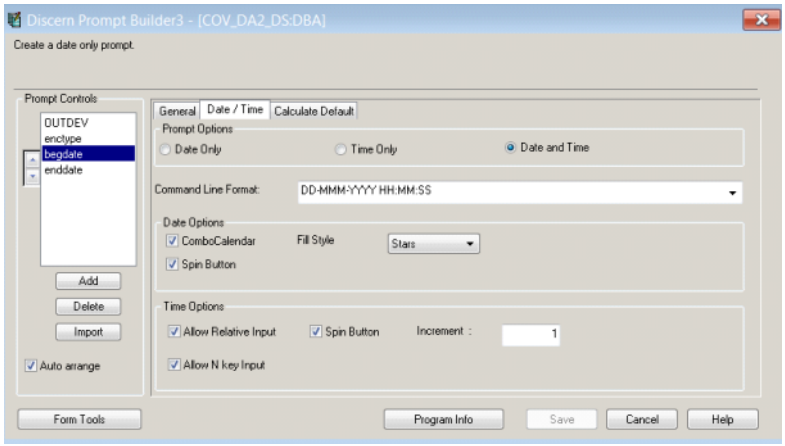


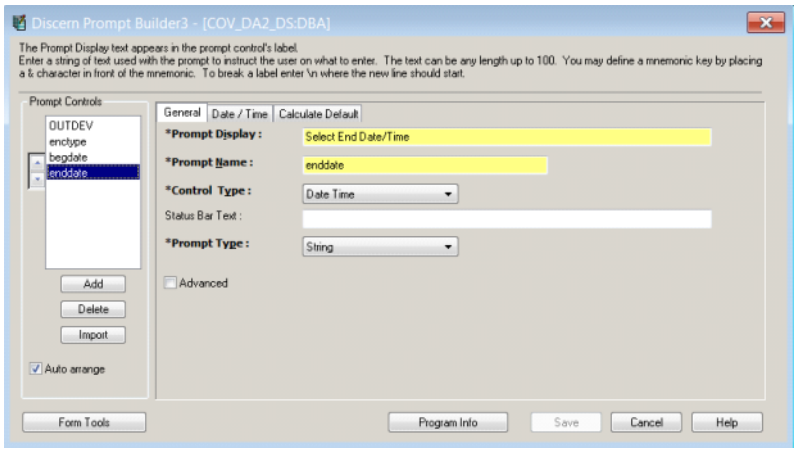



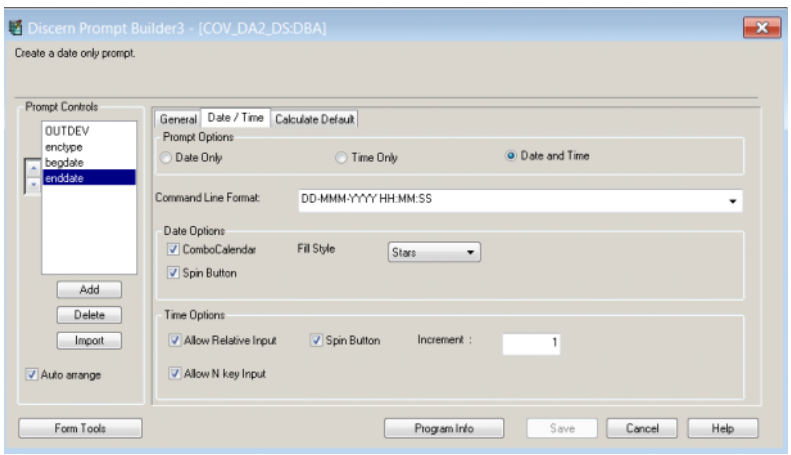

d. The Start and End Date/Times are configured below to pass a string back to the program.






e. The **critical** piece we have to design in the prompts is to have a **default** value defined for every prompt. We need the program to be guaranteed to return at least one row.

```
prompt
    "Output to File/Printer/MINE" = "MINE"
    , "Select Encounter Type" = 309308.00
    , "Select Begin Date/Time" = "SYSDATE"
    , "Select End Date/Time" = "SYSDATE"

with OUTDEV, enctype, begdate, enddate
```

f. See the CCL code above. We have default values set for each prompt.

Add the CCL API code statements to the CCL.

```
;*****************************************
EXECUTE CCL_PROMPT_API_DATASET "autoset"
```

a. The statement above is necessary so CCL will allow you to call the subroutines we will use to create the data source program later. This line of code should be placed directly after any prompt statements that are defined. It must be the first line of code that is executed in the CCL program.

```
SELECT IF (CNVTINT(GetParameter("_PREPARE_")) = 1)
    WITH NOCOUNTER, REPORTHELP, CHECK, MAXREC = 1
ELSE
    WITH NOCOUNTER, REPORTHELP, CHECK, MAXREC = 1000
ENDIF
INTO "NL:"
```

b. The line of code above requires a bit of explanation. When a data source program is called

from DA2, the data source program is actually called twice. The first time it is called, it returns the column names and data types to DA2. That is what is happening with **_PREPARE_** parameter statement above. This is why it is crucial that we write the CCL so it will return a minimum of 1 result when called. Otherwise the column/data type structure will be unknown to DA2.

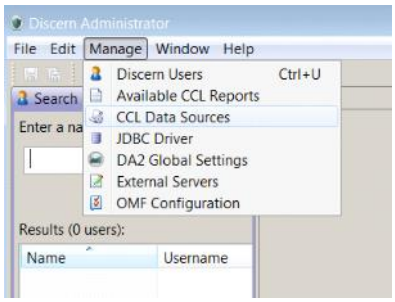
c. The rest of the ccl code follows the look of a standard query until we get to the Report Writer sections.

```
HEAD REPORT
    stat = MakeDataSet(100)

DETAIL
    stat = WriteRecord(0)
FOOT REPORT
    stat = CloseDataSet(0)


WITH MAXREC = 1000
```

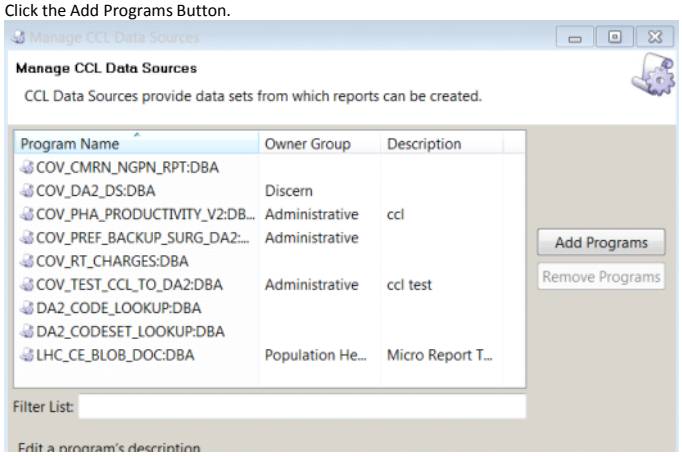
d. The 3 subroutine calls above are necessary to return the information to DA2.
e. In the MakeDataSet call we are just defining a certain number of elements to act as placeholders for the number of rows we expect to return. This is similar to using an alterlist command with a record structure.
f. The WriteRecord(0) command actually copies the record to the data set.
g. The CloseDataSet(0) command closes the data set.

## Add the data source program to DA2

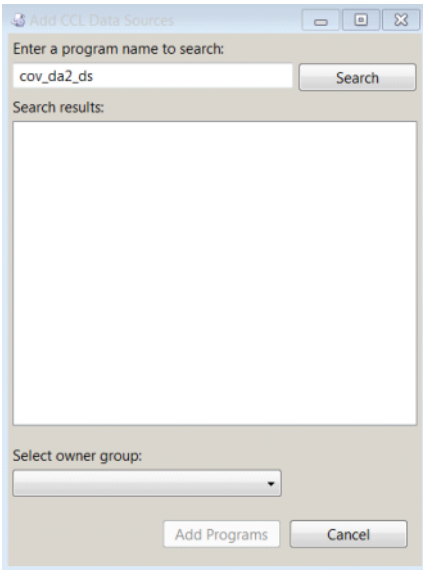
1. Open DA2 Administrator, and select the Manage menu item and select the CCL Data Source item in that menu.




2. Click the Add Programs Button.

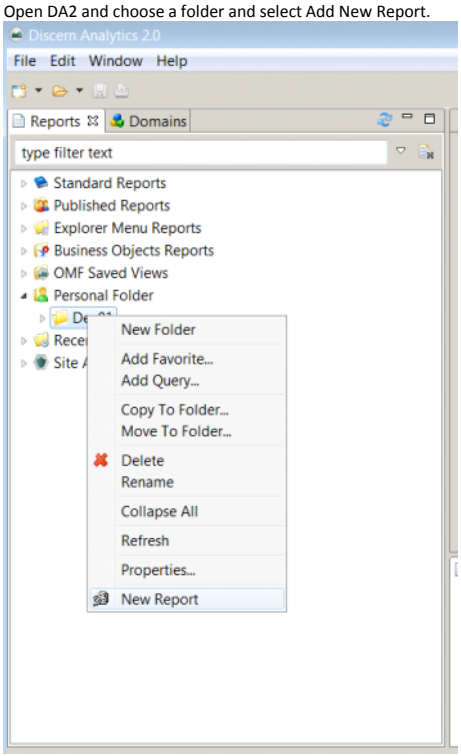



3. Enter the name of your data source program. Click Search and be sure to select Discern as the Owner Group and click OK. (Note: If the program name you try to add doesn't display, it may already be added as a data source program. The name of our example program is already listed above.)

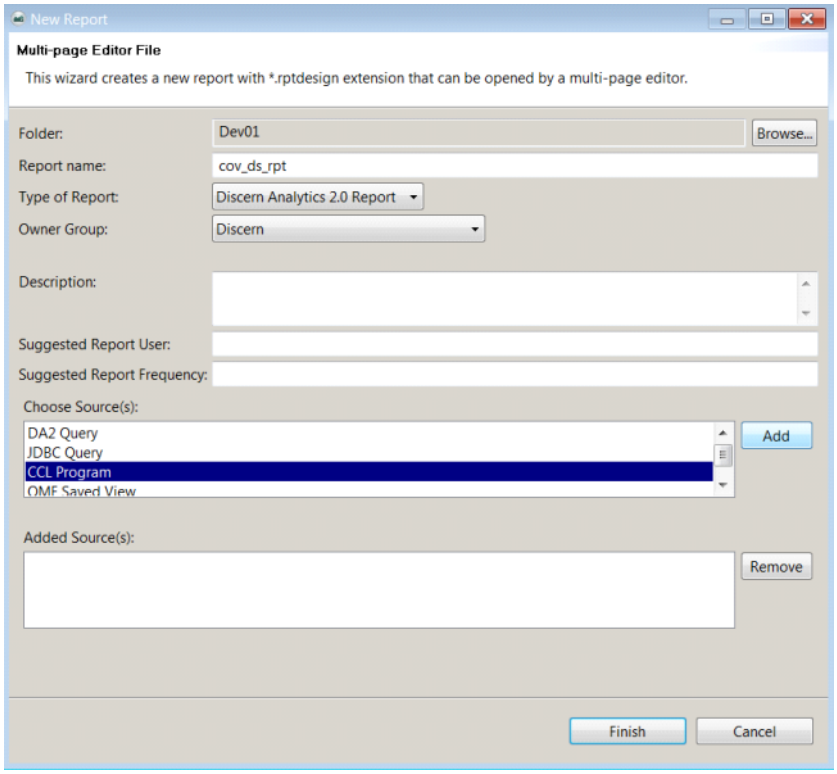


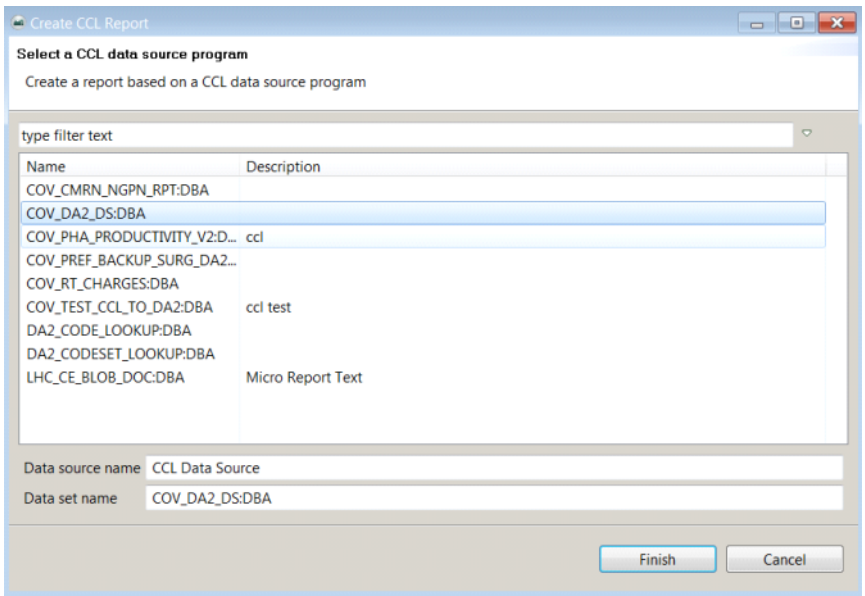

## Create a Report using the Data Source Program in DA2

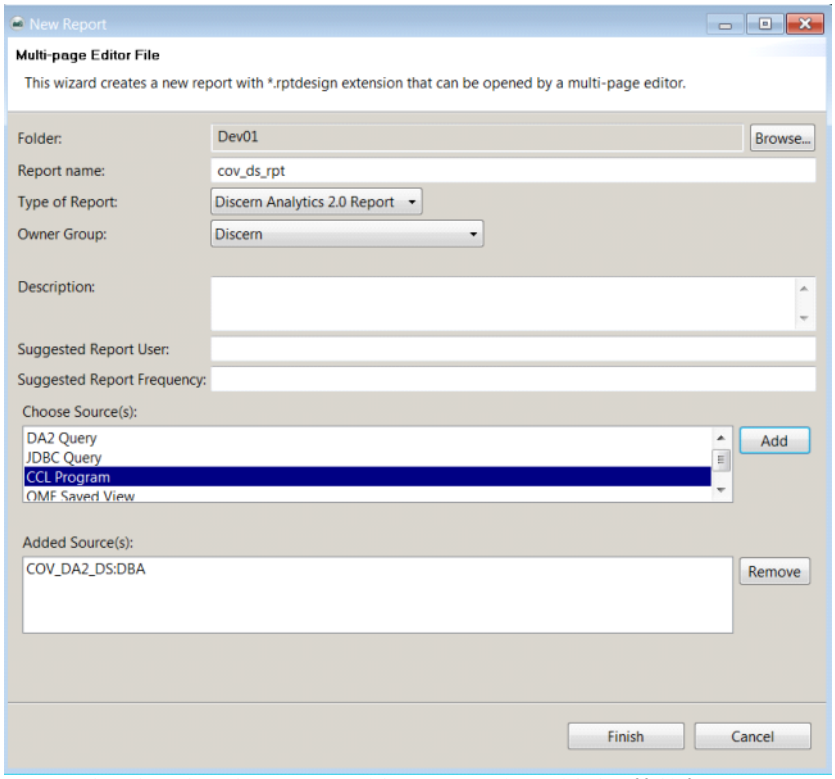
1. Open DA2 and choose a folder and select Add New Report.



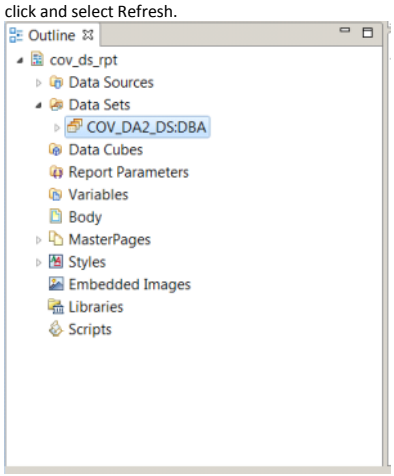

2. Enter a report name, Select CCL Program as your data source and choose the data source you just added.


New Report
Multi-page Editor File
This wizard creates a new report with *.rptdesign extension that can be opened by a multi-page editor.
Folder:
Dev01
Browse...
Report name:
cov_ds_rpt
Type of Report:
Discern Analytics 2.0 Report
Owner Group:
Discern
Description:
Suggested Report User:
Suggested Report Frequency:
Choose Source(s):
DA2 Query
JDBC Query
CCL Program
OMF Saved View
Add
Added Source(s):
Remove
Finish
Cancel

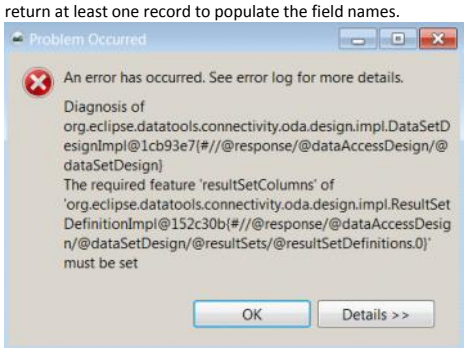

Create CCL Report
Select a CCL data source program
Create a report based on a CCL data source program
type filter text
Name
Description
COV_CMRN_NGPN_RPT:DBA
COV_DA2_DS:DBA
COV_PHA_PRODUCTIVITY_V2:D...
ccl
COV_PREF_BACKUP_SURG_DA2...
COV_RT_CHARGES:DBA
COV_TEST_CCL_TO_DA2:DBA
ccl test
DA2_CODE_LOOKUP:DBA
DA2_CODESET_LOOKUP:DBA
LHC_CE_BLOB_DOC:DBA
Micro Report Text
Data source name
CCL Data Source
Data set name
COV_DA2_DS:DBA
Finish
Cancel



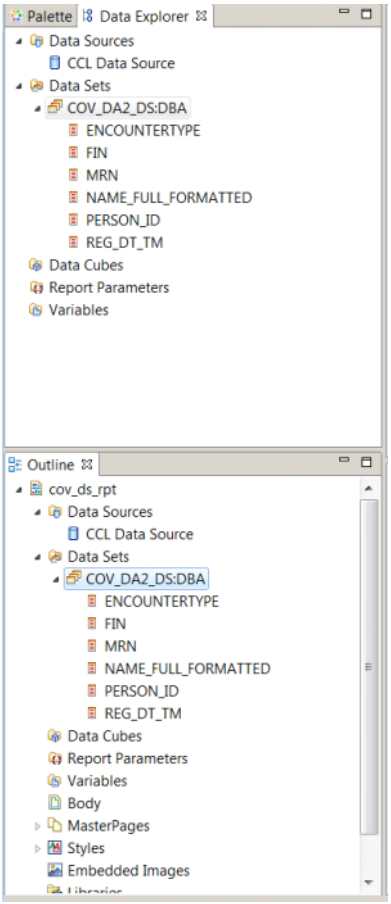

3. Be sure you have the Outline palette open. Expand the Data Sets, and expand the list of fields for the data source program you are using. If you don't see any fields underneath the data set, right click and select Refresh.



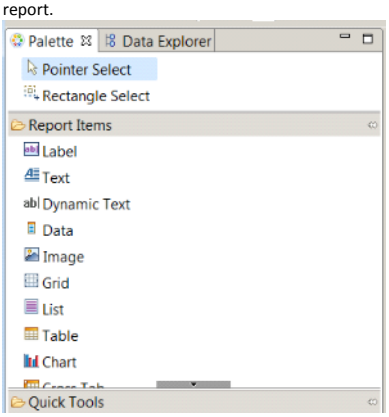

4. If you are unable to see any fields, select the Data Set Right Click and click Edit. Then choose the Parameters fields. If you see an error like the one below, then the CCL Data Source Program didn't return at least one record to populate the field names.



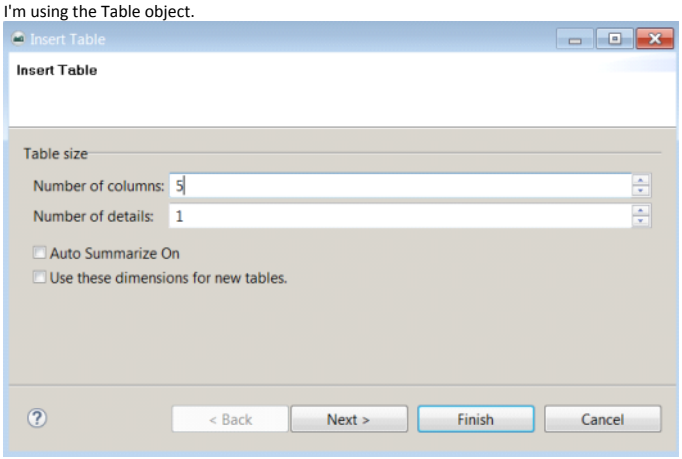

5. At this point you would need to go back to the data source program and rebuild the default values for the prompts so they return at least one result.

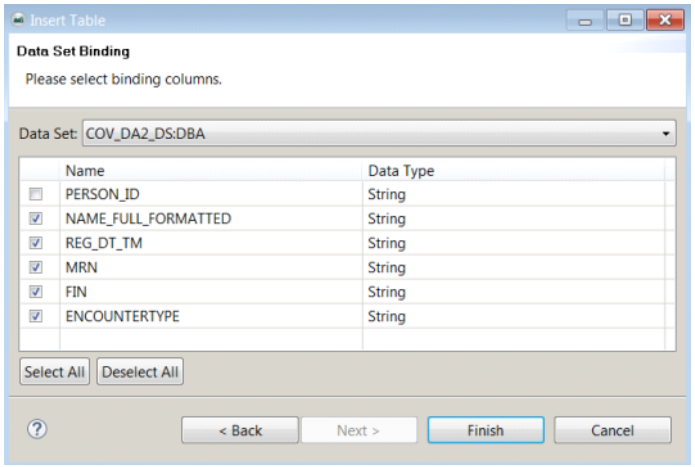


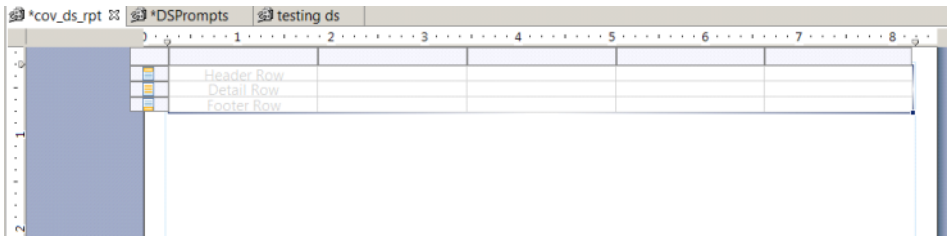

6. This is the view you should see when you expand the data source. Refer to step 5 if you don't see the fields listed.
7. Select the Palette tab with all of the report objects and select an object to use to build a small report.



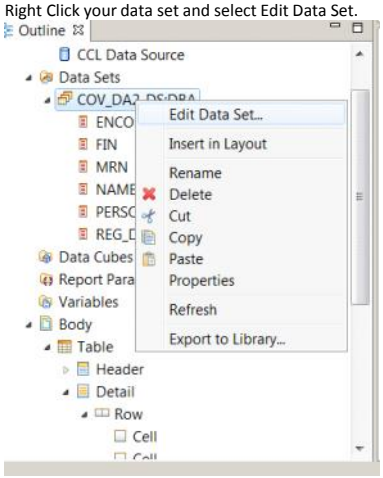

8. I'm using the Table object.



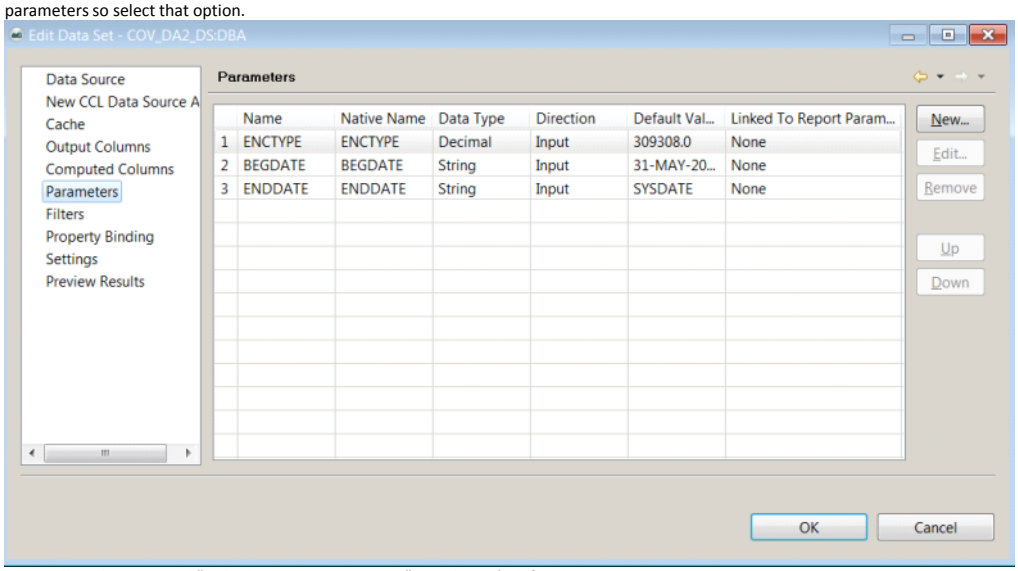



9. Now, we need build our parameters. First, let's check the parameters that are in the data set. Right Click your data set and select Edit Data Set.

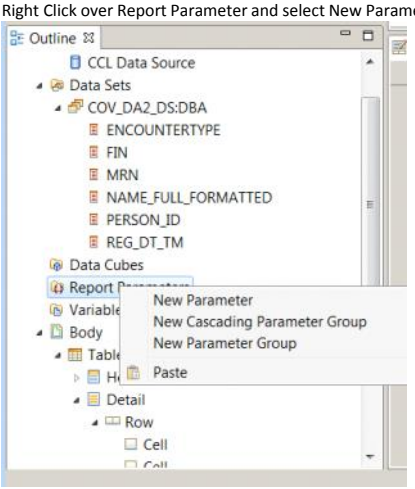



10. This will bring up a set of options you can look at for your data set. We are interested in the parameters so select that option.

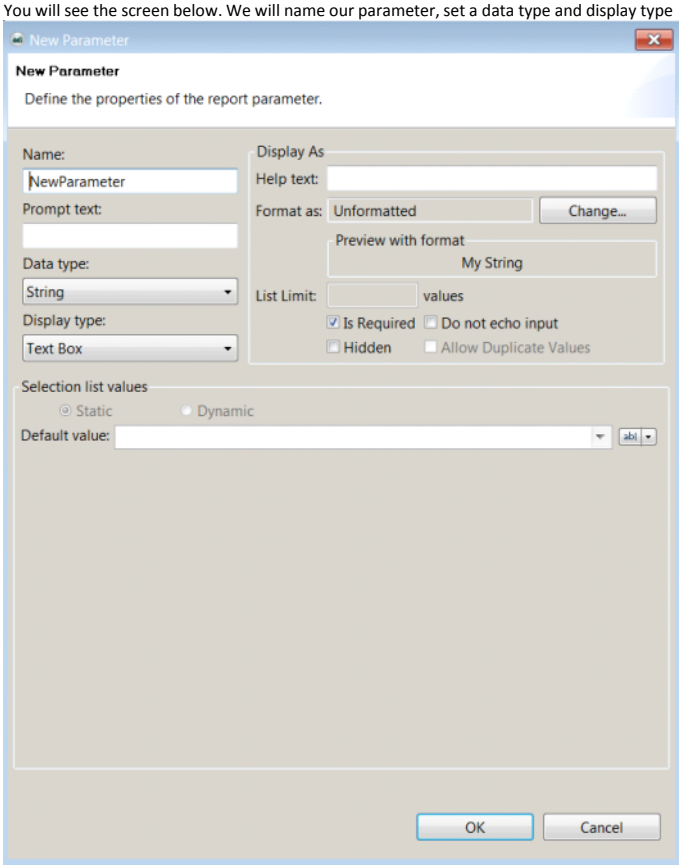



11. Notice the column named "Linked to Report Parameter". We haven't defined any report parameters yet. That is how we will link the options between the DA2 report and the data source. One other note to be aware of. The parameter names are all uppercase in DA2 regardless of how we named those in CCL. That will become important later when we have to add some javascript code.

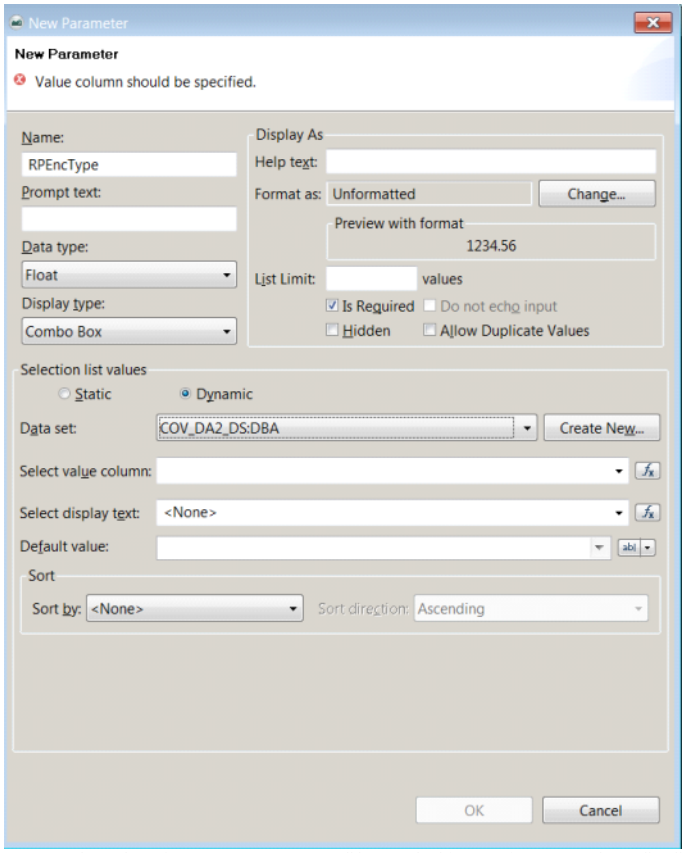
12. Simply close the box above by clicking OK.
13. Now we will build our first Report Parameter.
14. Return to either the Outline or the Data Explorer Palette.
15. Right Click over Report Parameter and select New Parameter.



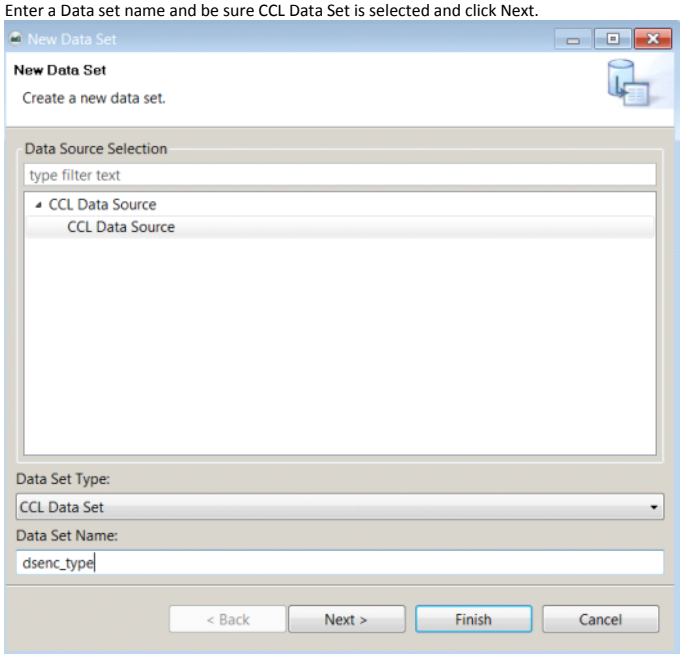

16. You will see the screen below. We will name our parameter, set a data type and display type



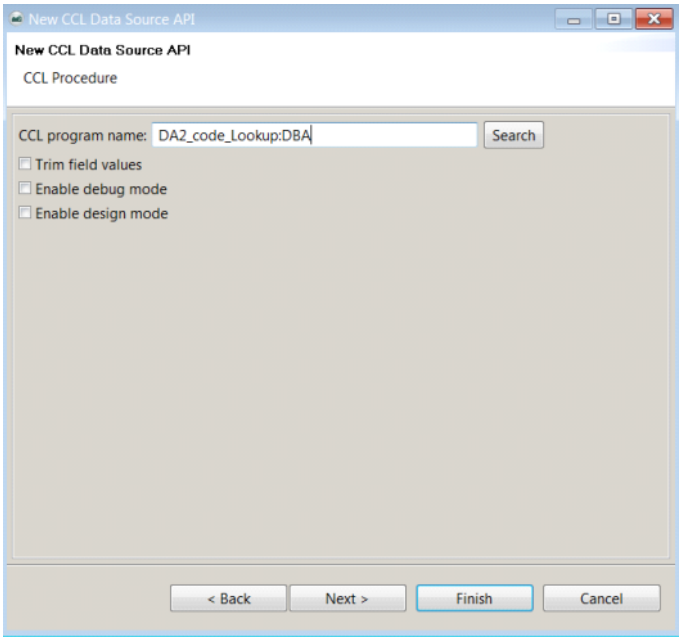

17. The first parameter we will create will be for the encounter type. Copy your parameter so it looks like the screen below.



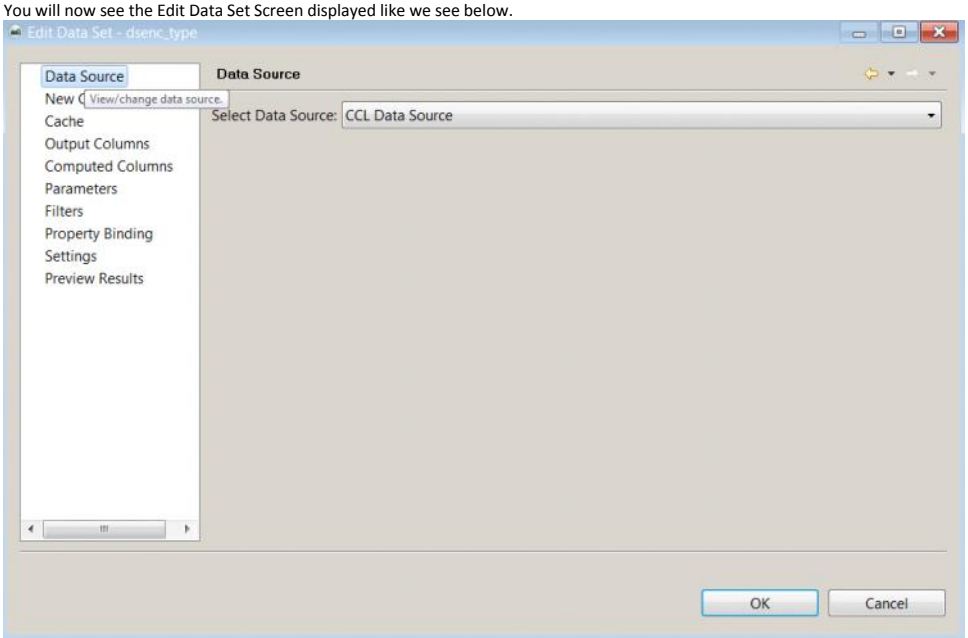

18. We want this to be a dynamic prompt so we will have to build a new data source that will pull in all the encounter types. Click the Create New button next to the Data Set field.
19. Enter a Data set name and be sure CCL Data Set is selected and click Next.



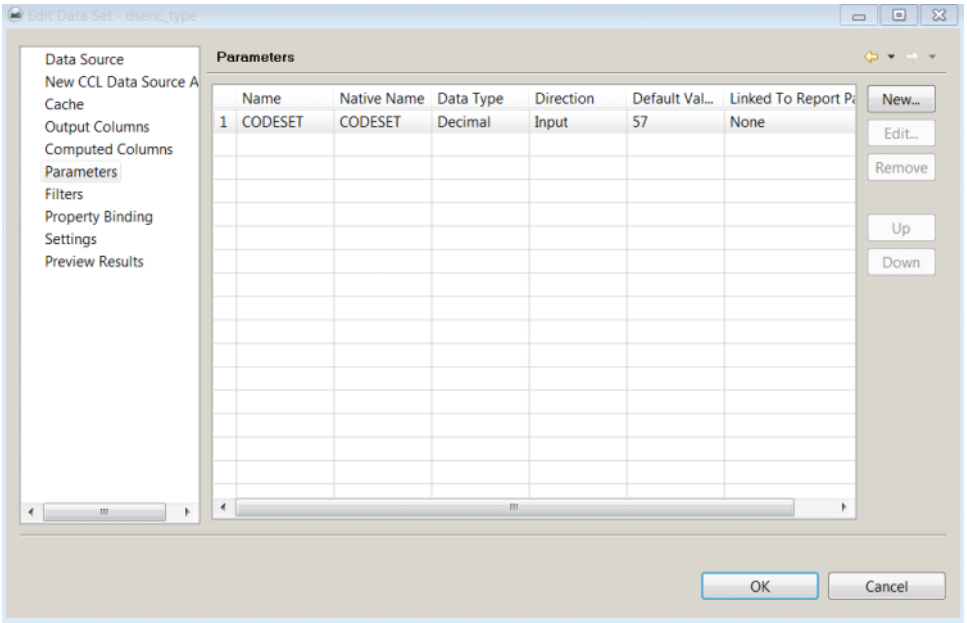

20. In the screen below we will use a lookup program. The name is DA2_code_lookup. Be sure and add the :DBA option after the program name or the wizard won't find the object.



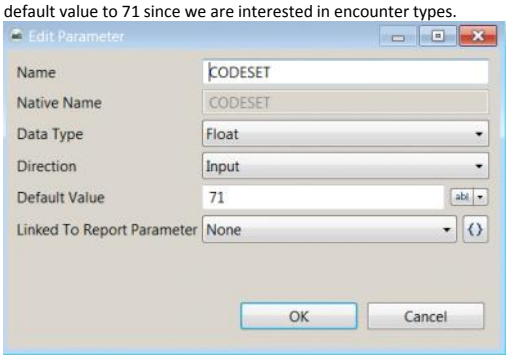

21. Click Finish.
22. You will now see the Edit Data Set Screen displayed like we see below.



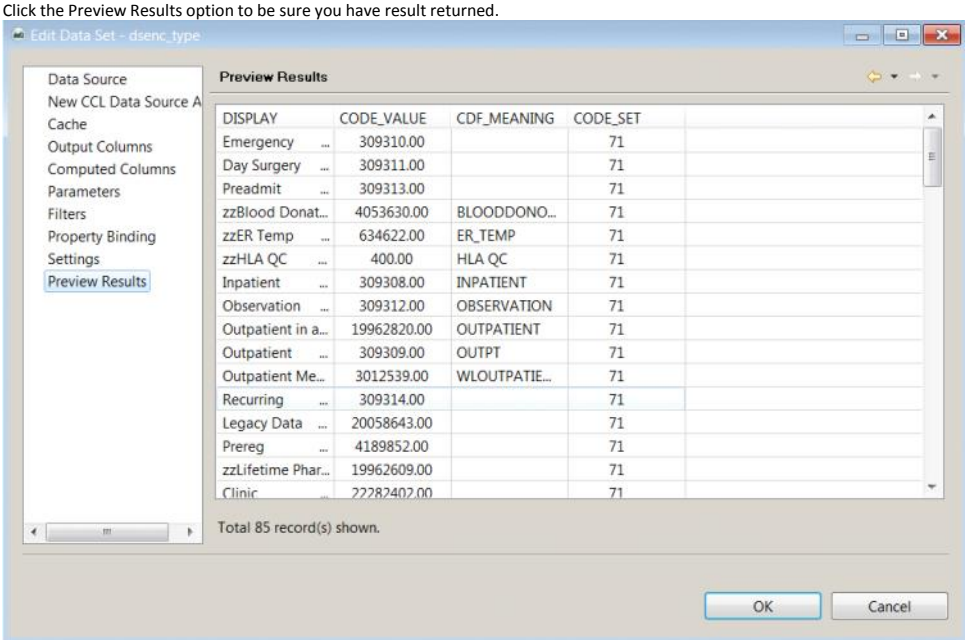

23. Select the Parameters option. We need to change that to reflect the correct code_set.



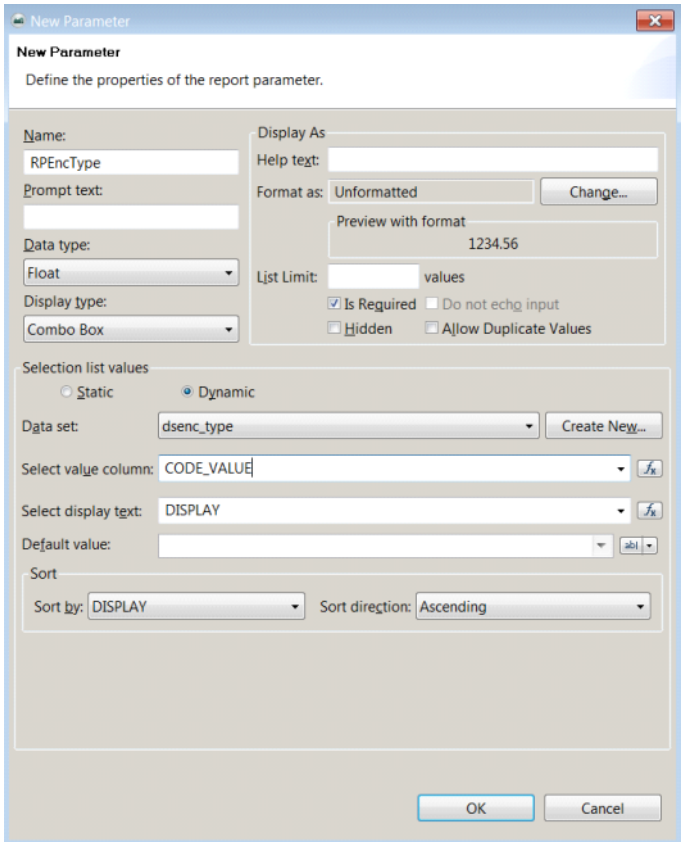

24. Select the codeset parameter and click the Edit button. The screen below will display. Change the default value to 71 since we are interested in encounter types.



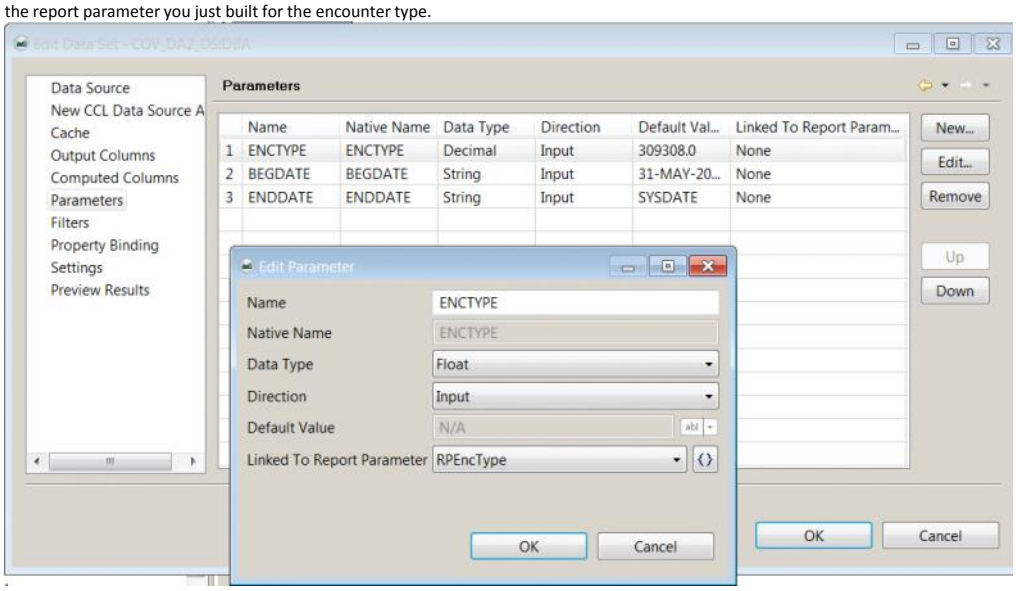

25. Click the Preview Results option to be sure you have result returned.

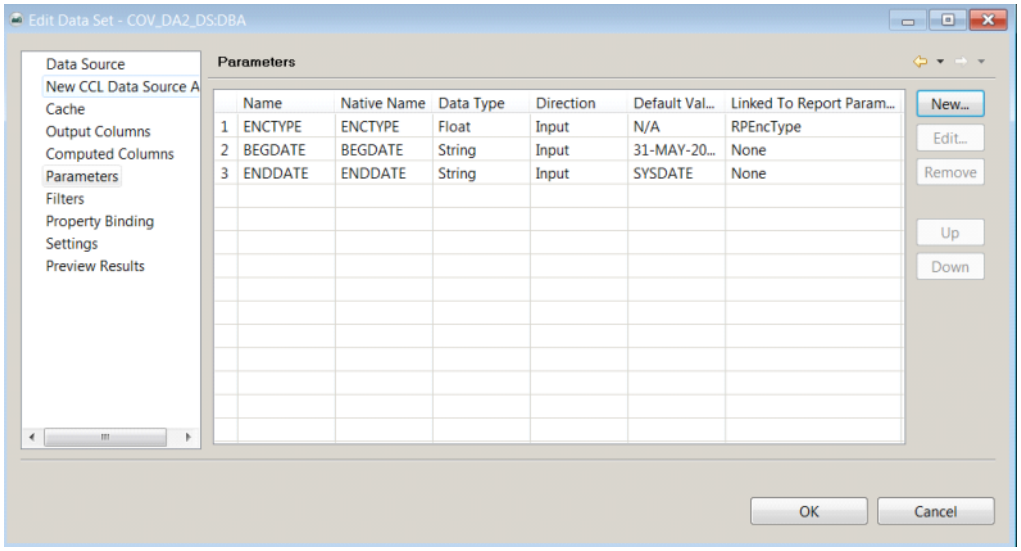



26. Click OK to close the data set edit screen.
27. Now we need to define our display and value columns for the report parameter.

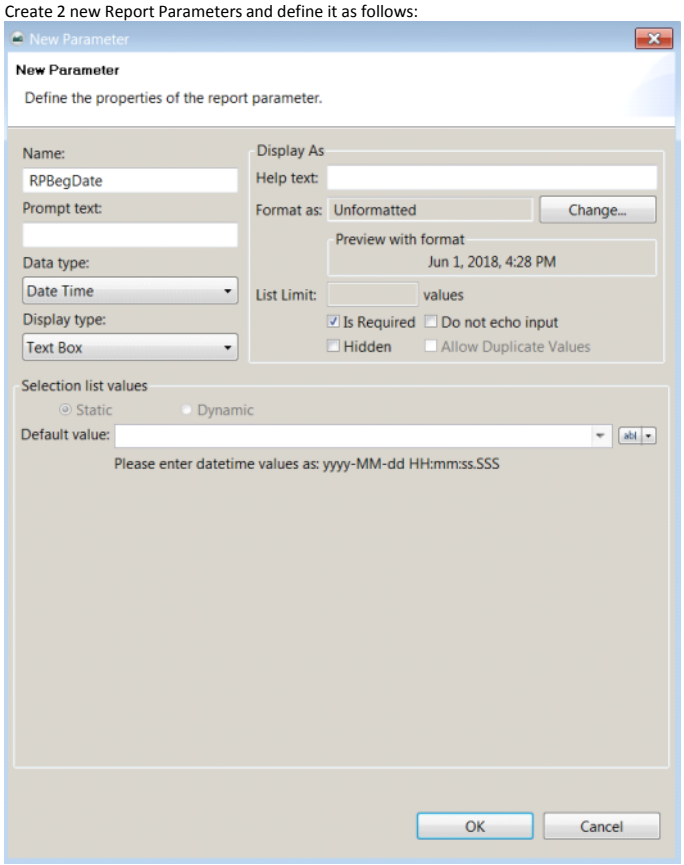


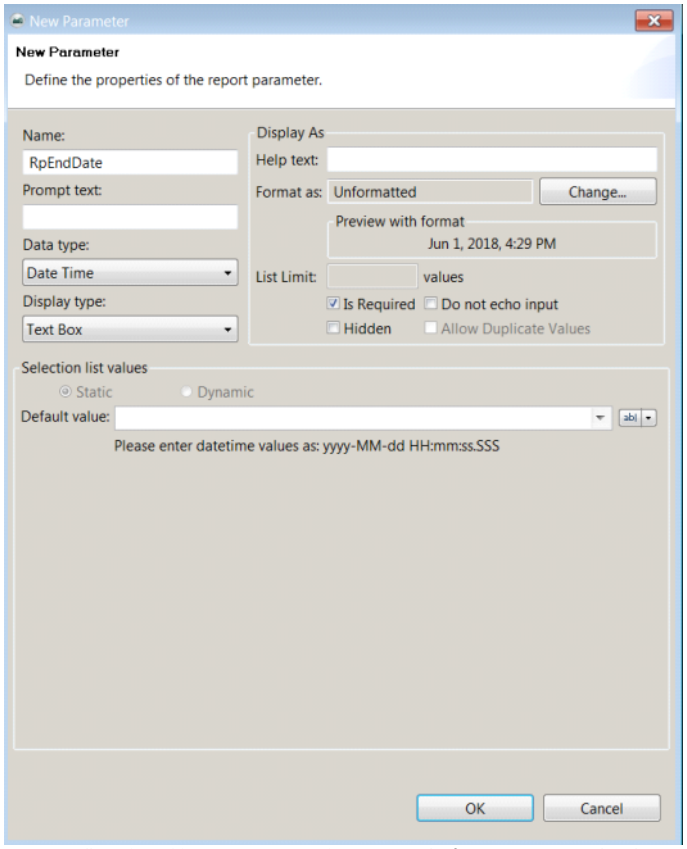

28. Click OK to close the Report Parameter.
29. Click the Edit Data Set option for the CCL Data Set and find the parameters and enter the name of the report parameter you just built for the encounter type.



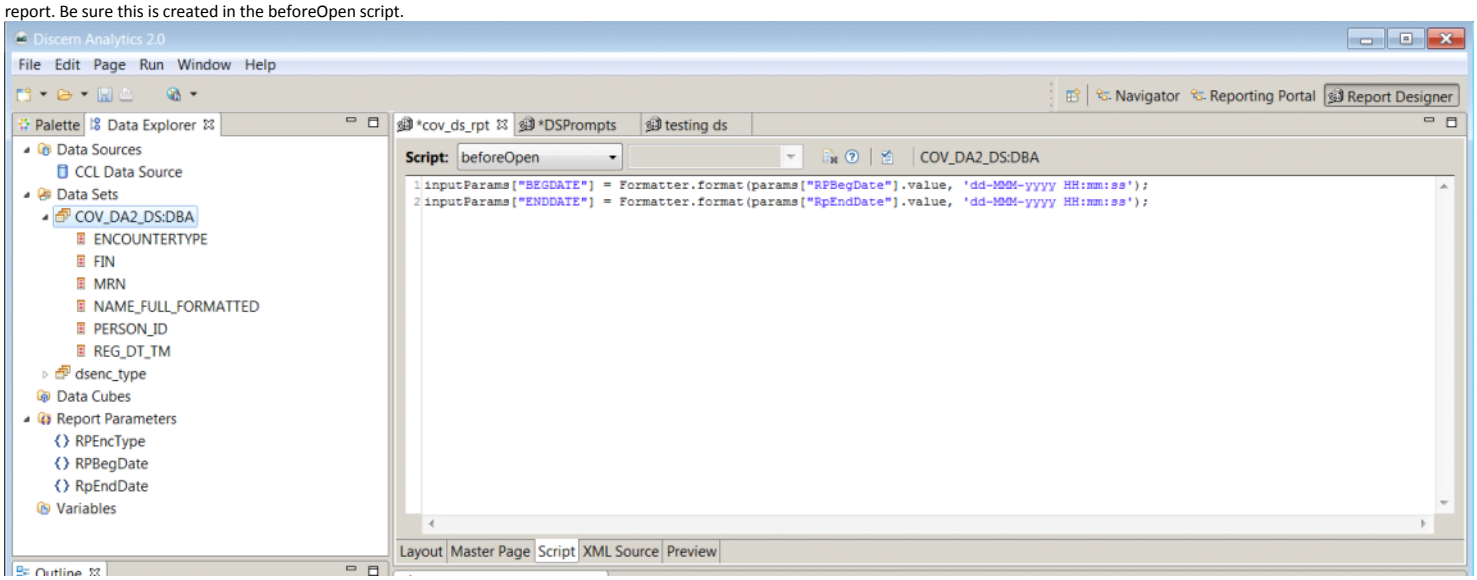



30. Now, we need to create 2 report parameters for our date prompts.
31. Create 2 new Report Parameters and define it as follows:

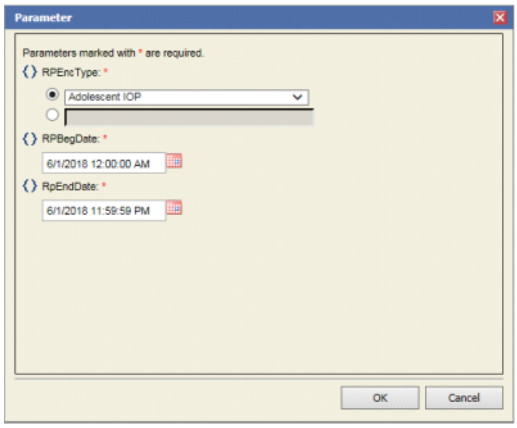





32. Now we will need to add some javascript code to convert the format to a version that the CCL data source script can use.
33. Select the data source and click the Script Tab. Now add the code below to your version of the report. Be sure this is created in the beforeOpen script.




34. Since we did this, we don't need to map the data source and the report parameters for the dates.
35. Now, you should be able to test your report and prompts.




36. If the users want to see this in excel then you can allow them to export to excel via the buttons in the output. See below.