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IMS Hands-on Lab - Using The New IMS Explorer To Access Your IMS Data

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Speaker Company IBM

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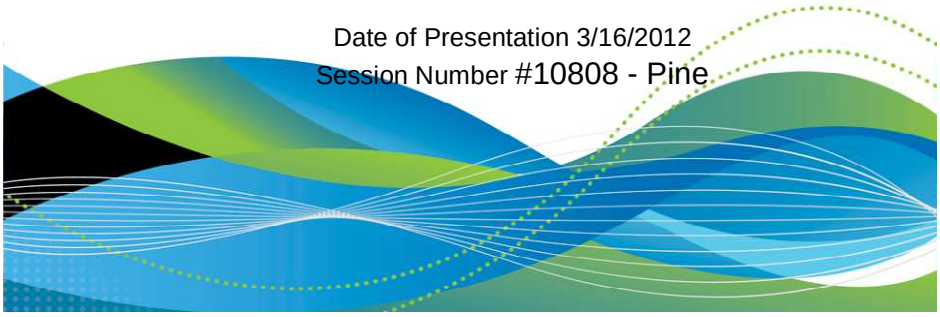
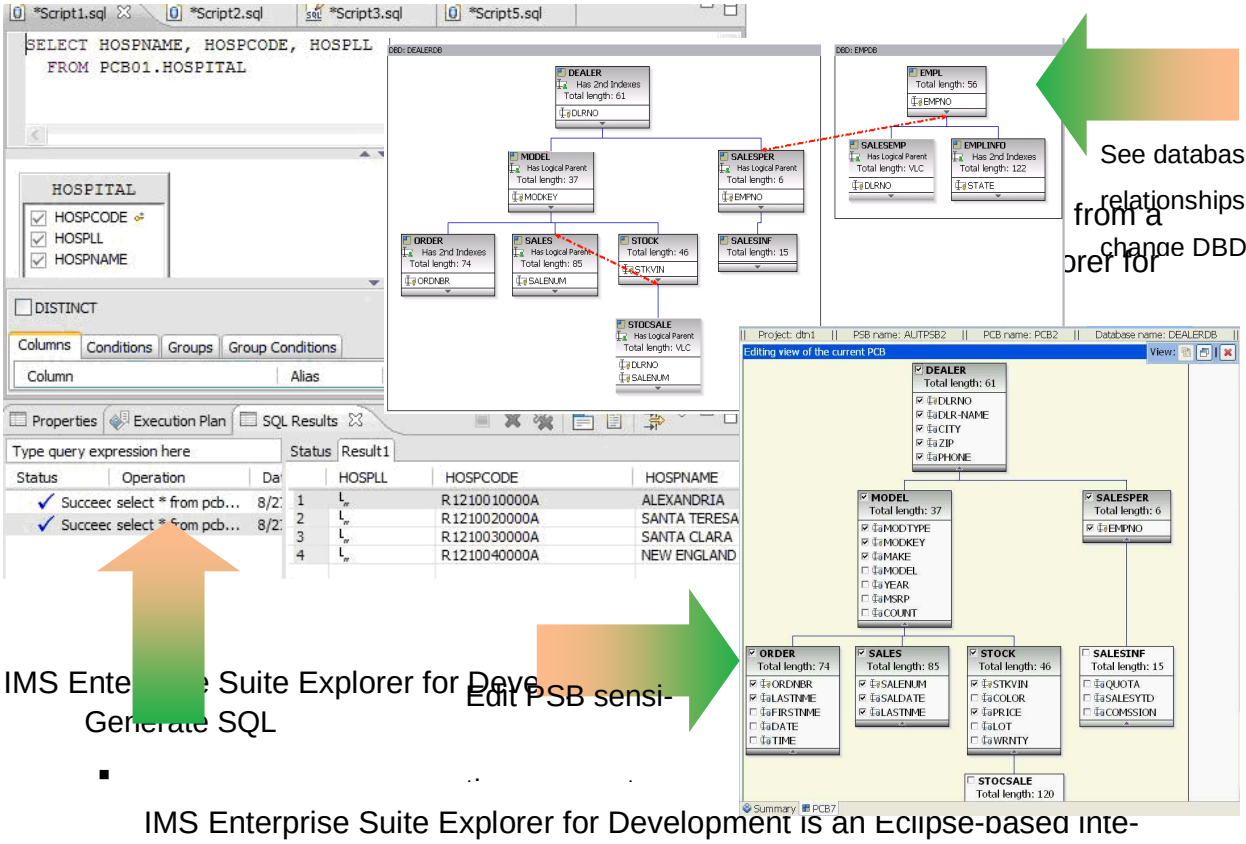
Session Number #10808 - Pine





See database relationships from a change DBD

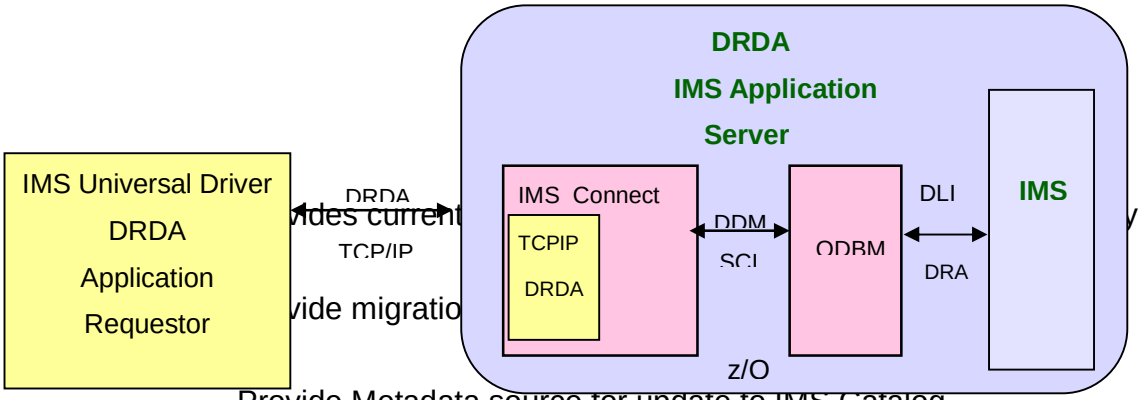
orer for

IMS Ente e Suite Explorer for Deve

Gen rate SQL

Edit PSB sensi-

- IMS Enterprise Suite Explorer for Development is an Eclipse-based integrated development environment (IDE) for IMS application developers and database architects
  - It can also be integrated with other IBM Eclipsed based tools (RAD, RDz, Optum Data Studio)
    - Provides end-to-end application development cycle
- Graphical editors are used for the development and visualization
  - Program Specification Block (PSB)
  - Database Description (DBD)
- IMS Universal JDBC driver type-4 connectivity
  - Relational view of IMS data
  - Graphical assistance to build SQL statements
- Incorporate DLIModel Utility and IMS 12 Catalog functionality
  -



Provide Metadata source for update to IMS Catalog

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Provide Metadata access from IMS Catalog

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Distribution

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IMS Enterprise Suite V2.1 at http://www.ibm.com/ims

IMS Connect and Open Database Manager

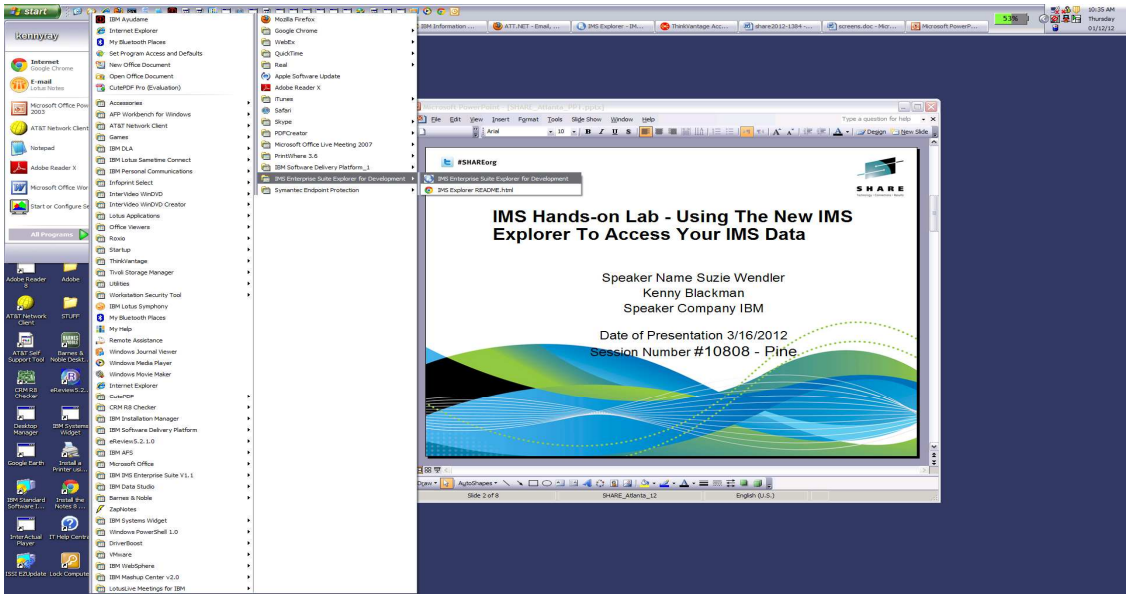
- Open Database Manager (ODBM) is a Common Service Layer component
  - Receives database connection requests from IMS Connect
  - Translates incoming database requests from the DDM protocol into DLI calls expected by IMS
  - Translates responses to the client into the DDM protocol
  - Manages connections to IMS DB
    - Implements the DRA interface

Part 1.IMS Enterprise Suite Explorer for Development

In this part of the lab, the IMS Explorer is used to create the IMS Java Database View metadata by parsing the IMS IVP Telephone PSB and DBD sources.

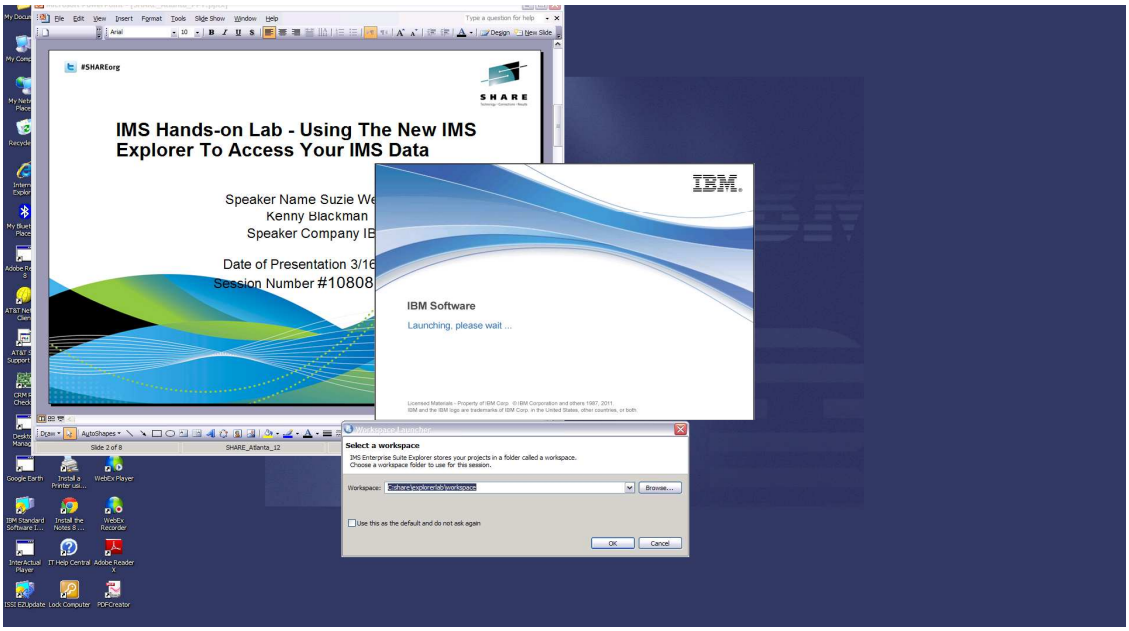
Note that in your workstation environments, the IMS Explorer is a standalone environment.

1. Start IMS Explorer

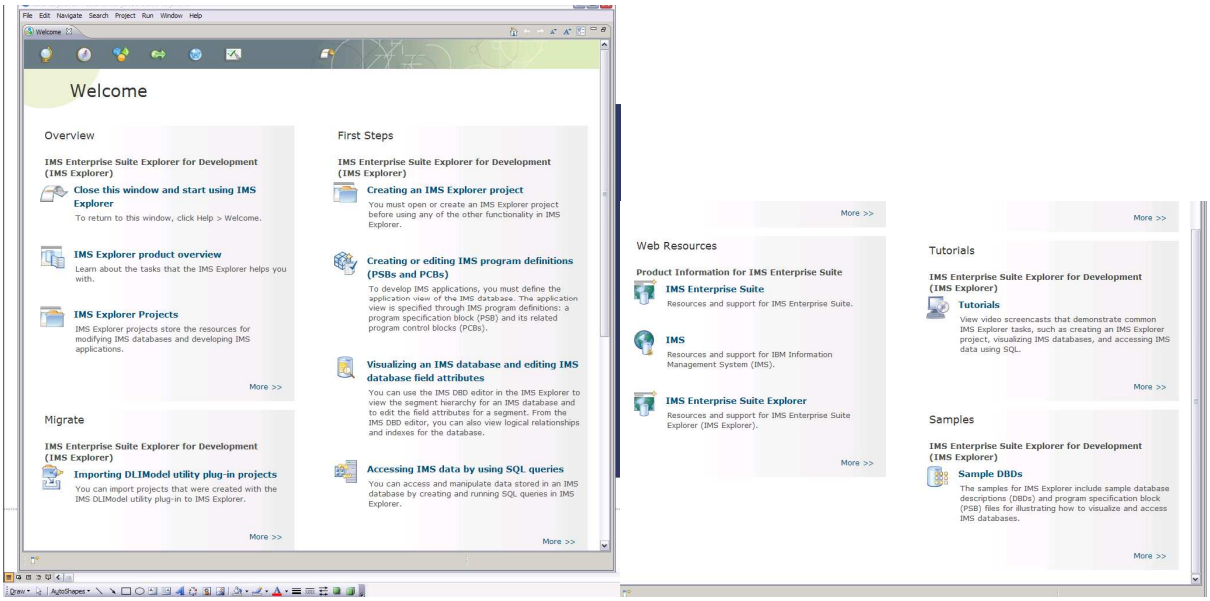


You may be prompted to select a workspace. A workspace is a directory that stores all of the files for the projects.

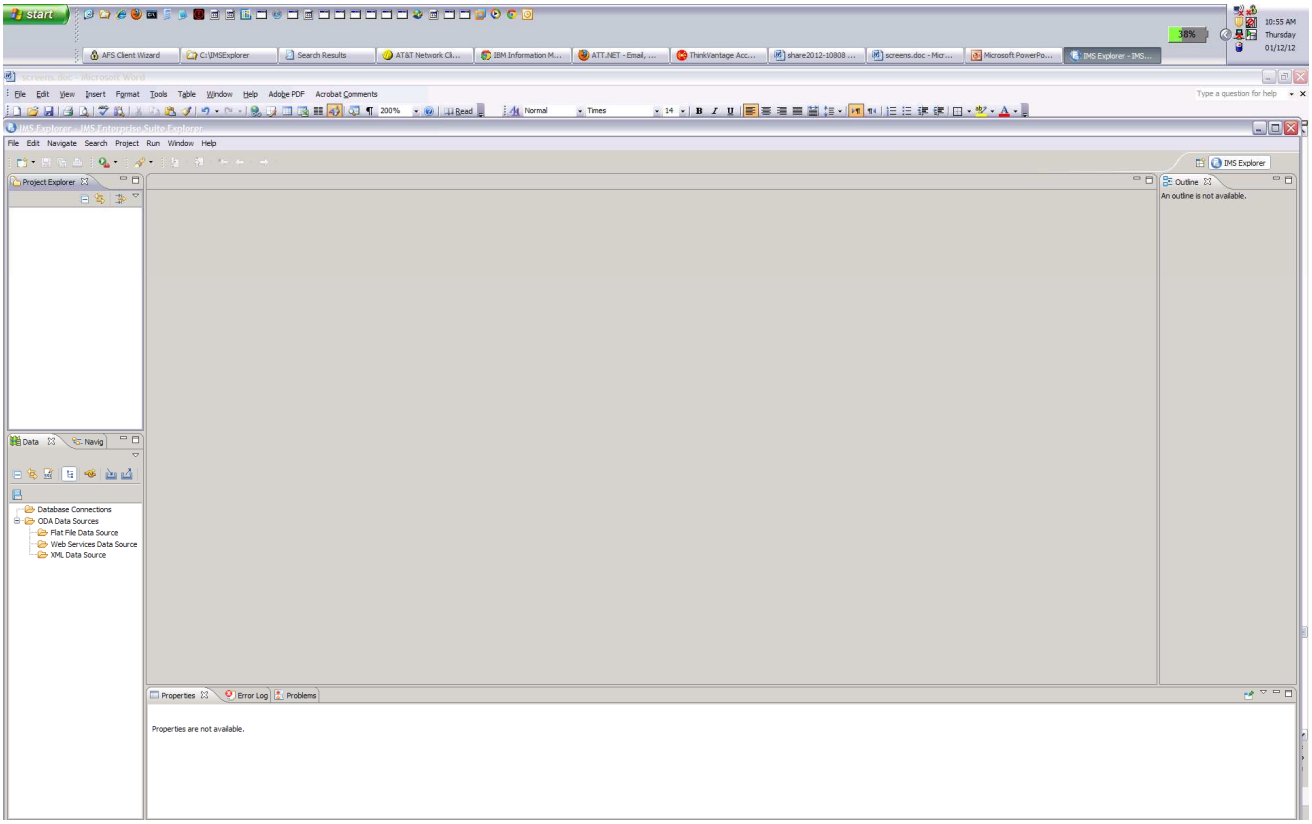
You can select your own directory, e.g., C:share\explorerlab\workspace or take the default directory.



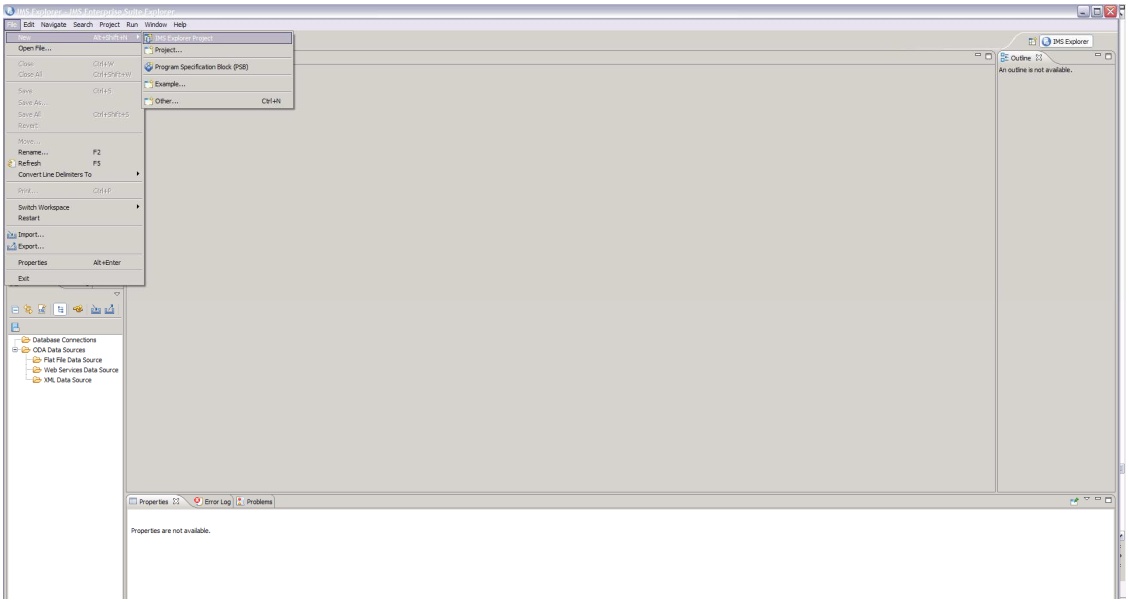
When Explorer startup is complete, you may be shown the Welcome Screen.



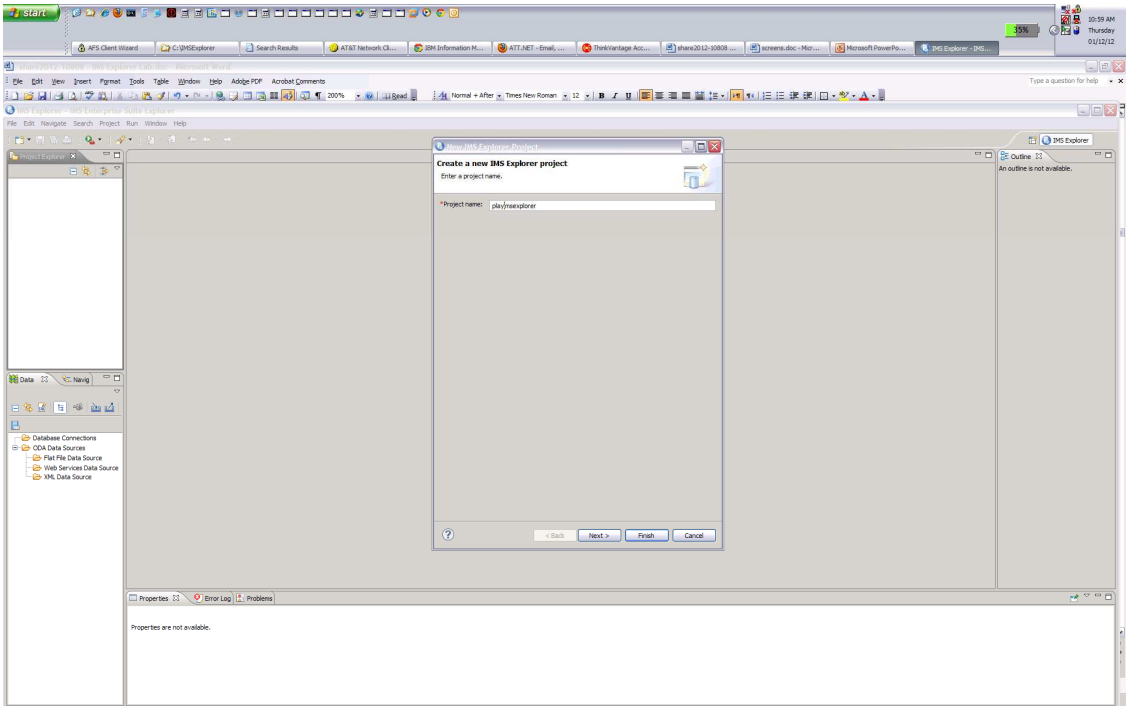
Close the Welcome page



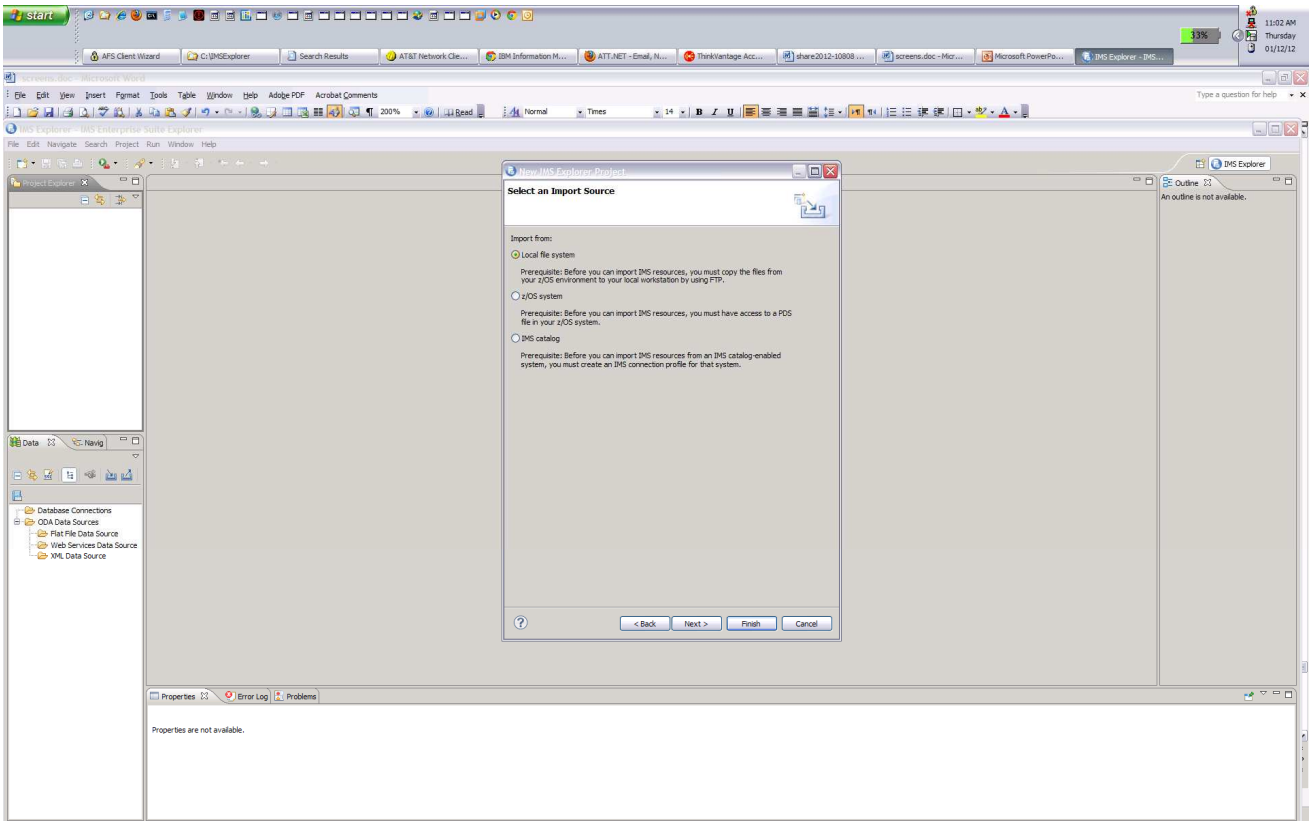
Click on File > New > IMS Explorer Project



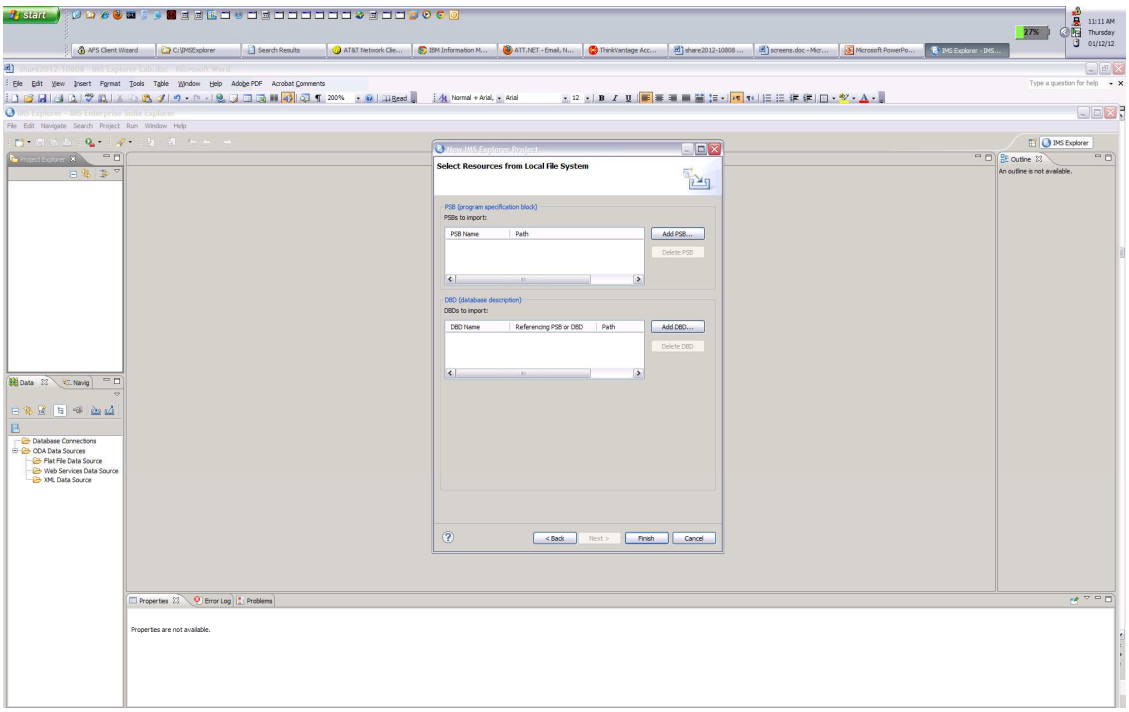
Enter a Project Name, e.g., playimsexplorer


Create a new IMS Explorer project
Enter a project name.
Project name:
play/mexplorer
Next >
Finish
Cancel

Click Next

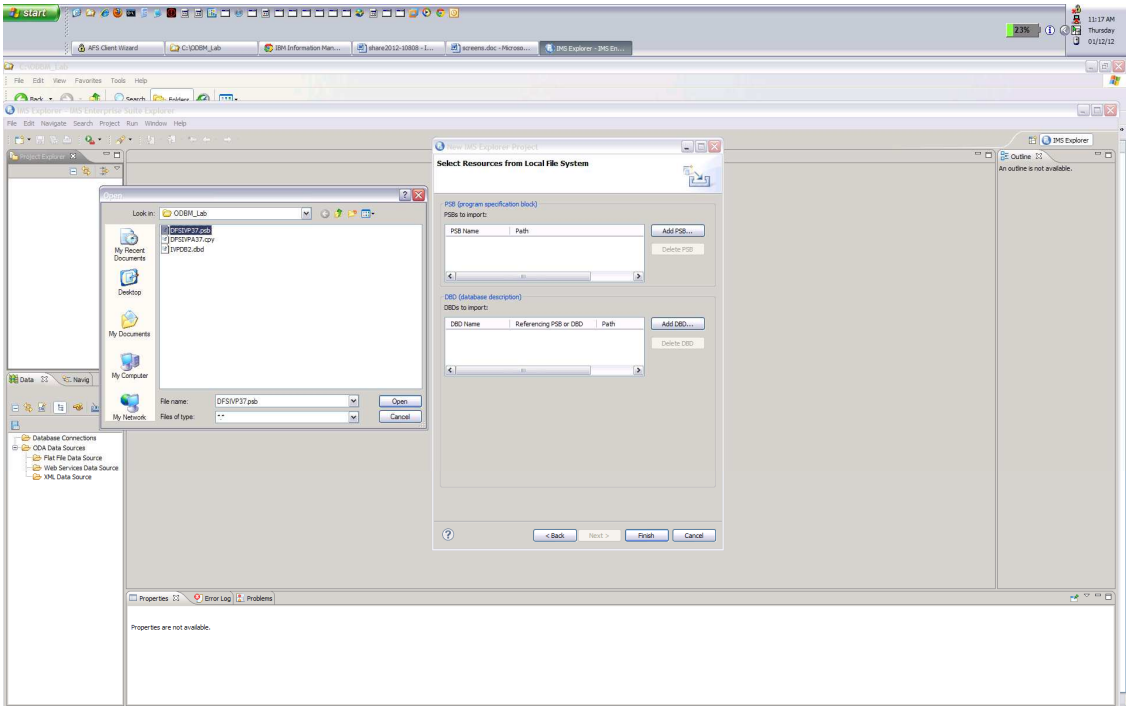

Select an Import Source
Import from:
Local file system
Prerequisite: Before you can import IMS resources, you must copy the files from your z/OS environment to your local workstation by using FTP.
z/OS system
Prerequisite: Before you can import IMS resources, you must have access to a PDS file in your z/OS system.
IMS catalog
Prerequisite: Before you can import IMS resources from an IMS catalog-enabled system, you must create an IMS connection profile for that system.
< Back
Next >
Finish
Cancel

On the Import IMS Resources (DBDs and PSBs) you can use Local file systems when the source files have been downloaded to your workstation. You can select z/OS system and connect to your z/OS system where your DBD/PSB is stored. For IMS 12 with Catalog function enabled you can obtain the Metadata.
For this lab we use local file systems source to create the Metadata and download source from z/OS to create the Metadata.
For this project select Local File system to obtain the source.
Click NEXT

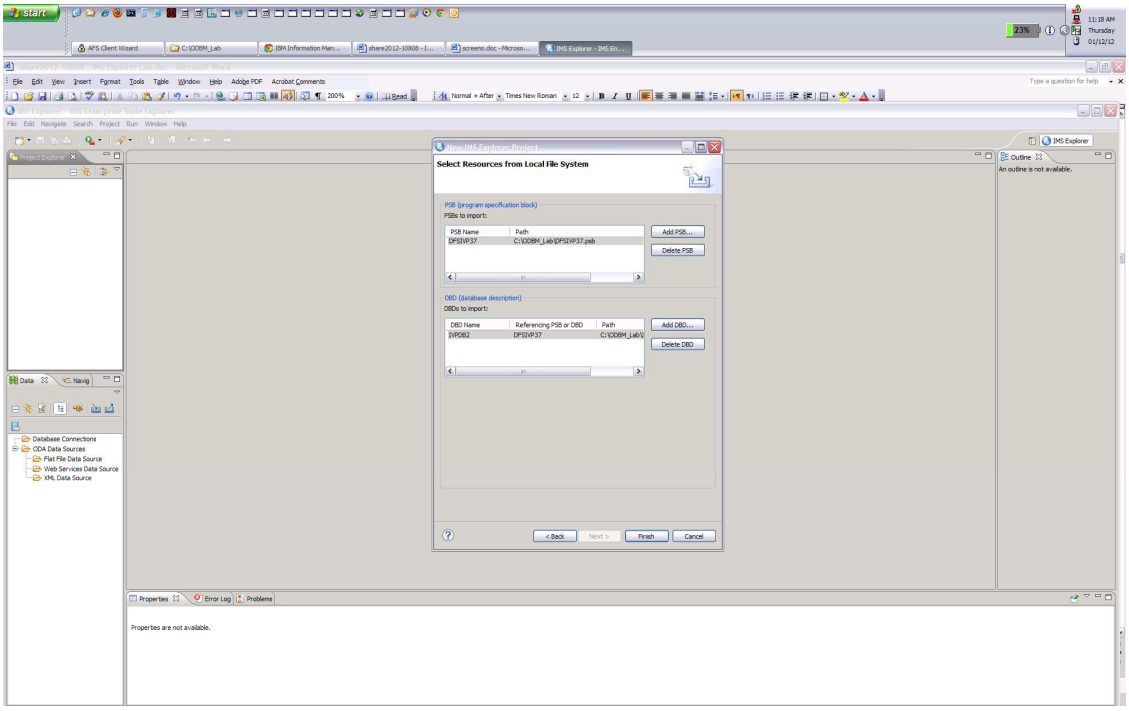


Select the Add PSB button
You will be asked to provide the PSB source. Use the Browse function to navigate to the path where the DFSIVP37.psb source is located.

C:\ODBM_lab

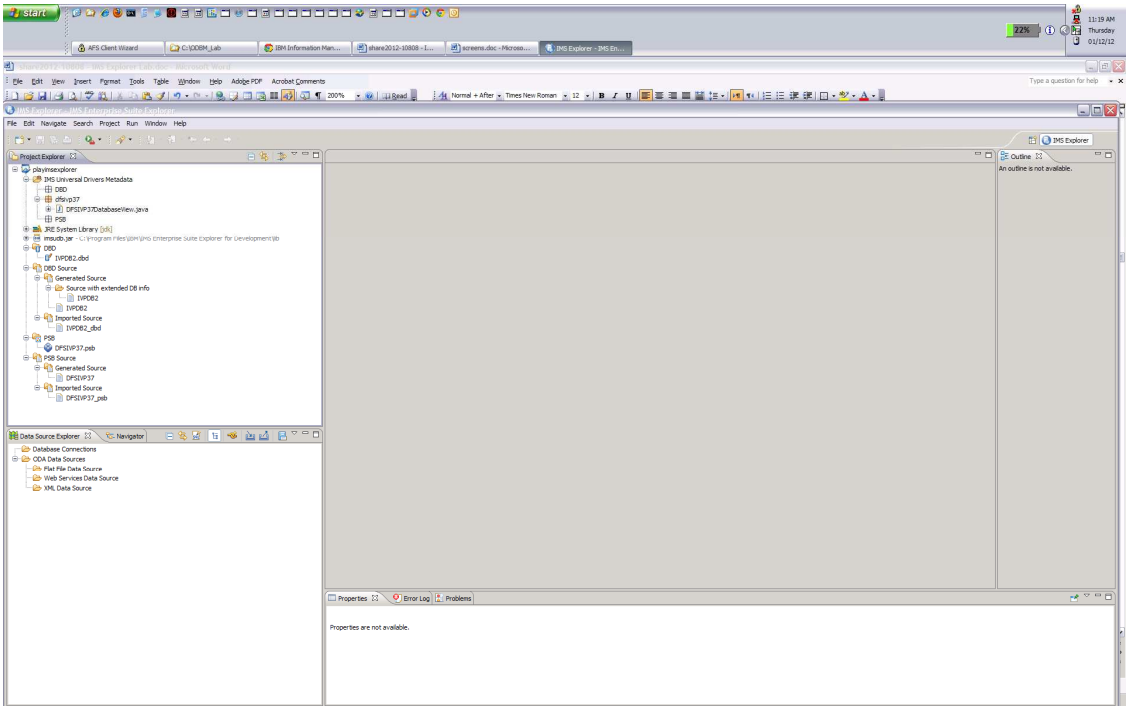


On the Open box select DFSIVP37.psb. and click Open Note since the IVPDB2 source box is in the same directory it is included in the import.



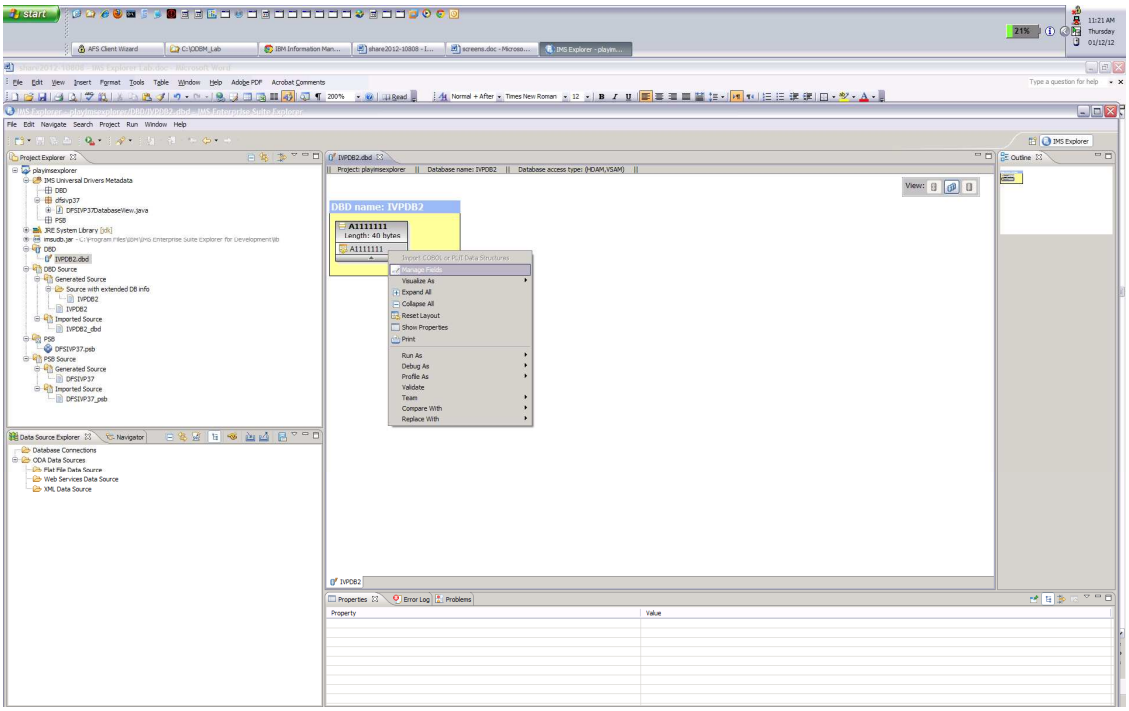
Click Finish to activate the parsing of the PSB and DBD.

After parsing completes your project is created. click on the + to open the project and navigate to the DBD folder. To open the basic view double click on IVPDB2.dbd

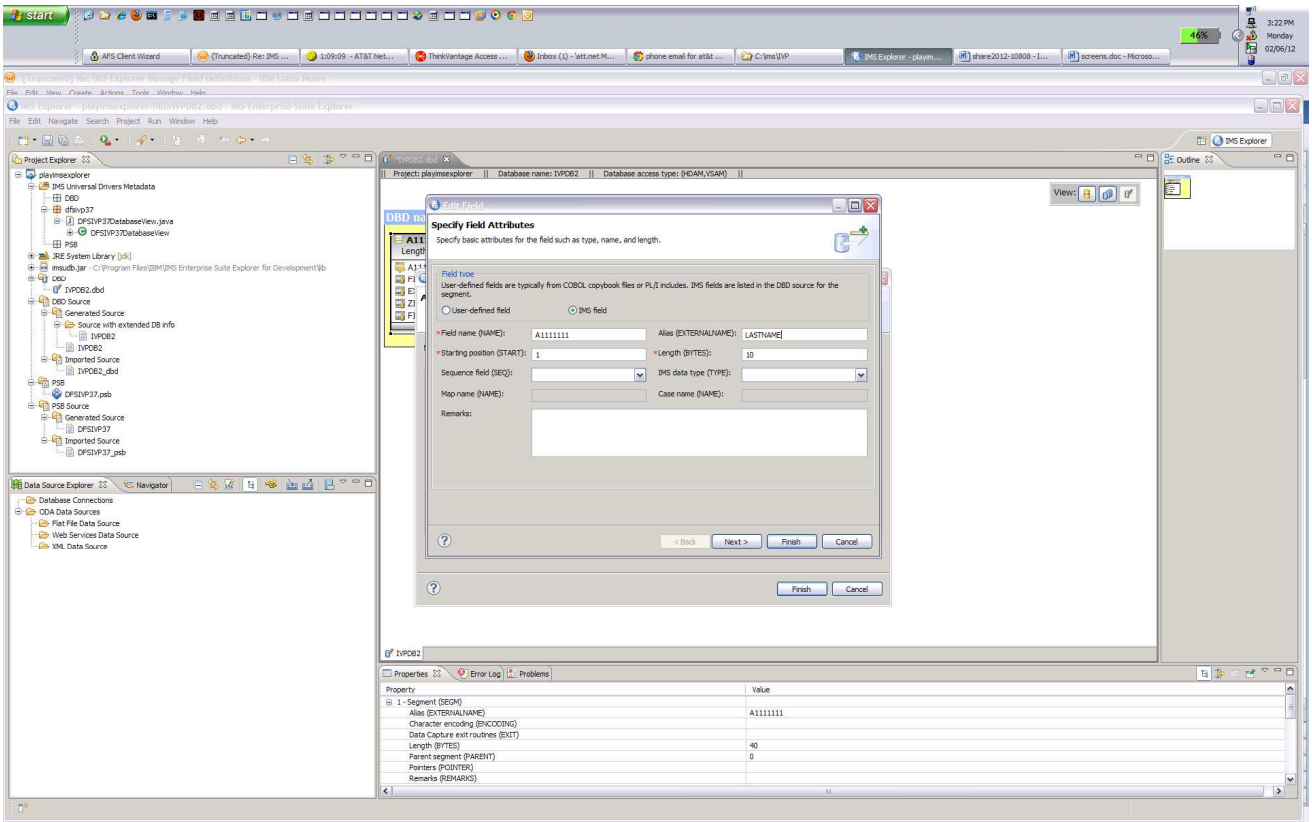


The Manage Fields function is used to add more fields to the segment since only the first 10 bytes are defined.

Right click on A1111111 and select Manage Fields



Select A111111 and enter LASTNAME for alias name

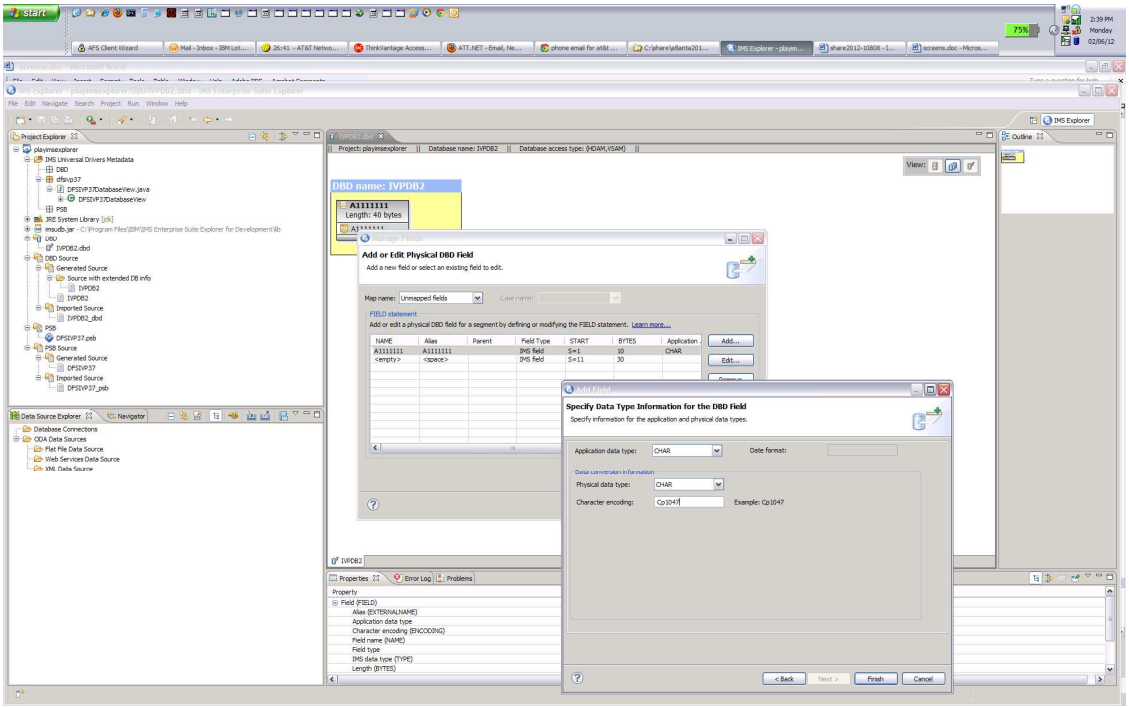


Select next and complete Data type definitions

Application Data Type from drop down list select Char

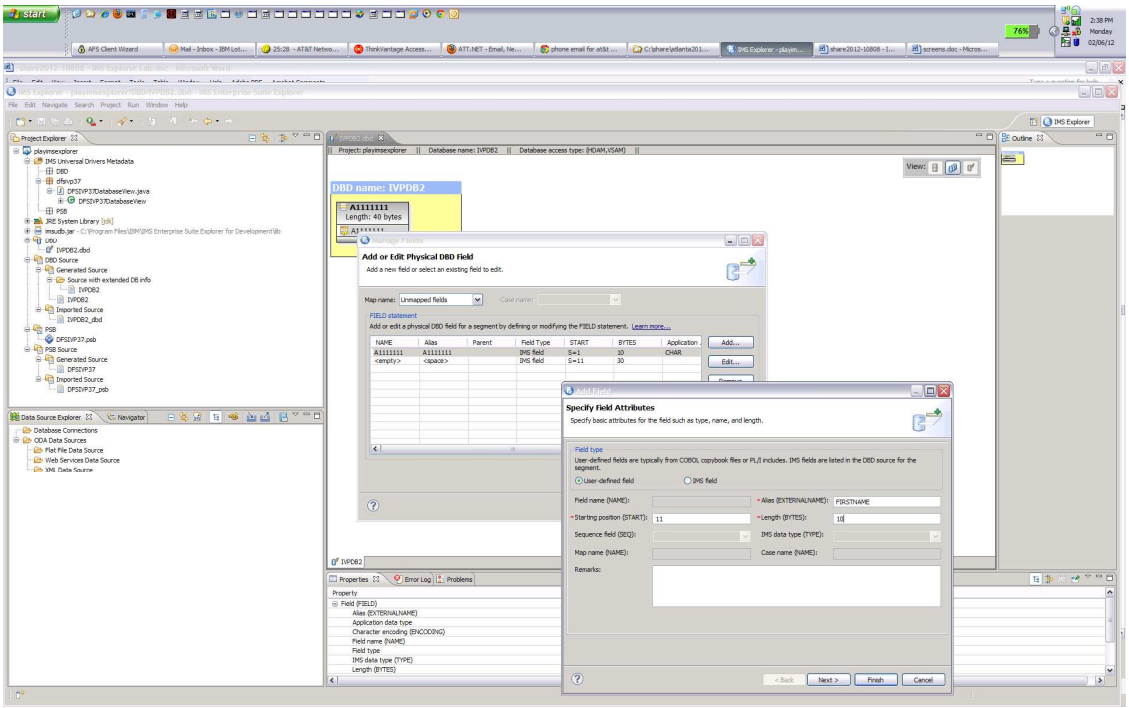
Physical Data Type from drop down list select Char

Character encoding enter: Cp1047



Click Finish

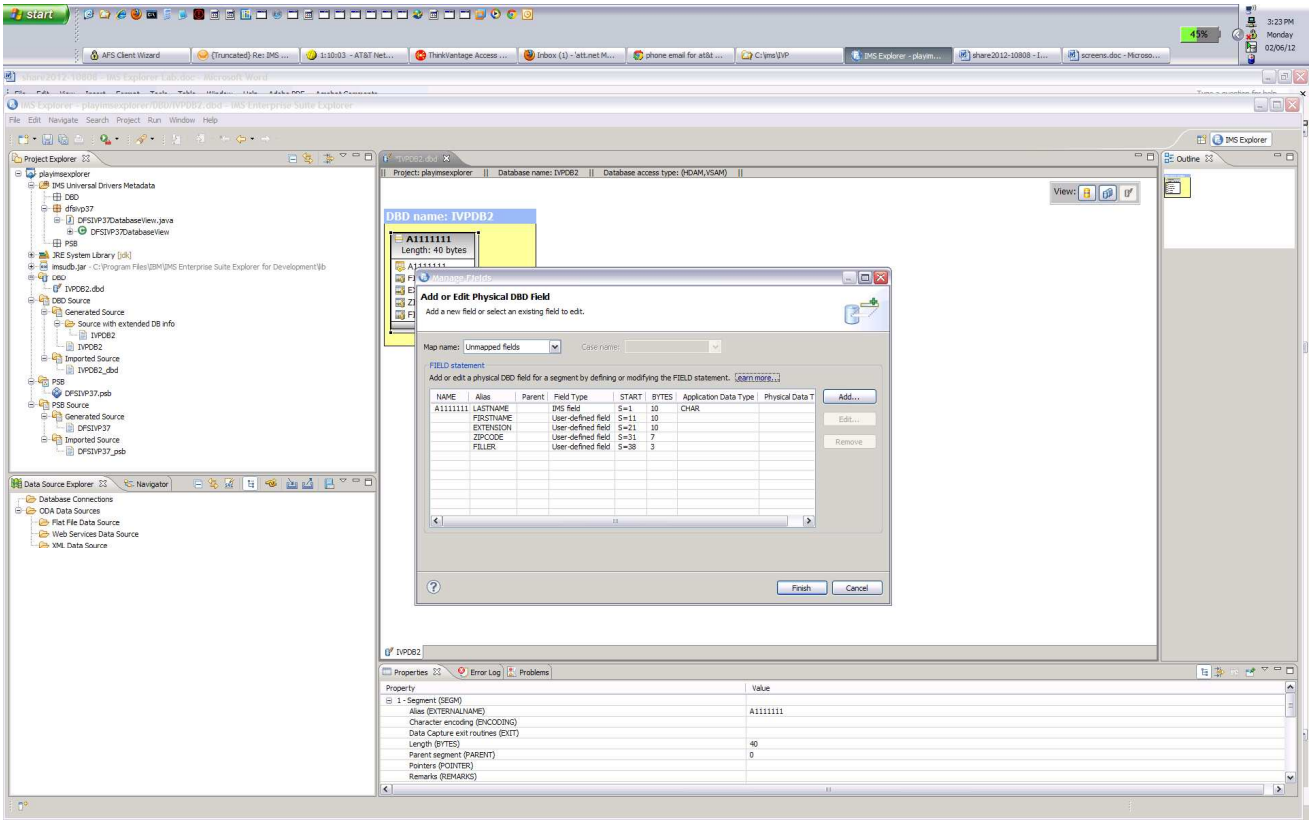
Repeat (Right click on A1111111 Manage Fields) to add more fields



Select <empty> Name field <space> Alias field use ADD button create field defintions.

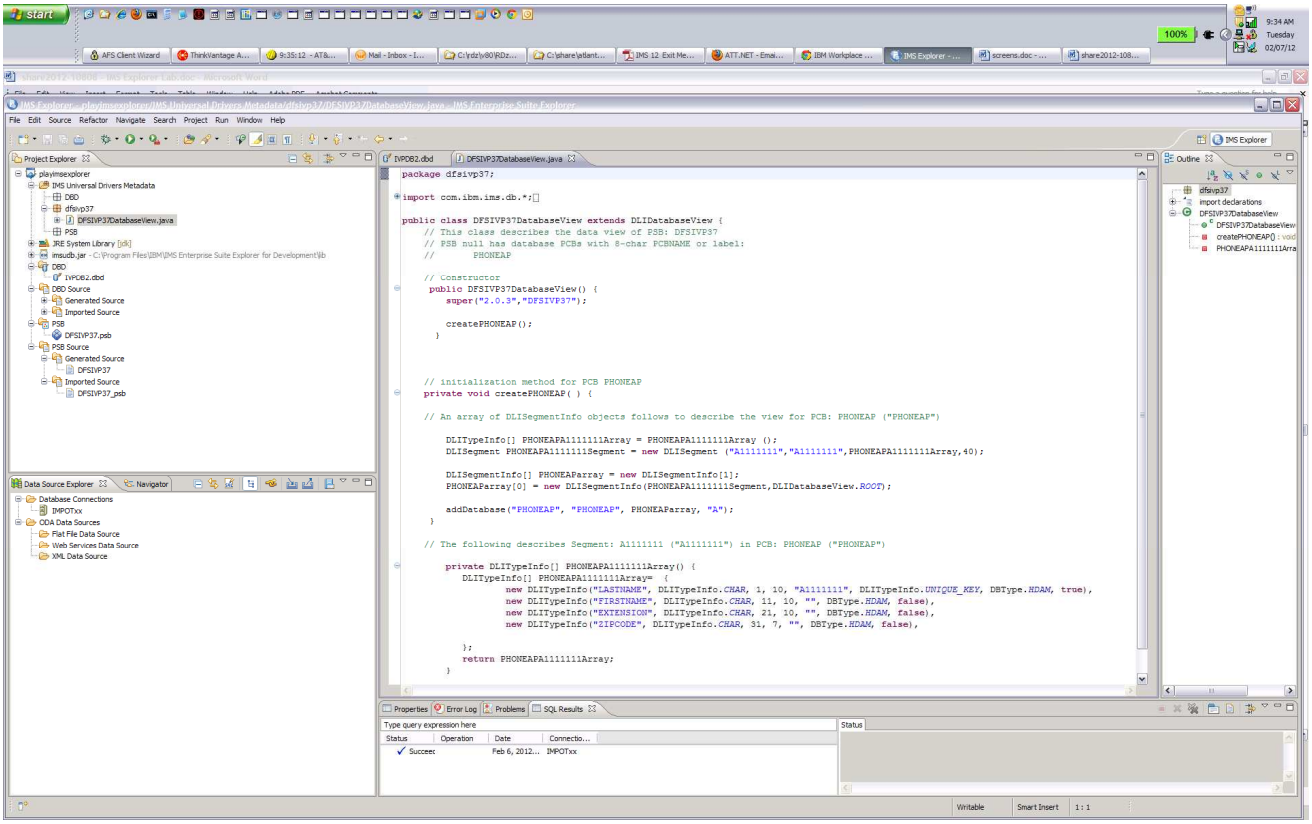
Set FIRSTNAME for alias name, verify starting positing is 11 , set length to 10 , select

User-defined field button
Select next and complete Data type definitions
Application Data Type from drop down list select Char
Physical Data Type from drop down list select Char
Character encoding enter: Cp1047
and click Finish
Set EXTENSION for alias name , verify starting position is 21 , set length to 10 and select User-defined field button
Select next and complete Data type definitions
Application Data Type from drop down list select Char
Physical Data Type from drop down list select Char
Character encoding enter: Cp1047
and click Finish
Set ZIPCODE for alias name , verify starting position is 31 , set length to 7 and select User-defined field button
Select next and complete Data type definitions
Application Data Type from drop down list select Char
Physical Data Type from drop down list select Char
Character encoding enter: Cp1047
and click Finish
Set FILLER for alias name ,verify starting position is 38 , verify length is 3
Click Finish to take default values and then click Finish on the Add or Edit Physical DBD Field to complete the segment field defintions.
You have now defined the fields representing the 40 bytes of the segment.



Use Ctrl-S to save the changes or just use the x tab to close the view.

Follow the path IMS Universal Drivers Metadata>dfsivp37> and double-click DFSIVP37DatabaseView.java to view the updates to the metadata.



Note the addition of the LASTNAME, FIRSTNAME, EXTENSION, ZIPCODE and Filler fields. This completes the building of the metadata.

This completes part 1 of the lab

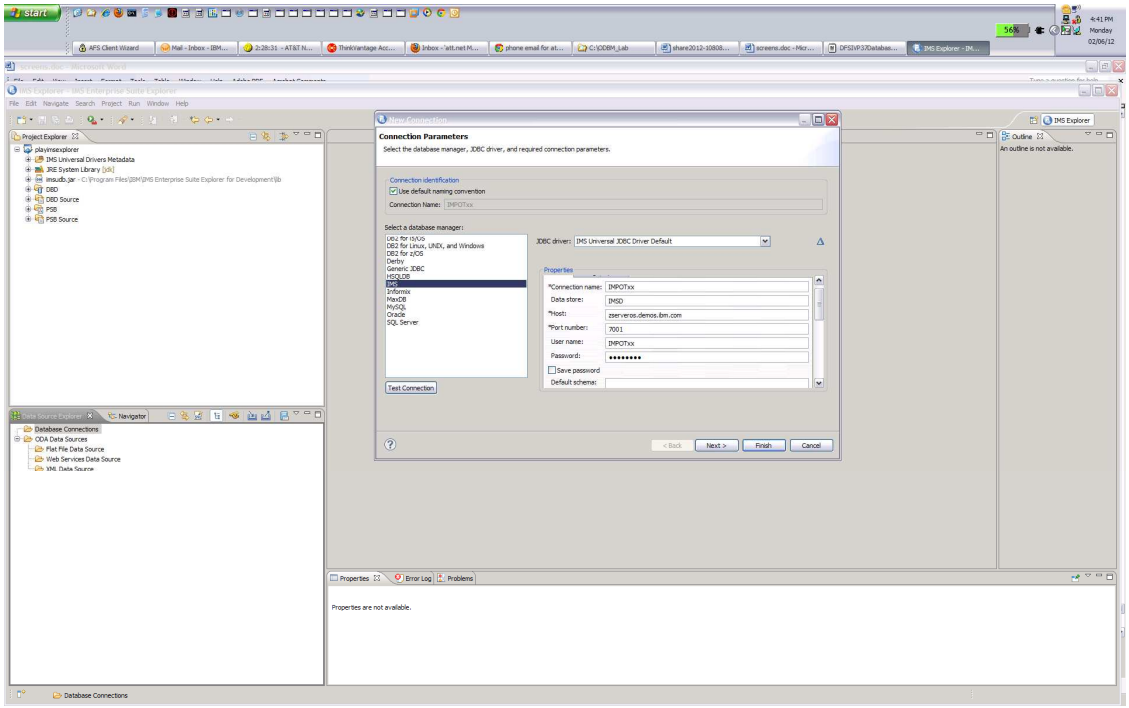
Part 2

In this section you will use the Data Store Explorer (DSE) in IMS Explorer to access the IMS Phone Book database using the metadata you created in Part 1.

- You can create and manage connections to IMS™ databases by using the Data Source Explorer.

To connect to an IMS database use the New Connection wizard to create a connection profile, so that you can connect to an IMS database and browse existing data objects:

1. In the Data Source Explorer, right-click the Database Connections folder, and click New.
2. Select IMS as the database manager and the driver name IMS Universal JDBC Driver as the JDBC driver.



In the Connection Name field enter IMPOTxx where xx is your team number

In the Data Store field enter IMSD

In the HOST field enter zserveros.demos.ibm.com

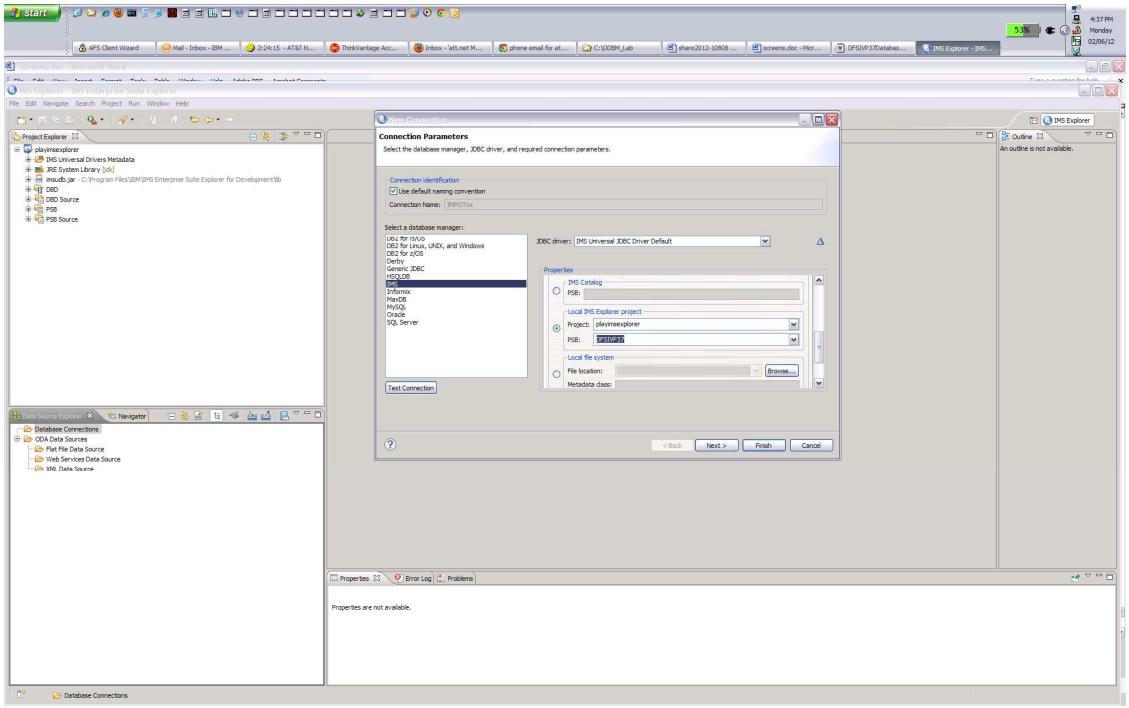
In the Port number field enter 7001

In the userid field enter IMPOTxx where xx is your team number

In the password field enter IMS06POT

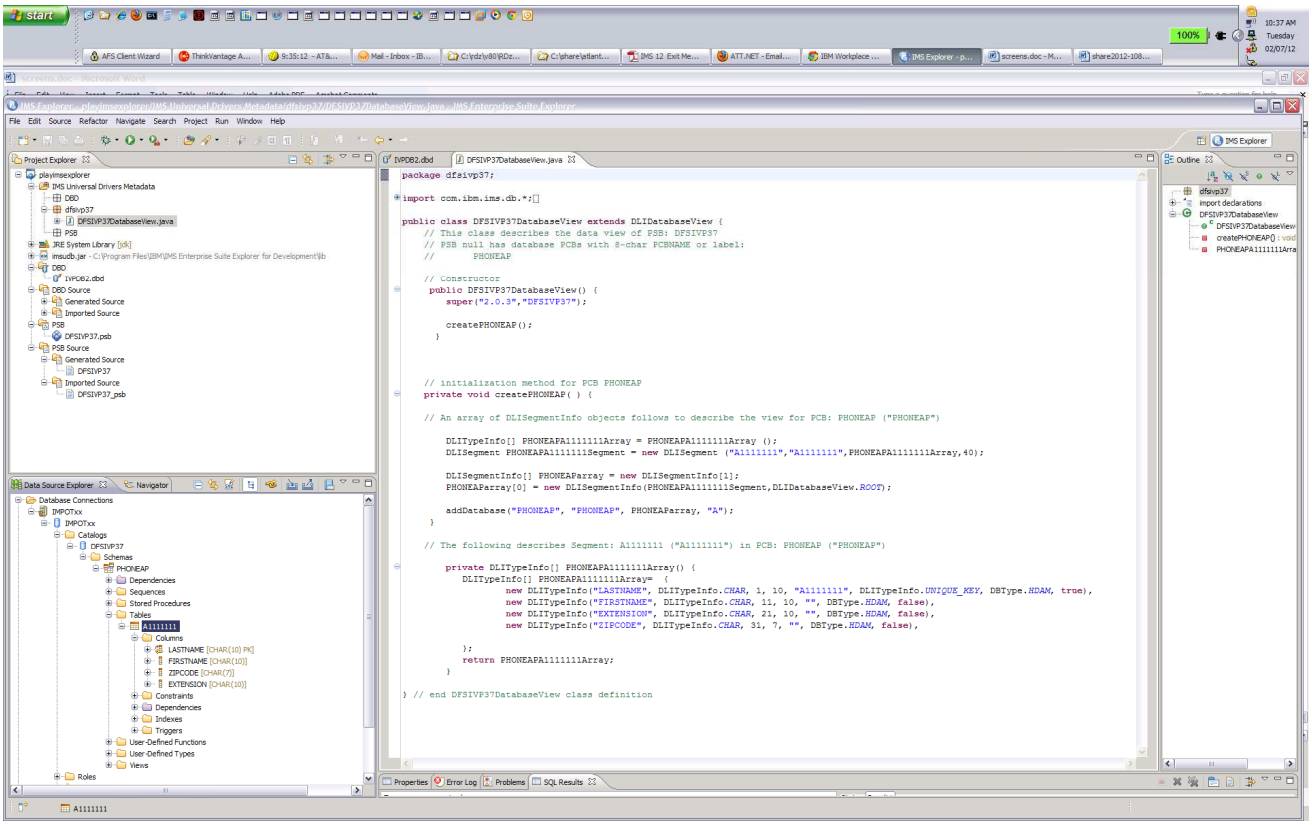
Scroll down to Local IMS Explorer project and select the radio button

The project drop down list select your project, e.g., playimsexplorer



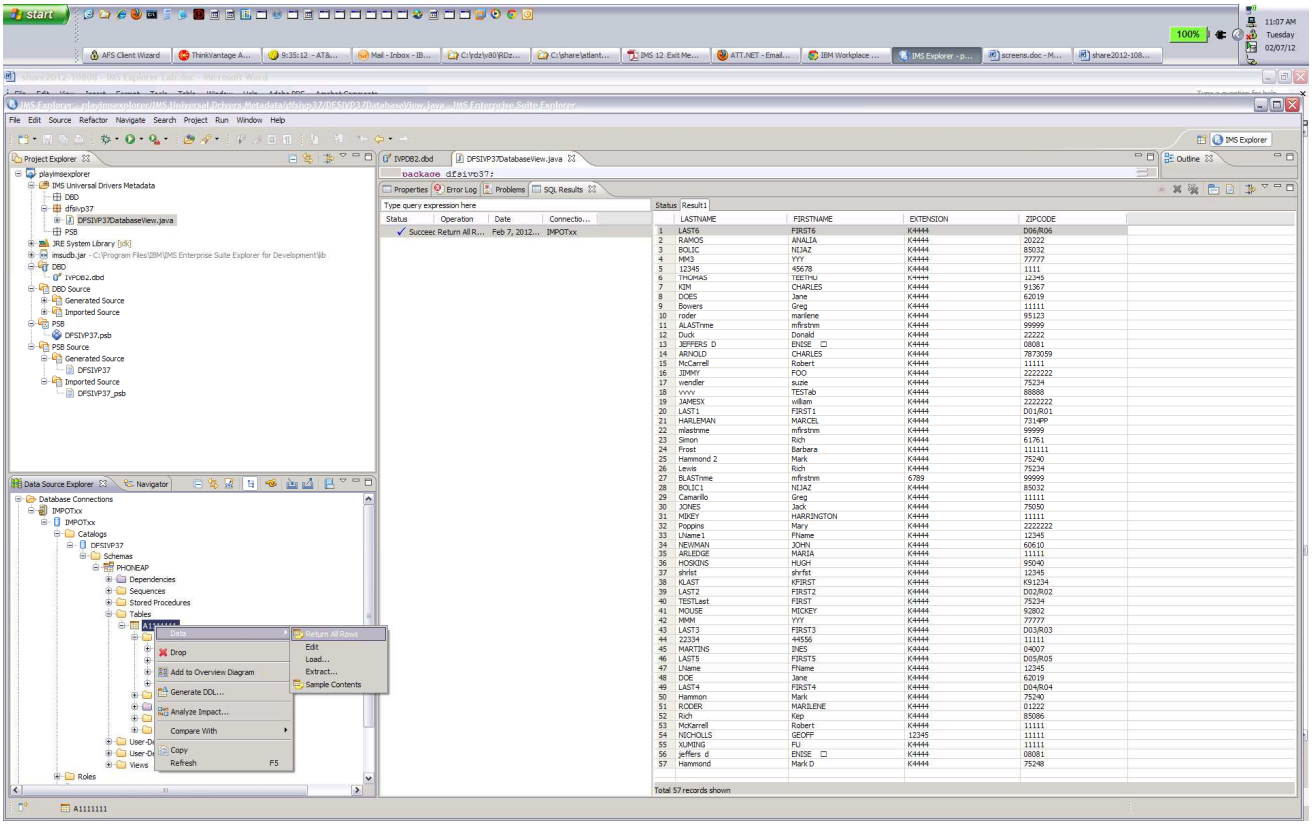
3. Click Finish.

The connection is displayed in the Data Source Explorer.



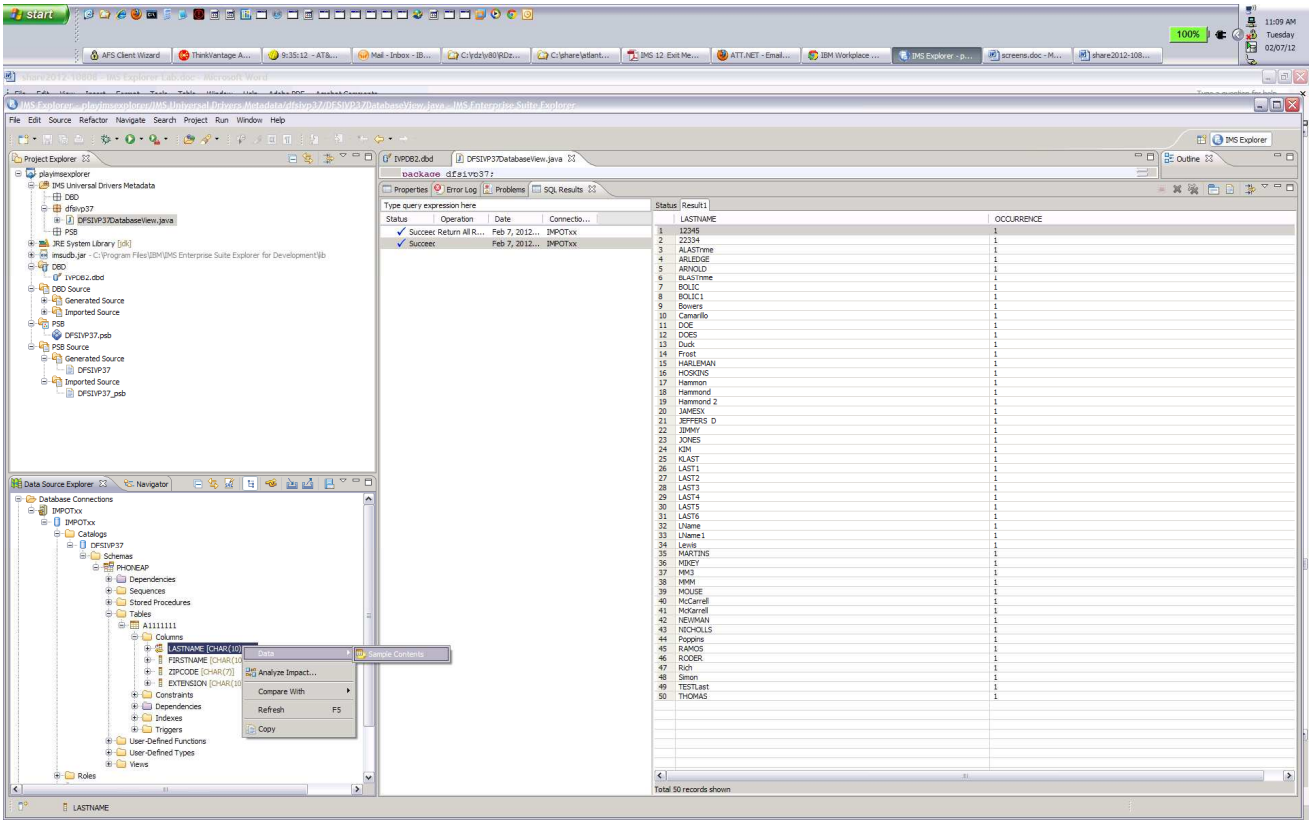
- To test the connection in the Data Source Explorer section under Database Connections, right click on DFSIVP37.
- Expand the path to columns and select A1111111.

- Right click and select Data then click on return all rows to return data.



You can now also issue additional queries. In between queries, you might need to disconnect/reconnect the connections.

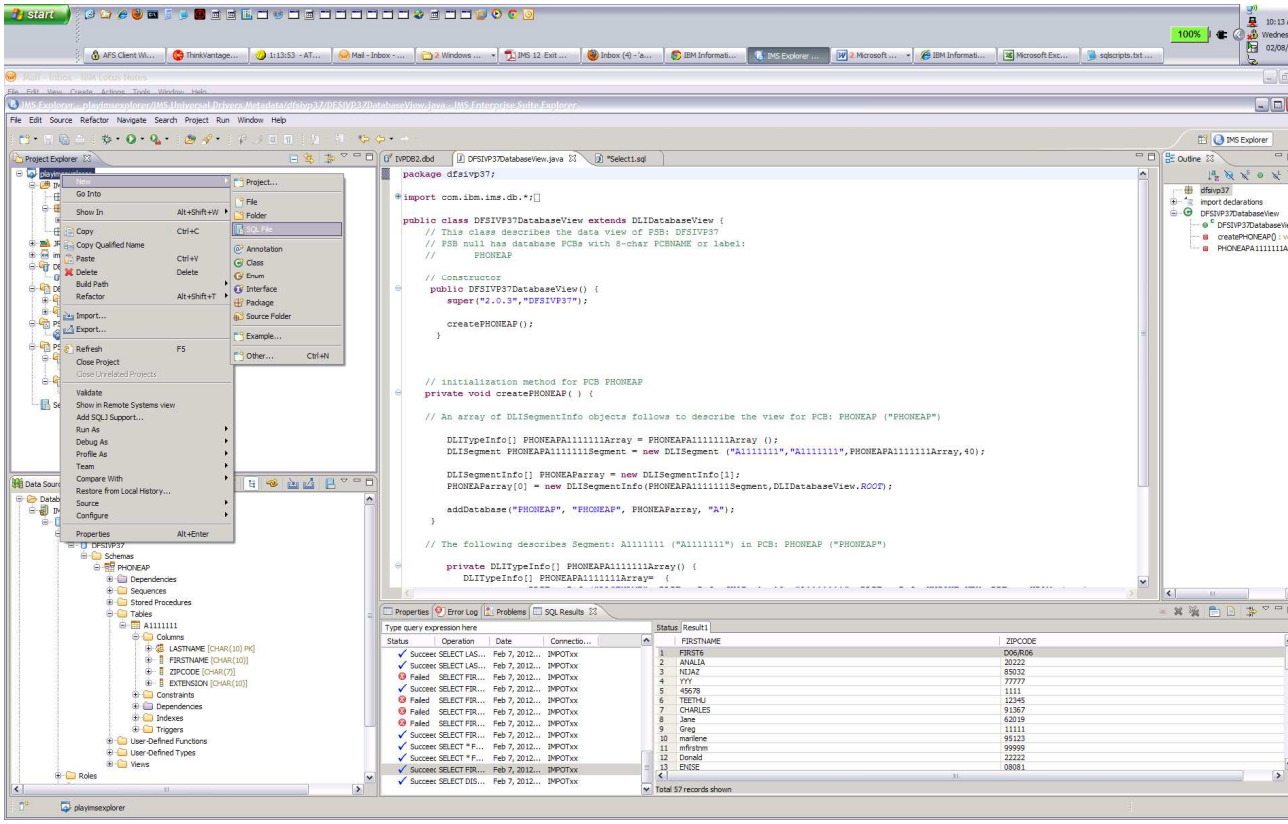
You can look at individual columns,
Select LASTNAME ,right click and select Data then click on sample contents to return data



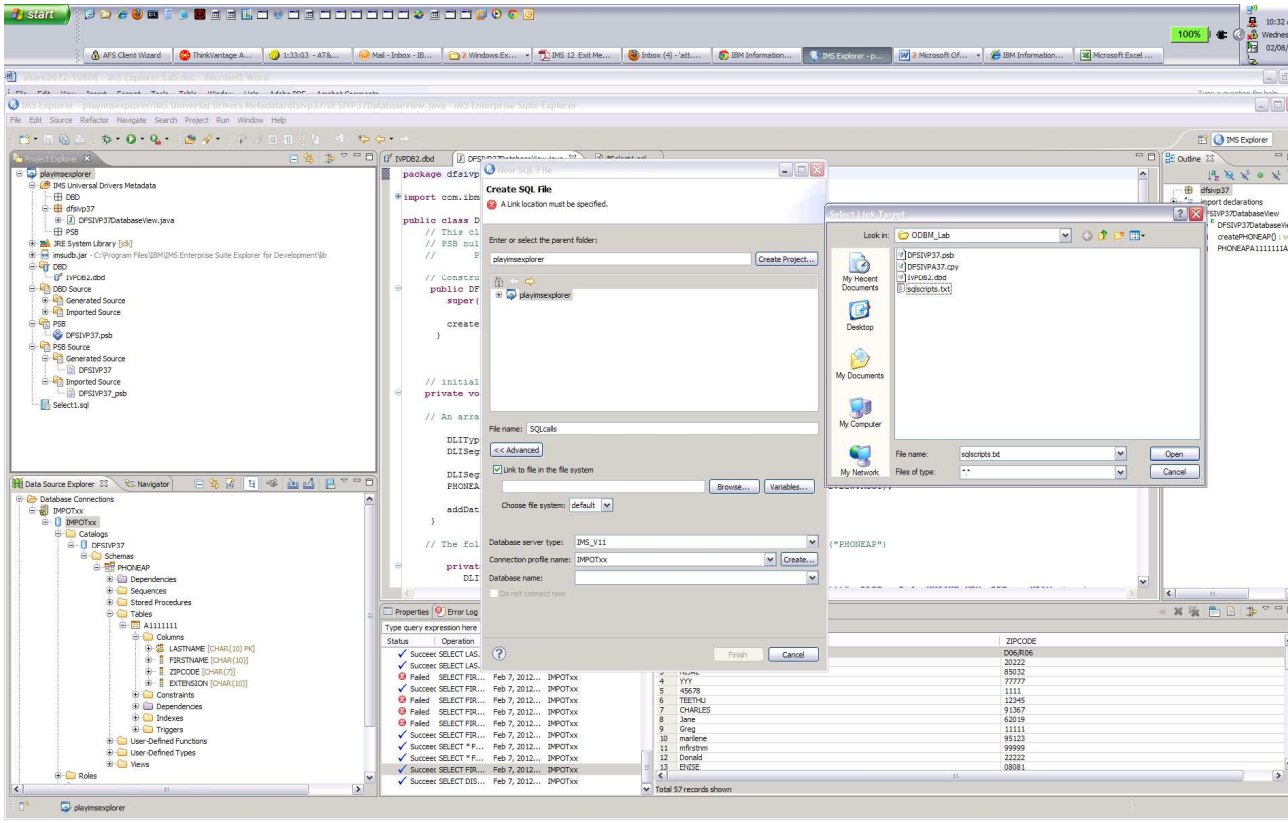
You can insert your own name into the database:

To create and run custom SQL queries against the IMS database:

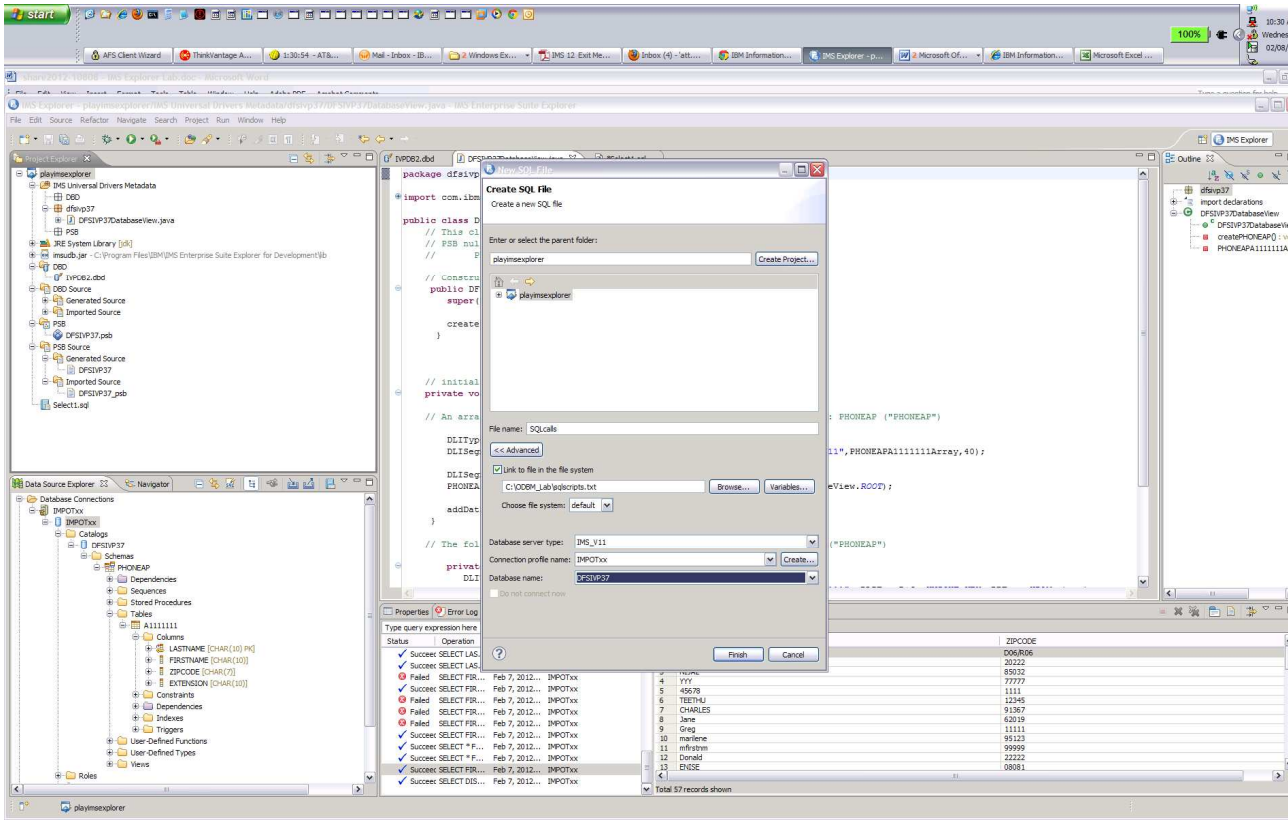
1. Select your project e.g., playimsexplorer.
    a. Right click New > SQL File and left mouse click.



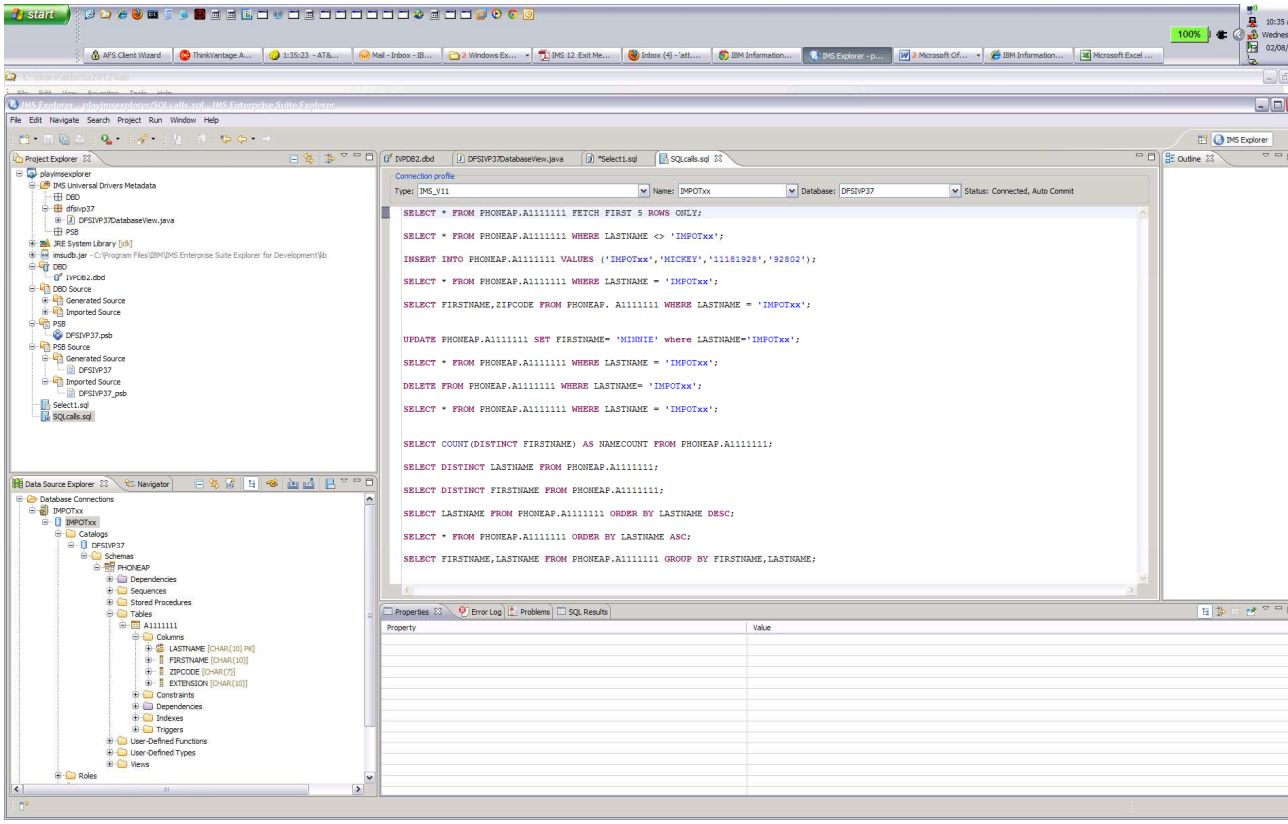
b. Enter SQLcalls for file name, click the advanced tab and check Link to file in the system box. Browse for C:ODBM_Lab folder and select sqlscripts.txt file then click Open tab.



c. For Database name: field use the drop down tab and select DFSIVP37.

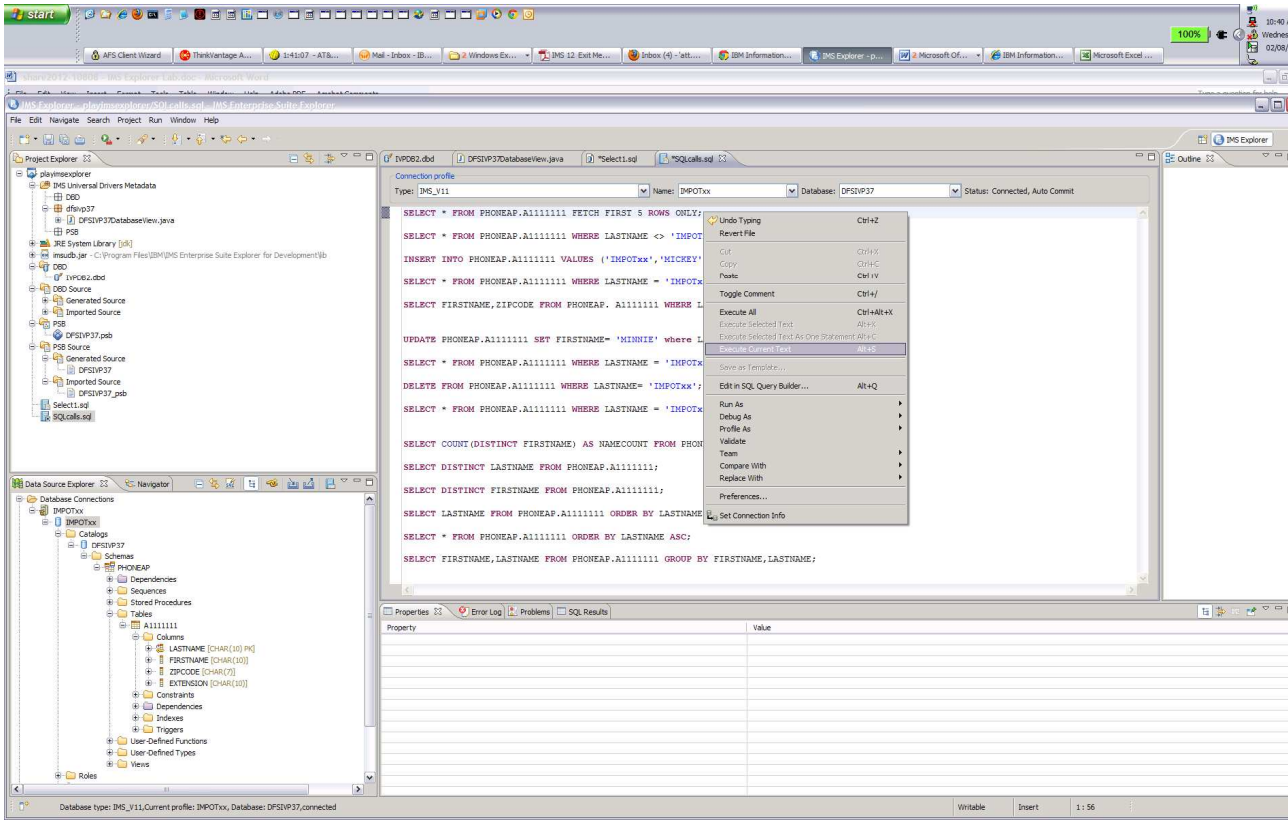


d. Click Finish.

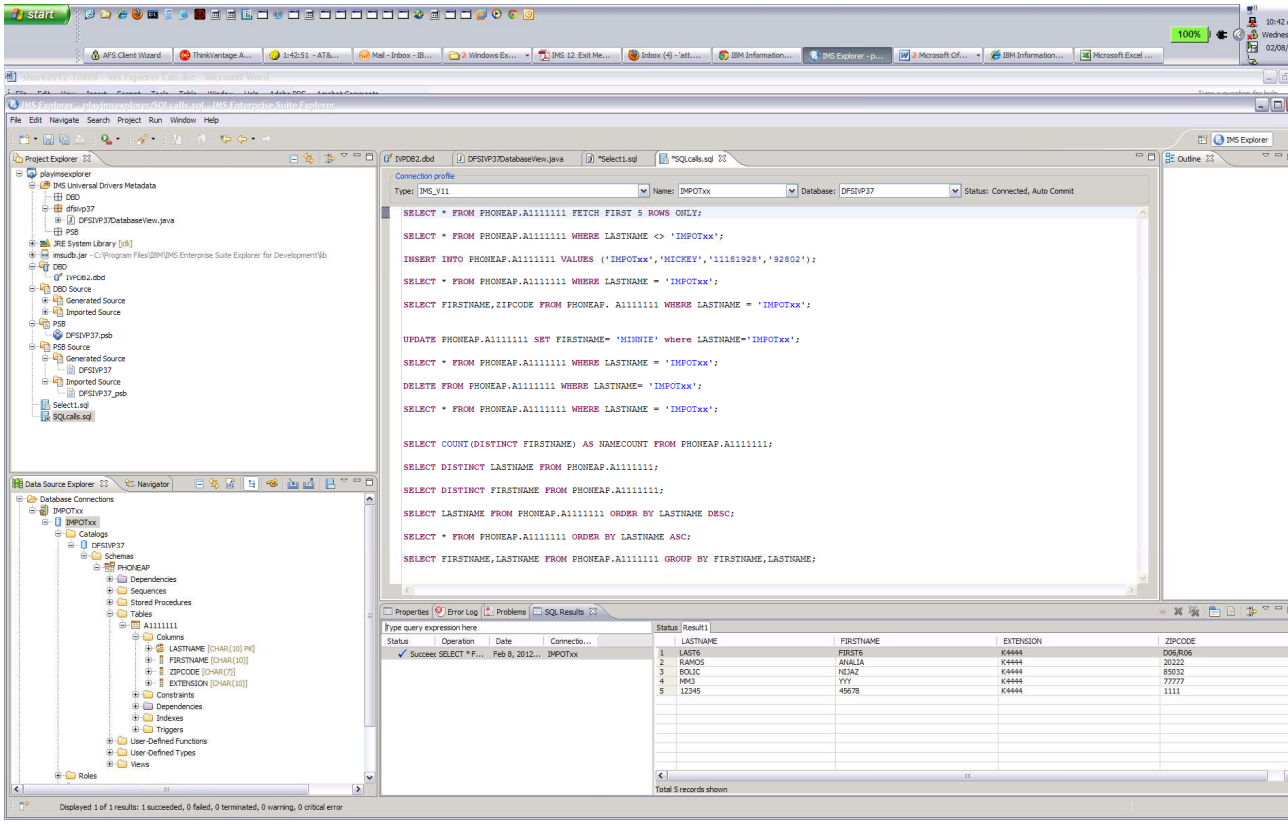


Change IMPOTxx to your team number

Select an SQL query and right mouse click



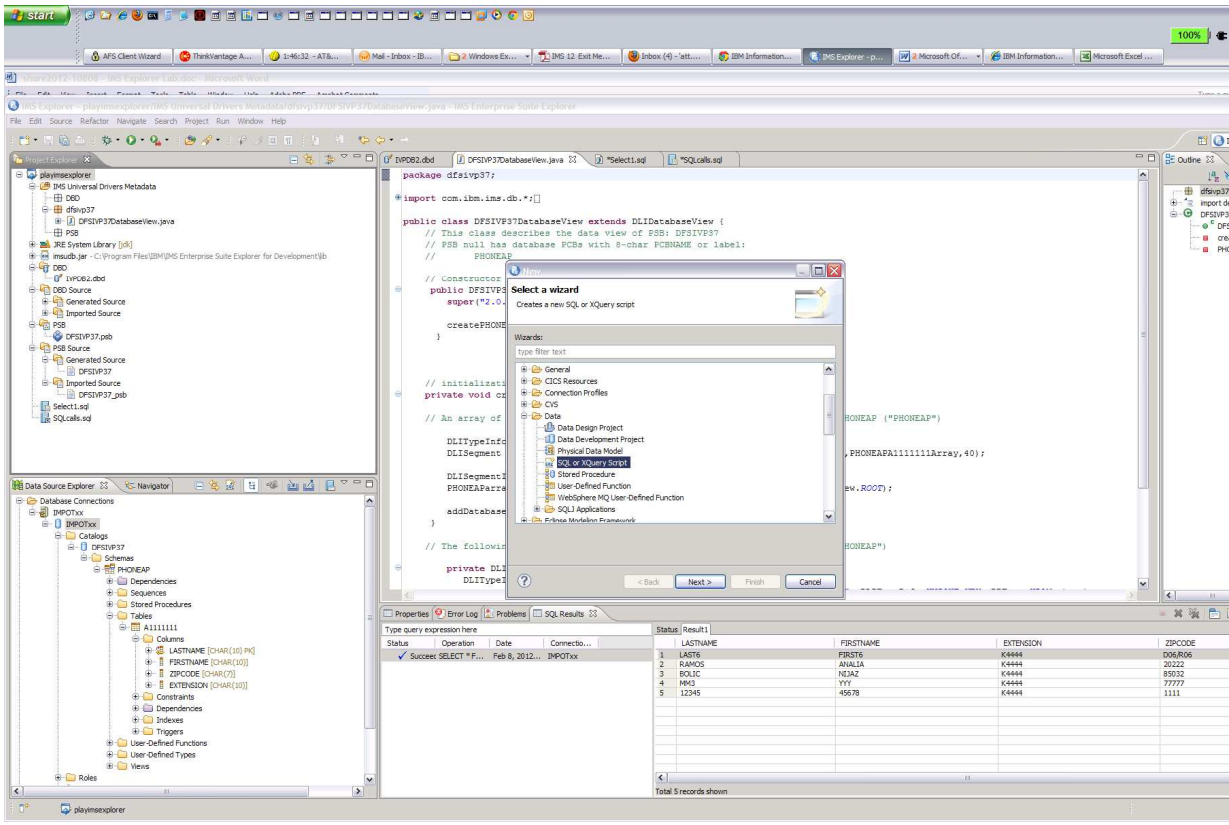
Select the Execute Current Text to run the SQL call



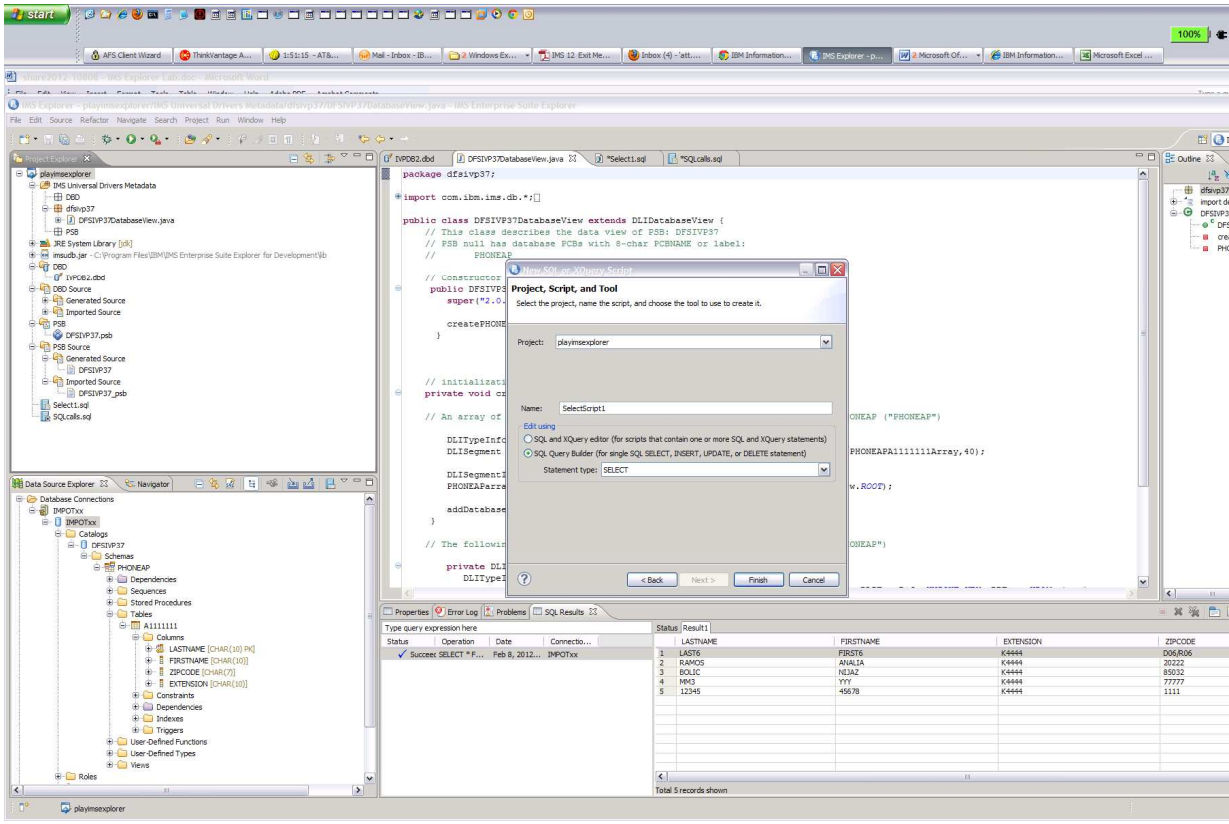
Try other SQL calls.

2. Create a SQL calls by using the SQL Query Builder.
    a. Select your project e.g., playimsexplorer.
    b. Right click New > Other

c. In the Select Wizard box expand

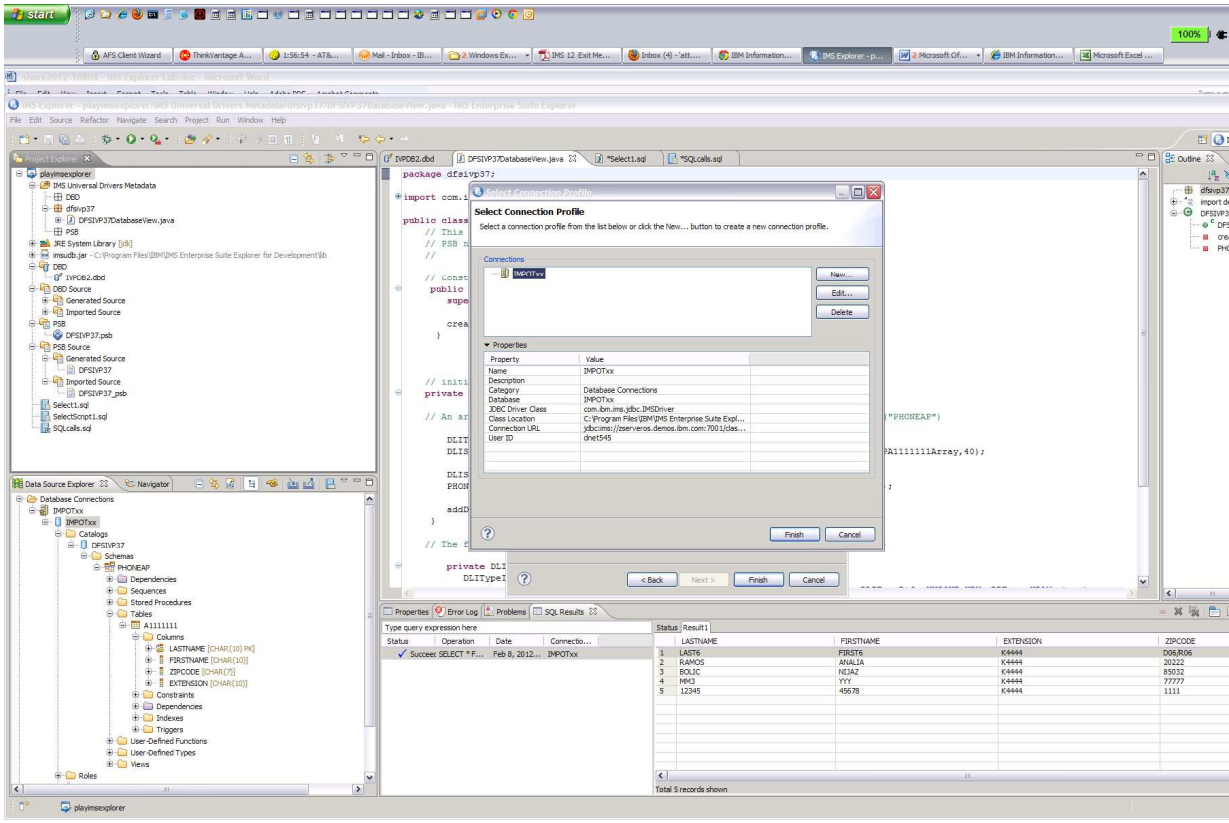


d. Expand the Data folder and select SQL or XQuery Script then click next.



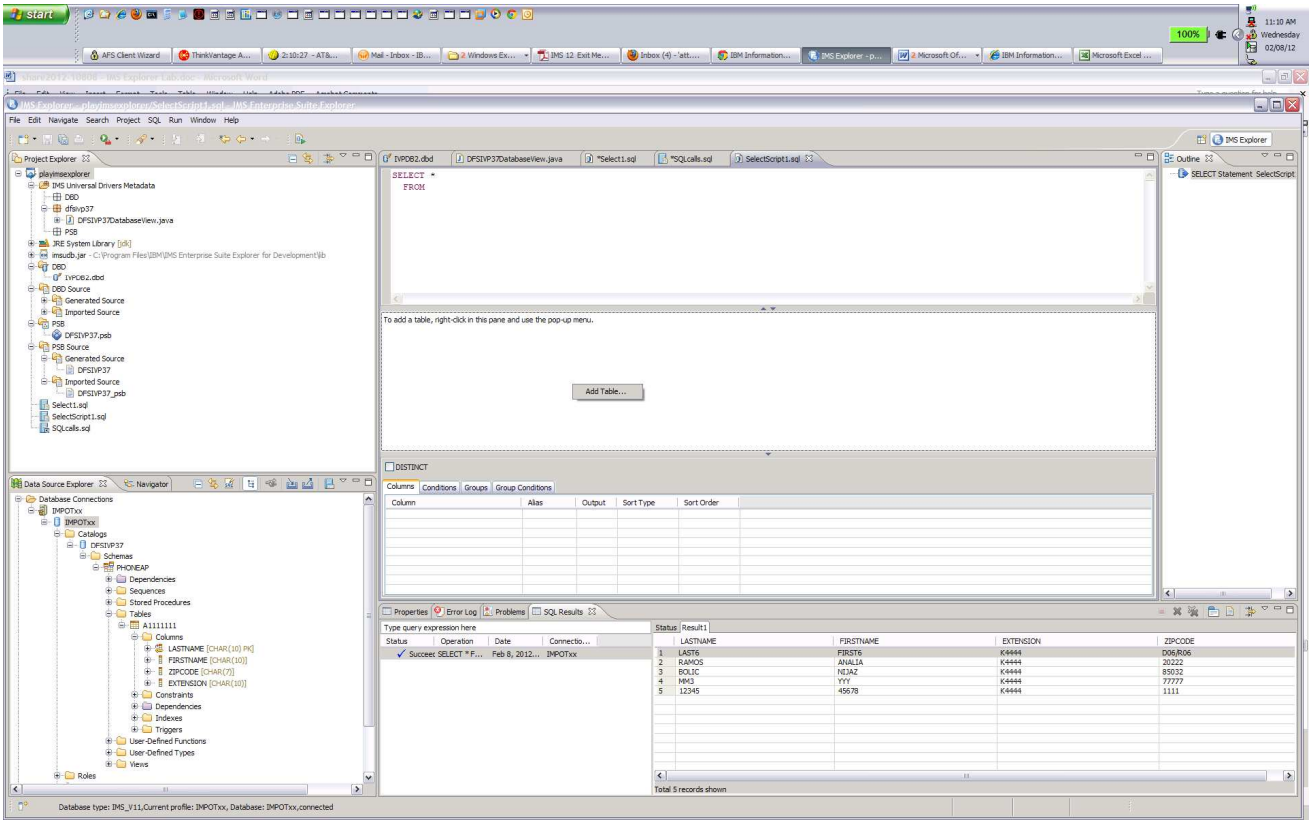
e. In the box change Name: to SelectScript1 and select SQL Query Builder(for single SQL … radio button and click Finish.

f. When the Select box appears verify the connection is your IMPOTxx defined connection

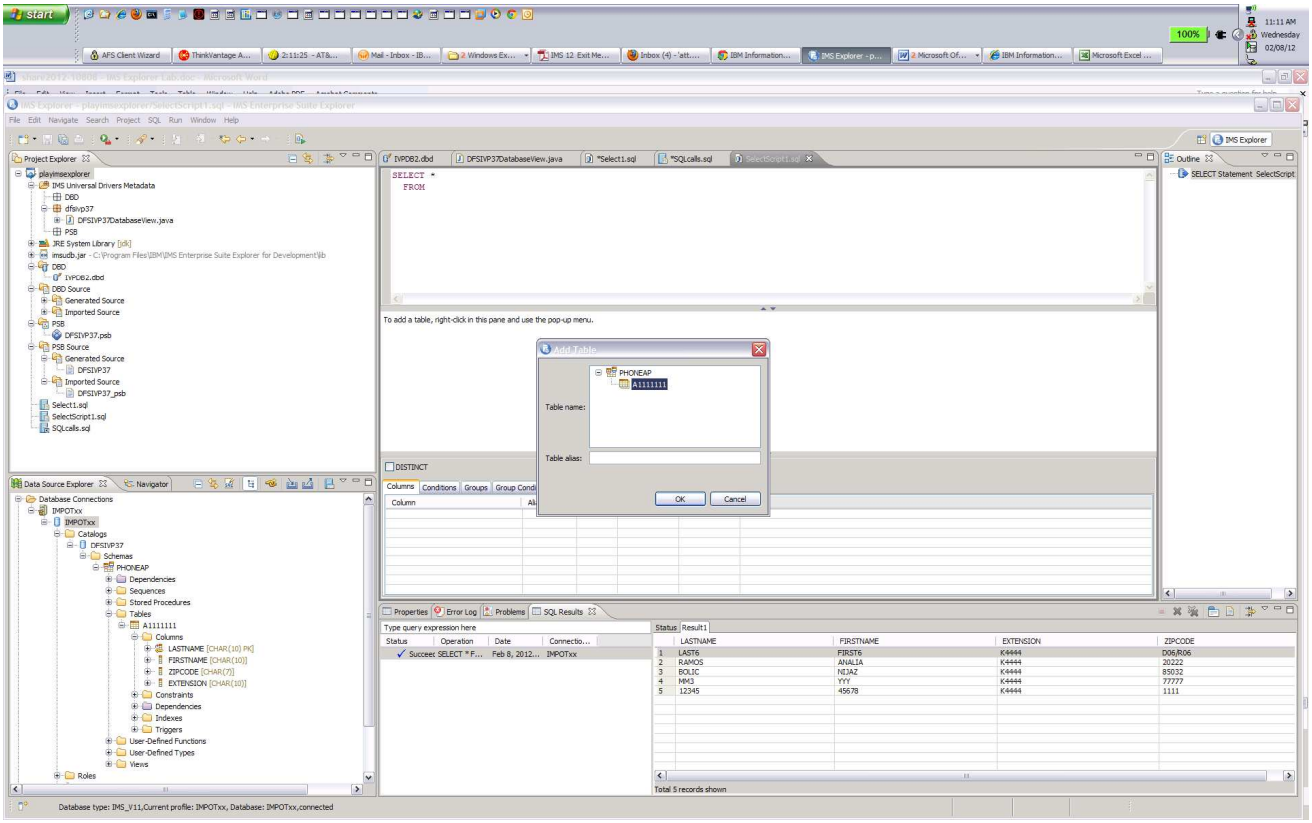


and select Finish.

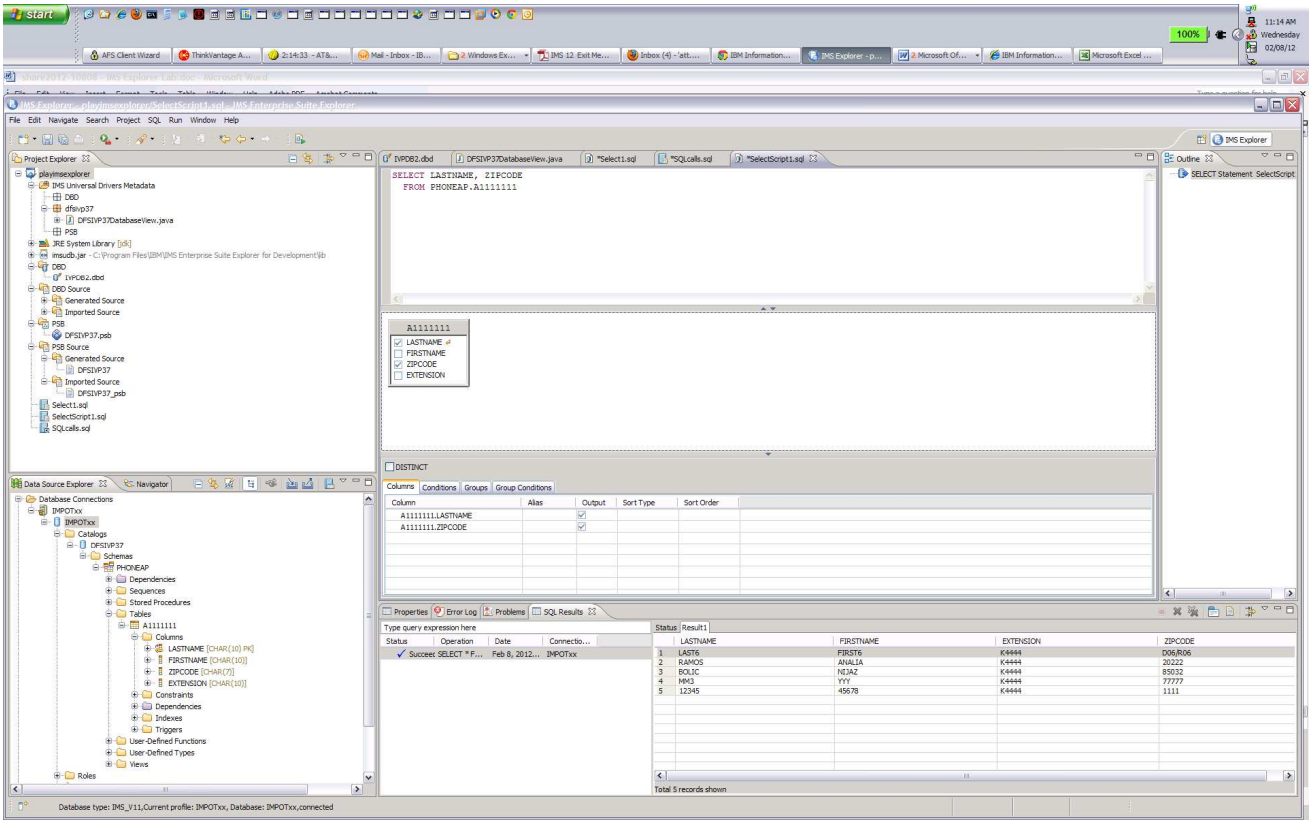
In the add a table window right-click and select Add Table



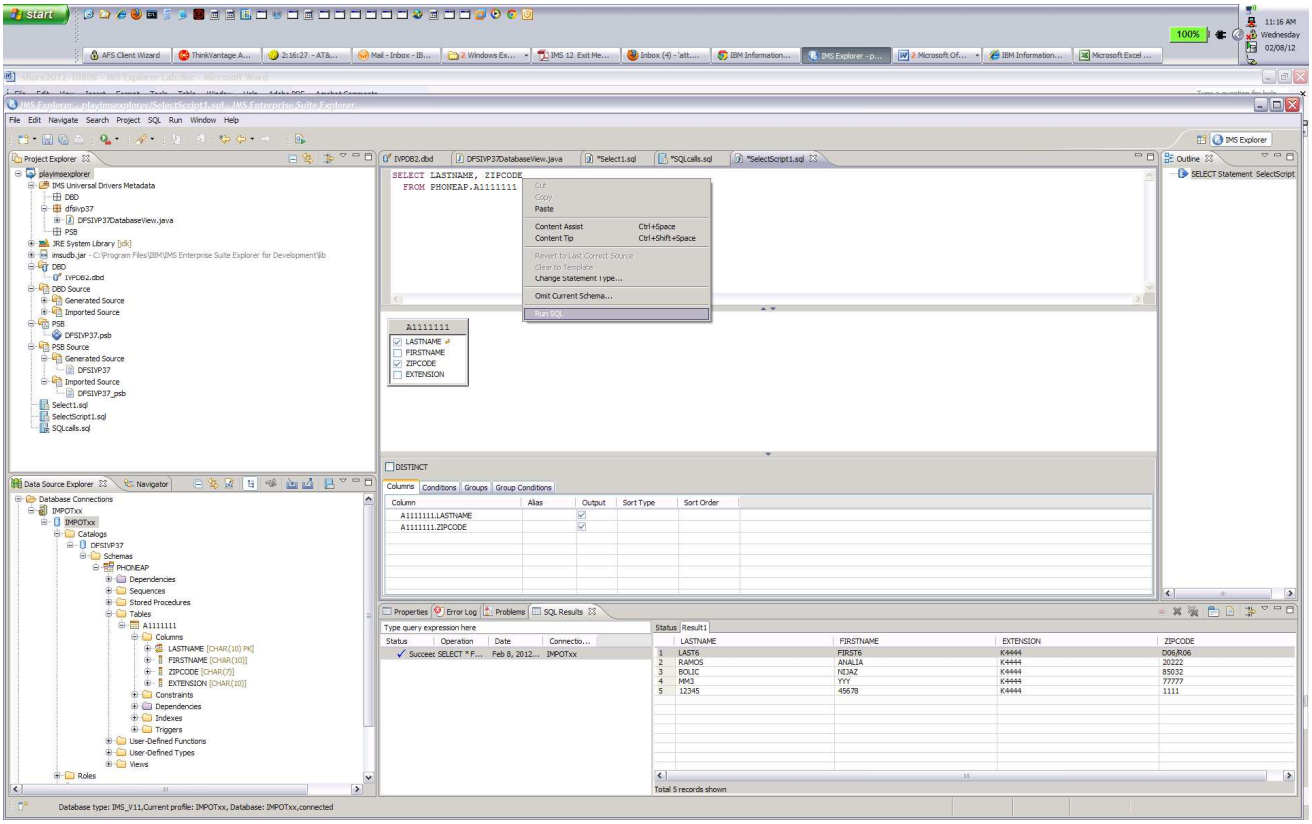
Expand PHONEAP and highlight A1111111 and hit ok button



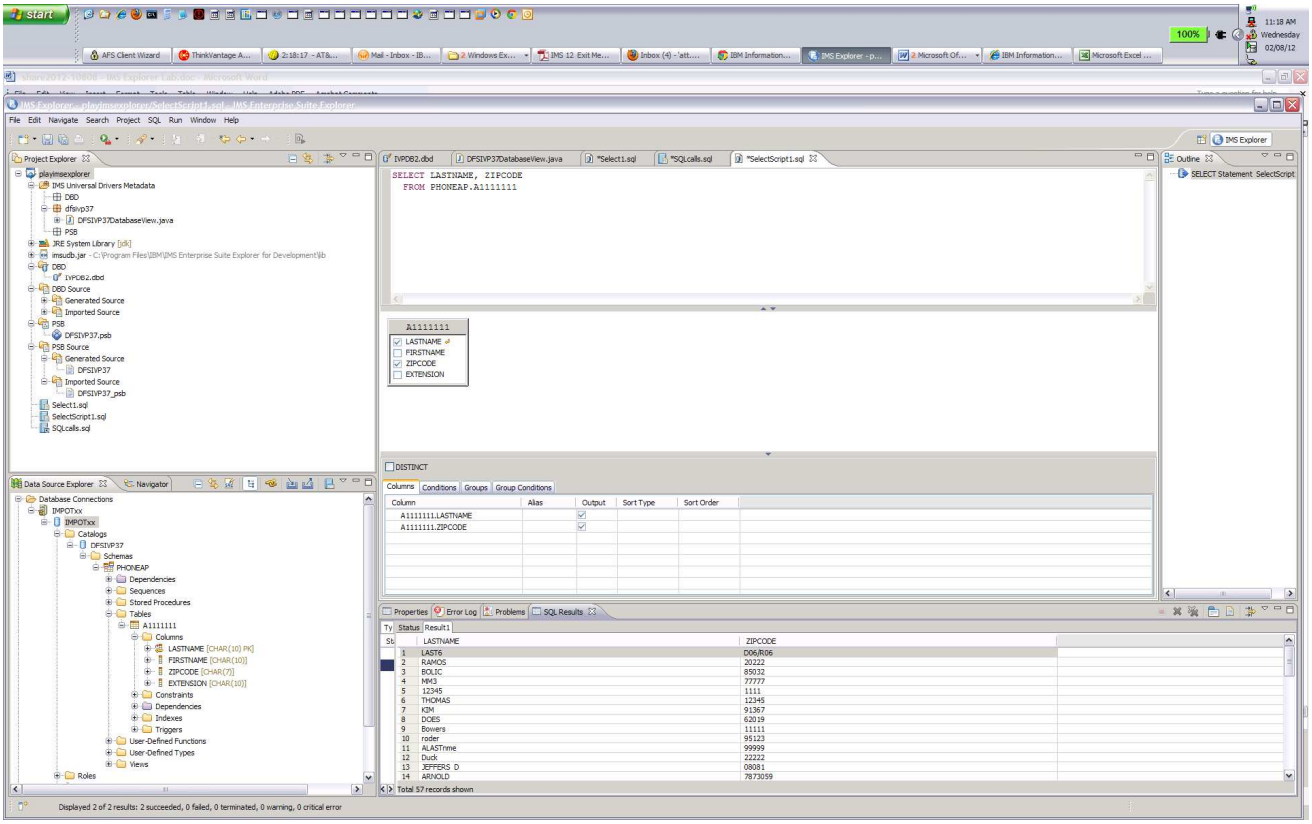
The SELECT statement is created. In the table box you can use check box to identify the fields you want to see in the results. tement and use Run SQL to execute the query



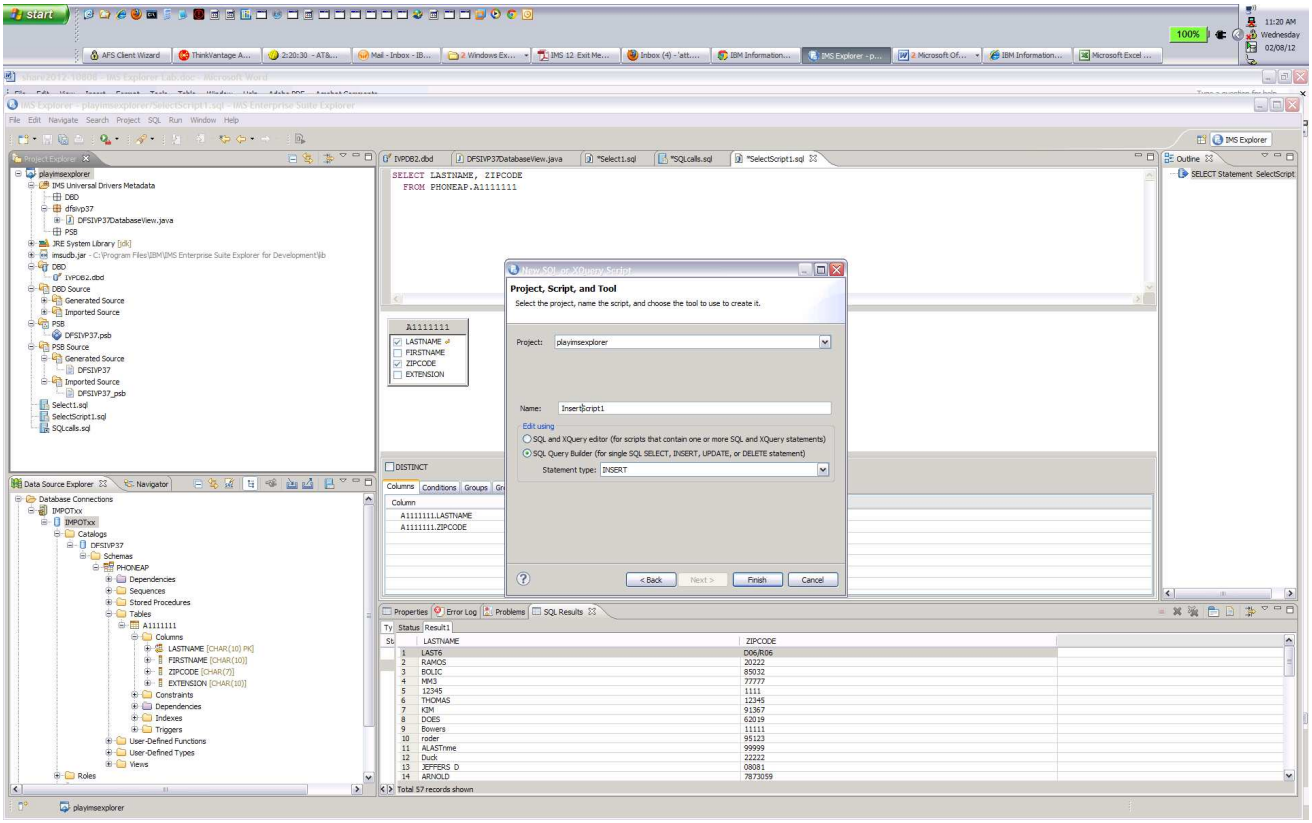
Right click on the Select statement and use the Run SQL

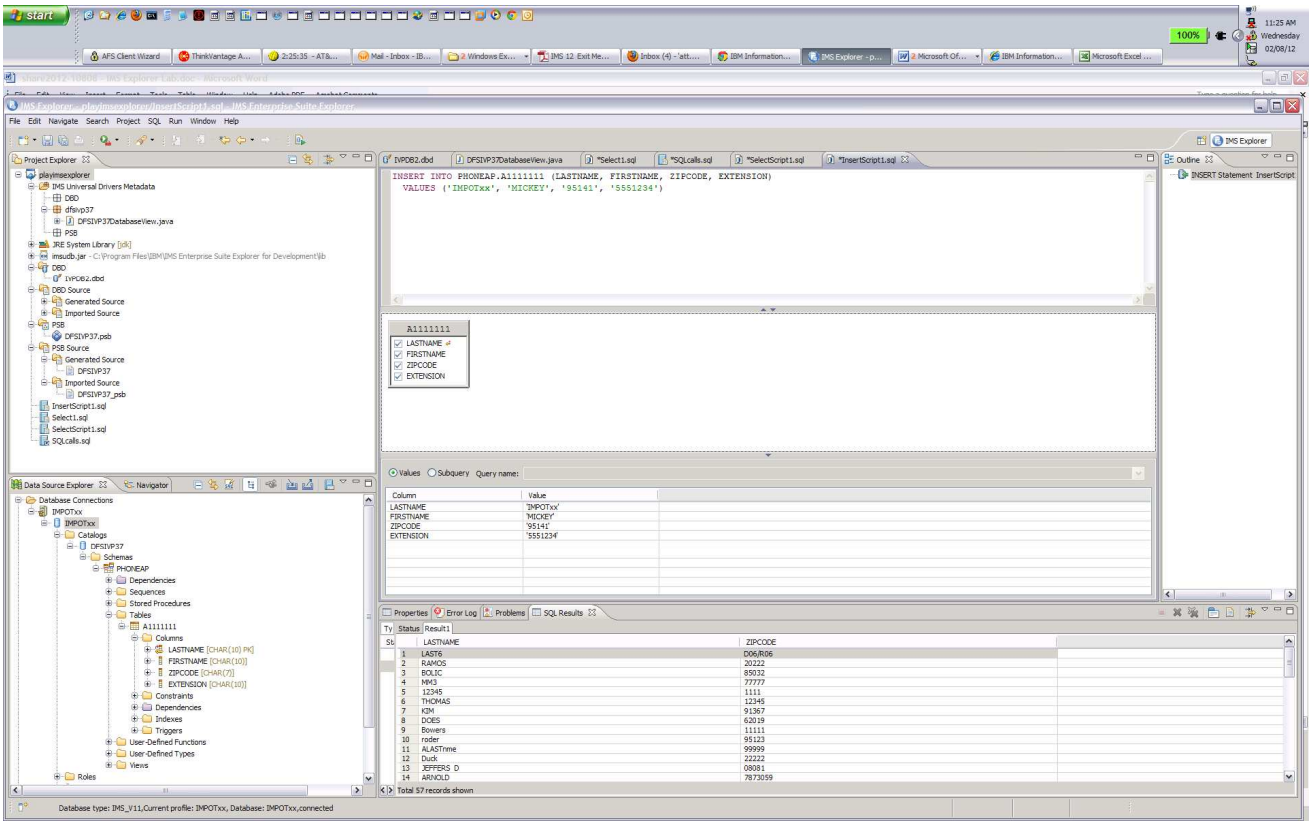

SELECT LASTNAME, ZIPCODE
FROM PHONEAP.A1111111
Content Assist Ctrl+Space
Content Tip Ctrl+Shift+Space
Change Statement Type...
Omit Current Schema...
Run SQL
A1111111
LASTNAME
FIRSTNAME
ZIPCODE
EXTENSION
DISTINCT
Columns Conditions Groups Group Conditions
A1111111.LASTNAME
A1111111.ZIPCODE
LASTNAME FIRSTNAME EXTENSION ZIPCODE
1 LAST6 FIRST6 K4444 D06/R06
2 RAMOS ANALIA K4444 20222
3 BOLIC NIJAZ K4444 85032
4 MM3 YYY K4444 77777
5 12345 45678 K4444 1111
Total 5 records shown

The results

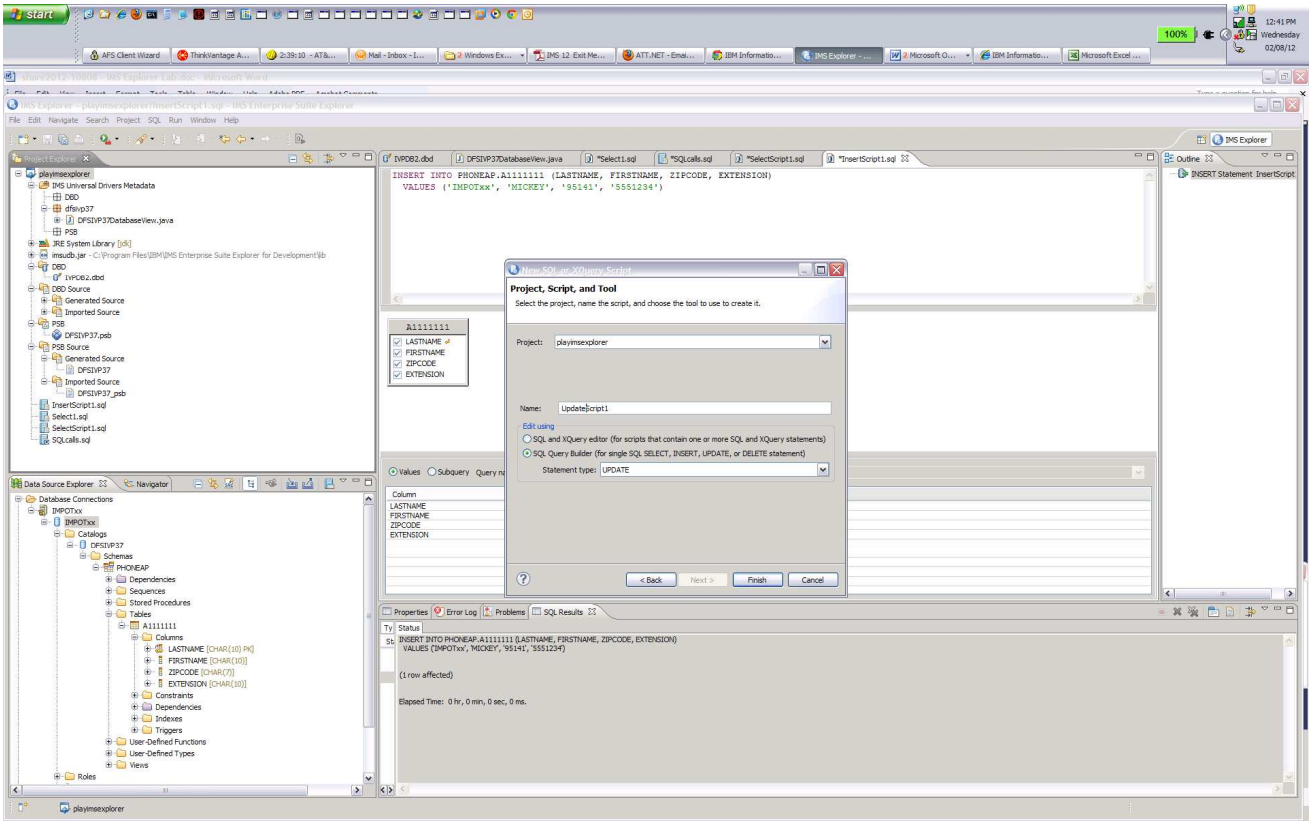


You can use the wizard to create INSERT

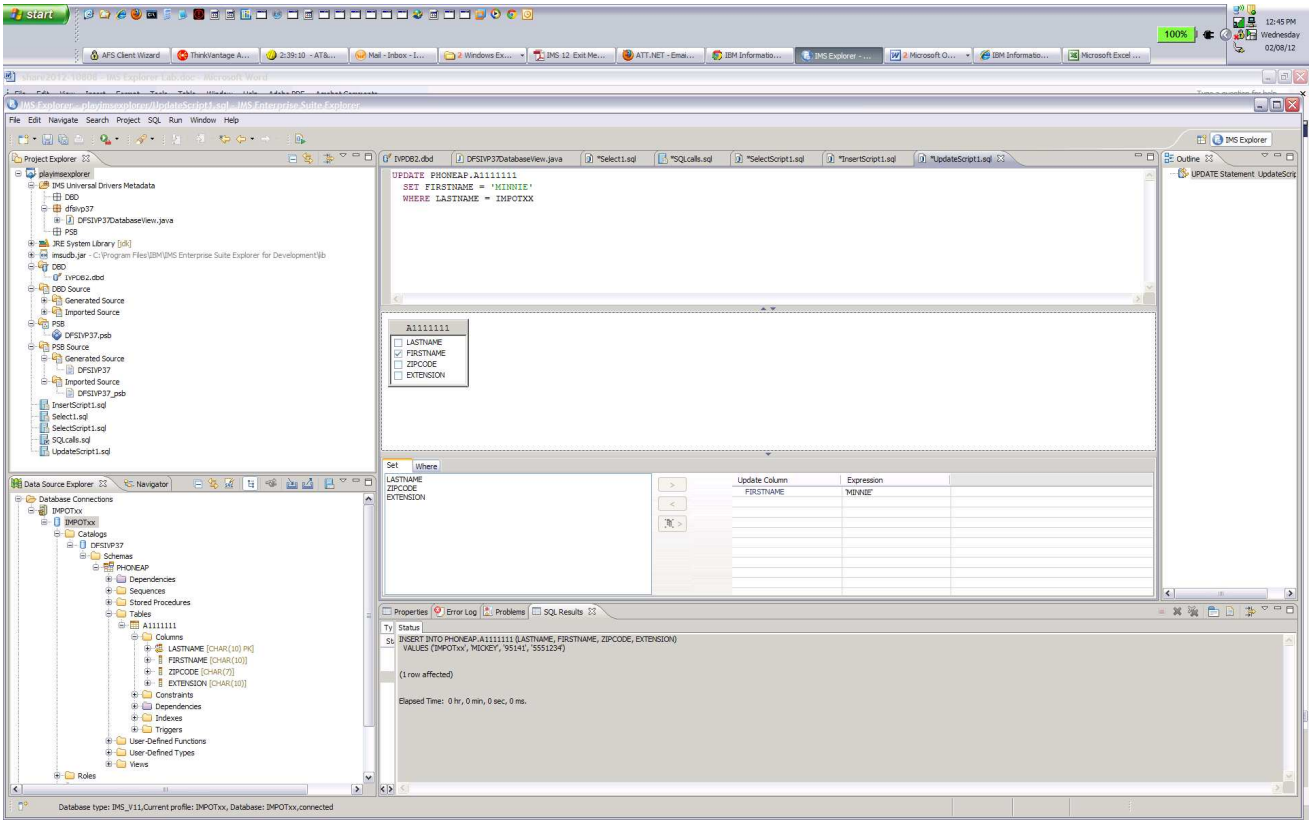

SELECT LASTNAME, ZIPCODE
FROM PHONEAP.A1111111
New SQL or XQuery Script
Project, Script, and Tool
Select the project, name the script, and choose the tool to use to create it.
Project: playimsexplorer
Name: InsertScript1
Edit using
SQL and XQuery editor (for scripts that contain one or more SQL and XQuery statements)
SQL Query Builder (for single SQL SELECT, INSERT, UPDATE, or DELETE statement)
Statement type: INSERT
< Back
Next >
Finish
Cancel
A1111111
LASTNAME
FIRSTNAME
ZIPCODE
EXTENSION
DISTINCT
Columns
Conditions
Groups
Column
A1111111.LASTNAME
A1111111.ZIPCODE
LASTNAME ZIPCODE
1 LAST6 D06/R06
2 RAMOS 20222
3 BOLIC 89032
4 MM3 77777
5 12345 1111
6 THOMAS 12345
7 KIM 91367
8 DOES 62019
9 Bowers 11111
10 roder 95123
11 ALASTrme 99999
12 Duck 22222
13 JEFFERS D 08081
14 ARNOLD 7873059
Total 57 records shown


INSERT INTO PHONEAP.A1111111 (LASTNAME, FIRSTNAME, ZIPCODE, EXTENSION)
VALUES ('IMPOTxx', 'MICKEY', '95141', '5551234')
A1111111
LASTNAME
FIRSTNAME
ZIPCODE
EXTENSION
Values
Subquery
Query name:
Column Value
LASTNAME 'IMPOTxx'
FIRSTNAME 'MICKEY'
ZIPCODE '95141'
EXTENSION '5551234'
LASTNAME ZIPCODE
1 LAST6 D06/R06
2 RAMOS 20222
3 BOLIC 89032
4 MM3 77777
5 12345 1111
6 THOMAS 12345
7 KIM 91367
8 DOES 62019
9 Bowers 11111
10 roder 95123
11 ALASTrme 99999
12 Duck 22222
13 JEFFERS D 08081
14 ARNOLD 7873059
Total 57 records shown
Database type: IMS_V11,Current profile: IMPOTxx, Database: IMPOTxx,connected

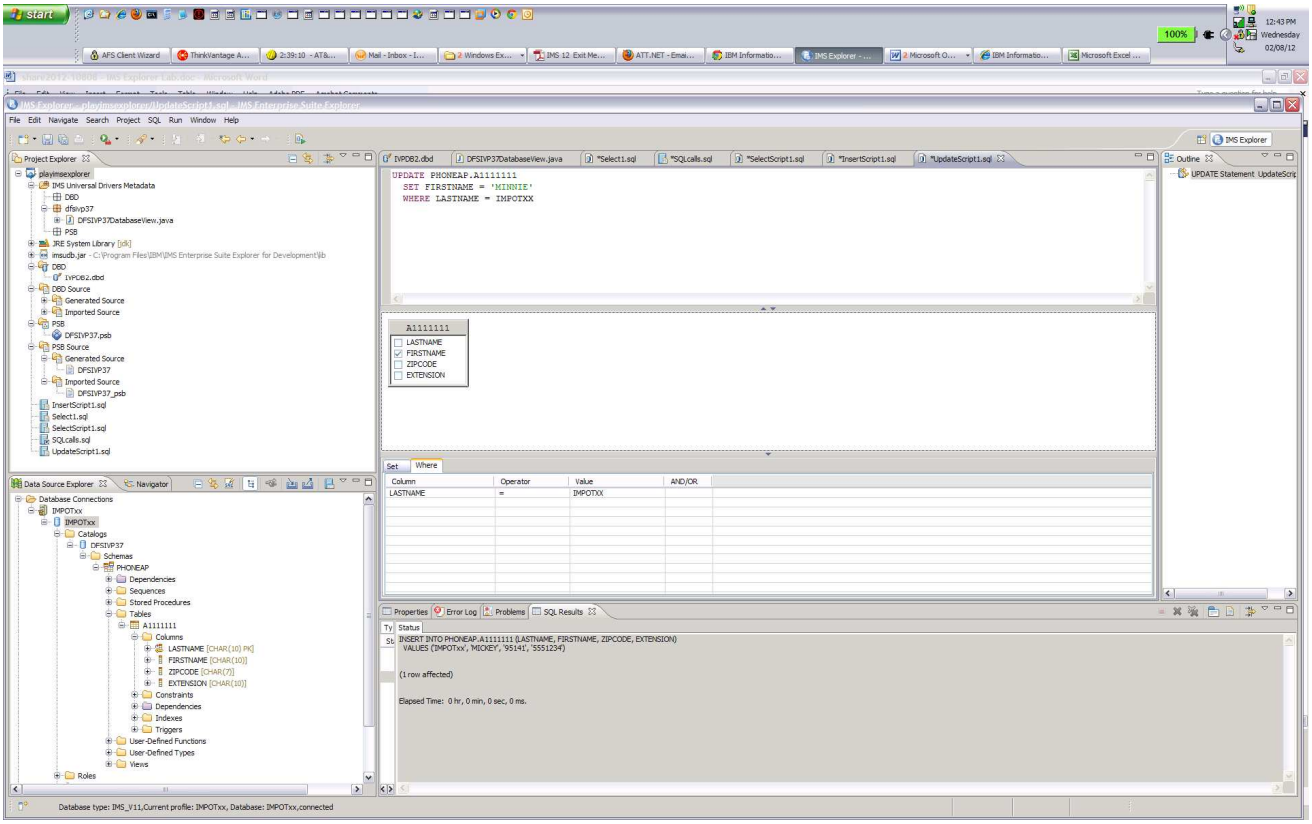
UPDATE



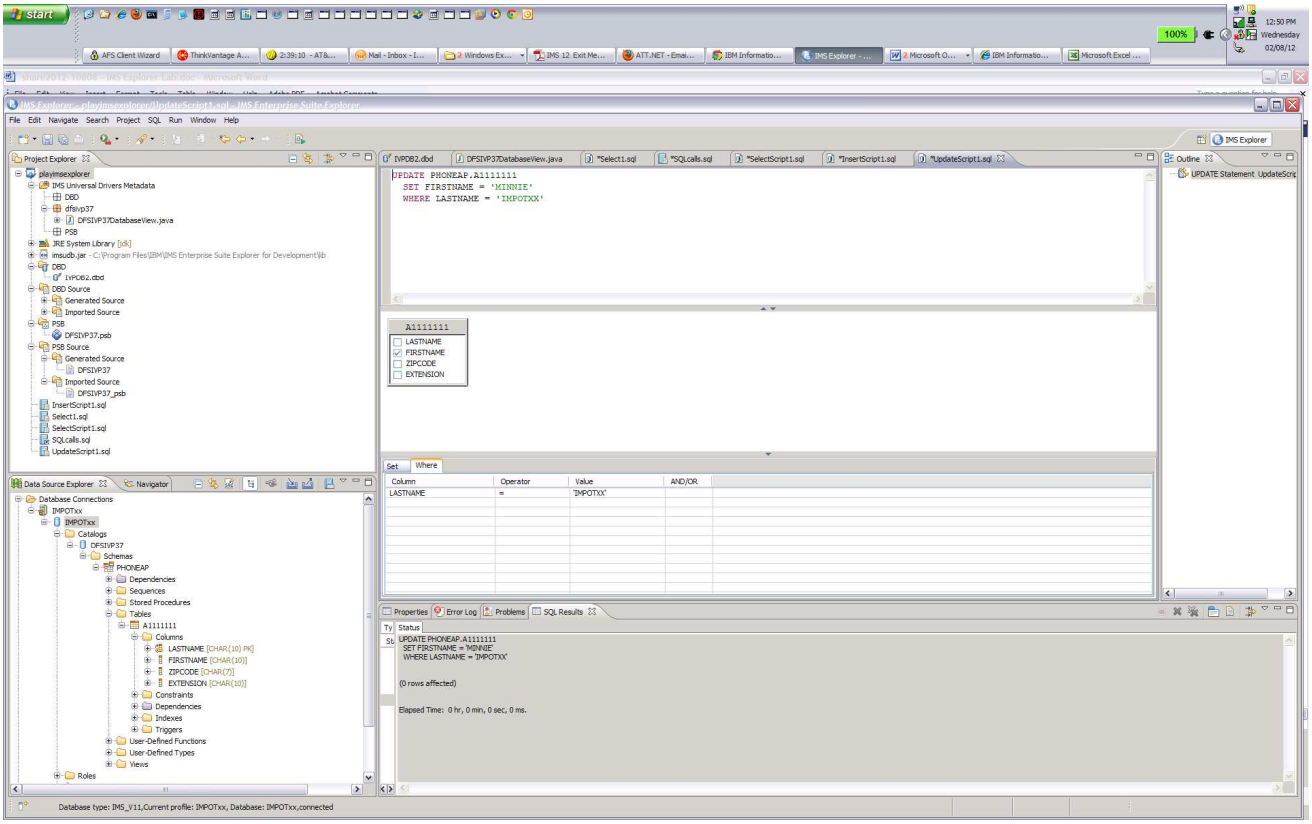
Note for UPDATE you need to use the SET



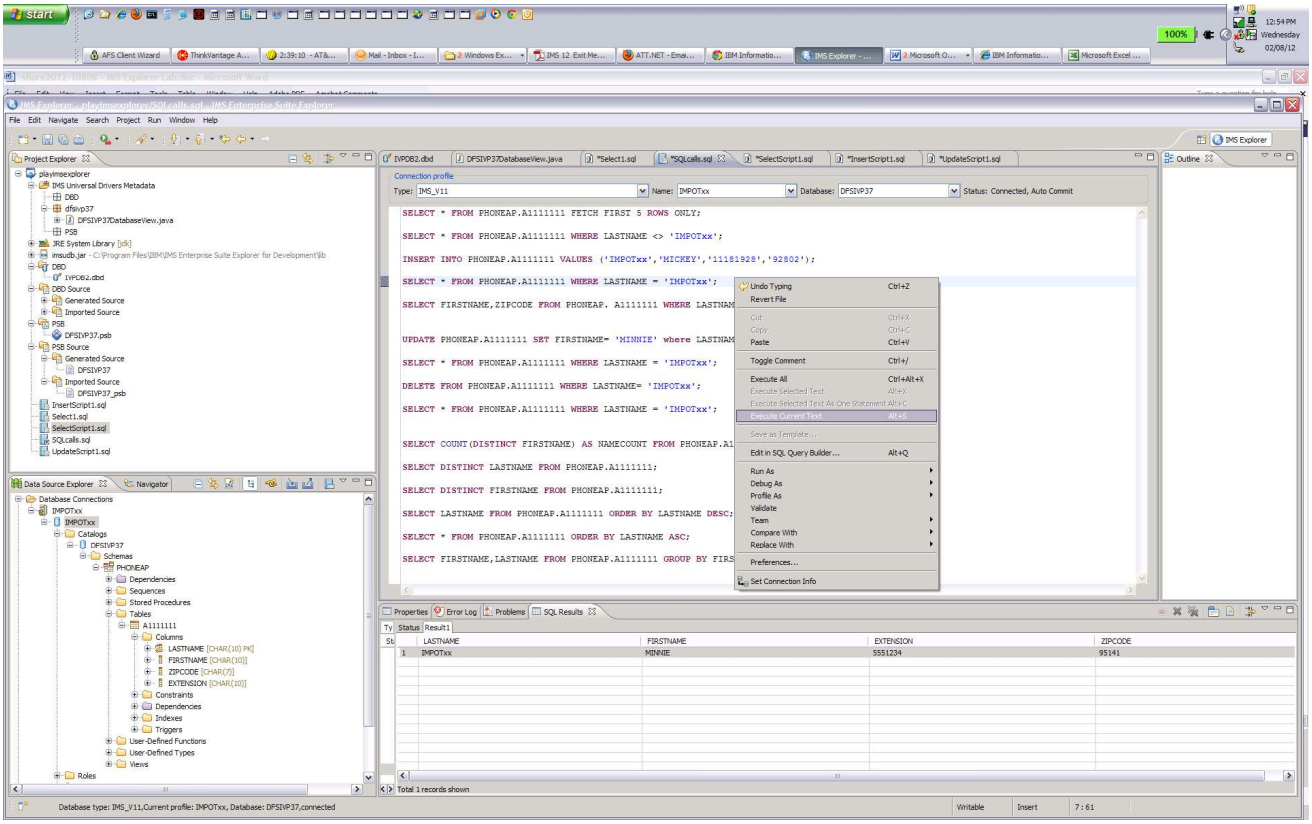
And Where tabs to specify the values for changing FIRSTNAME and qualify for LAST-NAME IMPOTxx


UPDATE PHONEAP.A1111111
SET FIRSTNAME = 'MINNIE'
WHERE LASTNAME = IMPOTXX
A1111111
LASTNAME
FIRSTNAME
ZIPCODE
EXTENSION
Column
Operator
Value
AND/OR
LASTNAME
=
IMPOTXX
INSERT INTO PHONEAP.A1111111 (LASTNAME, FIRSTNAME, ZIPCODE, EXTENSION)
VALUES ('IMPOTxx', 'MICKEY', '95141', '5551234')
(1 row affected)
Elapsed Time: 0 hr, 0 min, 0 sec, 0 ms.

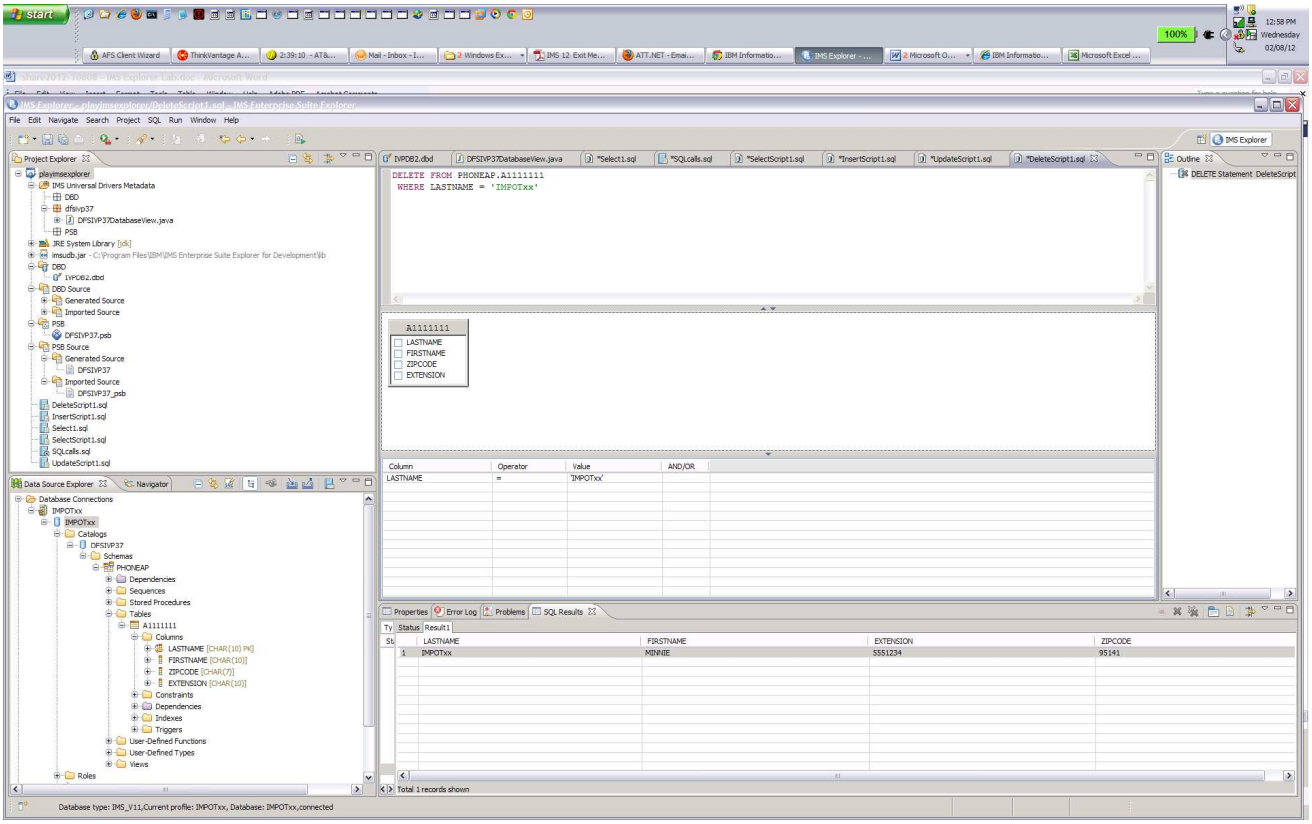
Results

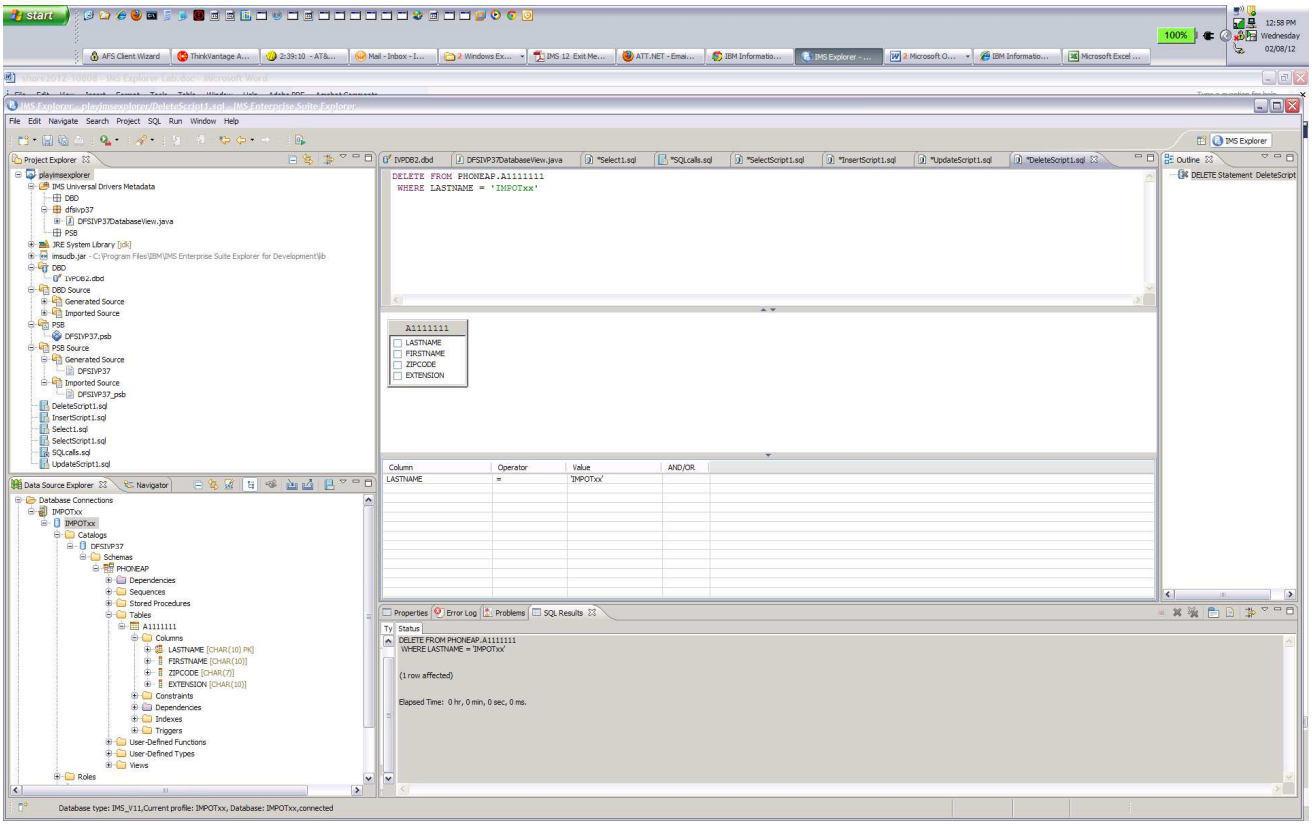


You can run the SQLcalls.sql script Select to verify the update


SELECT * FROM PHONEAP.A1111111 FETCH FIRST 5 ROWS ONLY;
SELECT * FROM PHONEAP.A1111111 WHERE LASTNAME <> 'IMPOTxx';
INSERT INTO PHONEAP.A1111111 VALUES ('IMPOTxx','MICKEY','11181928','92802');
SELECT * FROM PHONEAP.A1111111 WHERE LASTNAME = 'IMPOTxx';
SELECT FIRSTNAME,ZIPCODE FROM PHONEAP. A1111111 WHERE LASTNAM
UPDATE PHONEAP.A1111111 SET FIRSTNAME= 'MINNIE' where LASTNAM
SELECT * FROM PHONEAP.A1111111 WHERE LASTNAME = 'IMPOTxx';
DELETE FROM PHONEAP.A1111111 WHERE LASTNAME= 'IMPOTxx';
SELECT * FROM PHONEAP.A1111111 WHERE LASTNAME = 'IMPOTxx';
SELECT COUNT(DISTINCT FIRSTNAME) AS NAMECOUNT FROM PHONEAP.A1
SELECT DISTINCT LASTNAME FROM PHONEAP.A1111111;
SELECT DISTINCT FIRSTNAME FROM PHONEAP.A1111111;
SELECT LASTNAME FROM PHONEAP.A1111111 ORDER BY LASTNAME DESC;
SELECT * FROM PHONEAP.A1111111 ORDER BY LASTNAME ASC;
SELECT FIRSTNAME,LASTNAME FROM PHONEAP.A1111111 GROUP BY FIRS
Undo Typing Ctrl+Z
Revert File
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Toggle Comment Ctrl+/
Execute All Ctrl+Alt+X
Execute Selected Text Alt+X
Execute Selected Text As One Statement Alt+C
Execute Current Text Alt+S
Save as Template...
Edit in SQL Query Builder... Alt+Q
Run As
Debug As
Profile As
Validate
Team
Compare With
Replace With
Preferences...
Set Connection Info
LASTNAME FIRSTNAME EXTENSION ZIPCODE
1 IMPOTxx MINNIE 5551234 95141
Total 1 records shown

DELETE


DELETE FROM PHONEAP.A1111111
WHERE LASTNAME = 'IMPOTxx'
A1111111
LASTNAME
FIRSTNAME
ZIPCODE
EXTENSION
Column
Operator
Value
AND/OR
LASTNAME
=
'IMPOTxx'
LASTNAME
FIRSTNAME
EXTENSION
ZIPCODE
1
IMPOTxx
MINNIE
5551234
95141
Total 1 records shown
Database type: IMS_V11,Current profile: IMPOTxx, Database: IMPOTxx,connected


DELETE FROM PHONEAP.A1111111
WHERE LASTNAME = 'IMPOTxx'
A1111111
LASTNAME
FIRSTNAME
ZIPCODE
EXTENSION
Column
Operator
Value
AND/OR
LASTNAME
=
'IMPOTxx'
DELETE FROM PHONEAP.A1111111
WHERE LASTNAME = 'IMPOTxx'
(1 row affected)
Elapsed Time: 0 hr, 0 min, 0 sec, 0 ms.
Database type: IMS_V11,Current profile: IMPOTxx, Database: IMPOTxx,connected

This completes the lab

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