



A Case Study

“Building Financial Report and Dashboard Using OBIEE”

Part I

This is a 1st document in the series of building financial reports and dashboard taking Essbase as Data Source. This document briefs you the case study of preparing the RPD to query and analysis on top of it. Also, refer the 2nd guide along with it which shows how to build the Answer queries and Dashboard. The document focuses step by step approach to build the RPD and prepare a Physical, business and presentation layer.

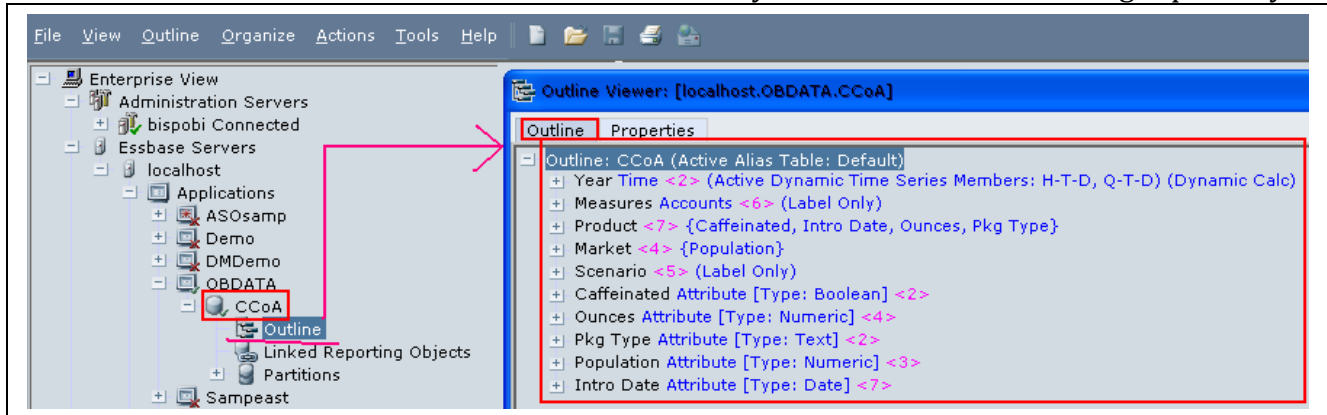
History:

Version	Description Change	Author	Publish Date
0.1	Initial Draft	Hitesh Mankar	24-Apr-2011
0.1	1 st Review	Amit Sharma	26 th Apr 2011

Building repository using multidimensional data source for financial analysis.

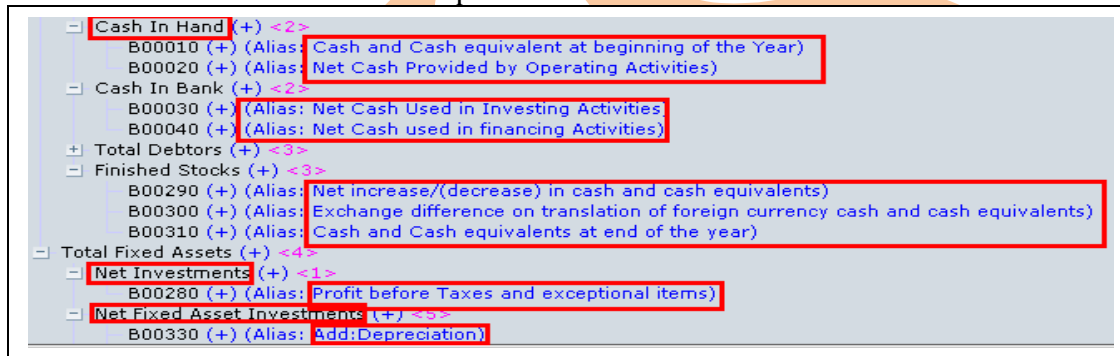
(Here multidimensional data source is Hyperion Essbase)

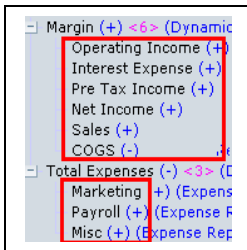
1. Start the multidimensional data source. Check out the Application Name, database name and its Outline of the cube first in Essbase Administration Services which you want to use for building repository.



(OBDATA is an Application name, CCoA (Common Chart of Accounts) is database. Also remember the login credentials of the application.)

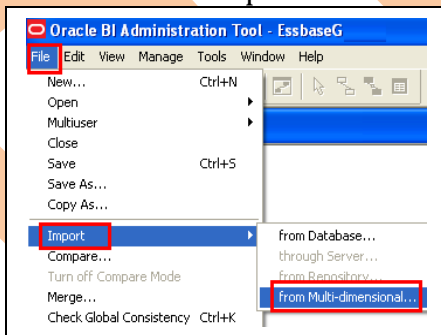
2. Measures which are used in reports.



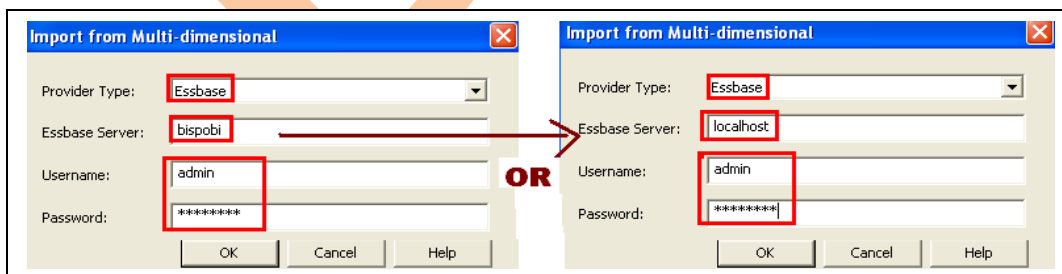


3. Now open the Administration Tool → go to file menu select new to create an empty repository → give a name to save rpd.

4. Go to File menu → Select import → from Multidimensional. (A new window will open)

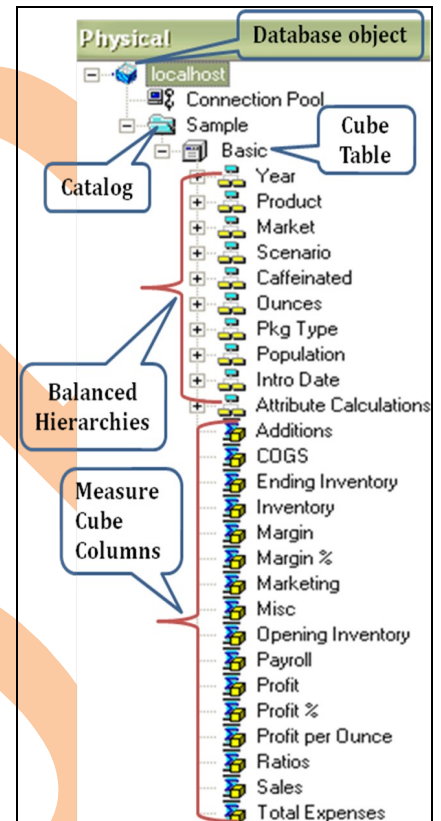
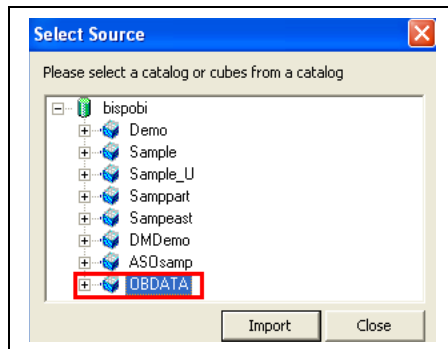


5. A Import from Multidimensional window will display select Essbase as provider type from drop down list give server name, Username and password than press "OK".



After selecting “OK”, a list of applications and cubes available on the Essbase Server is displayed.

6. The Administrator then has the option of selecting either Essbase applications or cubes to import.



7. Verify the Import in Physical Layer:-

When you import the physical schema, Oracle BI Server imports the cube, including its metrics, hierarchies and levels. Each multidimensional catalog in the database can contain multiple physical cubes. You can import one or more of these cubes into your BI repository. You can create a cube table manually. However, it is recommended that you import cube tables and their components. (Note that Essbase applications are mapped as Physical catalogs.)

7.1). Each cube from a multidimensional data source is set up as a physical cube table, a type of physical table. It has all the capabilities of a table such as physical cube columns, keys (optional) and foreign keys (optional). It also has cube-specific metadata such as hierarchies and levels. In the Physical layer, a physical cube table looks like a regular table but has a different icon. Columns also have unique cube icons:-

- Key icons represent attributes that are part of the hierarchy.
- Columns with cube icons represent attributes that are not part of the hierarchy.
- Columns with cube icons plus the sigma sign represent either additive measure or calculated members.

(*## The physical model is option is hidden for the multidimensional cube so you cannot create or see the physical model of cube)

7.2) Verify Imported Hierarchies and Levels

In the Physical Cube Table dialog box, the Hierarchies tab lists the dimensional hierarchies in the cube. In this dialog box you can add, edit or remove hierarchies.

To verify a hierarchy, select it and click Edit, or double-click the hierarchy. In the Hierarchy dialog box, verify that the levels are correct. The Hierarchy dialog box lists all the defined levels for the selected hierarchy.

The highest level in the hierarchy should be the (highest) item in the list. If you need to reorder hierarchy levels, select a level and click Up or Down to correct the order of the levels. There be multiple levels and you must select a level for buttons to be available.

You can also reorder, add, edit or remove levels. the multidimensional level icon .This confirms these columns have been identified as part of the hierarchy. The “Default Member type ALL” check should always be selected by default. This is for performance reasons. This check box helps Oracle Server rewrite more efficient Multidimensional Expressions (MDX) when sending logical queries.

If you delete property or key columns from a level, association is deleted and the column changes to a measure under the parent cube table.

7.3) Verify Imported Measures

To verify and assign the aggregation rule correctly follow the below instructions:-

- Verify aggregation rules after importing a cube. Typically, aggregation rules are assigned correctly when you import the cube. However, if a measure is a calculated measure, the aggregation rule is reported as None. Therefore, you should examine the aggregation rule for all measures after importing a cube to verify that the aggregation rule has been assigned correctly.
- For all measures assigned an aggregation rule value of None, contact the multidimensional data source administrator to verify that the value of the aggregation rule is accurate. If you need to change the aggregation rule, you can change it in the Physical Cube Column dialog box. If you build the measures manually, set the aggregation rule to match its definition in the multidimensional data source.

For all the measures the aggregations rule is Aggregated External by default showing in the physical layer.

(For this cube you don’t need to change anything for measure columns in physical layer.)

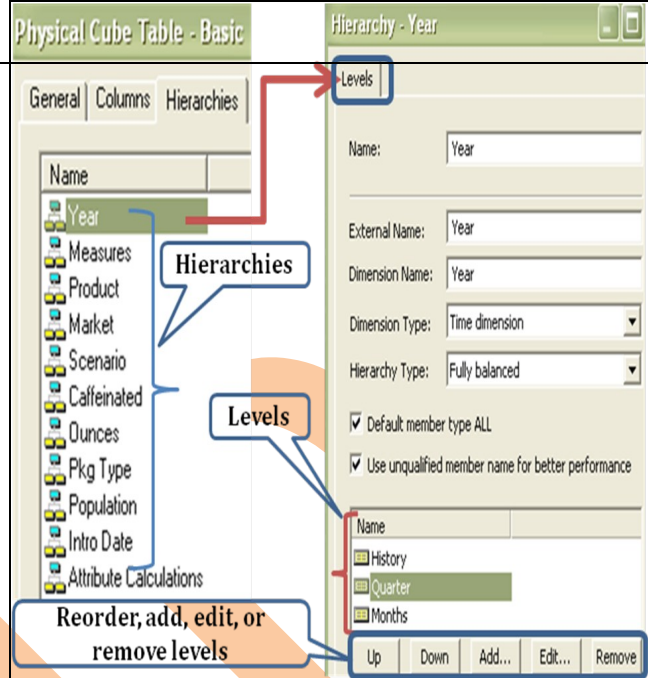
***Note: - The measures hierarchy is not supported in OBIEE (10.1.3.4.1) so it get flattened after importing into physical layer.

8). Create the Business Model and Mapping Layer.

Import the physical cube into the Business modeling and mapping layer, drag and drop the cube into the Business Model and Mapping Layer to automatically create a Business Model that includes associated dimensions and hierarchies.

When you drag from the Physical layer, logical tables, dimensions and relationships are created automatically. The Business Model can then be customized to take advantage of BI Server capabilities such as aggregate and fragment navigation.

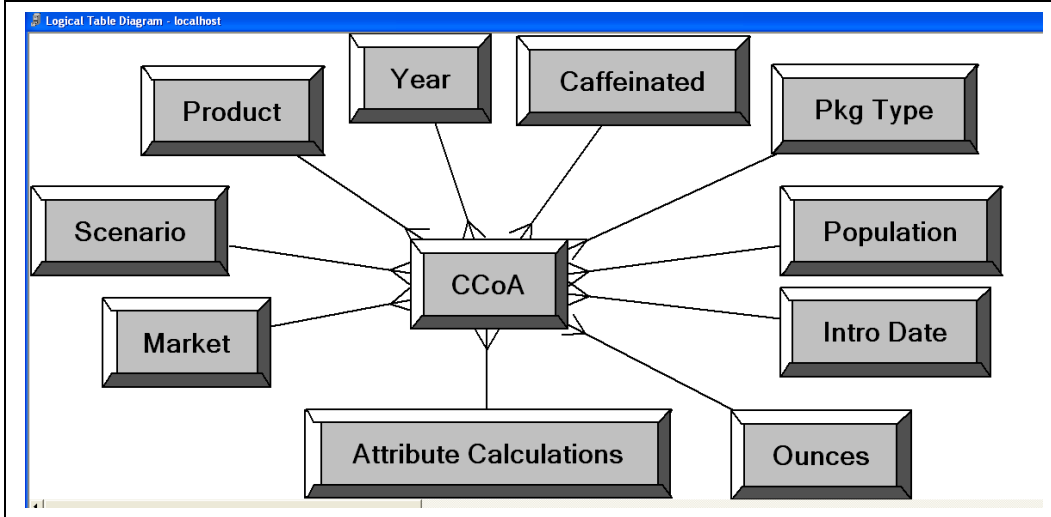
8.1) Right click on the newly imported cube in the BMM layer and navigate to Business Model Diagram → Whole Diagram. You can see automatically created model (Star schema because of multidimensional



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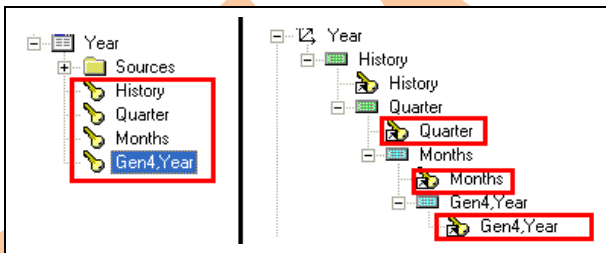
cube).

It is possible to create it on your own.

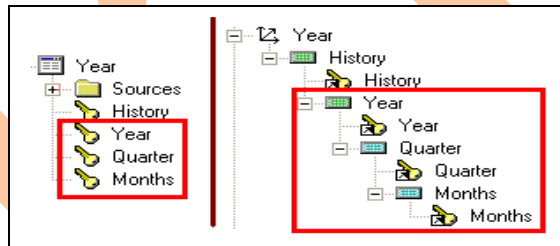


Arrange the model.

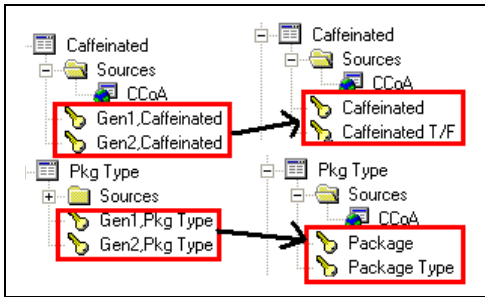
8.2) Expand the Year dimension, verify all the columns and Year hierarchy verify all the levels are in correct flow or not.



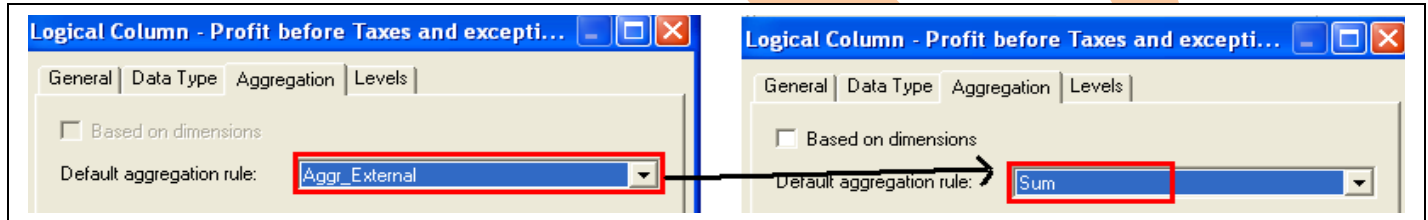
8.3) You can see that year hierarchy is not in correct form so correct it as shown in below screen shot. Just go to year dimension and rename the Quarter column as Year, Months column as Quarter and Gen4,Year column as Months and also change the names of levels also.



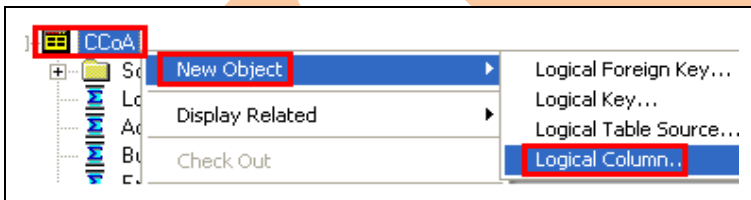
8.4) Also rename the columns of caffeinated and Pkg type.
(Rename other tables and columns as per your requirement and understanding.)



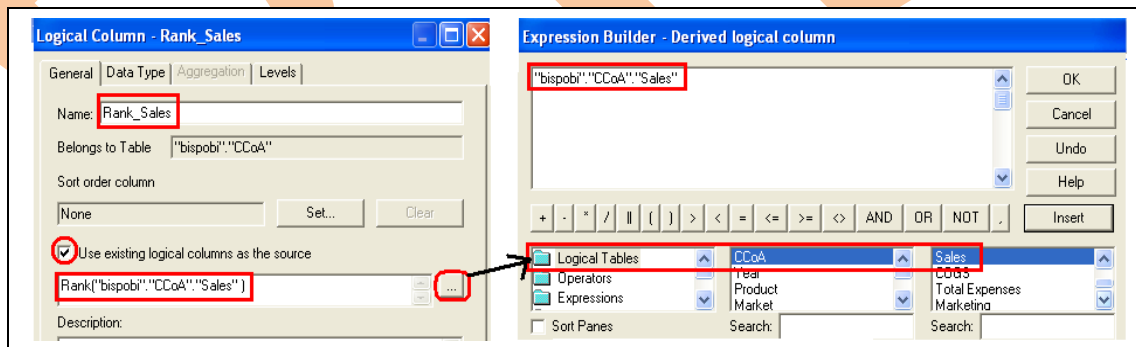
8.5) Now change the aggregation rule for all the measures from Aggr_External to Sum to create new computed logical columns and to apply functions.



8.6) Create a new logical column Rank_Sales (Rank) using any existing logical column. Right click on the fact table CCoA and select New object → Logical Column.



Give a name Rank_Sales for the column and select the check box Use existing logical column as the source → click on eclipse select logical tables → CCoA(Fact table) → Logical Column (Sales) and click on Insert then ok.



Put the existing logical column into bracket and add Rank as shown in the above screen shot and press ok to save this column. (You can see the newly created logical column).

9). Create the Presentation Layer

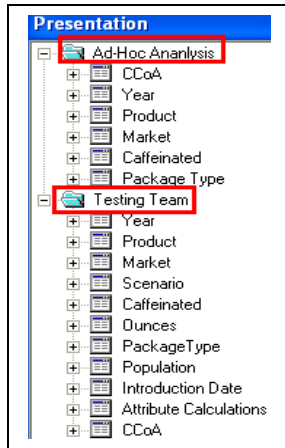
Setting up the Presentation layer for multidimensional data sources is similar to setting up the Presentation layer for a relational data source. To create the Presentation layer, you can drag the

business model into the Presentation layer. You can then modify objects in the Presentation layer just as you would with a relational data source as per your understanding and requirements.

9.1) Right Click in the empty presentation layer and select → New presentation catalog to create a new presentation catalog, give a name Ad-Hoc Analysis and press ok to save it.

9.2) Drag tables and columns into the catalog for Ad-hoc Analysis.

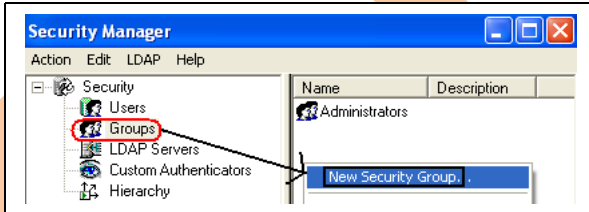
9.3) Now again create a new Testing Team catalog and put all the tables inside it, make it complete with all the available tables and columns.



10) Create Groups and group members.

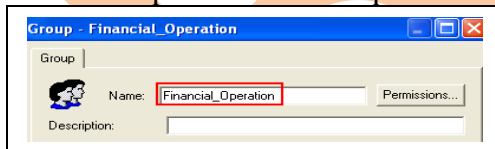
10.1) Go to Manage in Admin Tool → Select Security.

Select Groups from left pane in security manager then right click into right pane and select New Security Group.

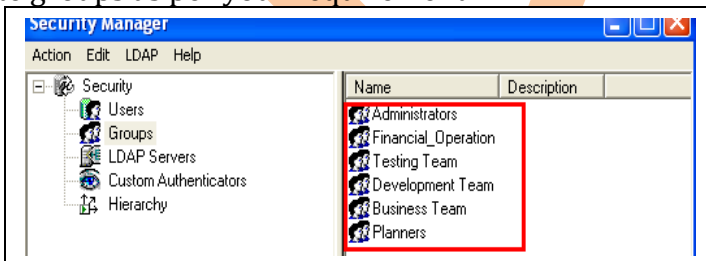


10.2) Enter a name for the new group and grant permissions.

(Permission is depends on the requirements of users what tables and columns they require for reporting)



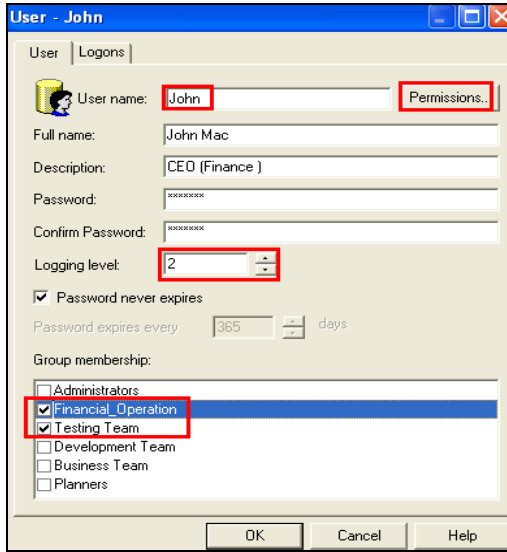
Create groups as per your requirement.



10.3) Create new Users

Similarly select users from left pane and then right click into right pane select New User.

If

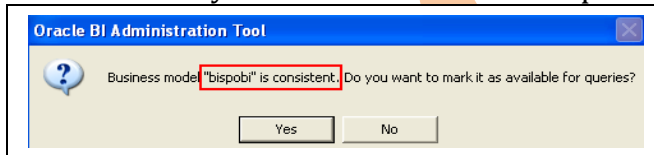


Enter a user name, set logging level and select groups to which group this user belongs. Permissions which are granted to the group are automatically applicable for the user also. you do not set permissions for users the group permissions were applicable for user.

11.) Testing and validating repository.

11.1) After building the presentation layer test the repository

Check Global Consistency for errors and save the repository.



Now the repository is ready and available for query.

11.2) Now configure the name of repository into OracleBI/Server/Config **NQSCONFIG.INI** file and save the changes.

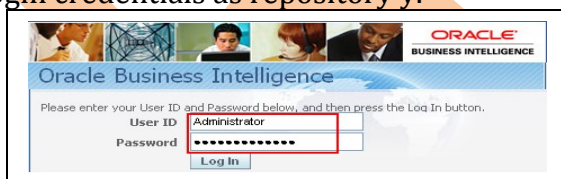
11.3) Start the services one by one

- A) Oracle BI Server
- B) Oracle BI Presentation Server
- C) Oracle BI Java Host

11.4) Go to Start menu,

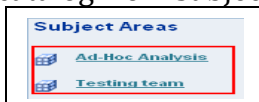
All Programs → Oracle Business Intelligence → Presentation Services.

Enter Login credentials as repository y.

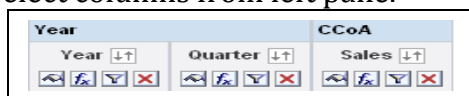


11.5) Click on the answers link.

Select a catalog from subject Area.



11.6) Select columns from left pane.



Click on the **Results** tab to get the result.

Year	Quarter	Sales
2010	Qtr1	18,901
	Qtr2	20,036
	Qtr3	17,700
	Qtr4	23,891
2011	Qtr1	462,394
	Qtr2	66,234
	Qtr3	68,660
	Qtr4	86,405

11.7) Check the Query Log to Verify Queries.

At the top right portion of the page, click Settings → Administration to open the Oracle BI Presentation Services Administration Window. Click the Manage Sessions link to open the Session Management Window.

Session Management ?

View session information below. Finished

Sessions

User ID	Host Address	Session ID	Browser Info	Logged On	Last Access
Administrator	bispobi	192.168.1.5.c5f687.1	Mozilla/5.0 (Windows NT 5.1; rv:2.0) Gecko/20100101 Firefox/4.0	4/27/2011 12:21:37 PM GMT+05:30	4/27/2011 12:24:37 PM GMT+05:30

Cursor Cache Cancel Running Requests Close All Cursors

ID	User	Refs	Status	Time	Action	Last Accessed	Statement	Information	Records
17	Administrator	1	Finished	0s	Close View Log	4/27/2011 12:21:50 PM GMT+05:30	SELECT "Year".Quarter saw_0, RIGHT("Year".Months, 4) saw_1, Product.Category saw_2, CCoA.Sales saw_3 FROM "Testing team" ORDER BY saw_0, saw_1, saw_2	Type=Report	20
68	Administrator	1	Finished	0s	Close View Log	4/27/2011 12:21:56 PM GMT+05:30	SELECT "Year".Quarter saw_0, RIGHT("Year".Months, 4) saw_1, CCoA.Sales saw_2 FROM "Testing team" ORDER BY saw_0, saw_1	Type=Report	8

Click the **View Log** link for the last entry.

```

----- SQL Request:
SET VARIABLE QUERY_SRC_CD='Report';SELECT "Year".Quarter saw_0, RIGHT("Year".Months, 4) saw_1, Product.Category saw_2, CCoA.Sales saw_3 FROM "Testing team" ORDER BY saw_0, saw_1, saw_2

+++Administrator:2a0000:2a0001:---2011/04/27 12:21:50
----- General Query Info:
Repository: Star, Subject Area: bispobi, Presentation: Testing team

+++Administrator:2a0000:2a0001:---2011/04/27 12:21:50
----- Cache Hit on query:
Matching Query: SET VARIABLE QUERY_SRC_CD='Report';SELECT "Year".Quarter saw_0, RIGHT("Year".Months, 4) saw_1, Product.Category saw_2, CCoA.Sales saw_3 FROM "Testing team" ORDER BY saw_0, saw_1, saw_2
Created by: Administrator

+++Administrator:2a0000:2a0001:---2011/04/27 12:21:50
----- Query Status: Successful Completion

```

Locate the **SQL Request** section. This section contains the logical SQL issued from Answers. Locate the **General Query Info** section. This section identifies the repository, subject area, and presentation catalog from which the query was run. The rest of the file contains information such as query status, number of rows returned, the physical data source to which Oracle BI Server is connecting and the physical SQL that was generated and so forth.

12). This repository is tested and validated successfully and now ready to build reports.