



Informatica Power Center 9.0.1

Building Financial Data Mode - Lab#28 Complex Data Transformation Guide I

Description:

BISP is committed to provide BEST learning material to the beginners and advance learners. In the same series, we have prepared a complete end-to end Hands-on Guide for building financial data model in Informatica. The document focuses on how the real world requirement should be interpreted. The mapping document template with very simplified steps and screen shots makes the complete learning so easy. The document focuses on various data transformation required to while loading data to the transaction system. **Join our professional training program and learn from experts.**

History:

Version	Description Change	Author	Publish Date
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Introduction:

In this exercise we are going to learn many cases where we require to apply various rules in order to ensure the data maps as per target system need. The summary of the data quality check is as below.

Objective:

In this example, we performed data quality check. These are requirement for Check the Account Data.

- Account Number Should be exactly 8 Char Long.
- Account Number starting with zero replace with X character.
- Branch_code split to Country, State and Branch_Area_Code.
- The Difference between "Account Open Date" and "Account Close Date" can't be < 30 days.
- in Dim_Account F_ATM_FACILITY, F_INTERNET_FACILITY is used to find the branch status code.

Summary:

Source Table - DIM_ACCOUNT

Target Table - TRG_ACCOUNT_DETAILS
BRANCH_GRADE

Process:

- Launch Informatica Power Center Designer 9.0.1
- Import source table in Source analyzer
- Import target table in Target Designer.
- Create mapping in Mapping Designer.
- Create filter transformation to filter the source data.
- Create expression transformation to define the expression.
- In Informatica power center workflow manager, Create workflow and assign session and relational connection.
- Execute workflow.
- In information power center workflow monitor, check session execution.
- Review data in Target Designer or Target connection.
- Check log execution.

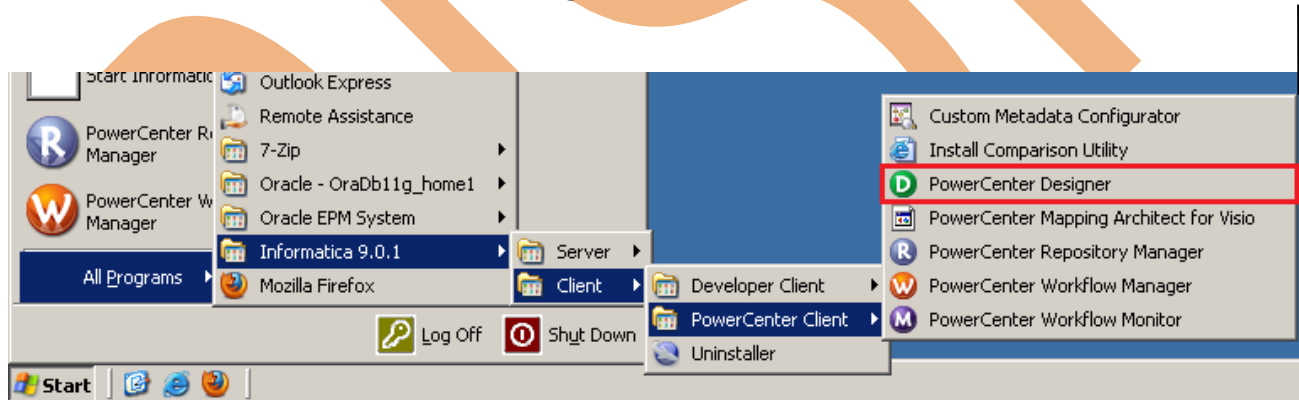
Mapping Sheet:

Case Study	DATA_QUALITI_CHECK							
Source Name	DIM_ACCOUNT							
Target Name	TRG_ACCOUNT_DETAILS, BRANCH_GRADE							
Filter Condition	LENGTH(V_ACCOUNT_NUMBER)=8 AND DATE_DIFF(D_CLOSED_DATE,D_START_DATE,'DDD')>30							
Source Details				Target Details		Target Details		
Entity Name	Field/Expression Name	Data Types	Expression	Destination Entity Name	DestinationField Name	Entity Name	Field Name	
DIM_ACCOUNT	N_ACCT_SKEY	NUMBER		TRG_ACCOUNT_DETAILS	N_ACCT_SKEY			
DIM_ACCOUNT	V_ACCOUNT_NUMBER	VARCHAR2	REPLACECHR(1,V_ACCOUNT_NUMBER,0,'X')	TRG_ACCOUNT_DETAILS	V_ACCOUNT_NUMBER			
			SUBSTR(LTRIM(RTRIM(V_ACCOUNT_NUMBER)),1,2)	TRG_ACCOUNT_DETAILS	COUNTRY_CD			
			SUBSTR(LTRIM(RTRIM(V_ACCOUNT_NUMBER)),3,2)	TRG_ACCOUNT_DETAILS	STATE_CD			
			SUBSTR(LTRIM(RTRIM(V_ACCOUNT_NUMBER)),5,2)	TRG_ACCOUNT_DETAILS	BRANCG_AREA_CD	BRANCH_GRADE	BRANCH_CD	
			DECODE(TRUE, F_ATM_FACILITY='N' OR F_INTERNET_FACILITY='N','A',F_ATM_FACILITY='N' OR F_INTERNET_FACILITY='Y','B','C')				GRADE	

Importing Source and Target Table

Import data from source and create target table (There are two types to create target table, Manually or import from database). There are following step to importing source and target database (Table).

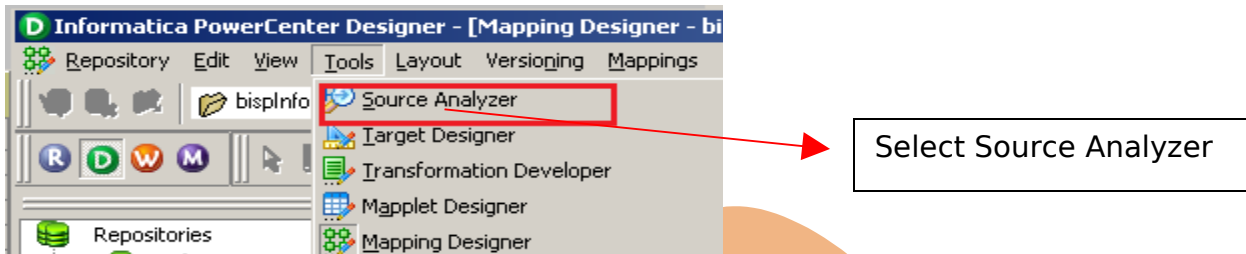
Step-1 Click on Start > All Programs > Informatica 9.0.1 > Client > Power Center Client> Power Center Designer.



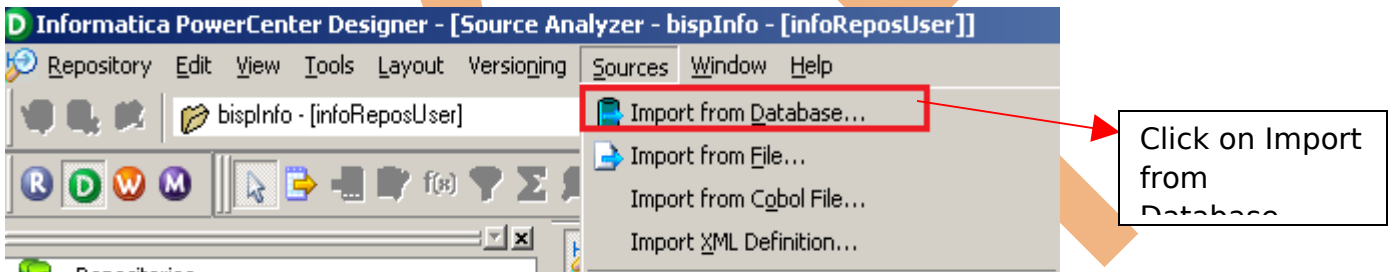
Step-2 Then Connect to Repository in Informatica Power Center Designer Right click on repository name and click on Connect.



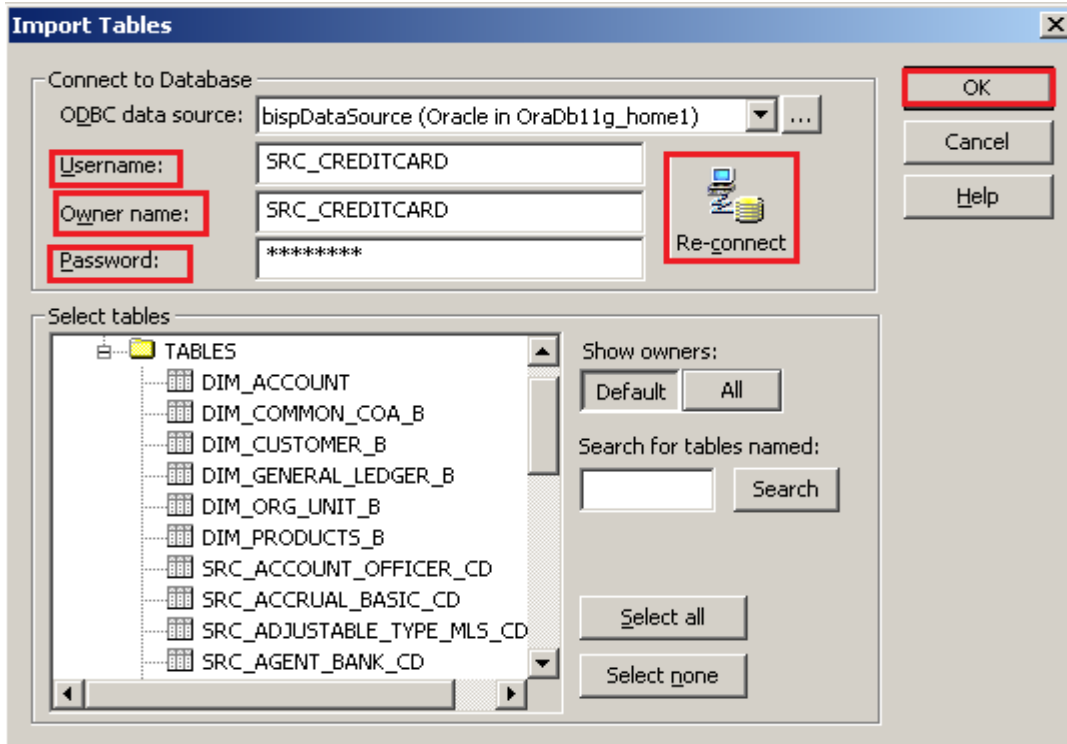
Step-3 Then go to Tools Menu and click on Source Analyzer to import source table.



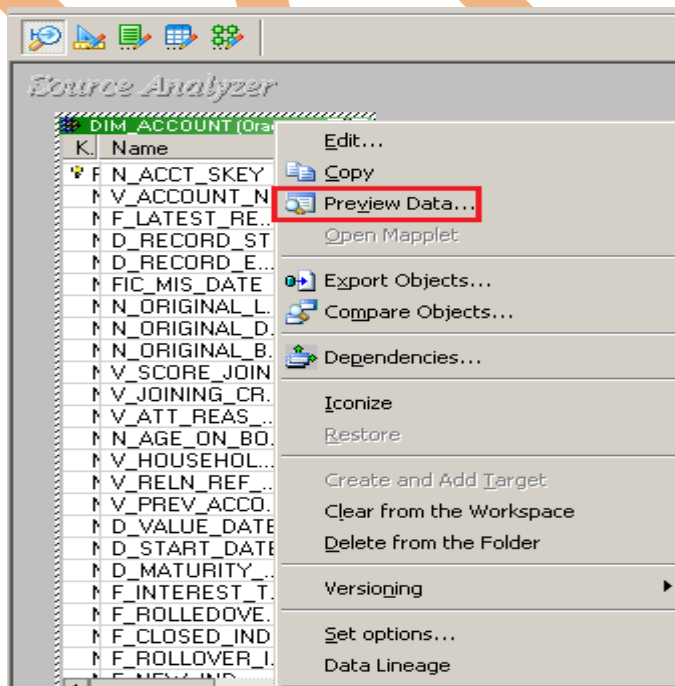
Step-4 And then go to Sources Menu in Informatica Power Center Designer Menu bar and select Import from database (Here some other options available such as Import from Database(import source data from RDBMS), Import from File(import source data from Flatfile), Import from Cobol File(import Cobol source), Import XML Definition(import source data from XML) etc.).



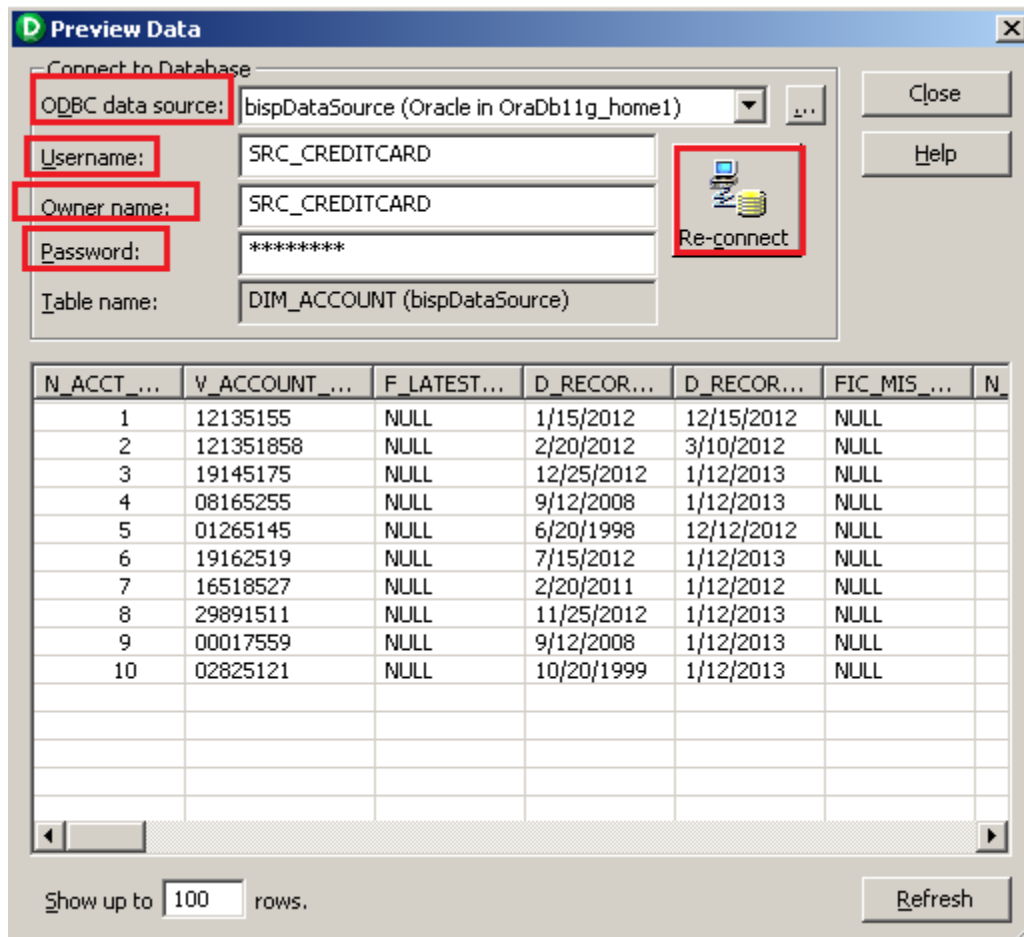
Step-5 Specify Username, Owner name and password then click on connect. Select source table and click on OK if you select all table, then click on select all and click OK.



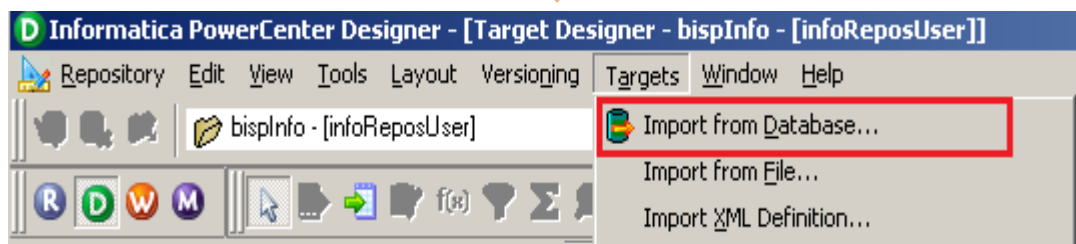
Step-6 Source table in source analyzer window. Then right click on Source table and select Preview Data to view data. If you want to edit some column and its relationship then you can do this from select Edit options. and also some other options available such as Export Objects, Compare Objects, Dependencies.., Iconize etc.



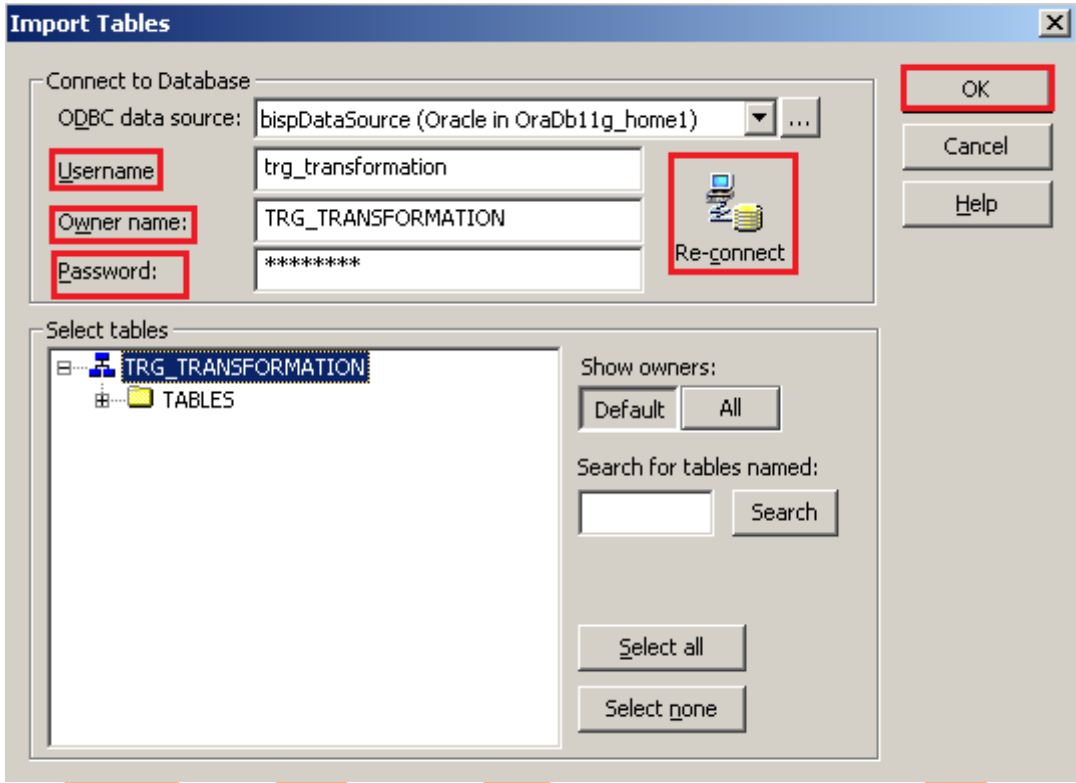
Step-7 When you click on Preview Data, A new window appear. Select ODBC data source connection and then specify Username, Owner name and Password and then click on Connect button.



Step-8 Now click on Target Designer. And then select Target menu in Informatica Power Center Designer Menu bar and click on Import from database to import target table. (Or create manually, In target menu click on create select database type and click OK. Then add column in Edit window. If target table stored in any RDBMS then select target table and then go to target menu and click on Generate/Execute SQL... Generate/Execute window appears. Then click on connect option and connect to database and specify information and then click on Generate and Execute).



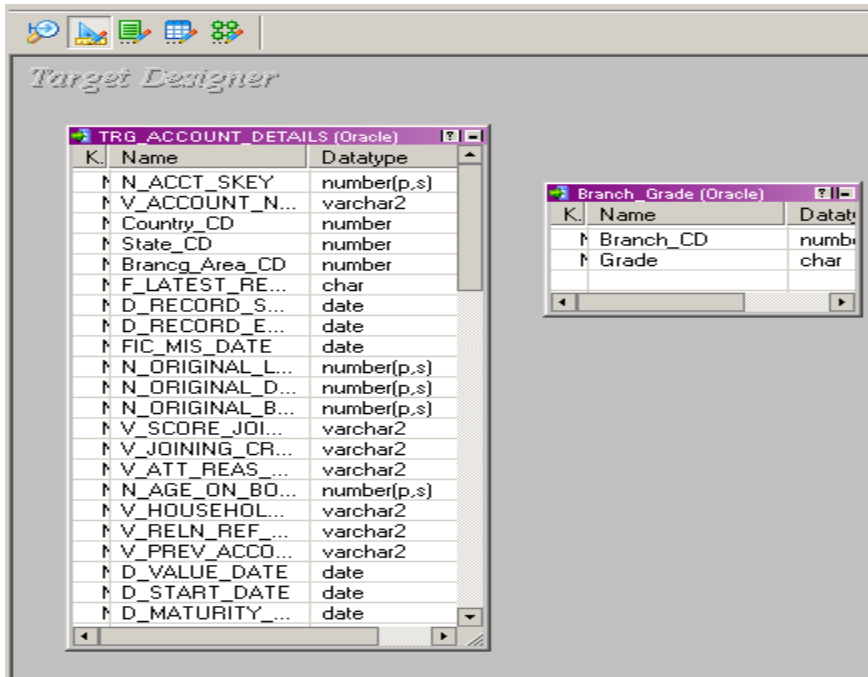
Step-9 Specify Username, Owner name, password and then click on connect and then select target table and click on OK.



Step-10 Target table in Target Designer tab. Here two target table in target designer window.

First Target Table(TRG_ACCOUNT_DETAILS) - Store all account information.

Second Target Table(Branch Grade) - Store Branch_CD and Grade.



Create Mapping:

Mappings represent the data flow b/w sources to targets. When the Informatica Power Center Server executes a session, it uses the instructions configured in the mapping to read, transform, and write data.

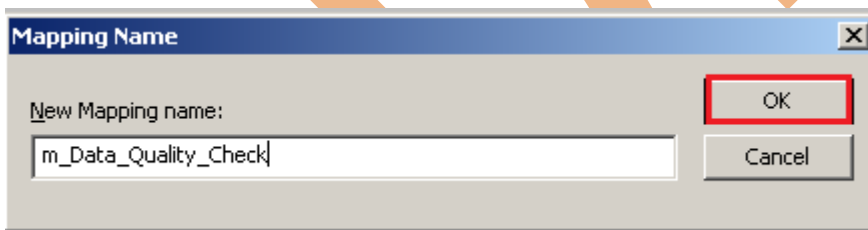
Every mapping must contain the following components:

Source definition: It describes the characteristics of a source.

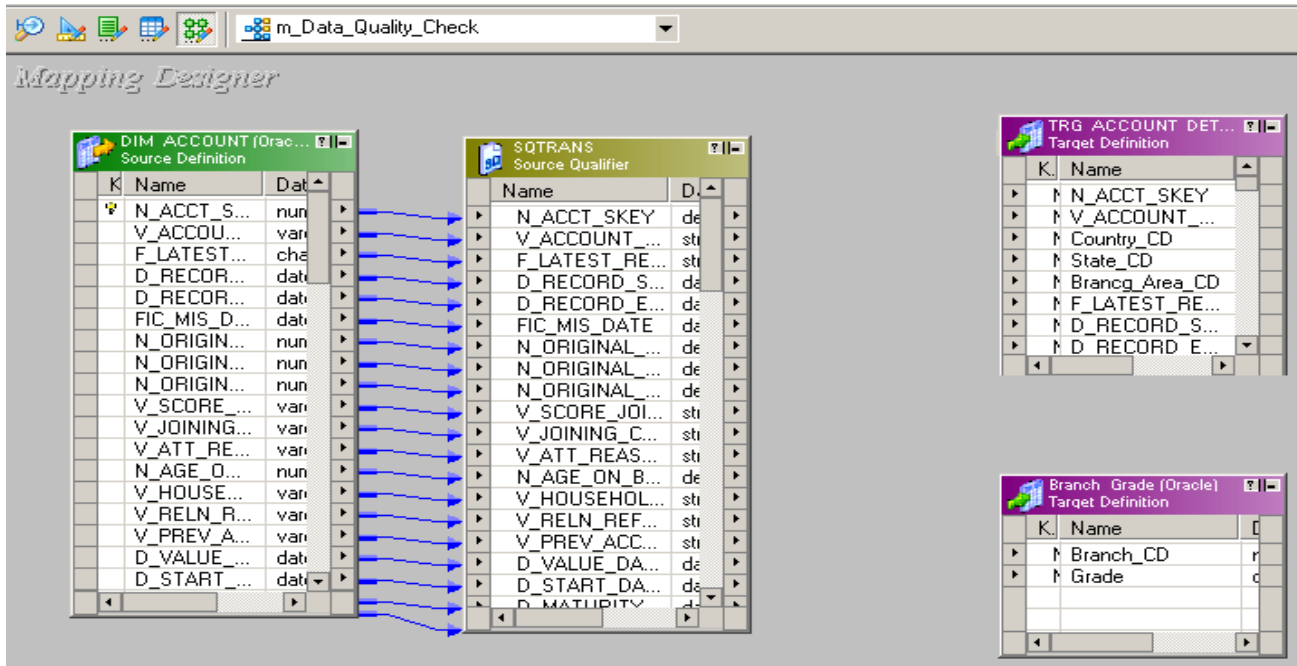
Transformation: A transformation is a repository object which reads the data, modifies the data and passes the data. Transformations in a mapping represent the operations that the integration service performs on the data.

Target definition: It describes the target table.

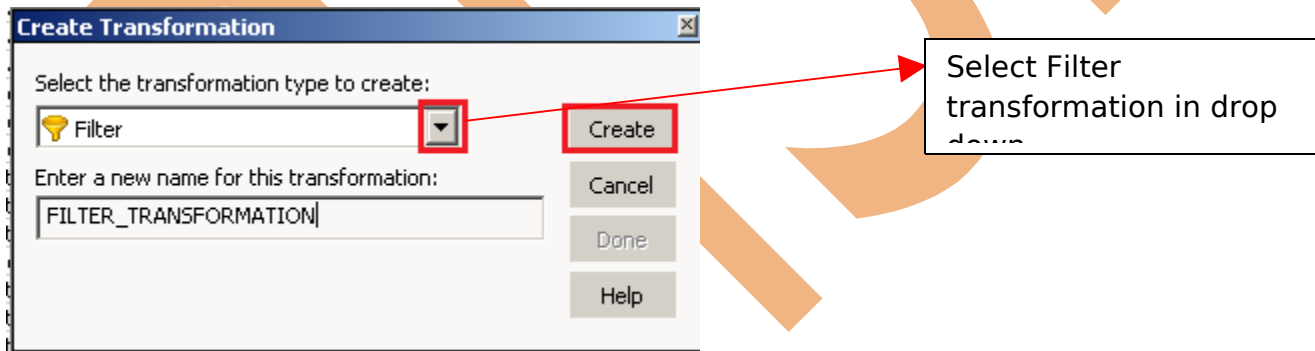
Step-1 Go to Mapping Designer  and Create New Mapping for the Data Quality Check and then name of mapping and click OK button.



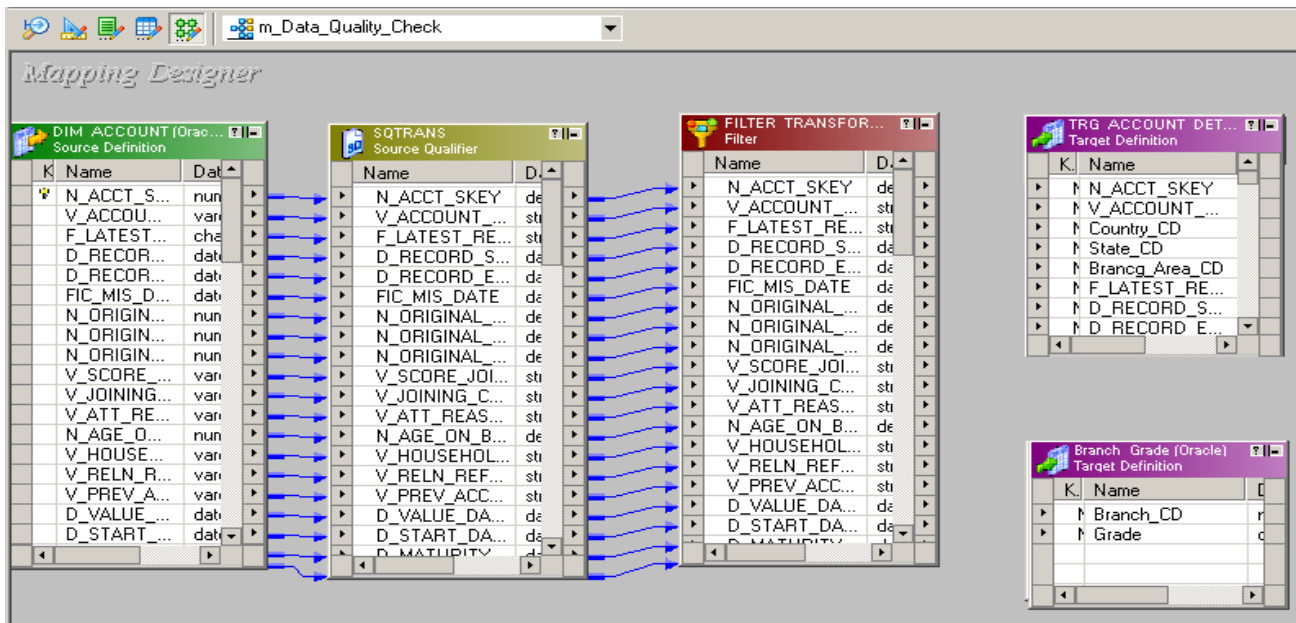
Step-2 Then drag and drop source and target table into Mapping Designer Window.



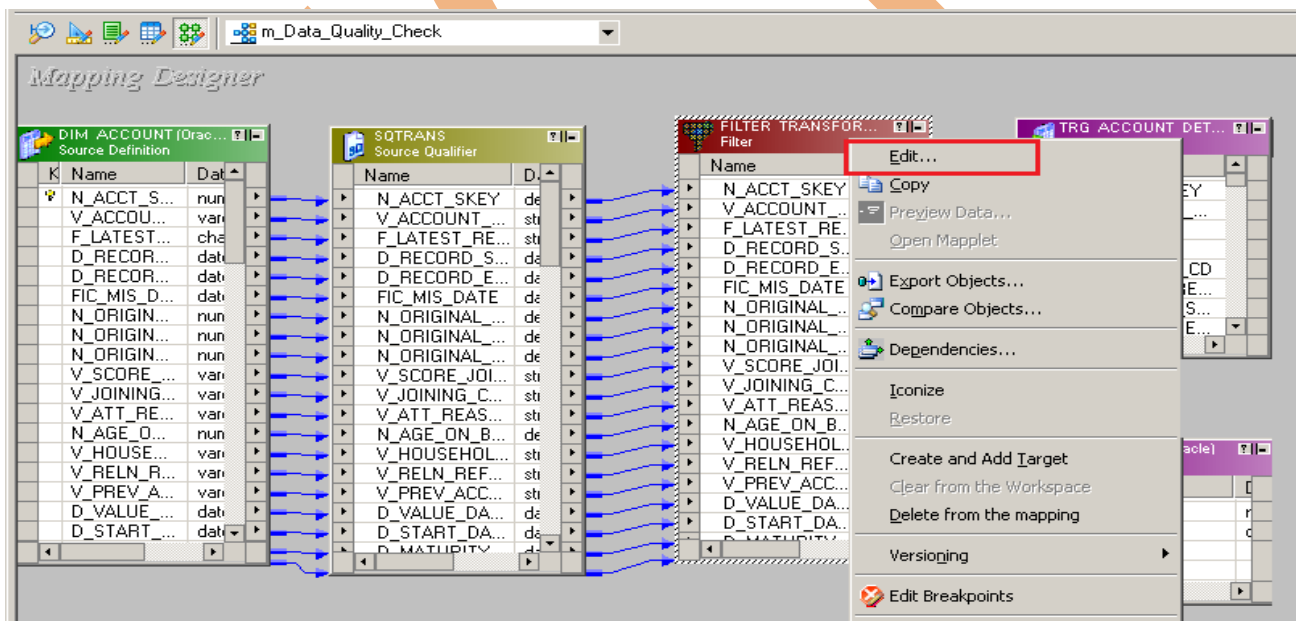
Step-3 Then Create Filter transformation for filter data means **Account Number Should be exactly 8 Char Long** and The **Difference between "Account Open Date" and "Account Close Date" can't be less than 30 days**.



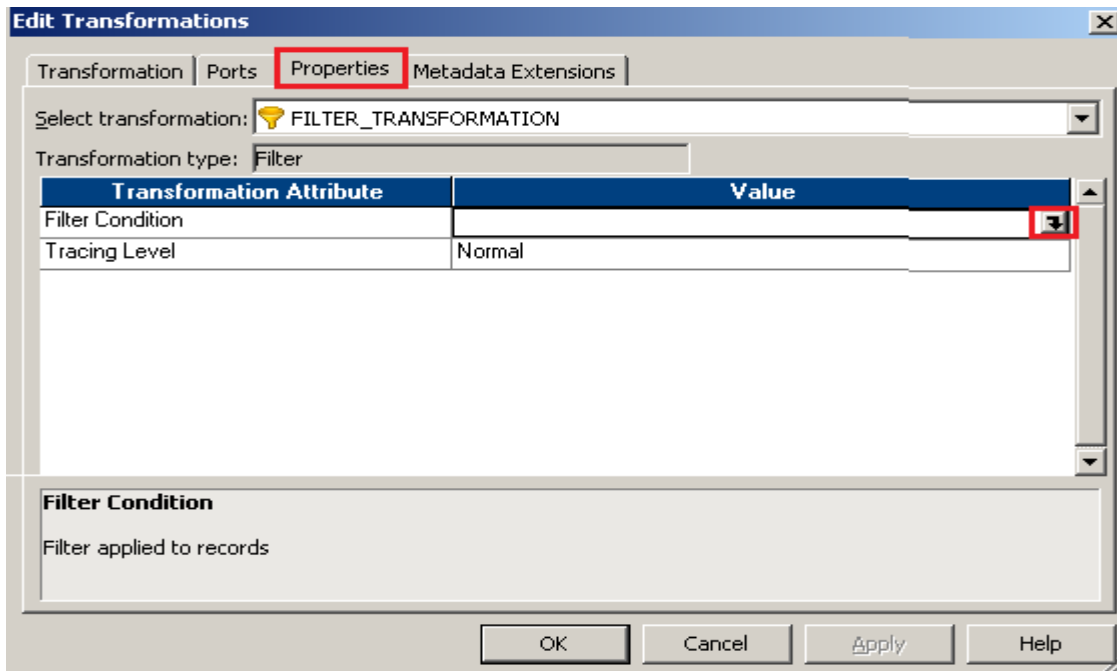
Step-4 Now, passes all source qualifier column into filter table.



Step-5 Right click on Filter table to give the filter condition.

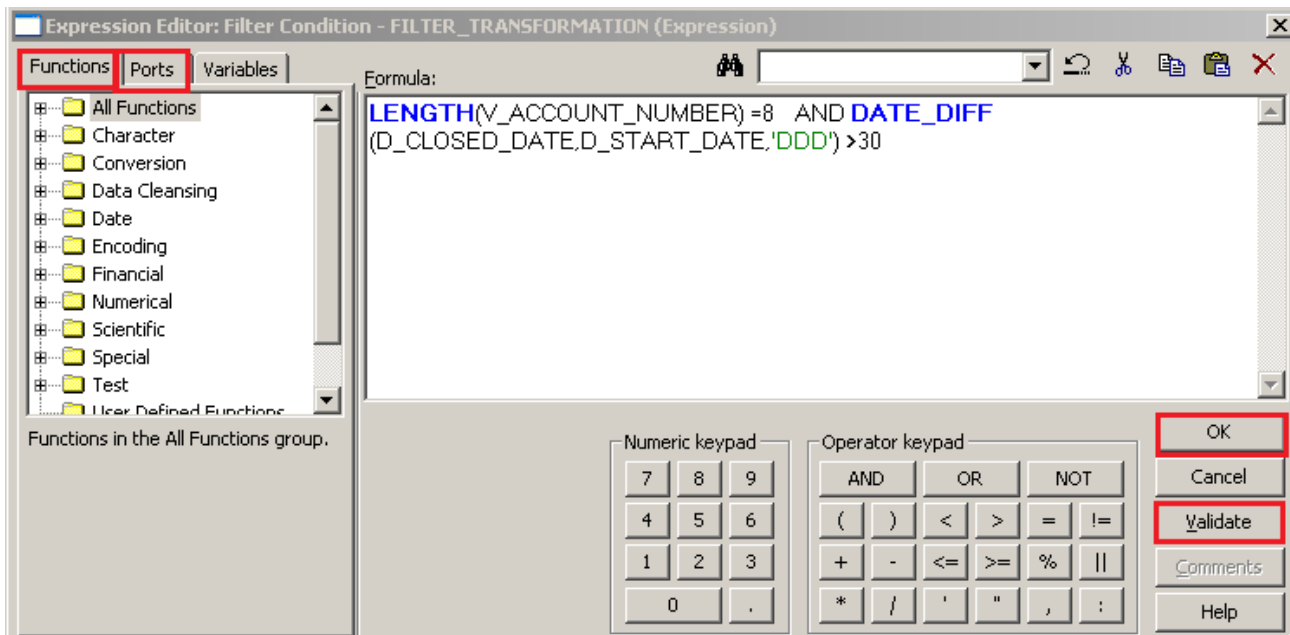


Step-5 Go to properties table and in Transformation Attribute to give value of Filter Condition.

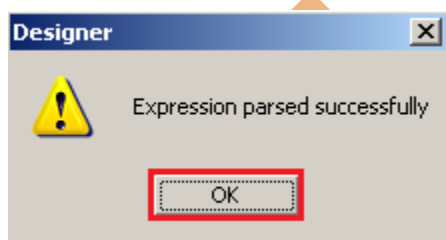


Step-6 Now, click on Functions tab and select LENGHT function to count the length of V_ACCOUNT_NUMBER then select = operator and 8 number. **This query fetch only that records which length is equal to 8.** And then select AND operator and select DATE_DIFF function to count the difference between Account_Start_Date and Account_Close_Date. And then select > operator and select 30 number. **This is query fetch only that value which date difference is not less than 30.** And Complete query fetch only that records which satisfy two condition.

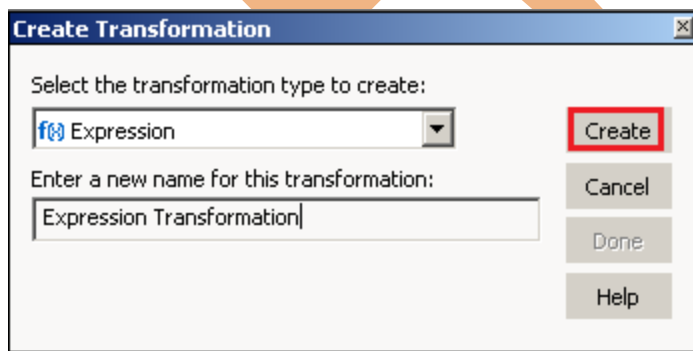
- Account Number Should be exactly 8 Char Long.
- The Difference between "Account Open Date" and "Account Close Date" can't be < 30 days



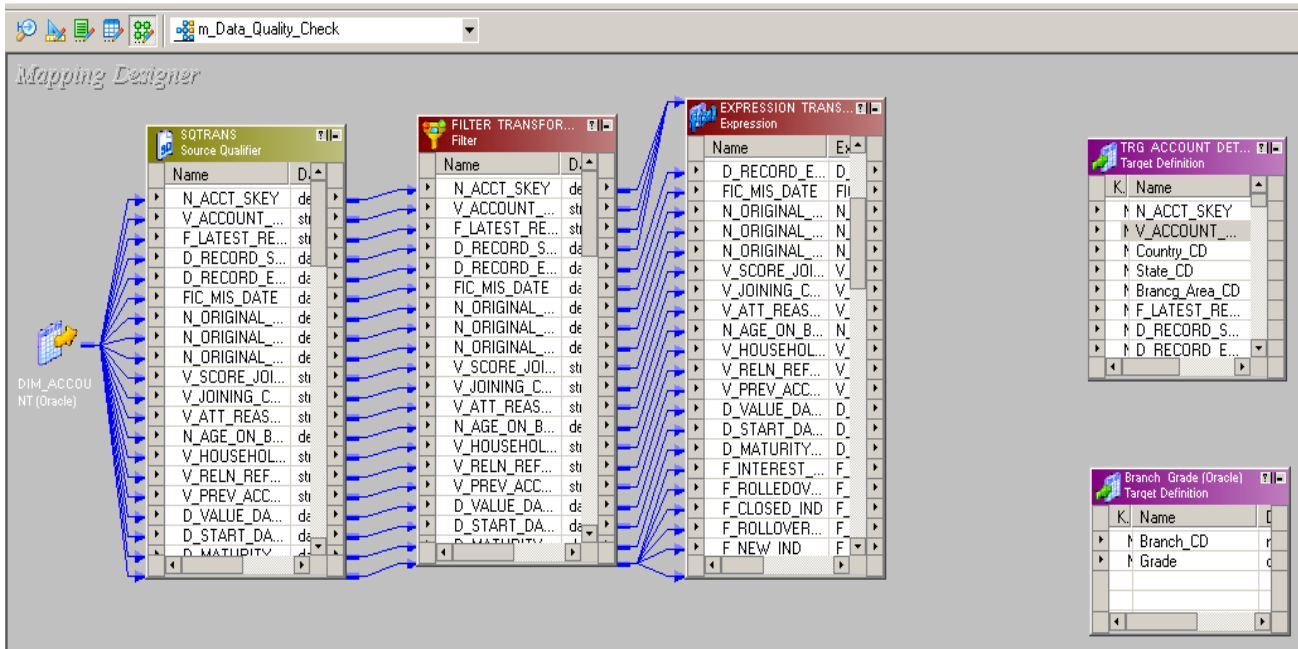
Step-7 Now, click on Validate button to validate it.



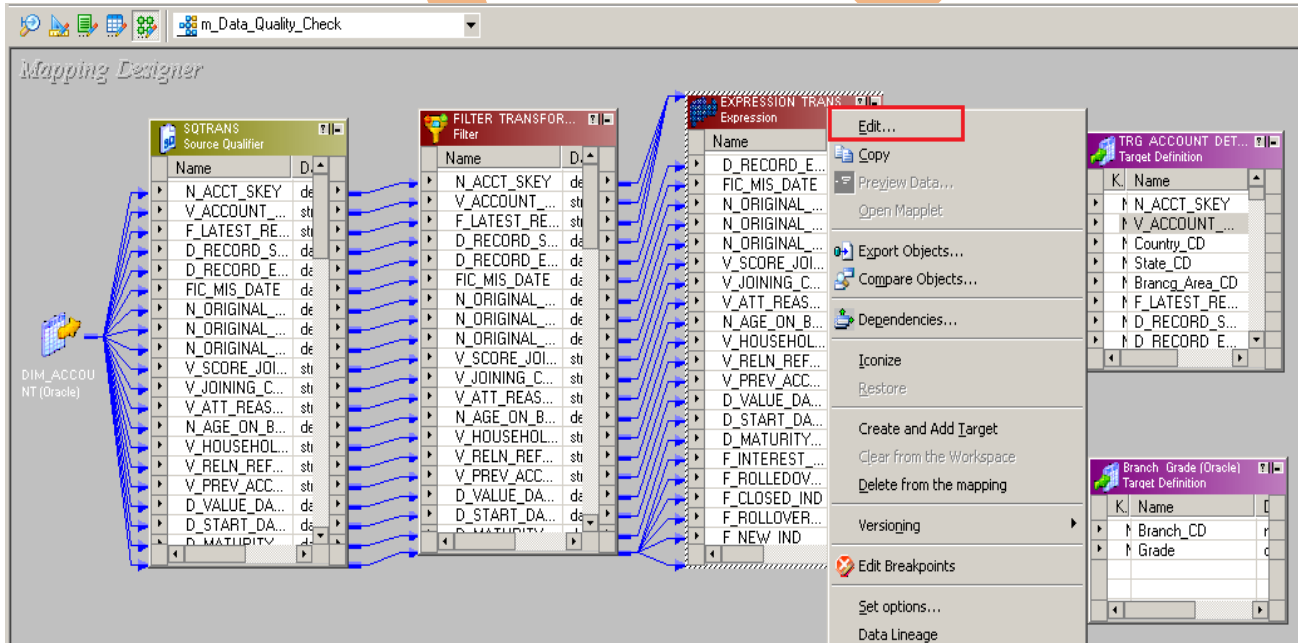
Step-8 Now create expression transformation for split the account number into COUNTRY_CD, STATE_CD, BRANCH_CD and if account number starting with zero then replace with x character. And also define its grade.



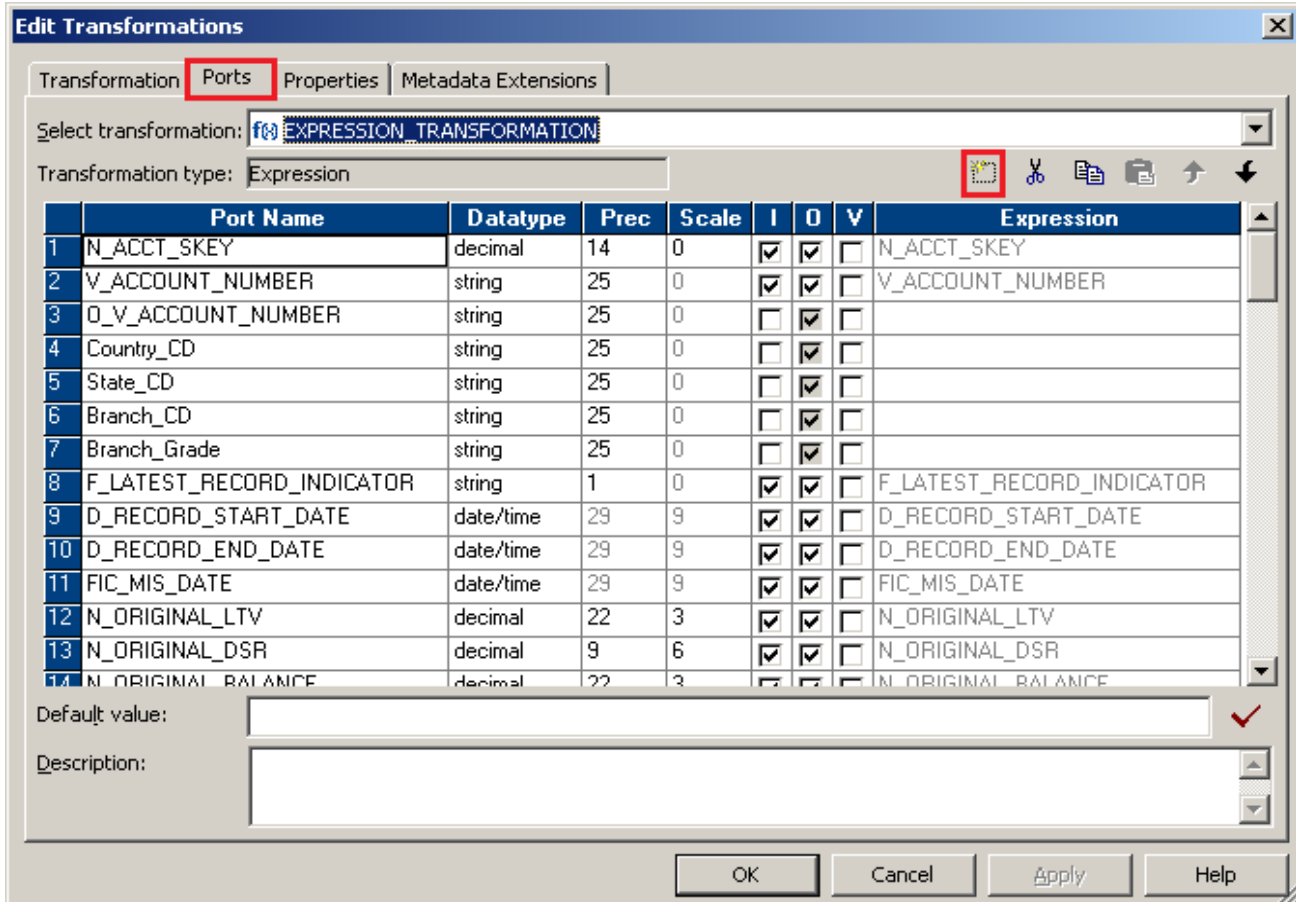
Step-9 Now passes all filter table column into expression transformation table



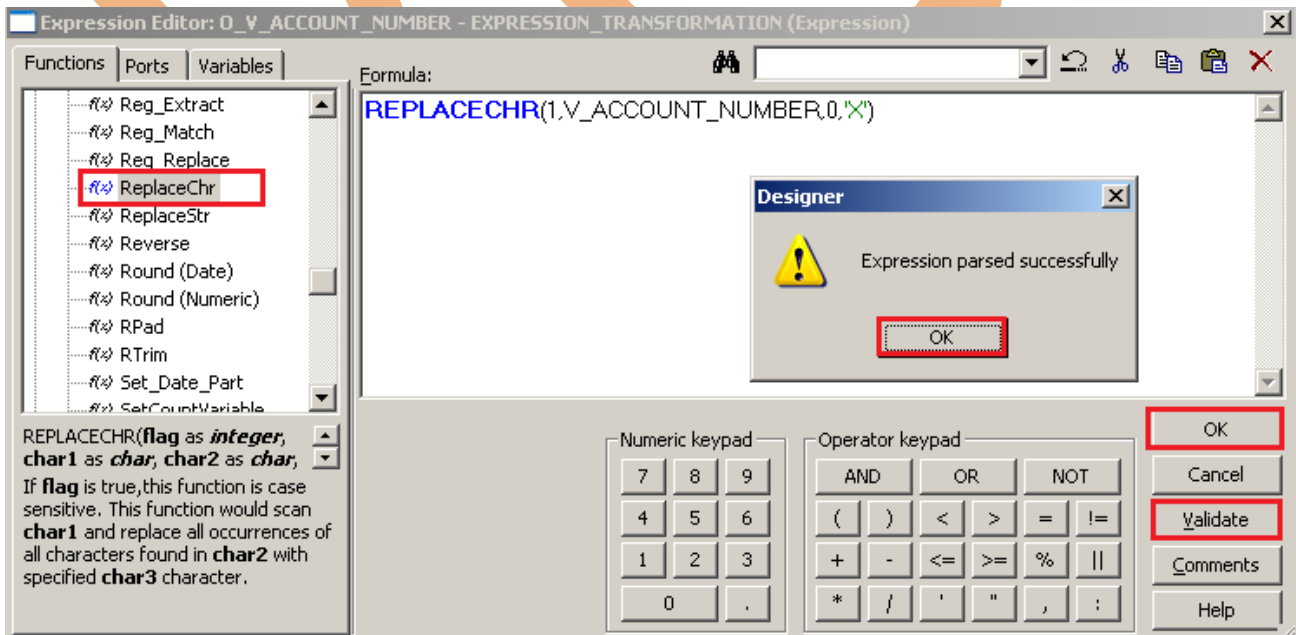
Step-10 Now right click on Expression table and select Edit.



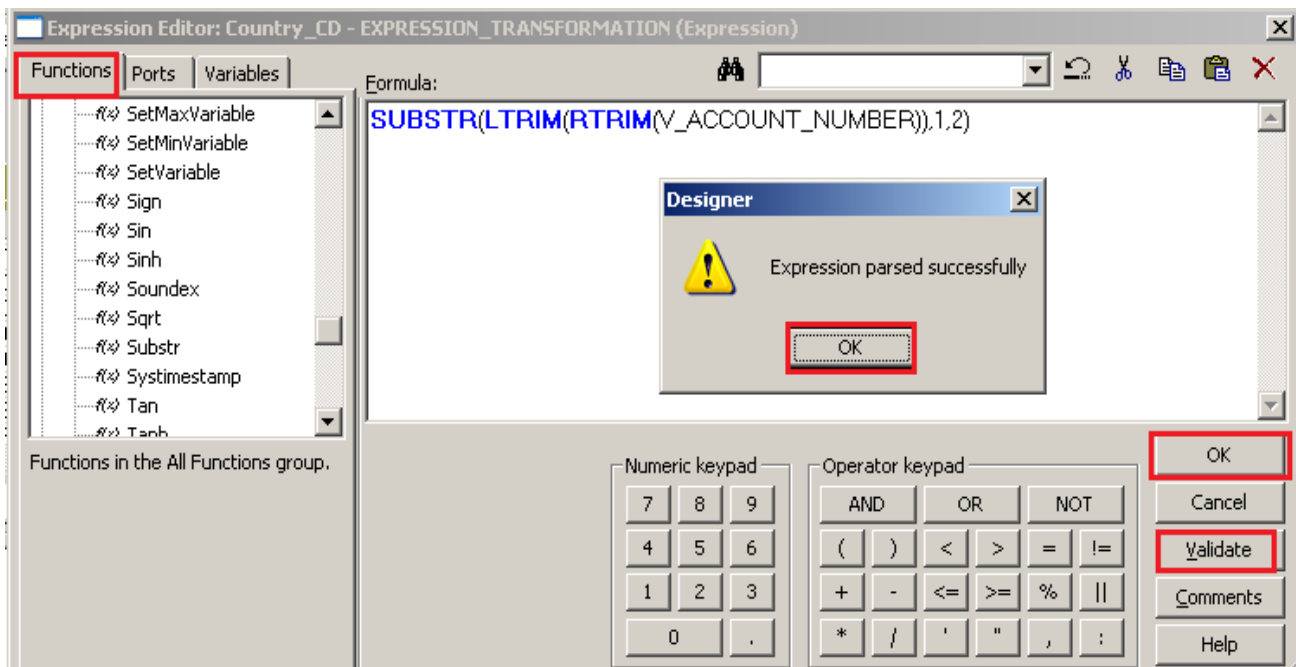
Step-11 Now go to Ports tab and add new port for output of V_ACCOUNT_NUMBER, Country_CD, State_CD, Branch_CD and Branch_Grade and click only **Output(O)** ports then give expression for these port into expression editor.



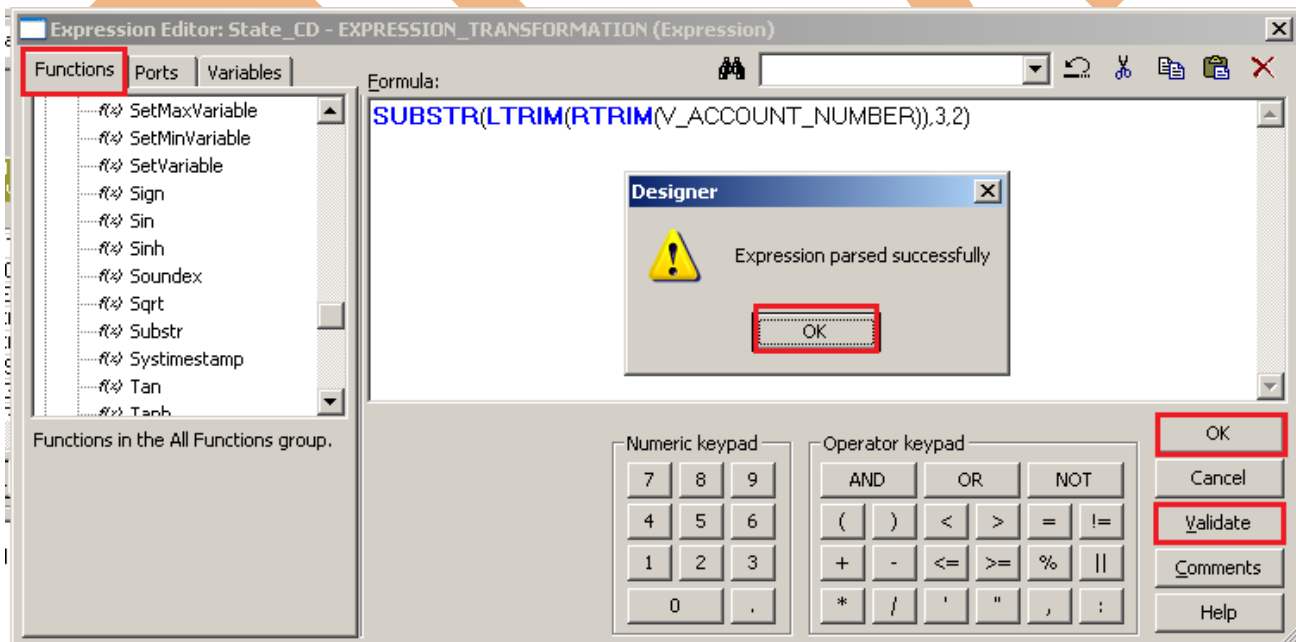
Step-12 Now select ReplaceChr function from function tab and select column and then specify condition and validate it.



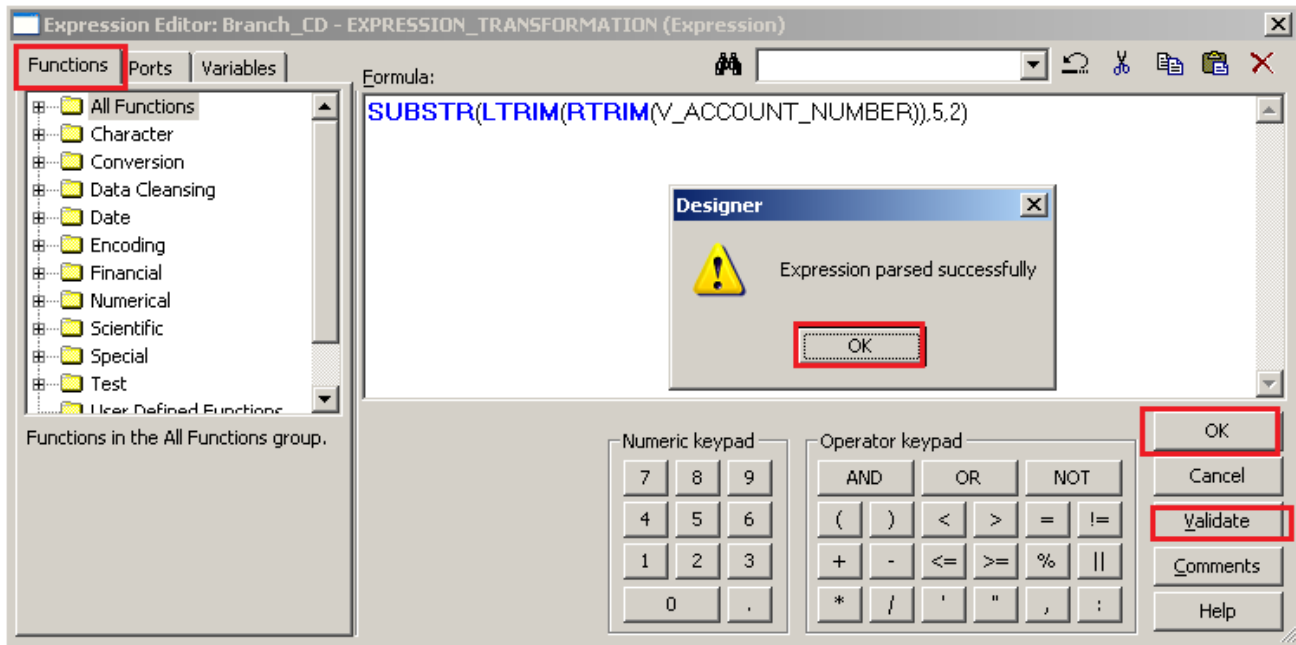
Step-13 Now select SUBSTR from function tab and select LTRIM and RTRIM function from function then specify condition and validate it.



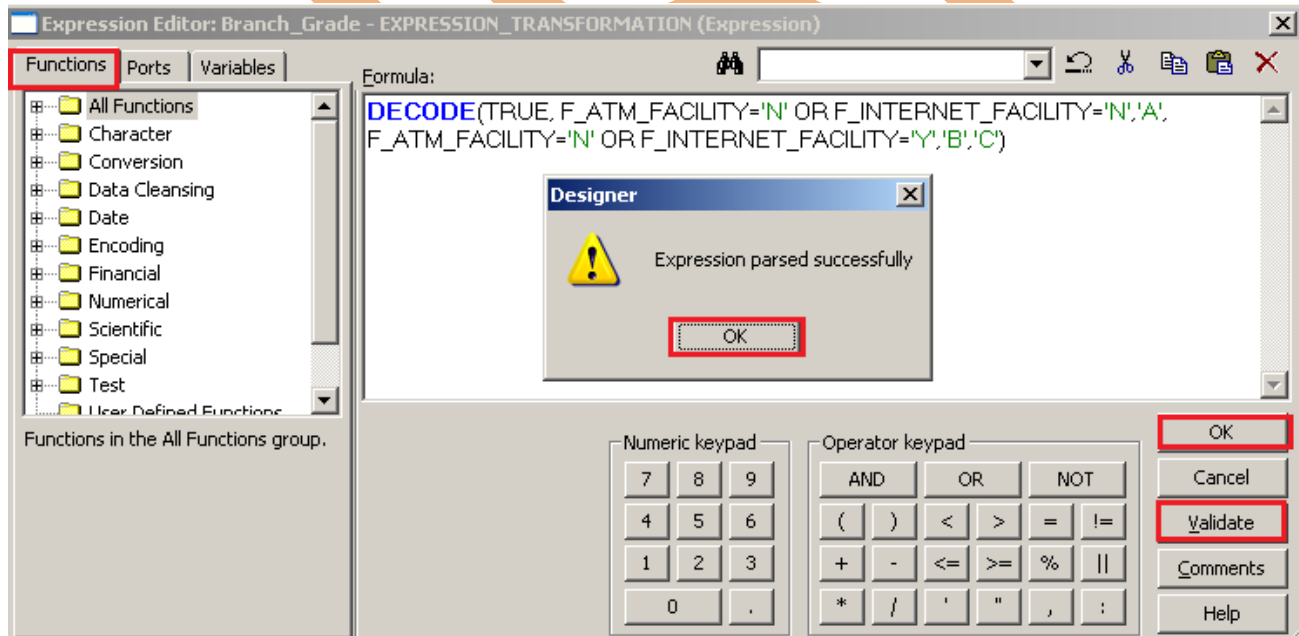
Step-14 Now select SUBSTR from function tab and select LTRIM and RTRIM function from function then specify condition and validate it



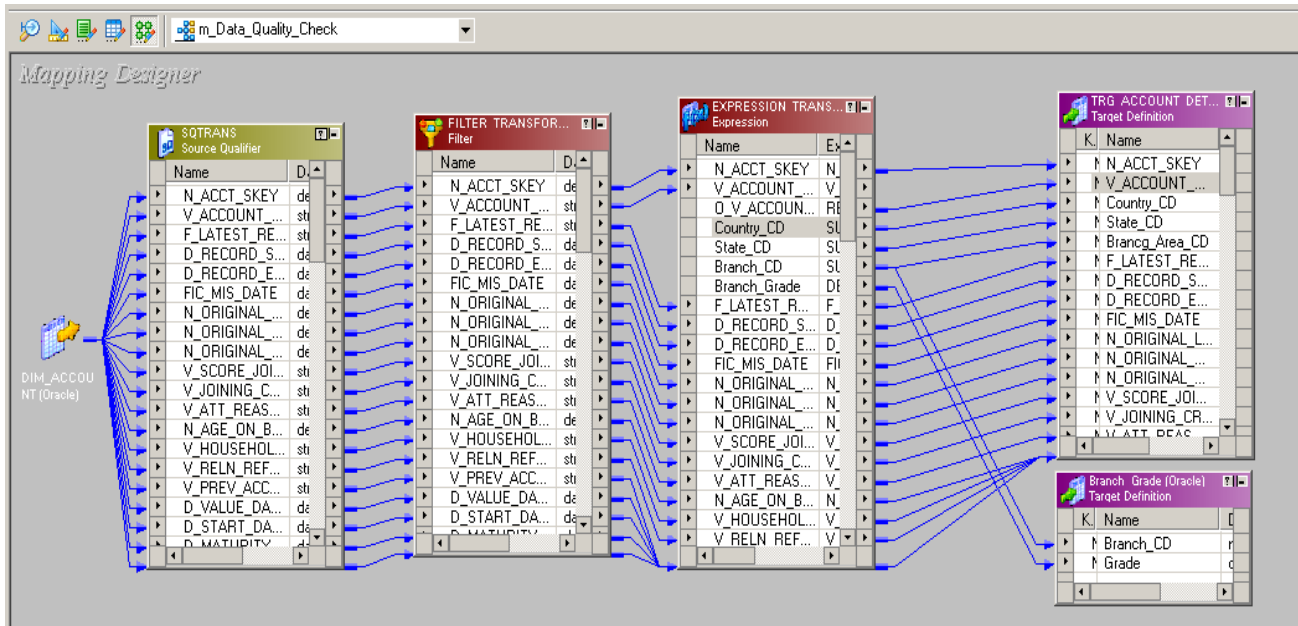
Step-15 Now select SUBSTR from function tab and select LTRIM and RTRIM function from function then specify condition and validate it



Step-16 Now select DECODE function from function tab and then specify condition to give grade for facility for ATM and Internet banking.



Step-17 Then Create Mapping.



Step-18 . Save this mapping.

01/16/2013 15:42:39 ** Saving... Repository infoReposUser, Folder Multiple_Source

Validating transformations of mapping m_Data_Quality_Check...

...transformation validation completed with no errors.

Validating data flow of mapping m_Data_Quality_Check...

...data flow validation completed with no errors.

Parsing mapping m_Data_Quality_Check...

...parsing completed with no errors.

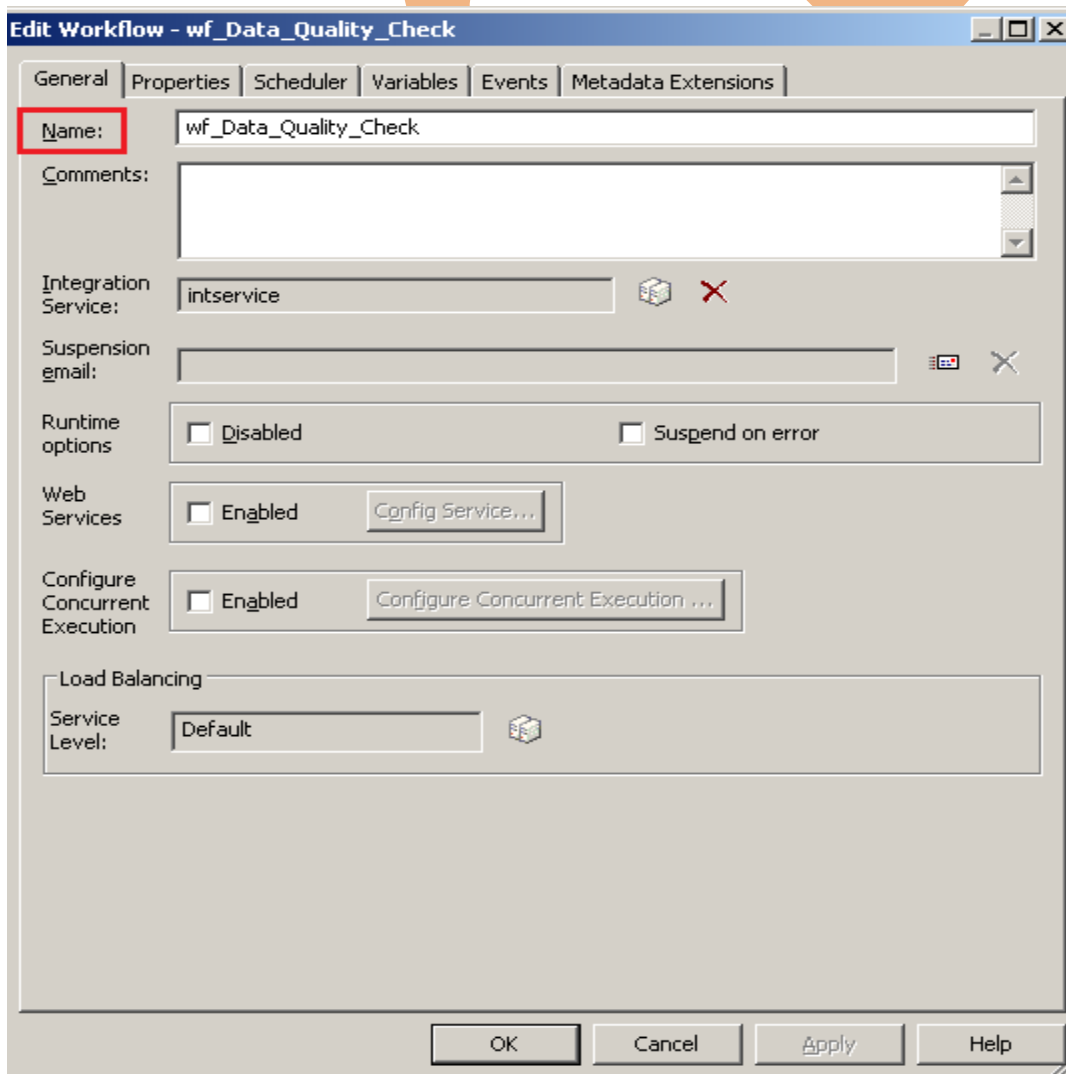
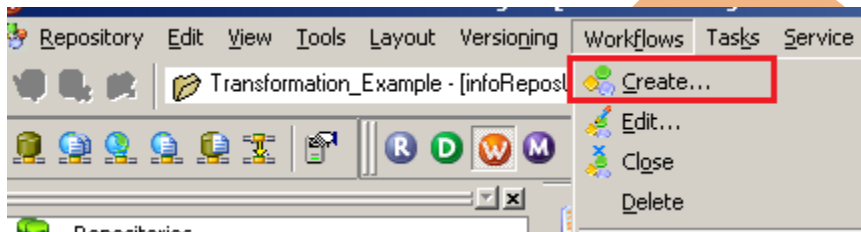
***** Mapping m_Data_Quality_Check is VALID *****

mapping m_Data_Quality_Check updated.

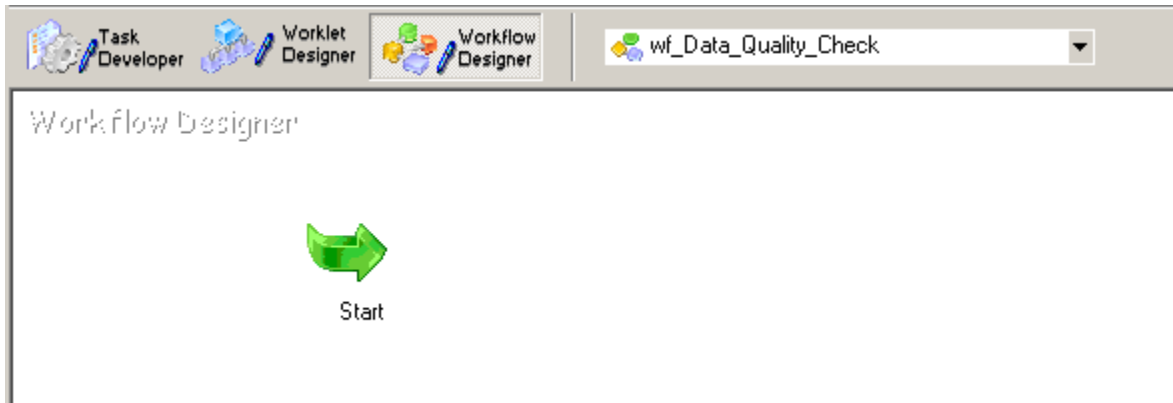
CREATE WORKFLOW

Workflow Manager: Workflow load the data between source to target b/w sequential manner. And also Define run-time properties for a mapping, known as sessions.

Step-1 Open Informatica PowerCenter Workflow Manager and then go to go to workflow designer and click on workflow menu to create workflow. Specify name of workflow and click OK.

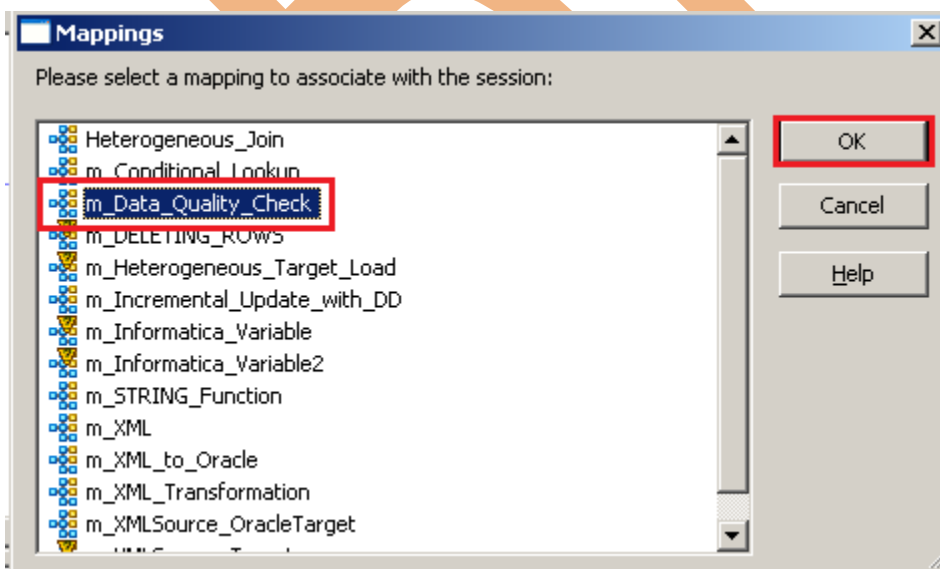
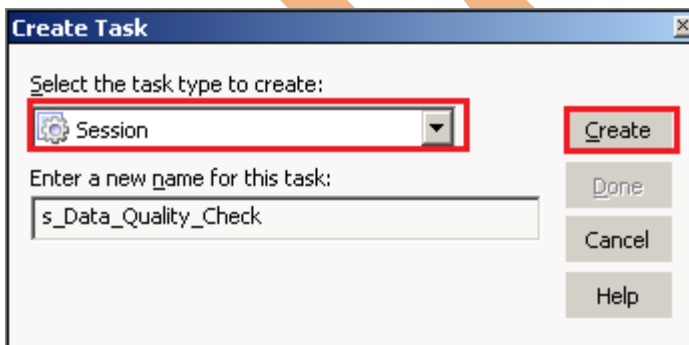


Step-2 Workflow Designer.



Step-3 Create Task and assign session, Click on Task menu and click on create and then name of session, click Create, select mapping and click OK.

SESSION - A session is a set of instructions that tells the Power Center Server how and when to move data from sources to targets.



Step-4 Session in workflow designer windows.

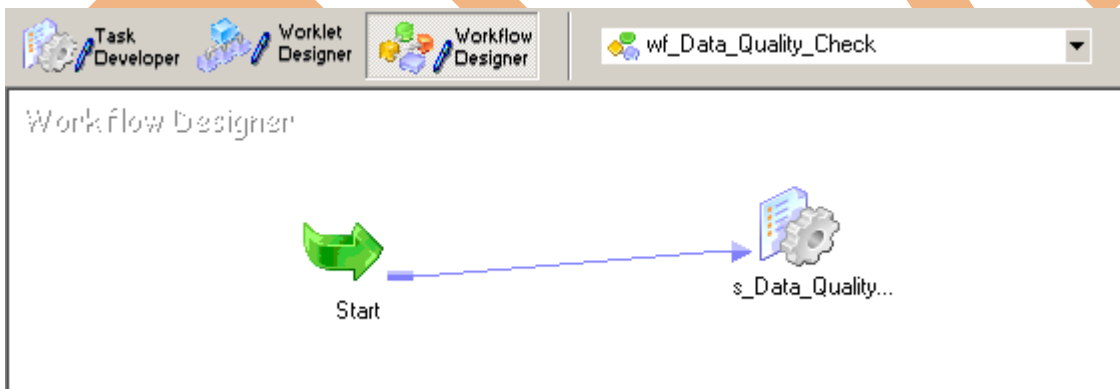


Step-5 Now create flow B/W Workflow to Task. Select Line Task and link to Start to s_Data_Quality_Check.

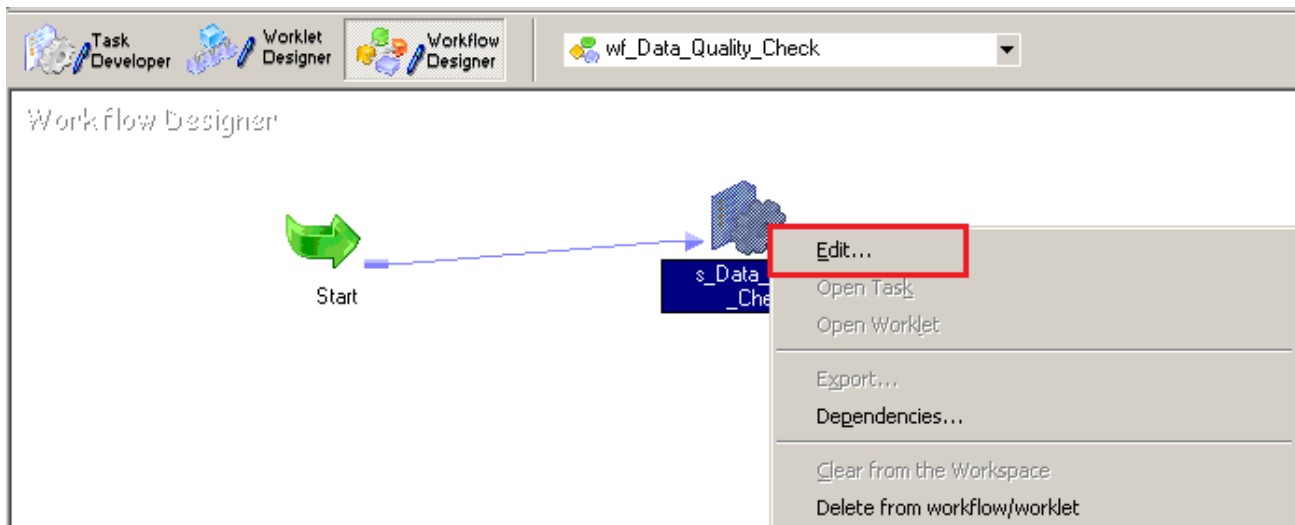
Link Task - Link task to determine the order of execution in the workflow.



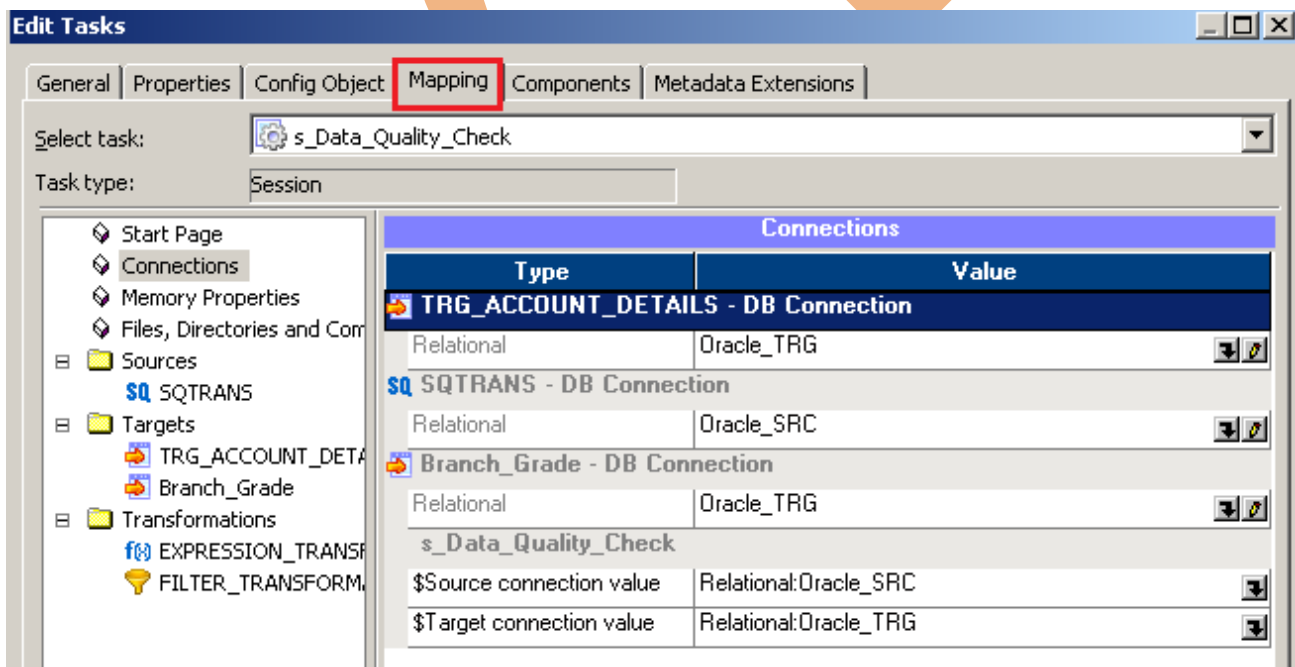
Step-6 Work Flow Designer Windows.



Step-7 Now Configure Connection to Target, Then Right Click on Expression and Edit, Then Click Mapping tab and configure connection for your Target table schema in oracle 11g RDBMS. And then click OK.



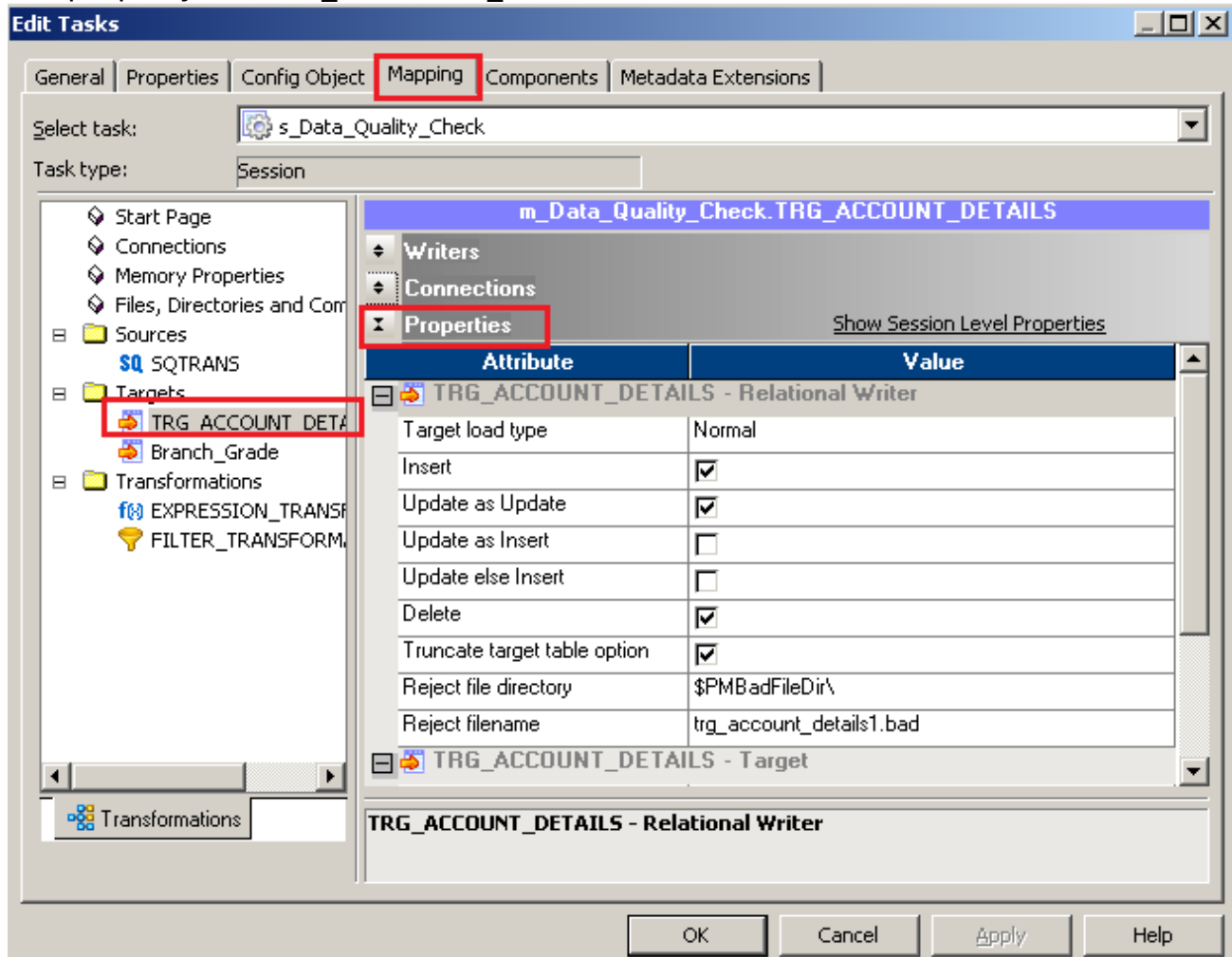
Step-8 In Mapping. Specify Connection and property.



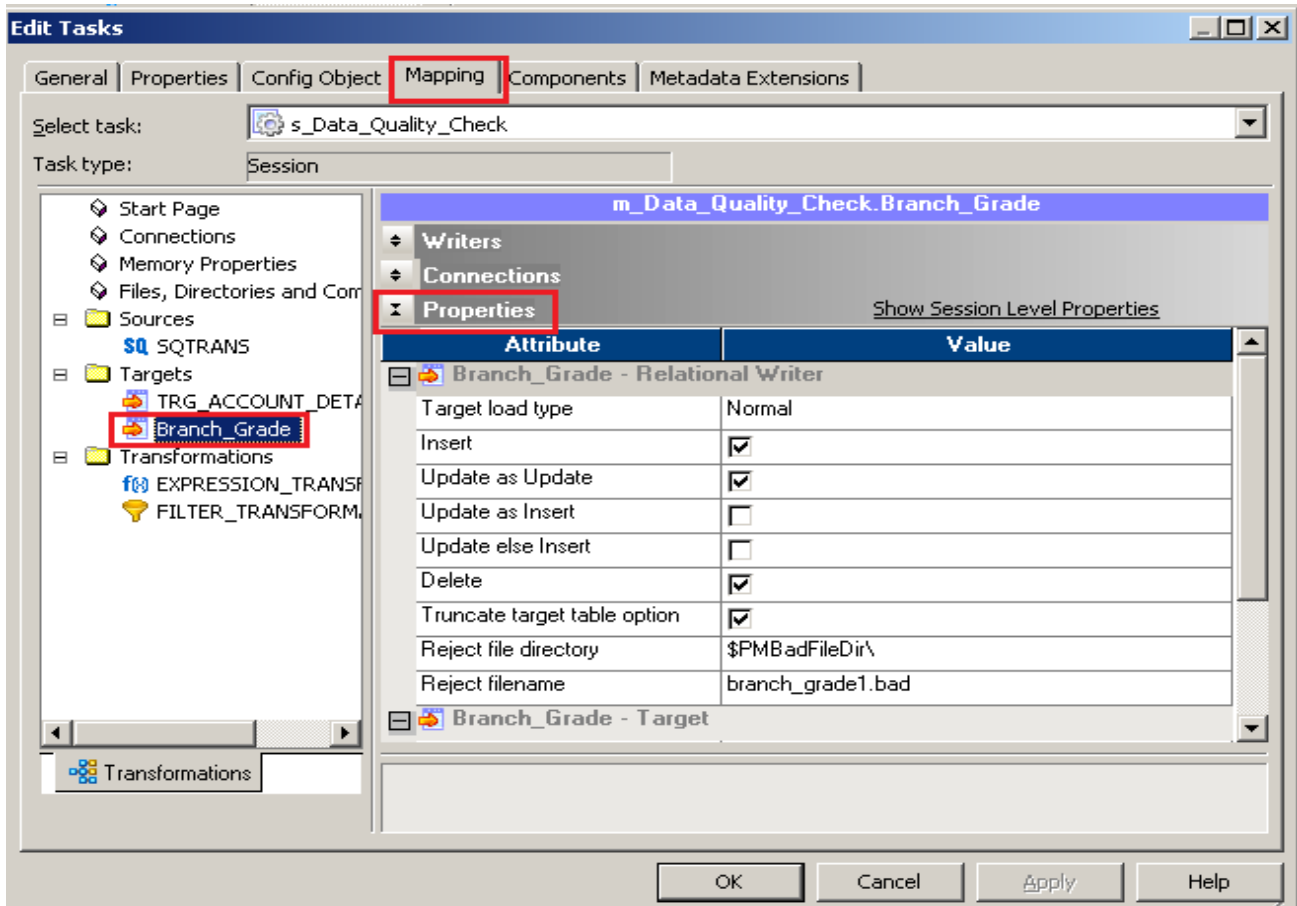
Step-9 Set These property for target table.

- **Insert:** Check this option to insert a row in the target table.
- **Delete:** Check this option to delete a row in the target table.
- **Truncate Table:** check this option to truncate the target table before loading the data.
- **Update as Update:** Update the row in the target table.
- **Update as Insert:** Insert the row which is flagged as update.
- **Update else Insert:** If the row exists in the target table, then update the row. Otherwise, insert the row.

Set property for TRG_ACCOUNT_DETAILS.



Step-10 Set These Set property for Branch_Grade.



Step-11 Now save (ctrl+s) this workflow and check it.

01/16/2013 15:42:45 *** Saving... Repository infoReposUser, Folder Multiple_Source

Validating the flow semantics of Workflow wf_Data_Quality_Check...
 ...flow semantics validation completed with no errors.

Validating tasks of Workflow wf_Data_Quality_Check...
 ...Workflow wf_Data_Quality_Check tasks validation completed with no errors.

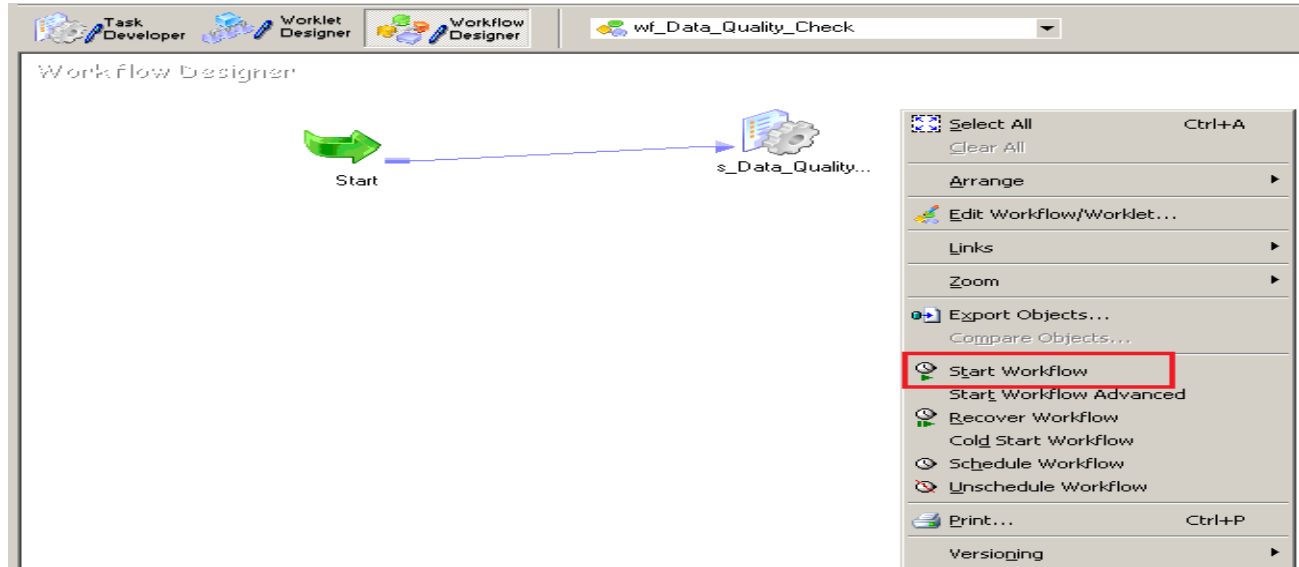
***** Workflow wf_Data_Quality_Check is VALID *****

Workflow wf_Data_Quality_Check updated.

Execute Workflow, Review data and Check log File

Workflow monitor: Workflow monitor is helpful in monitoring and tracking the workflow created in Informatica power center.

Step-1 Now Start Workflow, Right click on Workflow Designer Window and Click on Start Workflow.



Step-2 Check session in Informatica PowerCenter Workflow Monitor.

The screenshot displays the Informatica PowerCenter Workflow Monitor. The 'Workflow Run' table shows the following data:

Workflow Run	Start Time	Completion Time	Status
wf_Data_Quality_Check	1/16/2013 3:44:15 PM	1/16/2013 3:44:19 PM	Succeeded
wf_Data_Quality_Check	1/16/2013 3:44:15 PM	1/16/2013 3:44:15 PM	Succeeded
s_Data_Quality_Check	1/16/2013 3:44:15 PM	1/16/2013 3:44:19 PM	Succeeded

Below the table, the 'Task Details' section is expanded to show 'Source/Target Statistics' for the 's_Data_Quality_Check' session:

Transformation Name	Node	Applied Rows	Affected Rows	Rejected Rows	Throughput (Rows/Sec)	Throughput (Bytes/Sec)	Bytes	Last Error Code
Branch_Grade	node01_mit...	8	8	0	8	112	112	0
SQ SQTRANS	node01_mit...	10	10	0	10	24200	24200	0
TRG_ACCOUNT...	node01_mit...	8	8	0	8	19552	19552	0

Target table

Session successfully

Step-3 Now check target Table. Right click on Target Table in Target designer and give Username, Owner name and password and then click on Connect.

Connect to Database

ODBC data source: bispDataSource (Oracle in OraDb11g_home1)

Username: trg_transformation

Owner name: trg_transformation

Password: *****

Table name: TRG_ACCOUNT_DETAILS

N_ACCT...	V_ACCOU...	Country_...	State_CD	Brancg_Ar...	F_LATEST...	D_RECOR...	D_RECOR...	FIC_MIS_...	N_ORIGIN..
1	12135155	12	13	51	NULL	1/15/2012	12/15/2012	NULL	NUL
3	19145175	19	14	51	NULL	12/25/2012	1/12/2013	NULL	NUL
4	X8165255	8	16	52	NULL	9/12/2008	1/12/2013	NULL	NUL
5	X1265145	1	26	51	NULL	6/20/1998	12/12/2012	NULL	NUL
6	1X162519	10	16	25	NULL	7/15/2012	1/12/2013	NULL	NUL
7	16518527	16	51	85	NULL	2/20/2011	1/12/2012	NULL	NUL
8	29891511	29	89	15	NULL	11/25/2012	1/12/2013	NULL	NUL
10	X2825121	2	82	51	NULL	10/20/1999	1/12/2013	NULL	NUL

Connect to Database

ODBC data source: bispDataSource (Oracle in OraDb11g_home1)

Username: trg_transformation

Owner name: trg_transformation

Password: *****

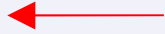
Table name: Branch_Grade

Branch_CD	Grade
51	A
51	A
52	A
51	A
25	A
85	B
15	B
51	A

Step-4 Session Log. Right click on session and select session log.

Severity	Timestamp	Node	Thread	Message Co...	Message
INFO	1/16/2013 3:44:17 PM	node01_mitest	READER_1_1_1	BLKR_16007	Reader run started.
INFO	1/16/2013 3:44:17 PM	node01_mitest	READER_1_1_1	RR_4010	SQ instance [SQTRANS] SQL Query [SELECT DIM_ACCOUNT.N_ACCT_SKEY, DIM_ACCOUNT.V_ACCOUNT_NUMBER, DIM_ACCOUNT.F_LATEST_RECORD_INDICATOR, DIM_ACCOUNT.D_RECORD_START_DATE, DIM_ACCOUNT.D_RECORD_END_DATE, DIM_ACCOUNT.FIC_MIS_DATE, DIM_ACCOUNT.N_ORIGINAL_LTV, DIM_ACCOUNT.N_ORIGINAL_DSR, DIM_ACCOUNT.N_ORIGINAL_BALANCE, DIM_ACCOUNT.V_SCORE_JOINING, DIM_ACCOUNT.V_JOINING_CREDIT_SCORE_BAND, DIM_ACCOUNT.V_ATT_REAS_CODE, DIM_ACCOUNT.N_AGE_ON_BOOK, DIM_ACCOUNT.V_HOUSEHOLD_REF_CODE, DIM_ACCOUNT.V_RELN_REF_CODE, DIM_ACCOUNT.V_PREV_ACCOUNT_NUMBER, DIM_ACCOUNT.D_VALUE_DATE, DIM_ACCOUNT.D_START_DATE, DIM_ACCOUNT.D_MATURITY_DATE, DIM_ACCOUNT.F_INTEREST_TYPE, DIM_ACCOUNT.F_ROLLOVER_TYPE, DIM_ACCOUNT.F_CLOSED_IND, DIM_ACCOUNT.F_ROLLOVER_IND, DIM_ACCOUNT.F_NEW_IND, DIM_ACCOUNT.F_JOINT_IND, DIM_ACCOUNT.F_SECURITY_STATUS, DIM_ACCOUNT.D_LAST_ACTIVITY_DATE, DIM_ACCOUNT.D_CLOSED_DATE, DIM_ACCOUNT.N_INT_ORIG_RATE, DIM_ACCOUNT.N_INT_BM_RATE, DIM_ACCOUNT.N_CREDIT_LIMIT_ORIG, DIM_ACCOUNT.V_CAMPAIN_ID, DIM_ACCOUNT.F_ATM_FACILITY, DIM_ACCOUNT.F_POS_FACILITY, DIM_ACCOUNT.F_TB_FACILITY, DIM_ACCOUNT.F_INTERNET_FACILITY, DIM_ACCOUNT.V_CONTRACT_CODE.]

SQL Query.



Severity	Timestamp	Node	Thread	Message Co...	Message
INFO	1/16/2013 3:44:17 PM	node01_mitest	WRITER_1_*_1	WRT_8168	End loading table [TRG_ACCOUNT_DETAILS] at: Wed Jan 16 15:44:17 2013
INFO	1/16/2013 3:44:17 PM	node01_mitest	WRITER_1_*_1	WRT_8035	Load complete time: Wed Jan 16 15:44:17 2013 LOAD SUMMARY ===== WRT_8036 Target: Branch_Grade (Instance Name: [Branch_Grade]) WRT_8038 Inserted rows - Requested: 8 Applied: 8 Rejected: 0 Affected: 8 WRT_8036 Target: TRG_ACCOUNT_DETAILS (Instance Name: [TRG_ACCOUNT_DETAILS]) WRT_8038 Inserted rows - Requested: 8 Applied: 8 Rejected: 0 Affected: 8
INFO	1/16/2013 3:44:17 PM	node01_mitest	WRITER_1_*_1	WRT_8043	*****END LOAD SESSION*****
INFO	1/16/2013 3:44:17 PM	node01_mitest	WRITER_1_*_1	WRT_8006	Writer run completed.
INFO	1/16/2013 3:44:17 PM	node01_mitest	MANAGER	PETL_24031	***** RUN INFO FOR TGT LOAD ORDER GROUP [1], CONCURRENT SET [1] ***** Thread [READER_1_1_1] created for [the read stage] of partition point [SQTRANS] has

Target Load Summary

