

Comparing designs and databases with Oracle SQL Developer Data Modeler

Heli Helskyaho

HrOUG 2015

Introduction, Heli

- * Graduated from Helsinki University (Master of Science, computer science)
- * Worked with Oracle products since 1993, worked for IT since 1990
- * Database!
- * CEO for Kantamestarit Oy since 2000
- * CEO for Miracle Finland Oy since 10/2010
- * Oracle ACE Director since 2013 (ACE since 2011)
- * Author of the book Oracle SQL Developer Data Modeler for Database Design Mastery (Oracle Press)

ORACLE

ed. hroug
godišnja konferencija

Oracle SQL Developer Data Modeler for Database Design Mastery

Design, Deploy, and Maintain World-Class Databases
on Any Platform

Heli Helskyaho
Oracle ACE Director

Forewords by C.J. Date and Tom Kyte

Oracle
Press

Introduction, Heli

- * Been an Oracle Designer user since 1996 and Data Modeler user since 2010
- * Been solving performance problems since 1993
 - * Absolutely convinced that good database *design* and *documentation* will *reduce* this work.
 - * Absolutely convinced that it is *easier* to solve problems on database that has been *documented*

What is Data Modeler?

- * A tool for database design (supports all the "new" Oracle features)
- * Logical, relational, physical models, DDLs,...
- * Multidimensional models (DW), Data Flows etc.
- * For **designing** and **documenting** the **data architecture** and the **database**
- * Support for all the phases in database design and easy moving from one to another, support for reverse engineering
- * Support for version control and multiuser environment: XML files and Subversion

What is Data Modeler?

- * Import: Oracle repository, existing databases, Oracle Designer, file import (Erwin, Bachman), ...
- * Export: DDL, CSV, ...
- * Reporting (in tool itself and also Reporting Repository)
- * Standards: Design Rules, Preferences, Naming Standards, Domains, ...
- * Data Modeler viewer integrated in SQL Developer (3.0 ->), also reports

Why is compare functionality important?

- * Better understanding of what you have
- * Better quality
- * Alter DDLs
- * ...

Different Compares

- * Design vs Design
- * Design vs Database
- * Database vs Design

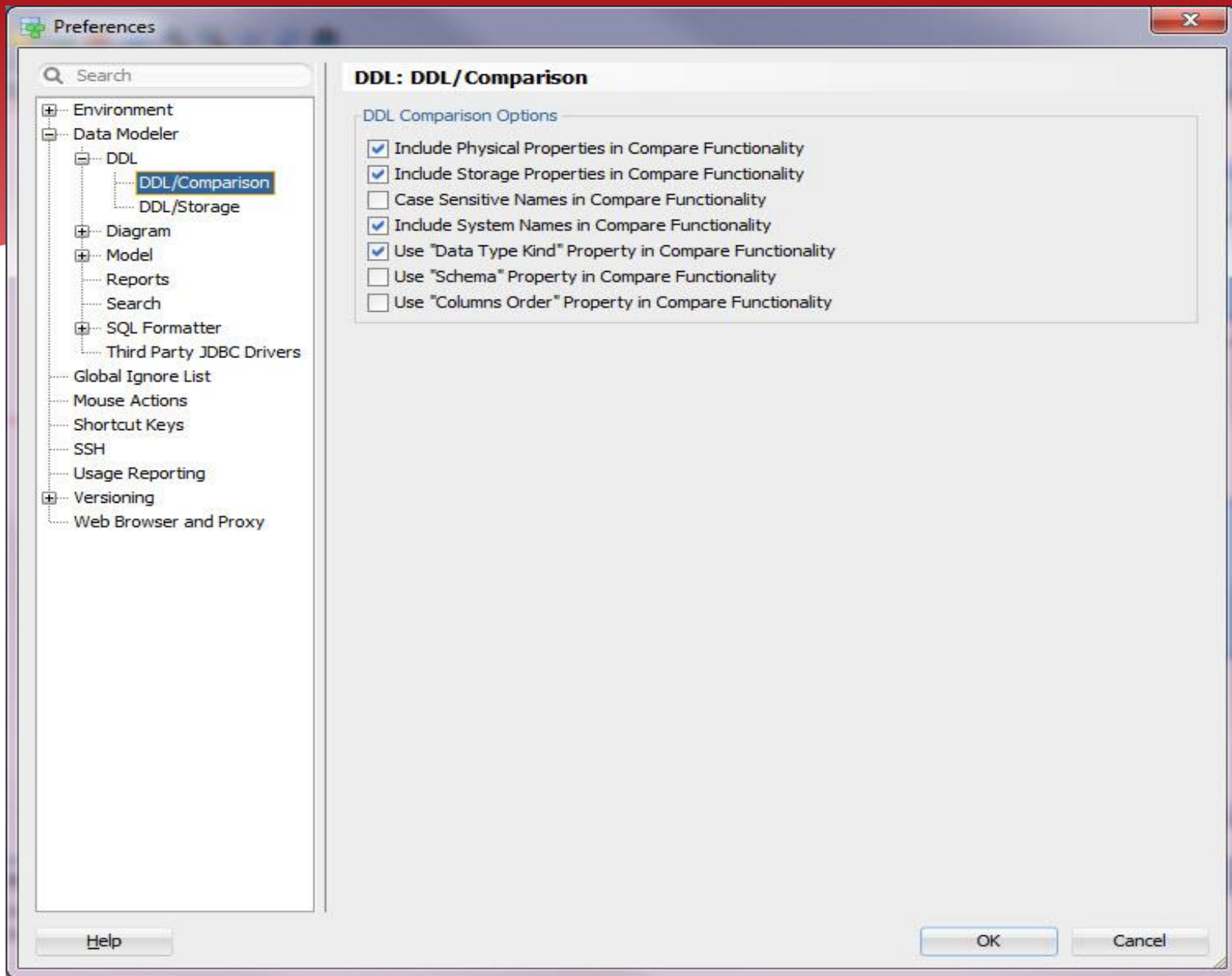
Different Compares, Designs

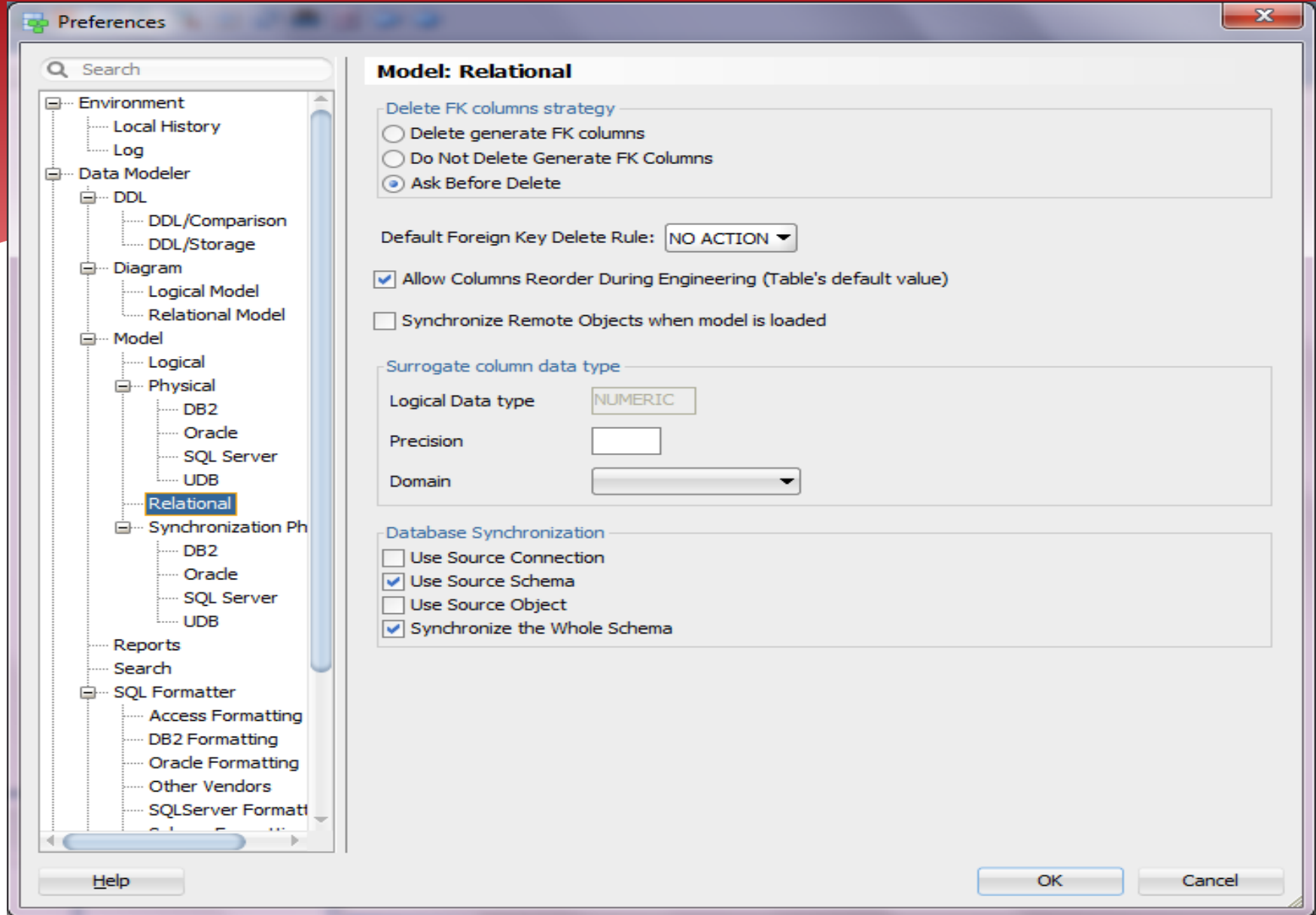
- * File | Import | Data Modeler Design
 - * Compares "everything"
- * Tools | Compare/Merge Models
 - * Compares only relational and physical models
 - * ALTER DDLs can be generated
- * These can be used for instance to compare different versions of the design from version control

Different Compares, Database

- * Synchronize Model With Data Dictionary
 - * Target: model
- * Synchronize Data Dictionary With Model
 - * Target: database
- * File | Import | DDL File
- * File | Import | Data Dictionary

Preferences and Properties



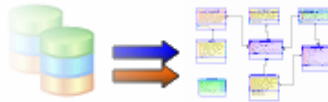


Comparing Designs, Import

- * File | Import | Data Modeler Design

Oracle SQL Developer Data Modeler Design Import Wizard

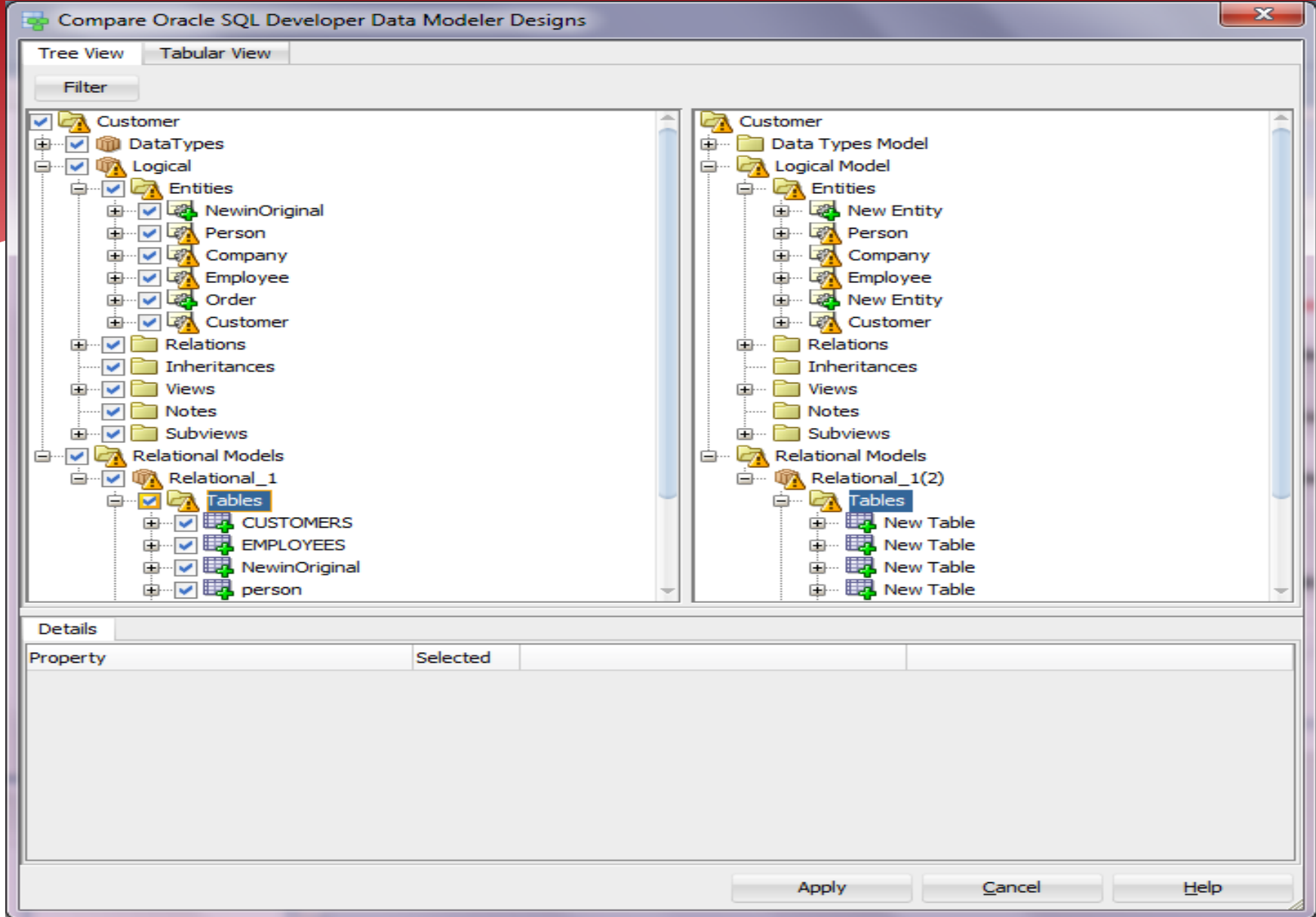
Select Logical and Relational Models To Import



1. Select Models to Import.

2. Generate Design.

Selected	Model	Import to
<input type="checkbox"/>	Logical Model	Logical Model
<input type="checkbox"/>	Relational_1	New Relational



Compare Oracle SQL Developer Data Modeler Designs

Tree View | Tabular View

Filter

NewinOriginal

- Person
 - Attributes
 - Candidate Keys
 - Company
 - Employee
 - Order
 - Customer
- Relations
- Inheritances
- Views
- Notes
- Subviews
- Relational Models
 - Relational_1
 - Tables
 - CUSTOMERS
 - Columns
 - Indexes
 - PK and UK Constraints
 - Foreign Keys
 - Table Check Constraints

New Entity

- Person
 - Attributes
 - Candidate Keys
 - Company
 - Employee
 - New Entity
 - Customer
- Relations
- Inheritances
- Views
- Notes
- Subviews
- Relational Models
 - Relational_1(2)
 - Tables
 - New Table
 - Columns
 - Indexes
 - PK and UK Constraints
 - Foreign Keys
 - Table Check Constraints

Details

Property	Selected	Source Entity: Person	Target Entity: Person
Comment	<input checked="" type="checkbox"/>		Definition of a person...
Name	<input type="checkbox"/>	Person	Person
Comment in RDBMS	<input type="checkbox"/>		
Notes	<input type="checkbox"/>		
Temporary Table Scope	<input type="checkbox"/>		
Short Name	<input type="checkbox"/>	Per	Per
Preferred Abbreviation	<input type="checkbox"/>	PerPA	PerPA
Synonyms	<input type="checkbox"/>	PersonS	PersonS
Synonyms To Display	<input type="checkbox"/>	PersonSD	PersonSD

Apply | Cancel | Help

Compare Oracle SQL Developer Data Modeler Designs

Tree View | Tabular View

Filter: | Model: ALL | Status: All | Type: ALL

Selected	Source	Target	Type:
<input type="checkbox"/>	XMLTYPE	XMLTYPE	Structured Type
<input checked="" type="checkbox"/>	NewinOriginal		Entity
<input checked="" type="checkbox"/>	Person	Person	Entity
<input type="checkbox"/>	Person.SSN	Person.SSN	Attribute
<input type="checkbox"/>	Person.PersonInfo	Person.PersonInfo	Attribute
<input type="checkbox"/>	Person.CUSTOMERS cno	Person.CUSTOMERS cno	Attribute
<input type="checkbox"/>	Person.Person PK	Person.Person PK	Key
<input checked="" type="checkbox"/>	Company	Company	Entity
<input type="checkbox"/>	Company.CompanyID	Company.CompanyID	Attribute
<input type="checkbox"/>	Company.CompanyInfo	Company.CompanyInfo	Attribute
<input type="checkbox"/>	Company.CUSTOMERS cno	Company.CUSTOMERS cno	Attribute
<input type="checkbox"/>	Company.Company PK	Company.Company PK	Key
<input checked="" type="checkbox"/>	Employee	Employee	Entity
<input type="checkbox"/>	Employee.EmpNo	Employee.EmpNo	Attribute
<input type="checkbox"/>	Employee.Firstname	Employee.Firstname	Attribute
<input type="checkbox"/>	Employee.Lastname	Employee.Lastname	Attribute
<input type="checkbox"/>	Employee.Description	Employee.Description	Attribute
<input type="checkbox"/>	Employee.EmpNo1	Employee.EmpNo1	Attribute
<input type="checkbox"/>	Employee.Employee PK	Employee.Employee PK	Key
<input checked="" type="checkbox"/>	Order		Entity
<input checked="" type="checkbox"/>	Customer	Customer	Entity
<input type="checkbox"/>	Customer.CustNo	Customer.CustNo	Attribute

Generate Report

Details

Property	Selected	Source Entity: Person	Target Entity: Person
Comment	<input checked="" type="checkbox"/>		Definition of a person...
Name	<input type="checkbox"/>	Person	Person
Comment in RDBMS	<input type="checkbox"/>		
Notes	<input type="checkbox"/>		
Temporary Table Scope	<input type="checkbox"/>		
Short Name	<input type="checkbox"/>	Per	Per
Preferred Abbreviation	<input type="checkbox"/>	PerPA	PerPA
Synonyms	<input type="checkbox"/>	PersonS	PersonS
Synonyms To Display	<input type="checkbox"/>	PersonSD	PersonSD

Apply | Cancel | Help

Comparing Designs, Compare/Merge Models

- * Tools | Compare/Merge Models
- * Compares the design that is open and a design you select to be compared
- * Compares only relational and physical models

Relational Models Dialog

Design To Compare: ~none~

Source Model

Relational Model

Target Design Customer

Target Model: Relational_1

RDBMS Sites

RDBMS Site:

Compare Mapping

Compare Models

Tree View | Tabular View

Filter

Relational_1(Customer)

- [-] Data Types Model
- [-] Tables
 - [-] CUSTOMERS
 - [-] Company
 - [-] Twitter_Info
 - [-] person
 - [-] To Drop
- [-] Views

Relational_1(Customer)

- [-] Data Types Model
- [-] Tables
 - [-] CUSTOMERS
 - [-] CPY
 - [-] New Table
 - [-] person
 - [-] EMPLOYEES
- [-] Views

Options | Tables that will be recreated | Data type conversion | Orade Errors to Mask

Details	Dynamic/UD properties	Physical Details	Storage Details
Property	Selected	Source Table: Company	Target Table: CPY
Name	<input checked="" type="checkbox"/>	Company	CPY
Schema	<input type="checkbox"/>		MN
Comment	<input type="checkbox"/>	Heli's comments in Excel	Heli's comments in Excel
Comment in RDBMS	<input type="checkbox"/>		
Notes	<input type="checkbox"/>		
Abbreviation	<input type="checkbox"/>	Comp	Comp
Temporary Table Scope	<input type="checkbox"/>		
Table Type	<input type="checkbox"/>		
Structured Type	<input type="checkbox"/>		
Allow Type Substitution	<input type="checkbox"/>	true	true
Spatial Table	<input type="checkbox"/>	false	false
Min Volumes	<input type="checkbox"/>	0	0
Expected Volumes	<input type="checkbox"/>	0	0
Max Volumes	<input type="checkbox"/>	9999999	9999999

Merge | DDL Preview | Close | Help

Compare Models

Tree View | Tabular View

Filter

Relational_1(Customer)

- Data Types Model
- Tables
 - CUSTOMERS
 - Company
 - Twitter_Info
 - person
 - To Drop
- Views

Relational_1(Customer)

- Data Types Model
- Tables
 - CUSTOMERS
 - CPY
 - New Table
 - person
 - EMPLOYEES
- Views

Options | Tables that will be recreated | Data type conversion | Orade Errors to Mask

Details	Dynamic/UD properties	Physical Details	Storage Details
Property	Selected	Source Table: Company	Target Table: CPY
hiveName	<input checked="" type="checkbox"/>	HiveCPY	
hiveSchema	<input checked="" type="checkbox"/>	Hive	
UDP_table	<input checked="" type="checkbox"/>		UDP_value

Merge | DDL Preview | Close | Help

Compare Models

Tree View | Tabular View

Filter

Relational_1(Customer)

- Data Types Model
- Tables
 - CUSTOMERS
 - Company
 - Twitter_Info
 - person
 - To Drop
- Views

Relational_1(Customer)

- Data Types Model
- Tables
 - CUSTOMERS
 - CPY
 - New Table
 - person
 - EMPLOYEES
- Views

Options | Tables that will be recreated | Data type conversion | Oracle Errors to Mask

Details	Dynamic/UD properties	Physical Details	Storage Details
Property	Selected	Source Table: Company	Target Table: CPY
User	<input checked="" type="checkbox"/>		MN
Row Dependency	<input checked="" type="checkbox"/>	YES	NO
Name	<input type="checkbox"/>	Company	CPY
Comment	<input type="checkbox"/>		
Comment in RDBMS	<input type="checkbox"/>		
Temporary	<input type="checkbox"/>	NO	NO
Preserve Rows	<input type="checkbox"/>	YES	YES
Temporary Tablespace	<input type="checkbox"/>		
Organization	<input type="checkbox"/>	HEAP	HEAP
Logging	<input type="checkbox"/>	YES	YES
Cache	<input type="checkbox"/>	NO	NO
Parallel	<input type="checkbox"/>	NO	NO
Degree	<input type="checkbox"/>		
Partitioned	<input type="checkbox"/>	NO	NO

Merge | DDL Preview | Close | Help

Compare Models

Tree View | Tabular View

Filter

Relational_1(Customer)

- [-] Data Types Model
- [-] Tables
 - [-] CUSTOMERS
 - [-] Company
 - [-] Twitter_Info
 - [-] person
 - [-] To Drop
- [-] Views

Relational_1(Customer)

- [-] Data Types Model
- [-] Tables
 - [-] CUSTOMERS
 - [-] CPY
 - [-] New Table
 - [-] person
 - [-] EMPLOYEES
- [-] Views

Options | Tables that will be recreated | Data type conversion | Grade Errors to Mask

Details	Dynamic/UD properties	Physical Details	Storage Details
Property	Selected	Source Table: Company	Target Table: CPY
Tablespace	<input checked="" type="checkbox"/>		MNTablespace
PCT Free	<input type="checkbox"/>		
PCT Used	<input type="checkbox"/>		
INITRANS	<input type="checkbox"/>		
SC Initial Extent	<input type="checkbox"/>		
SC Next Extent	<input type="checkbox"/>		
SC Min Extents	<input type="checkbox"/>		
SC Max Extents	<input type="checkbox"/>		
SC PCT Increase	<input type="checkbox"/>		
SC Buffer Pool	<input type="checkbox"/>		
SC Free Lists	<input type="checkbox"/>		
SC Free List Groups	<input type="checkbox"/>		

Merge | DDL Preview | Close | Help

Compare Models

Tree View | Tabular View

Filter

Relational_1(Customer)

- Data Types Model
- Tables
 - CUSTOMERS
 - Company
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 - person
 - To Drop
- Views

Relational_1(Customer)

- Data Types Model
- Tables
 - CUSTOMERS
 - CPY
 - New Table
 - person
 - EMPLOYEES
- Views

Options | Tables that will be recreated | Data type conversion | Orade Errors to Mask

Details	Dynamic/UD properties	Physical Details	Storage Details
Table	Backup Strategy	Data Restore	Script Execution
CUSTOMERS	Rename	Restore	Continue
CPY	Rename	Restore	Continue
person	Rename	Restore	Continue
			Unload Directory

Merge | DDL Preview | Close | Help

Compare Models

Tree View | Tabular View

Filter

Relational_1(Customer)

- Data Types Model
- Tables
 - CPY
 - Columns
 - Indexes
 - PK and UK Constraints
 - Foreign Keys
 - Table Check Constraints
 - Valid Time Dimensions
- Customers
- EMPLOYEES
- TABLE_5
- TableInTarget
- person
- Views
 - Customer
 - VIEW_2
 - VIEW_3

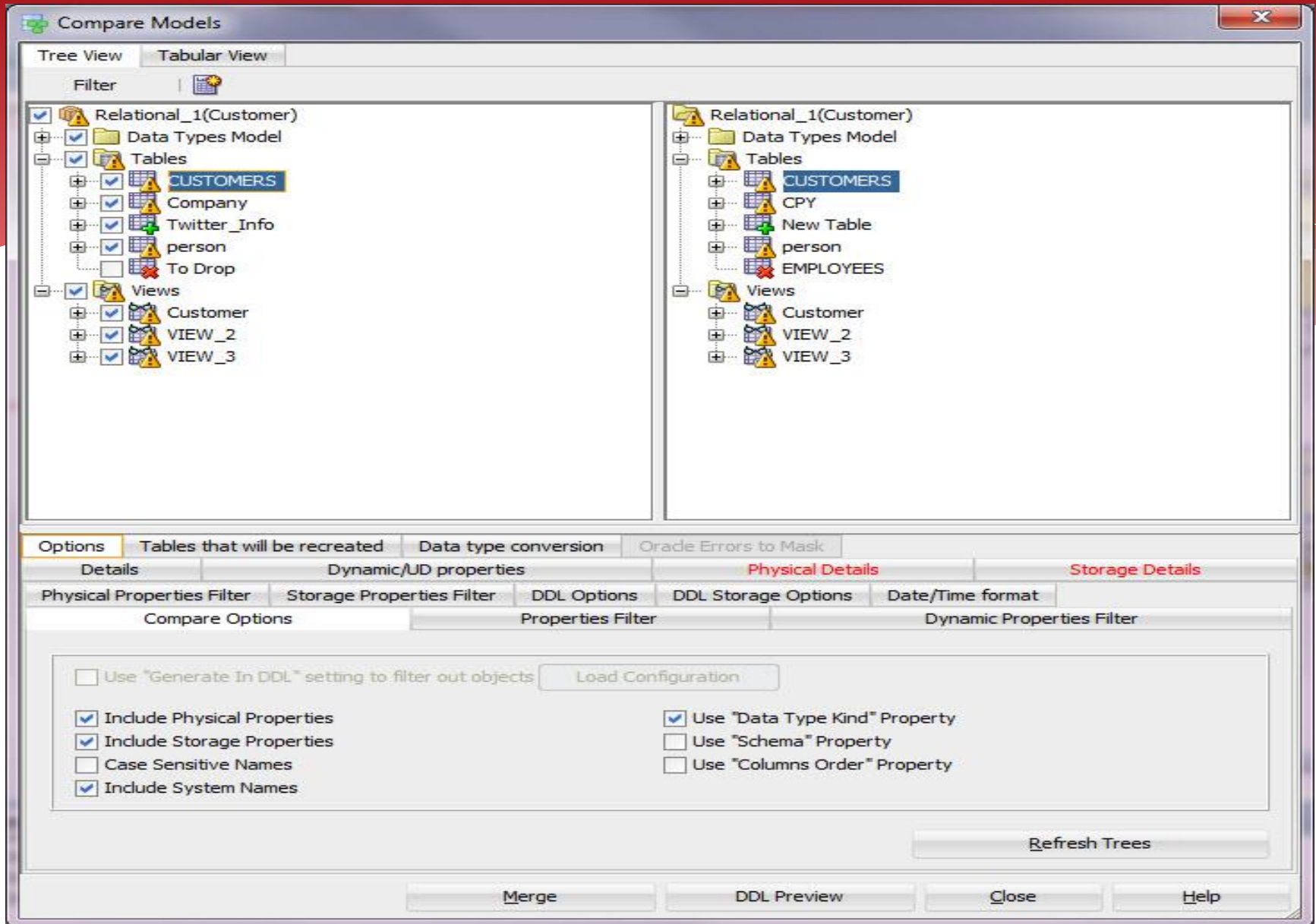
Relational_1(Customer)

- Data Types Model
- Tables
 - CPY
 - Columns
 - Indexes
 - PK and UK Constraints
 - Foreign Keys
 - Table Check Constraints
 - Valid Time Dimensions
- CUSTOMERS
- EMPLOYEES
- New Table
- New Table
- person
- Views
 - Customer
 - VIEW_2
 - VIEW_3

Details | Physical Details | Storage Details | Options | Tables that will be recreated | **Data type conversion** | Orade Errors to Mask

Column	Current Data Type	New Data Type	Recreate Table	Conversion Expression
CUSTOMERS.CommonPro...	VARCHAR2 (10)	NUMBER (10)	<input type="checkbox"/>	

Merge | DDL Preview | Close | Help



Compare Models

Tree View | Tabular View

Filter

Relational_1(Customer)

- Data Types Model
- Tables
 - CUSTOMERS
 - Company
 - Twitter_Info
 - person
 - To Drop
- Views

Relational_1(Customer)

- Data Types Model
- Tables
 - CUSTOMERS
 - CPY
 - New Table
 - person
 - EMPLOYEES
- Views

Options | Tables that will be recreated | Data type conversion | Grade Errors to Mask

Details | Dynamic/UD properties | Physical Details | Storage Details

Physical Properties Filter | Storage Properties Filter | DDL Options | DDL Storage Options | Date/Time format

Compare Options | Properties Filter | Dynamic Properties Filter

Physical Properties to be Included or Excluded in Compare Model

Columns	Property	Included
Foreign Keys	Name	<input checked="" type="checkbox"/>
PK and UK Constraints	Comment	<input checked="" type="checkbox"/>
Structured Types	Comment in RDBMS	<input checked="" type="checkbox"/>
Tables	Default Value	<input checked="" type="checkbox"/>
Views	ColumnExpression	<input checked="" type="checkbox"/>
	Auto Increment User	<input checked="" type="checkbox"/>

Refresh Trees

Merge | DDL Preview | Close | Help

Compare Models

Tree View | Tabular View

Filter

Relational_1(Customer)

- Data Types Model
- Tables
 - CUSTOMERS
 - Company
 - Twitter_Info
 - person
 - To Drop
- Views

Relational_1(Customer)

- Data Types Model
- Tables
 - CUSTOMERS
 - CPY
 - New Table
 - person
 - EMPLOYEES
- Views

Options | Tables that will be recreated | Data type conversion | Grade Errors to Mask

Details | Dynamic/UD properties | Physical Details | Storage Details

Physical Properties Filter | Storage Properties Filter | DDL Options | DDL Storage Options | Date/Time format

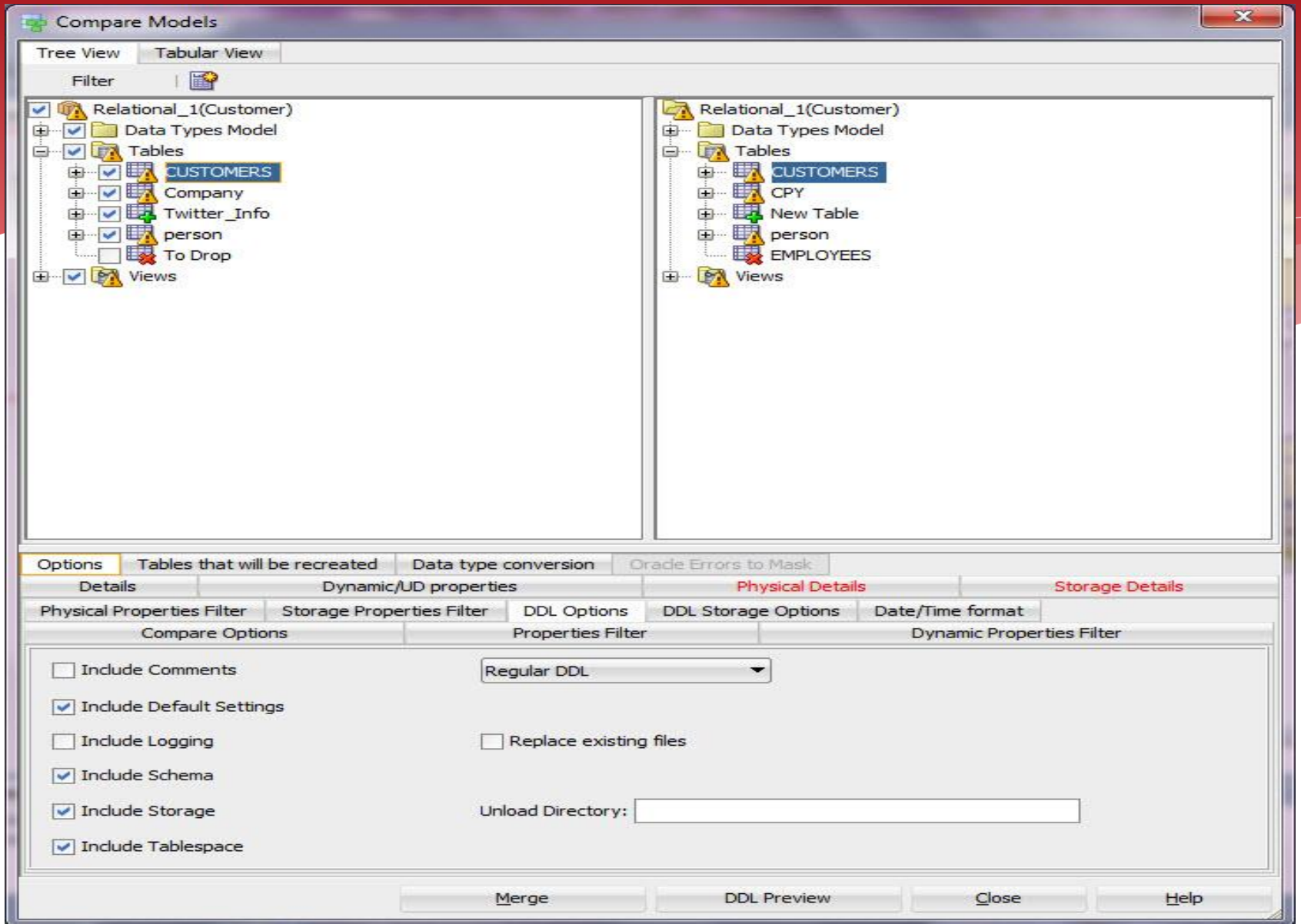
Compare Options | Properties Filter | Dynamic Properties Filter

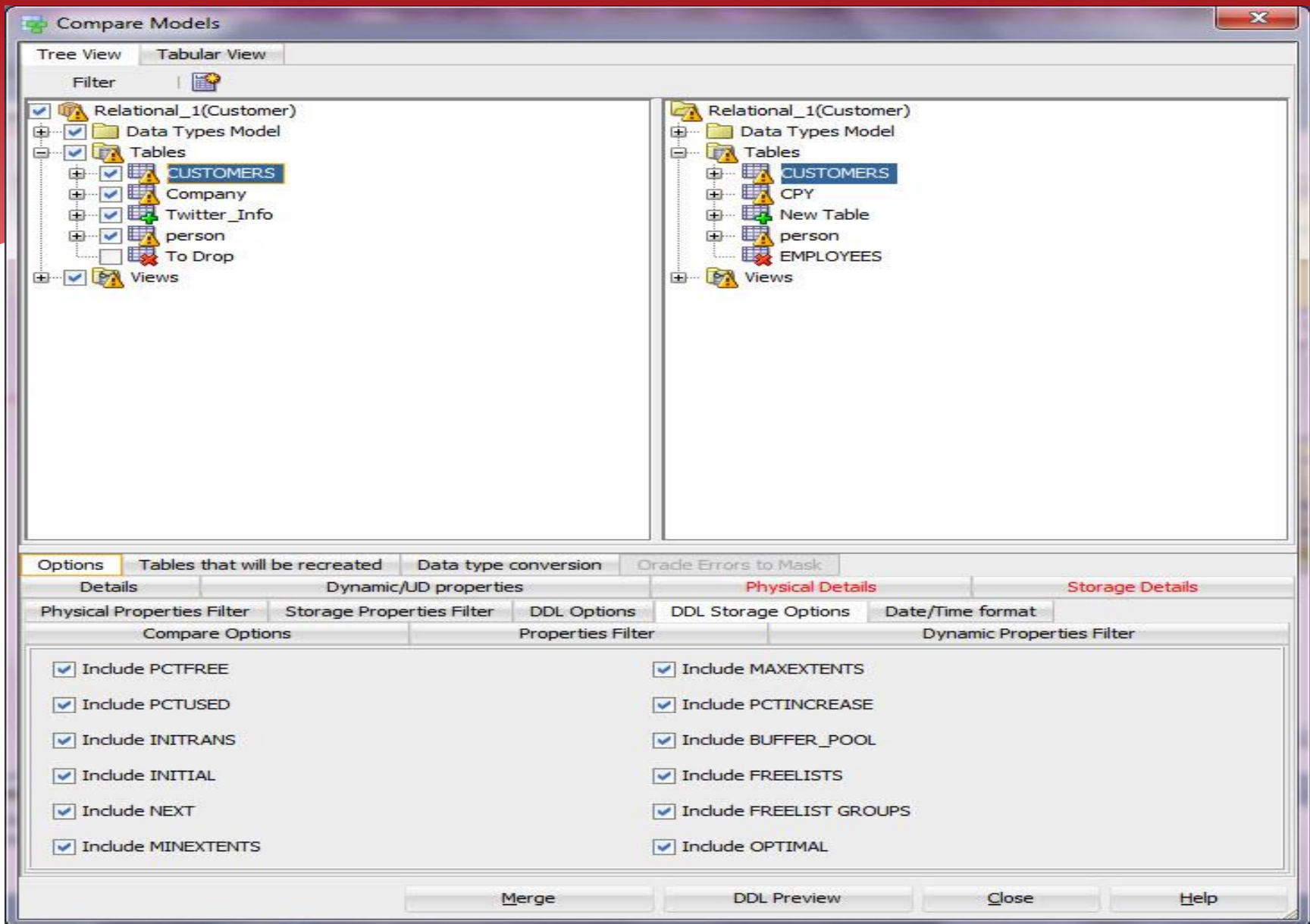
Storage Properties to be Included or Excluded in Compare Model

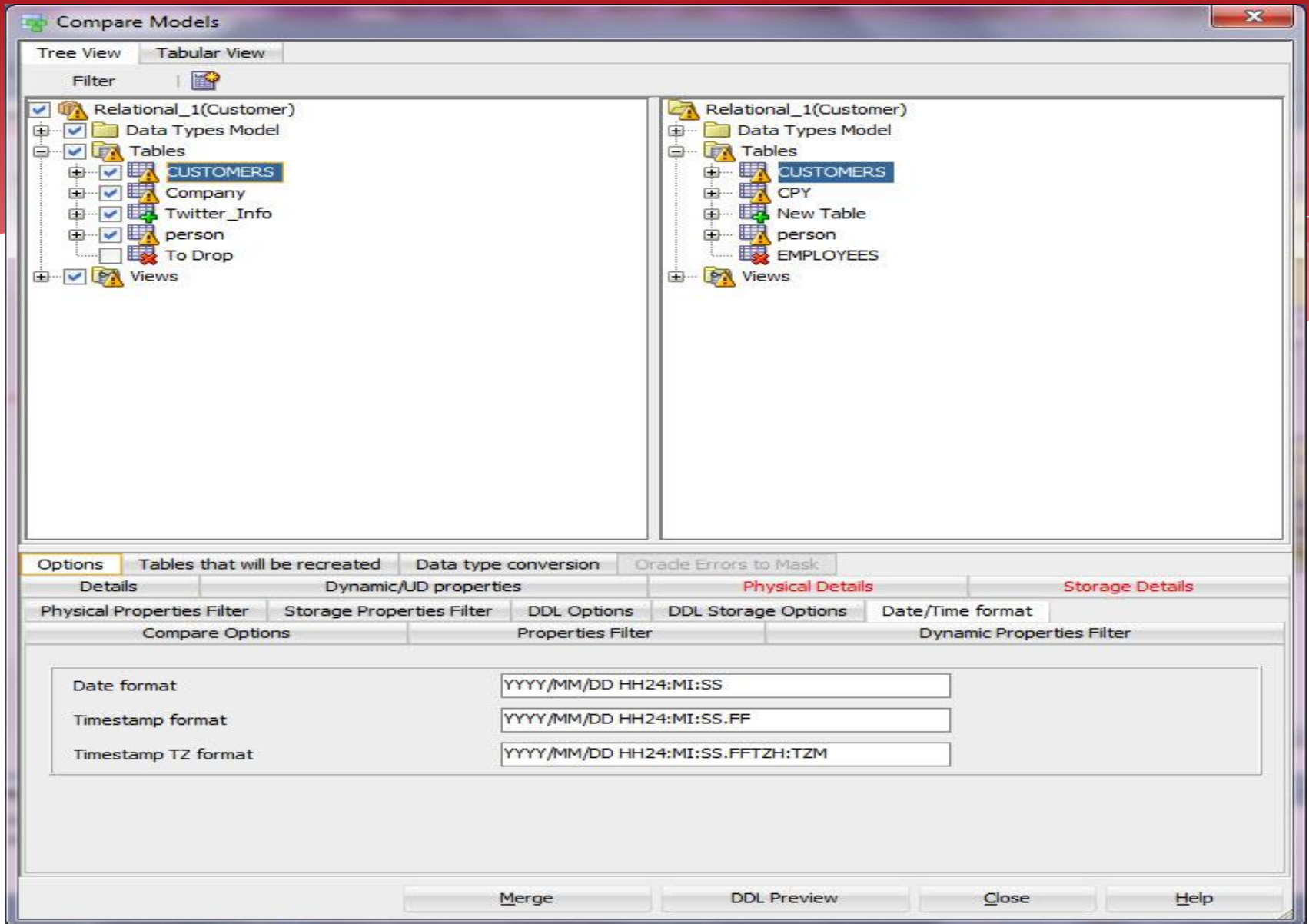
Tables	Property	Included
	Tablespace	<input checked="" type="checkbox"/>
	PCT Free	<input checked="" type="checkbox"/>
	PCT Used	<input checked="" type="checkbox"/>
	INITRANS	<input checked="" type="checkbox"/>
	SC Initial Extent	<input checked="" type="checkbox"/>
	SC Next Extent	<input checked="" type="checkbox"/>

Refresh Trees

Merge | DDL Preview | Close | Help







Compare Models

Tree View | Tabular View

Filter

Relational_1(Customer)

- Data Types Model
- Tables
 - CUSTOMERS
 - Company
 - Twitter_Info
 - person
 - To Drop
- Views

Relational_1(Customer)

- Data Types Model
- Tables
 - CUSTOMERS
 - CPY
 - New Table
 - person
 - EMPLOYEES
- Views

Options | Tables that will be recreated | Data type conversion | Hide Errors to Mask

Details | Dynamic/UD properties | Physical Details | Storage Details

Physical Properties Filter | Storage Properties Filter | DDL Options | DDL Storage Options | Date/Time format

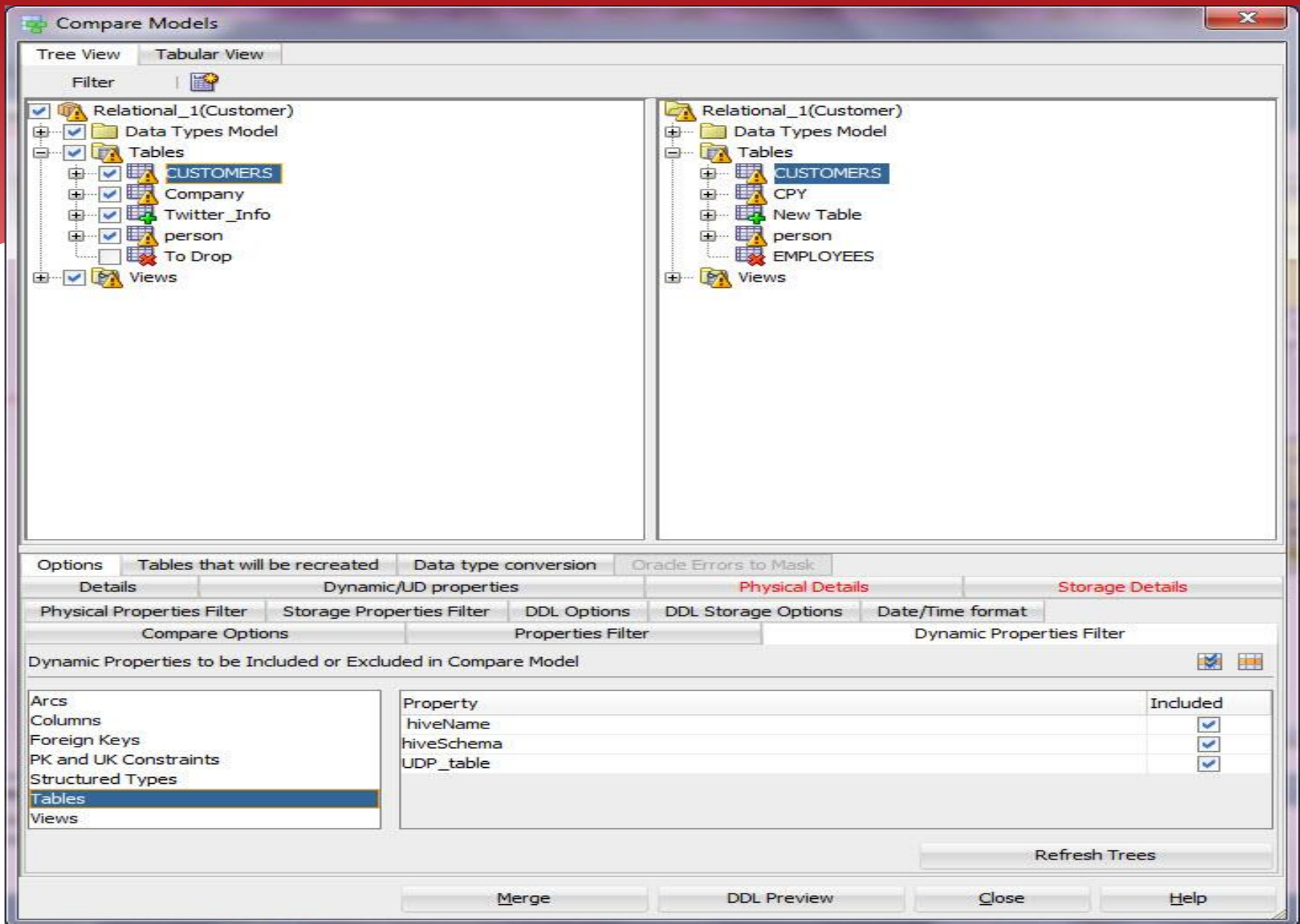
Compare Options | Properties Filter | Dynamic Properties Filter

Properties to be Included or Excluded in Compare Model

Property	Included
Name	<input checked="" type="checkbox"/>
Comment	<input checked="" type="checkbox"/>
Comment in RDBMS	<input checked="" type="checkbox"/>
Notes	<input checked="" type="checkbox"/>
Mandatory	<input checked="" type="checkbox"/>
Foreign Keys	<input checked="" type="checkbox"/>

Refresh Trees

Merge | DDL Preview | Close | Help



```
DDL File Editor - Oracle Database 11g
1  |-- Generated by Oracle SQL Developer Data Modeler 4.1.0.881
2  -- at:      2015-06-12 23:47:39 EEST
3  -- site:    Oracle Database 11g
4  -- type:    Oracle Database 11g
5
6
7
8
9
10 ALTER TABLE MN.person DROP CONSTRAINT person_CUSTOMERS_FK CASCADE ;
11
12 ALTER TABLE MN.CPY DROP CONSTRAINT CPY_CUSTOMERS_FK CASCADE ;
13
14 ALTER TABLE MN.CUSTOMERS DROP CONSTRAINT CUSTOMERS_FK CASCADE ;
15
16 ALTER TABLE MN.CUSTOMERS RENAME TO bcp_CUSTOMERS
17 ;
18 CREATE TABLE MN.CUSTOMERS
19 (
20     CNo NUMBER (16) NOT NULL ,
21     CommonProperty VARCHAR2 (10)
22 )
23 ORGANIZATION HEAP
24 NOCOMPRESS
25 NOCACHE
26 NOPARALLEL
27 ROWDEPENDENCIES
28 DISABLE ROW MOVEMENT
29 ;
30
31
```

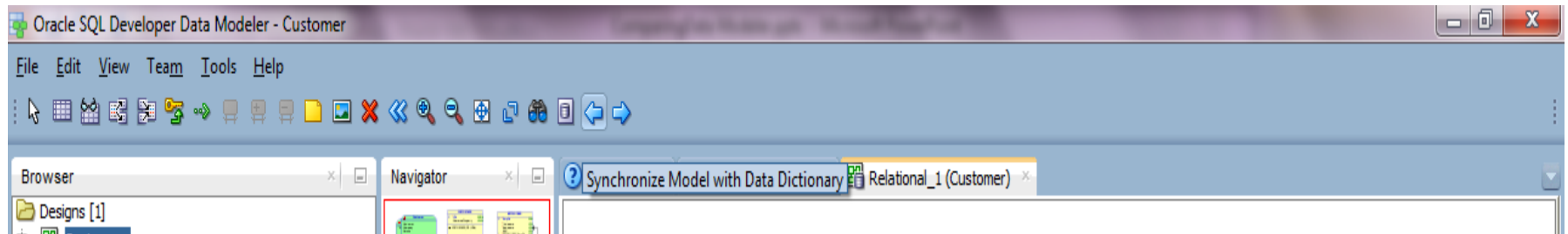
Save Find Close Help

NO?...

- * If you merge and then realize something was not correct, you can always close the design without saving it.

Comparing Database

- * Synchronize Model With Data Dictionary



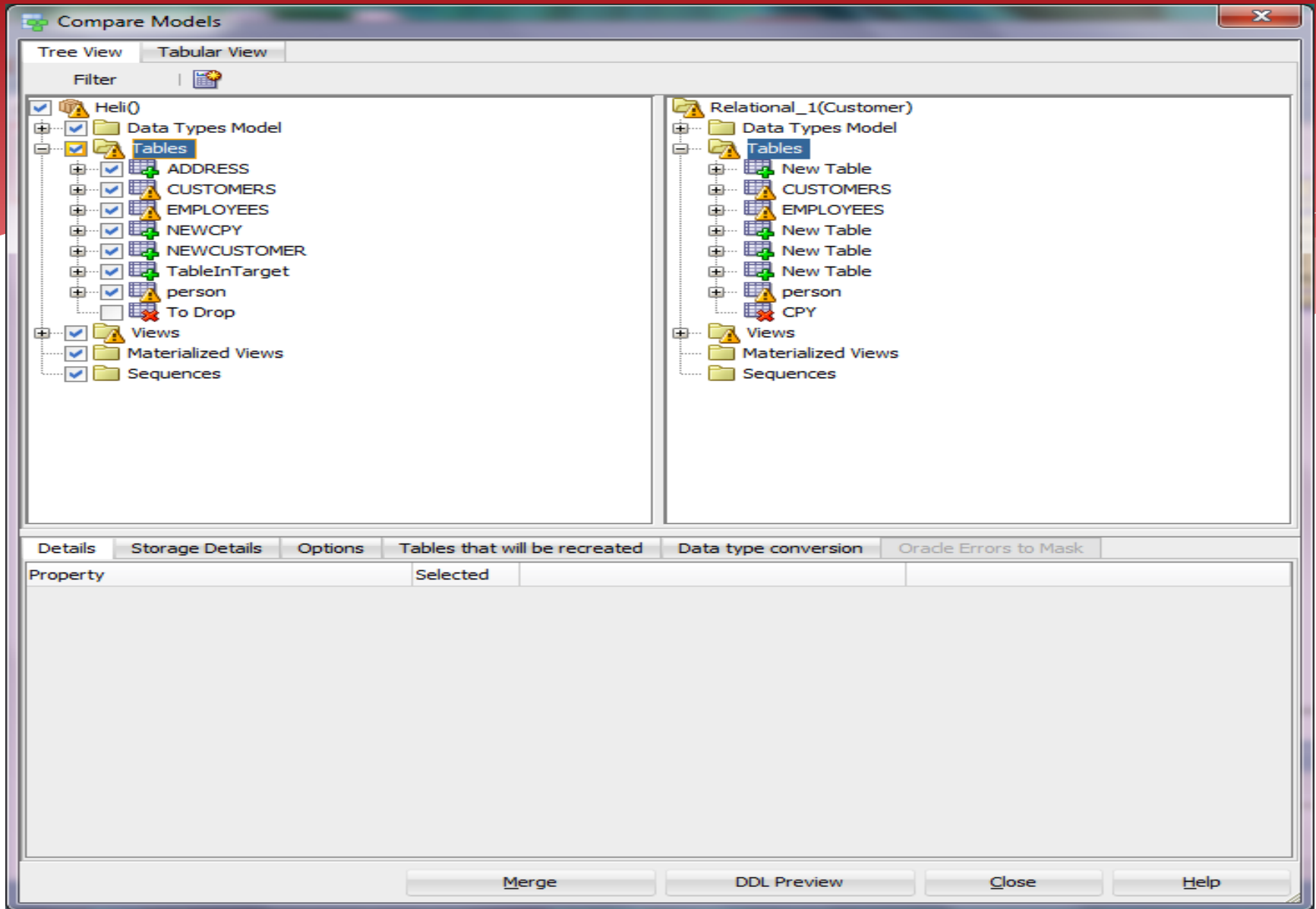
Data Dictionary Connections X

Select Connections for Synchronize

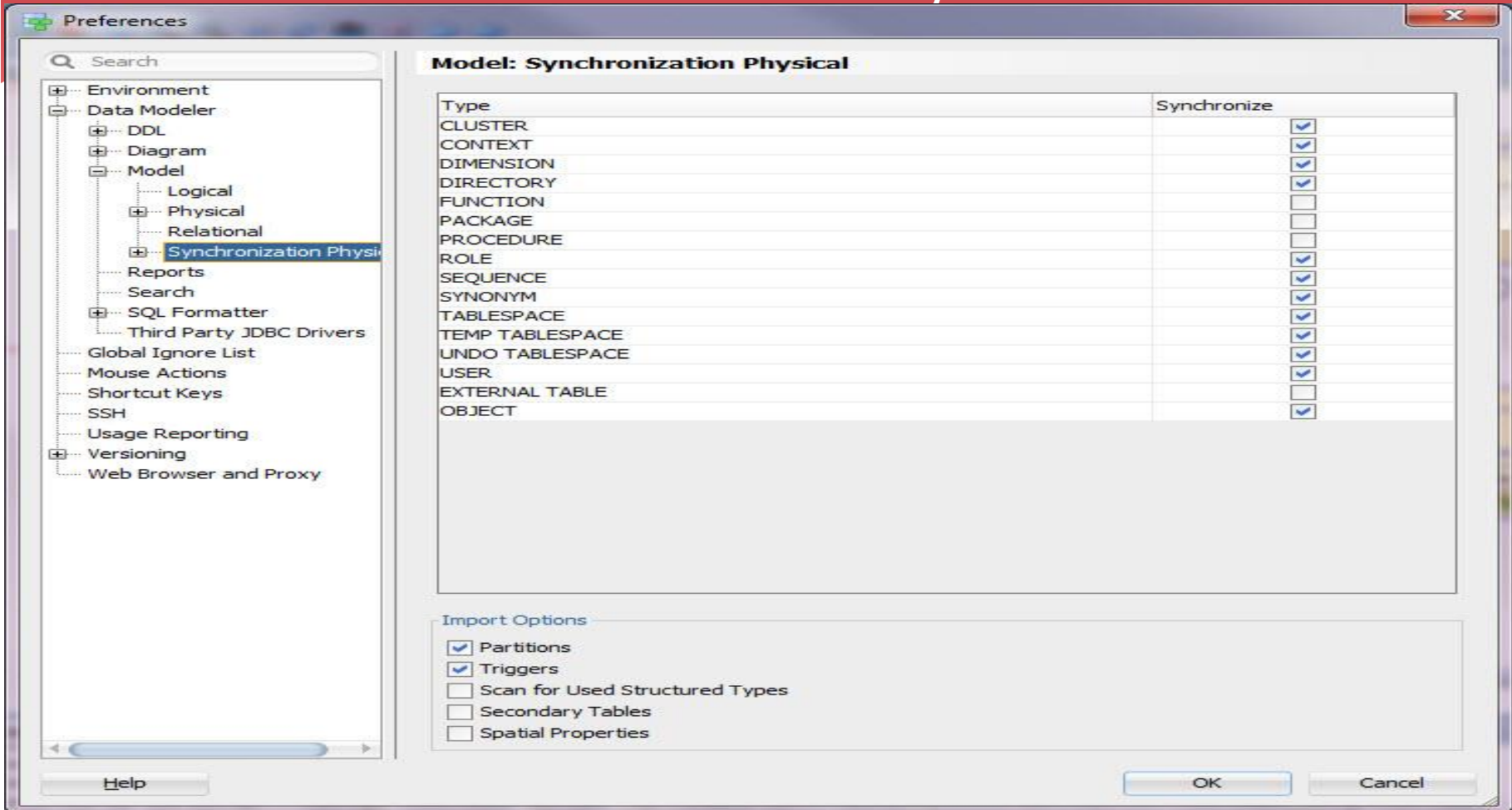
Source Connection	Included

Redirect Connection

- Heli
- ReportingRepository
- ReportingRepositoryRepo
- ReportingRepositorySystem

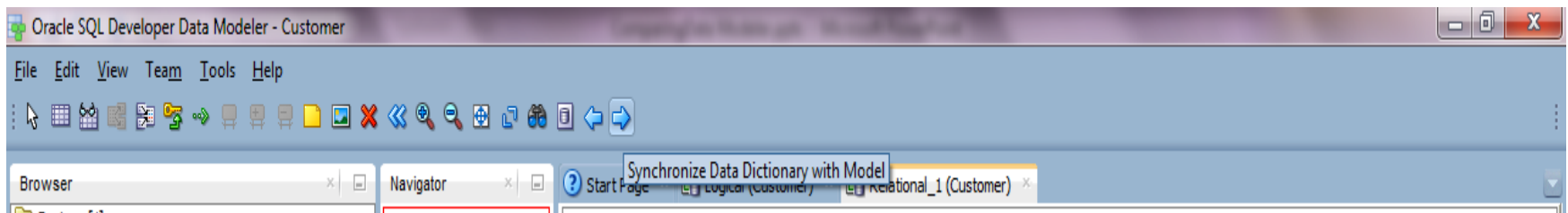


Why some of the elements were not synchronized?



Comparing Database

- * Synchronize Data Dictionary With Model



Data Dictionary Connections X

Select Connections for Synchronize

Source Connection	Included
-------------------	----------

Redirect Connection

Compare Models

Tree View | Tabular View

Filter

Relational_1(Customer)

- Data Types Model
- Tables
 - CPY
 - CUSTOMERS
 - EMPLOYEES
 - person
 - To Drop
 - To Drop
 - To Drop
 - To Drop
- Views
 - Customer
 - VIEW_2
 - VIEW_3
- Materialized Views
- Sequences

Heli0

- Data Types Model
- Tables
 - New Table
 - CUSTOMERS
 - EMPLOYEES
 - person
 - ADDRESS
 - NEWCPY
 - NEWCUSTOMER
 - TableInTarget
- Views
 - New View
 - New View
 - New View
- Materialized Views
- Sequences

Details	Storage Details	Options	Tables that will be recreated	Data type conversion	Grade Errors to Mask
Property			Selected	Source Table: person	Target Table: person
Schema			<input type="checkbox"/>	MN	HELI
Name			<input type="checkbox"/>	person	person
Comment in RDBMS			<input type="checkbox"/>		
Structured Type			<input type="checkbox"/>		
Allow Type Substitution			<input type="checkbox"/>	true	true
Spatial Table			<input type="checkbox"/>	false	false
Columns Order			<input type="checkbox"/>	sn; pi; CUSTOMERS_CNo	sn; pi; CUSTOMERS_CNo

Sync New Objects | Merge | DDL Preview | Close | Help

```
DDL File Editor - Oracle Database 11g
1  -- Generated by Oracle SQL Developer Data Modeler 4.1.0.866
2  -- at:      2015-03-10 14:22:30 EET
3  -- site:    Oracle Database 11g
4  -- type:    Oracle Database 11g
5
6
7
8
9  CREATE TABLE "MN"."CPY"
10 (
11     "CompanyID"      VARCHAR2 (10 CHAR) NOT NULL ,
12     "CompanyInfo"    VARCHAR2 (50 CHAR) NULL ,
13     "CUSTOMERS_CNo"  NUMBER (16) NOT NULL
14 )
15 ORGANIZATION HEAP
16 TABLESPACE "MNTablespace"
17 NOCOMPRESS
18 NOCACHE
19 NOPARALLEL
20 NOROWDEPENDENCIES
21 DISABLE ROW MOVEMENT
22 ;
23
24
25 ALTER TABLE "MN"."CPY"
26     ADD CONSTRAINT "CPY_PK" PRIMARY KEY ( "CUSTOMERS_CNo" ) NOT DEFERRABLE ENABLE VALIDATE ;
27
28
29
30
31 CREATE TABLE "MN"."CUSTOMERS"
```

I have renamed a column in design..

Compare Models

Tree View | Tabular View

Filter

Relational_1(Customer)

- Data Types Model
- Tables
 - CPY
 - CUSTOMERS
 - EMPLOYEES
 - Columns
 - (0)EmpNo
 - (1)Firstname
 - (2)Lastname
 - (3)DSCNew
 - (4)EMP
 - To Drop
 - Indexes
 - PK and UK Constraints
 - Foreign Keys
 - Table Check Constraints
 - Valid Time Dimensions
 - person
 - To Drop
 - To Drop

Heli0

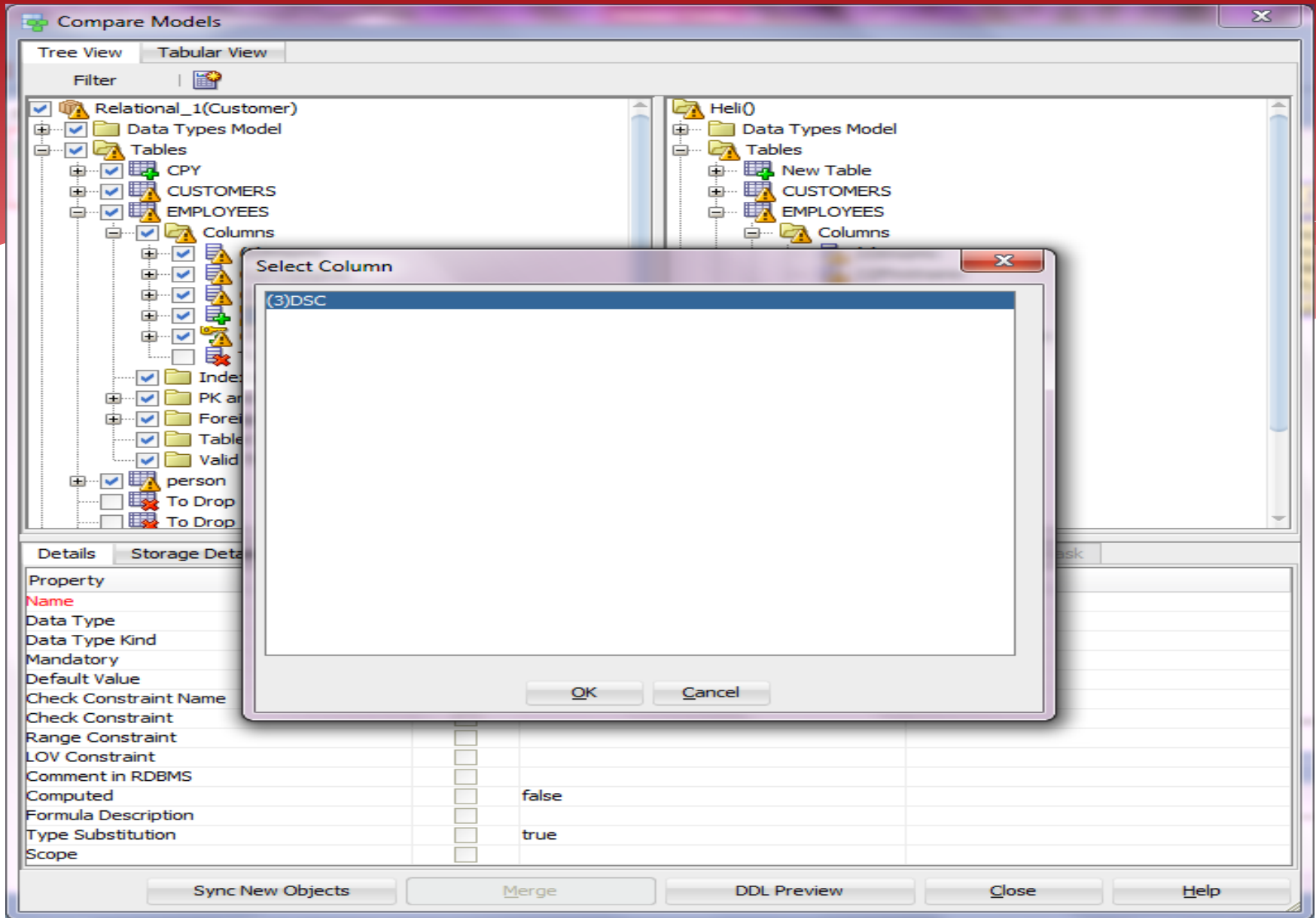
- Data Types Model
- Tables
 - New Table
 - CUSTOMERS
 - EMPLOYEES
 - Columns
 - (0)EmpNo
 - (1)Firstname
 - (2)Lastname
 - New Column
 - (4)EMPLOYEES_EmpNo
 - (3)DSC
 - Indexes
 - PK and UK Constraints
 - Foreign Keys
 - Table Check Constraints
 - Valid Time Dimensions
 - person
 - ADDRESS
 - NEWCPY

Map to existing column

Details | Storage Details | Options | Tables that will be recreated | Data type conversion | Grade Errors to Mask

Property	Selected	EMPLOYEES.DSCNew
Name	<input checked="" type="checkbox"/>	DSCNew
Data Type	<input type="checkbox"/>	VARCHAR2 (100)
Data Type Kind	<input type="checkbox"/>	Logical Type(VARCHAR)
Mandatory	<input type="checkbox"/>	false
Default Value	<input type="checkbox"/>	
Check Constraint Name	<input type="checkbox"/>	
Check Constraint	<input type="checkbox"/>	
Range Constraint	<input type="checkbox"/>	
LOV Constraint	<input type="checkbox"/>	
Comment in RDBMS	<input type="checkbox"/>	
Computed	<input type="checkbox"/>	false
Formula Description	<input type="checkbox"/>	
Type Substitution	<input type="checkbox"/>	true
Scope	<input type="checkbox"/>	

Sync New Objects | Merge | DDL Preview | Close | Help



Compare Models

Tree View | Tabular View

Filter

Relational_1(Customer)

- Data Types Model
- Tables
 - CPY
 - CUSTOMERS
 - EMPLOYEES
 - Columns
 - (0)EmpNo
 - (1)Firstname
 - (2)Lastname
 - (3)DSCNew
 - (4)EMPLOYEES_EmpNo
 - Indexes
 - PK and UK Constraints
 - Foreign Keys
 - Table Check Constraints
 - Valid Time Dimensions
 - person
 - To Drop
 - To Drop
 - To Drop

Heli()

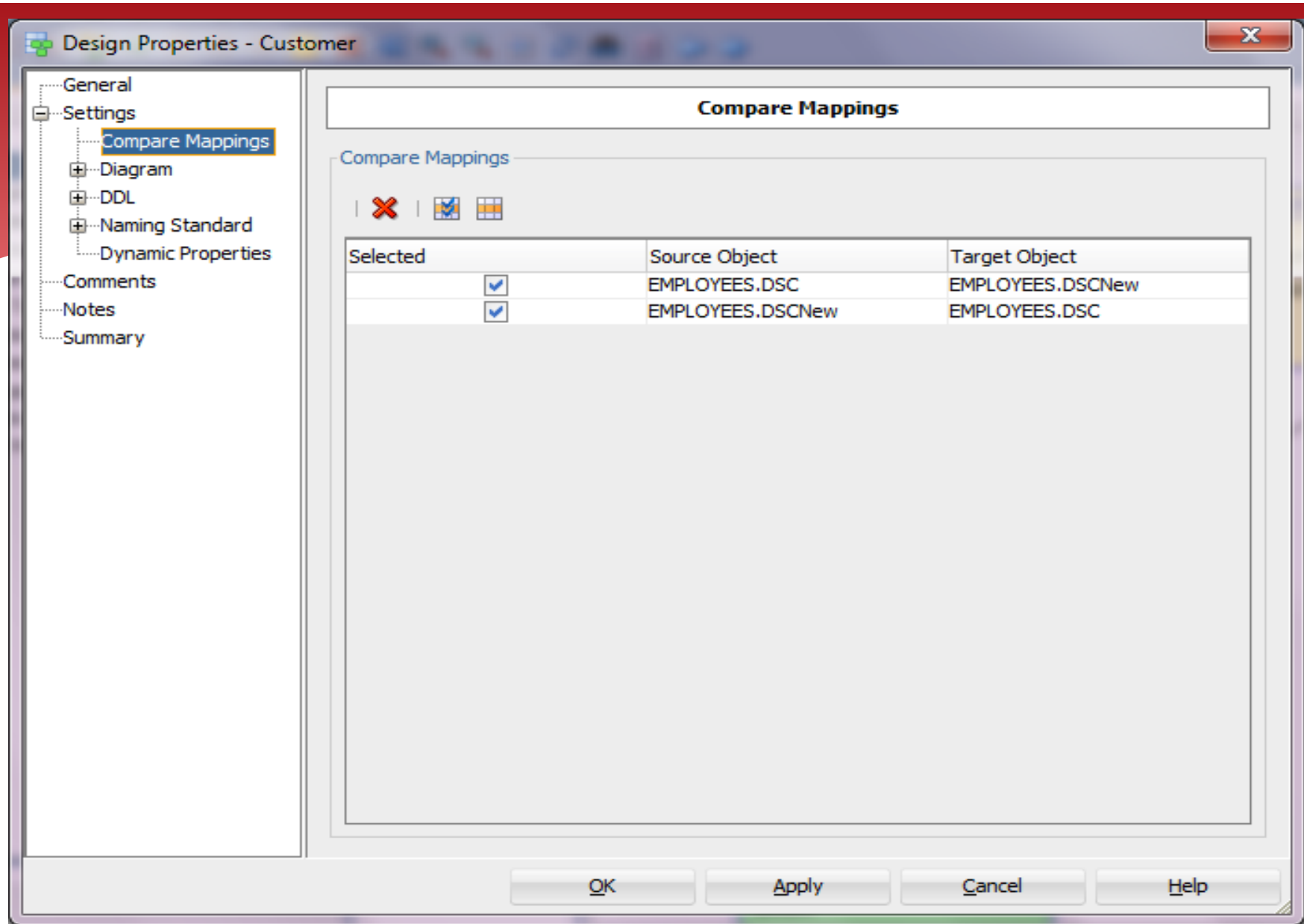
- Data Types Model
- Tables
 - New Table
 - CUSTOMERS
 - EMPLOYEES
 - Columns
 - (0)EmpNo
 - (1)Firstname
 - (2)Lastname
 - (3)DSC
 - (4)EMPLOYEES_EmpNo
 - Indexes
 - PK and UK Constraints
 - Foreign Keys
 - Table Check Constraints
 - Valid Time Dimensions
 - person
 - ADDRESS
 - NEWCPY
 - NEWCUSTOMER

Details	Storage Details	Options	Tables that will be recreated	Data type conversion	Grade Errors to Mask
Property		Selected	EMPLOYEES.DSCNew	EMPLOYEES.DSC	
Name		<input checked="" type="checkbox"/>	DSCNew	DSC	
Data Type		<input type="checkbox"/>	VARCHAR2 (100)	VARCHAR2 (100 BYTE)	
Data Type Kind		<input type="checkbox"/>	Logical Type(VARCHAR)	Logical Type(VARCHAR)	
Mandatory		<input type="checkbox"/>	false	false	
Not Null Constraint Name		<input type="checkbox"/>			
Default Value		<input type="checkbox"/>			
Check Constraint Name		<input type="checkbox"/>			
Use Domain Constraint		<input type="checkbox"/>	false	false	
Check Constraint		<input type="checkbox"/>			
Range Constraint		<input type="checkbox"/>			
LOV Constraint		<input type="checkbox"/>			
Generate Check Constraint In DDL		<input type="checkbox"/>	YES	YES	
Comment		<input type="checkbox"/>			
Comment in RDBMS		<input type="checkbox"/>			

Sync New Objects Merge DDL Preview Close Help

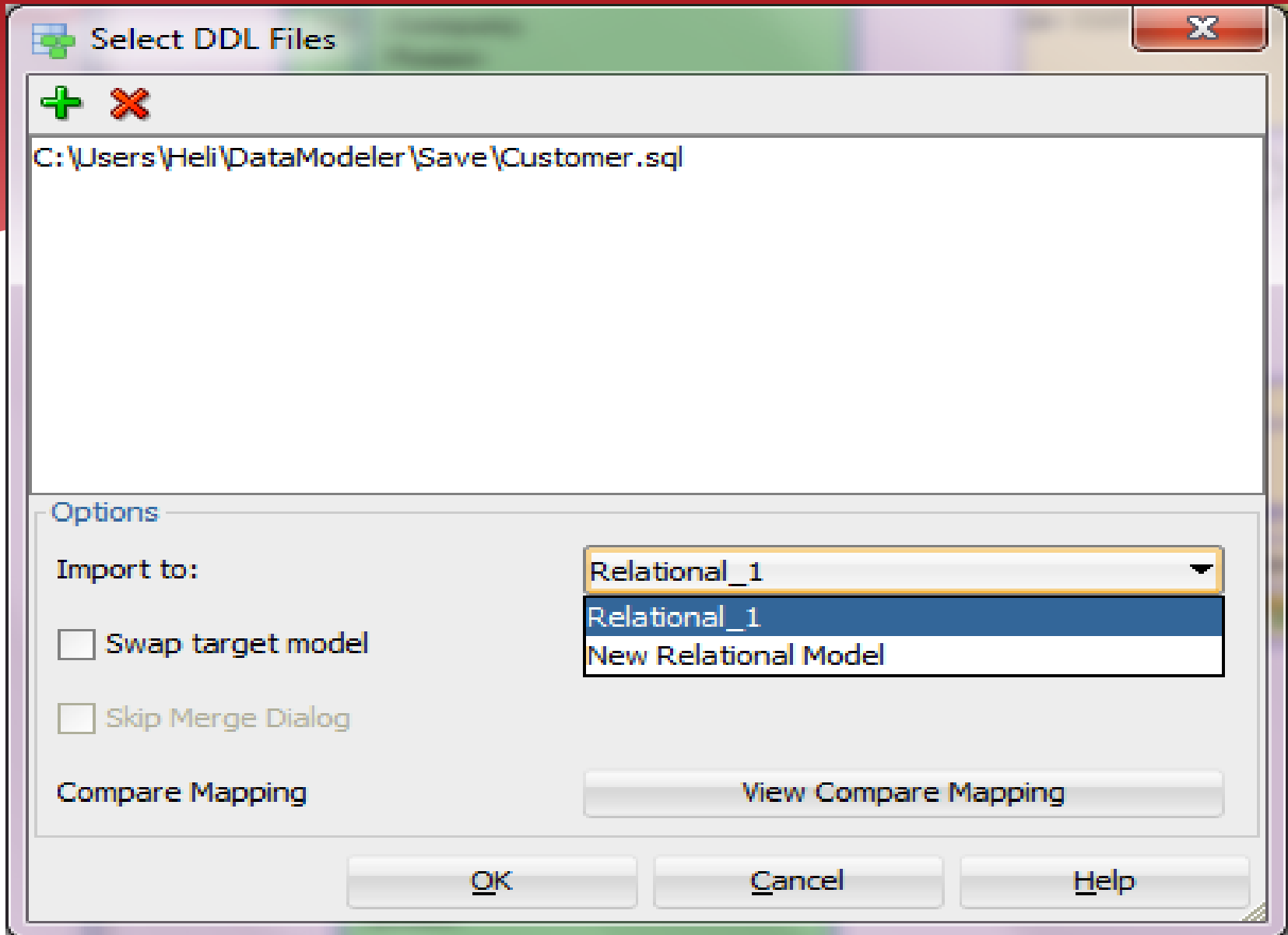
It's called a Compare Mapping

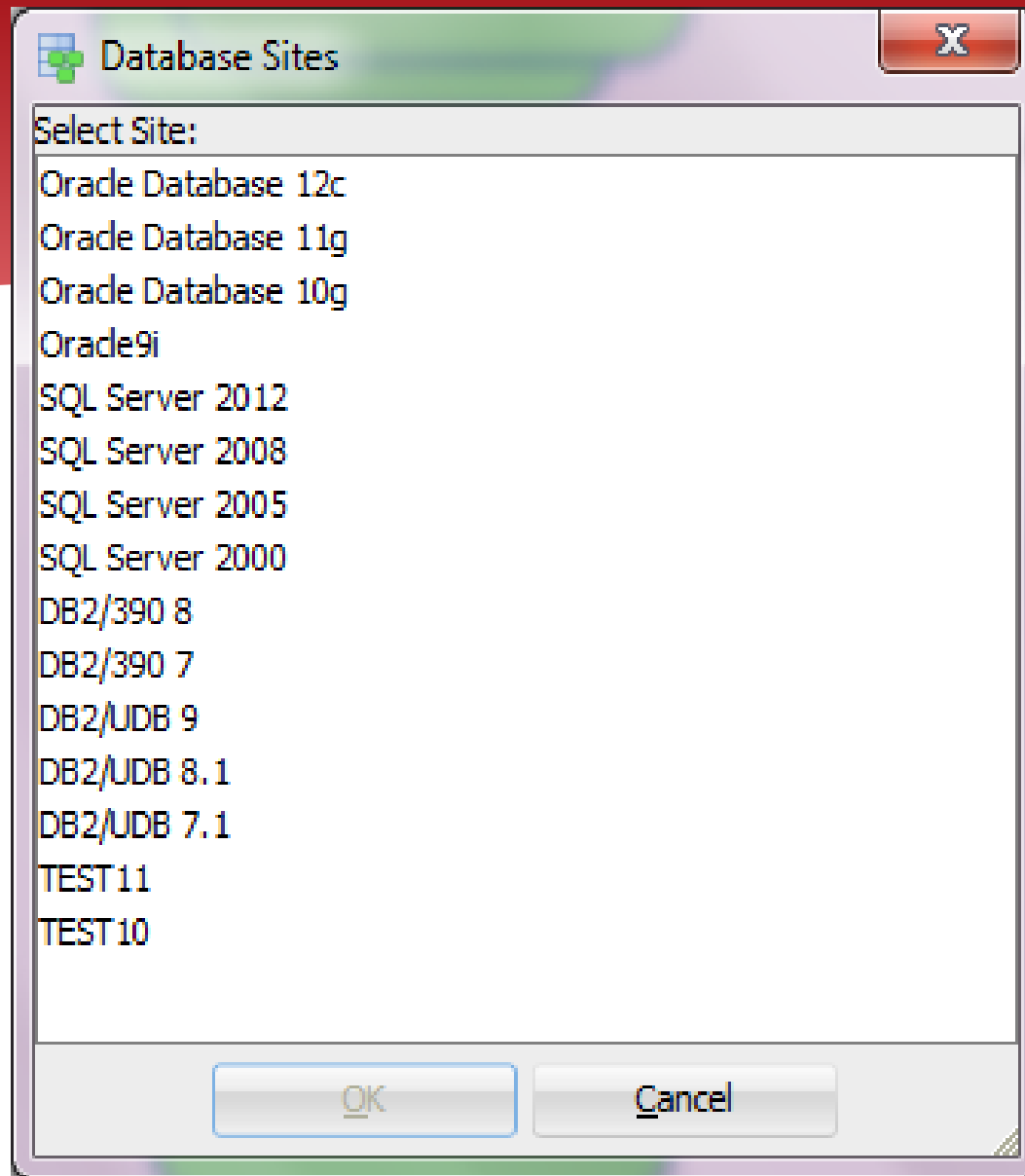
- * And Data Modeler will remember it for this design...



Comparing DDL File

* File | Import | DDL File





```
View Log
Oracle SQL Developer Data Modeler 4.1.0.866
Oracle SQL Developer Data Modeler Import Log
Date and Time: 2015-03-10 20:53:37 EET
Design Name: Customer
RDBMS : Oracle Database 12c

All Statements:          26
Imported Statements:     13
Failed Statements:       0
Not Recognized Statements: 13

<<<<< Not Recognized >>>>>
PROMPT CREATING TABLESPACE 'MNTablespace'

PROMPT CREATING USER 'MN'

PROMPT CREATING TABLE 'CPY'

PROMPT CREATING PRIMARY KEY ON 'CPY'

PROMPT CREATING TABLE 'CUSTOMERS'

PROMPT CREATING PRIMARY KEY ON 'CUSTOMERS'

PROMPT CREATING TABLE 'EMPLOYEES'

PROMPT CREATING PRIMARY KEY ON 'EMPLOYEES'

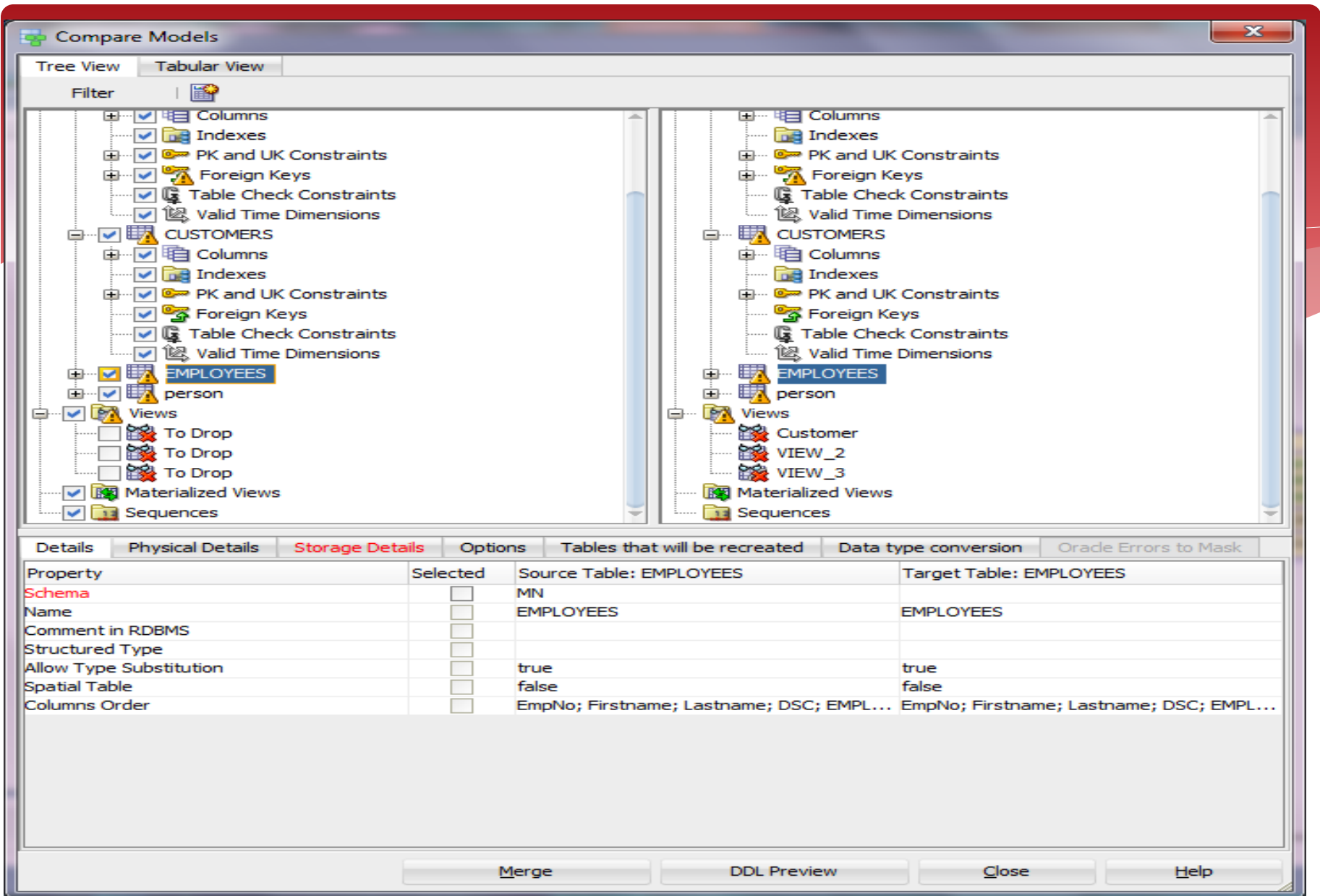
PROMPT CREATING TABLE 'person'

PROMPT CREATING PRIMARY KEY ON 'person'

PROMPT CREATING FOREIGN KEY ON 'CPY'

PROMPT CREATING FOREIGN KEY ON 'EMPLOYEES'
```

Save Close



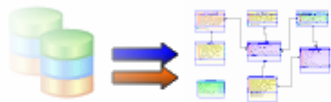
```
DDL File Editor - Oracle Database 11g
1  |-- Generated by Oracle SQL Developer Data Modeler 4.1.0.881
2  -- at:      2015-06-12 23:47:39 EEST
3  -- site:    Oracle Database 11g
4  -- type:    Oracle Database 11g
5
6
7
8
9
10 ALTER TABLE MN.person DROP CONSTRAINT person_CUSTOMERS_FK CASCADE ;
11
12 ALTER TABLE MN.CPY DROP CONSTRAINT CPY_CUSTOMERS_FK CASCADE ;
13
14 ALTER TABLE MN.CUSTOMERS DROP CONSTRAINT CUSTOMERS_FK CASCADE ;
15
16 ALTER TABLE MN.CUSTOMERS RENAME TO bcp_CUSTOMERS
17 ;
18 CREATE TABLE MN.CUSTOMERS
19 (
20     CNo NUMBER (16) NOT NULL ,
21     CommonProperty VARCHAR2 (10)
22 )
23 ORGANIZATION HEAP
24 NOCOMPRESS
25 NOCACHE
26 NOPARALLEL
27 ROWDEPENDENCIES
28 DISABLE ROW MOVEMENT
29 ;
30
31
```

Save Find Close Help

Comparing Data Dictionary

- * File | Import | Data Dictionary

Data Dictionary Import Wizard



Select database connection to connect to desired database.
If the list is empty use the "Add" button to create one.

1. Connect to Database.

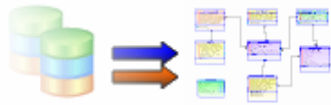
2. Select Schema/Database.

3. Select Objects to Import.

4. Generate Design.

Connection Name	Connection Details
Heli	Heli@//localhost:15210/ord
ReportingRepository	DM_REPORT_REPOS@//localhost:15210/ord
ReportingRepositoryRepo	repo@//localhost:15210/ord
ReportingRepositorySystem	system@//localhost:15210/ord
Testi	Testi@//localhost:15210/ord

Data Dictionary Import Wizard



Select the schema/database you wish to import.

1. Connect to Database.

2. Select Schema/Database.

3. Select Objects to Import.

4. Generate Design.

Selected	Schema
<input type="checkbox"/>	APPQOSSYS
<input type="checkbox"/>	DBSNMP
<input type="checkbox"/>	DM_REPORT_REPOS
<input type="checkbox"/>	HANNA
<input checked="" type="checkbox"/>	HELI
<input type="checkbox"/>	HENKILO
<input type="checkbox"/>	MGMT_VIEW
<input type="checkbox"/>	ORACLE_OCM
<input type="checkbox"/>	OUTLN
<input type="checkbox"/>	REPO
<input type="checkbox"/>	SYS
<input type="checkbox"/>	SYSMAN
<input type="checkbox"/>	SYSTEM
<input type="checkbox"/>	TESTI
<input type="checkbox"/>	WMSYS
<input type="checkbox"/>	YHTEINEN
<input type="checkbox"/>	YHTEISET



Filter:

All Selected

Options

Import To:

Relational_1

Swap Target Model

Oracle Database 11g

Compare Mapping

< Back

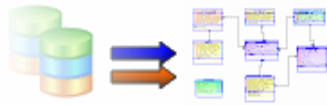
Next >

Finish

Cancel

Help

Data Dictionary Import Wizard



Select the objects you wish to import.

1. Connect to Database.

2. Select Schema/Database.

3. Select Objects to Import.

4. Generate Design.

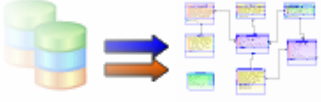
Selected	Schema	Object Name
<input checked="" type="checkbox"/>	HELI	ADDRESS
<input checked="" type="checkbox"/>	HELI	CUSTOMERS
<input checked="" type="checkbox"/>	HELI	EMPLOYEES
<input checked="" type="checkbox"/>	HELI	NEWCPY
<input checked="" type="checkbox"/>	HELI	NEWCUSTOMER
<input checked="" type="checkbox"/>	HELI	TableInTarget
<input checked="" type="checkbox"/>	HELI	person

Tables Views Users Roles Directories External Tables Contexts Clusters Sequences Synonyms
Tablespaces Temp Tablespaces Dimensions Types Packages Stored Procedures Functions Undo Tablespaces

Filter:

< Back Next > Finish Cancel Help

Data Dictionary Import Wizard



View summary and generate Oracle SQL Developer Data Modeler design.

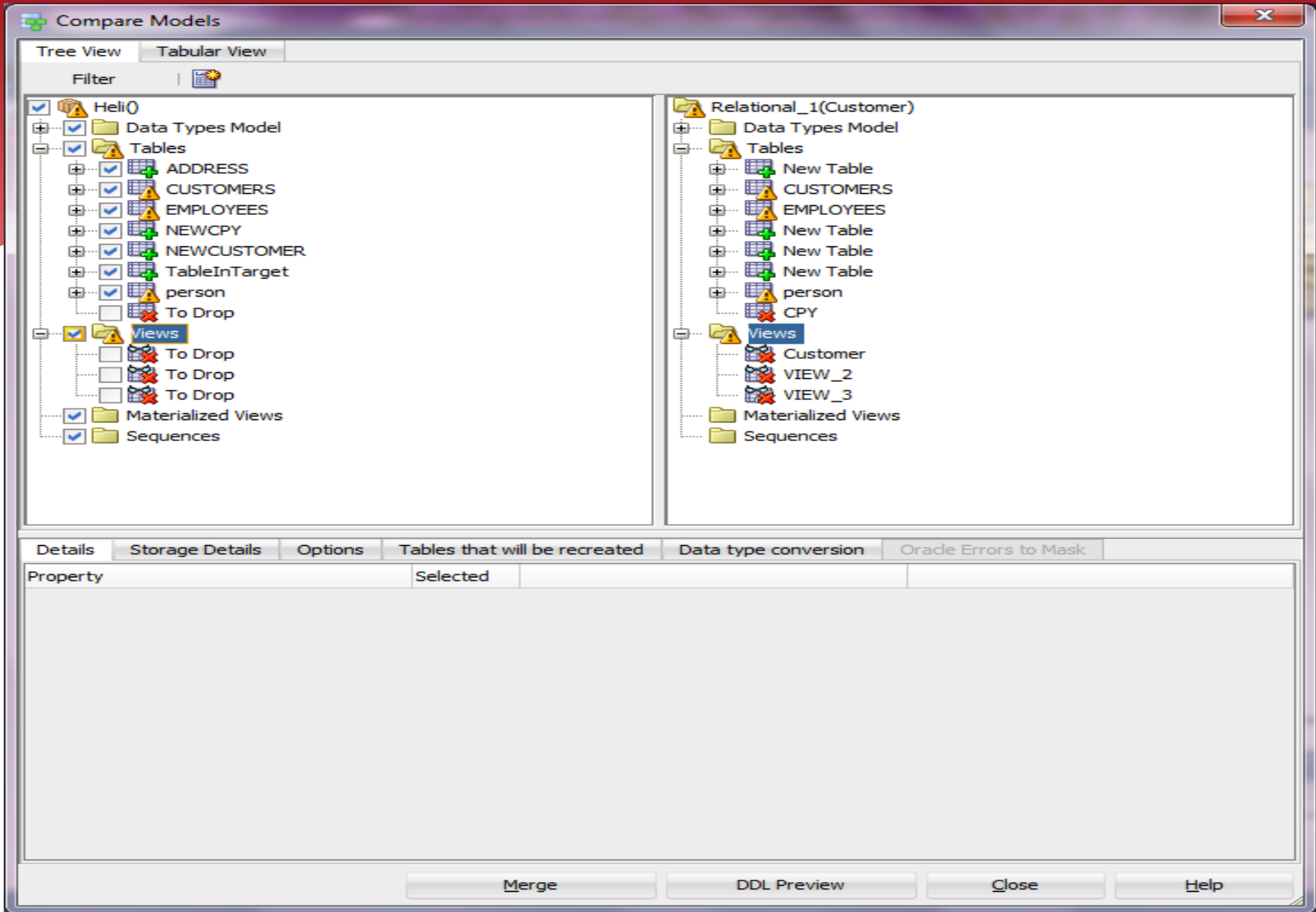
1. Connect to Database.
2. Select Schema/Database.
3. Select Objects to Import.
4. Generate Design.

Database Name: Orade
Database Version: Oracle Database 11g Enterprise Edition

DB Objects that will be imported:

TABLE	7
-------	---

< Back Next > Finish **Cancel** Help



Conclusions

- * Different compares
 - * Design vs Design
 - * Design vs Database
 - * Database vs Design

Conclusions

- * File | Import | Data Modeler Design
- * Tools | Compare/Merge Models
- * Synchronize Model With Data Dictionary
- * Synchronize Data Dictionary With Model
- * File | Import | DDL File
- * File | Import | Data Dictionary

Conclusions

- * When you import to an existing model -> compare
- * Remember the preferences make a difference

THANK YOU!

QUESTIONS?

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@HeliFromFinland

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