

Practices for Lesson 17: Defining Your Physical Model

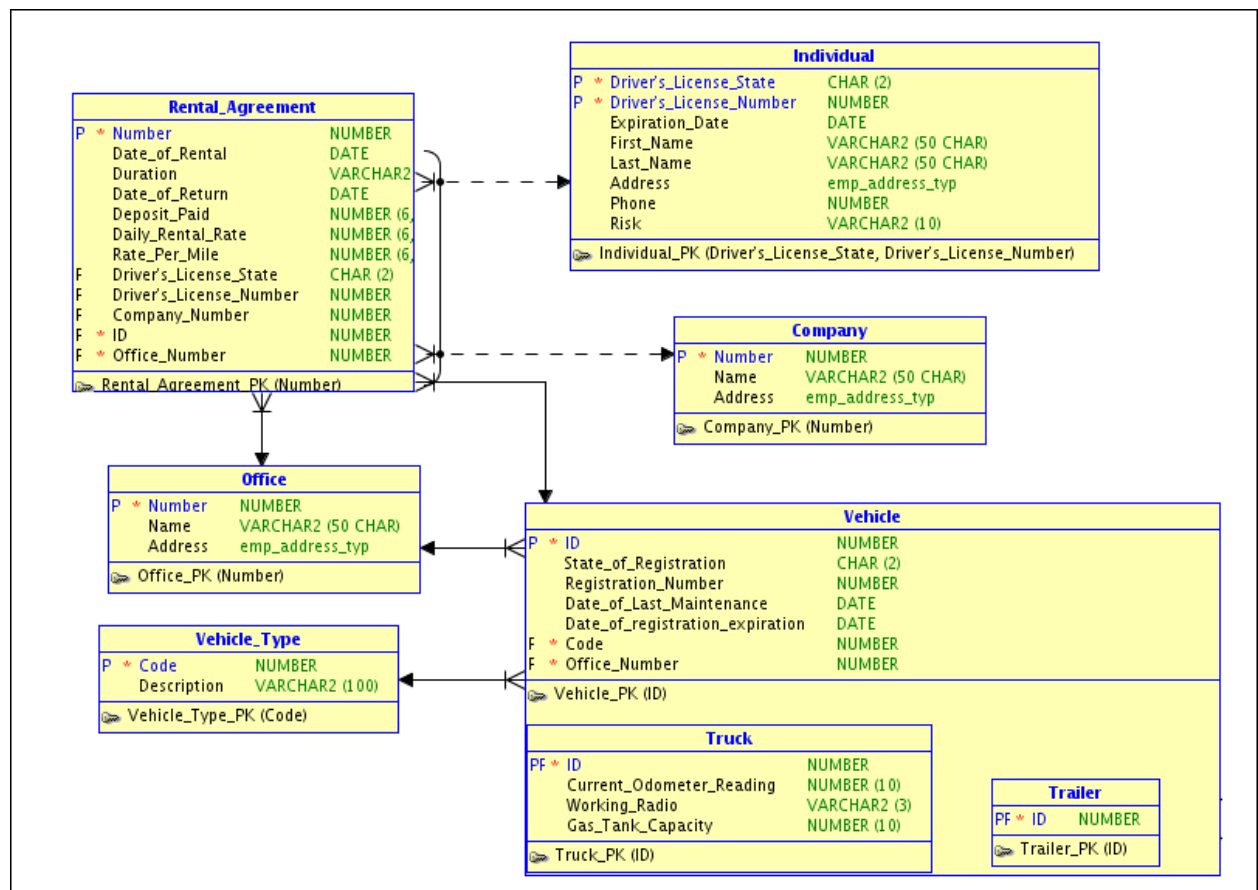
Chapter 17

Practice 17-1: Create a Physical Model

Task

In this practice, you perform the following:

1. Create a physical model for the Rental Agreement relational model Relational_1 from Practice 15-2 (sol_15_02_a.dmd).
2. Change the name of Relational_1 to Vehicle Rentals.
3. Create a tablespace and a user for the model.
4. Add a partition to the Rental Agreement table so that you can access the rental agreements for a given month quickly.



Solution 17-1: Create a Physical Model

The following is one possible solution to this practice.

1. Open the solution to practice 15 (sol_15_02_a.dmd). Note that some of the column names in the `Rental Agreement` and `Vehicle` tables in the preceding relational model screen capture have changed from practice 15-2 for better clarity.

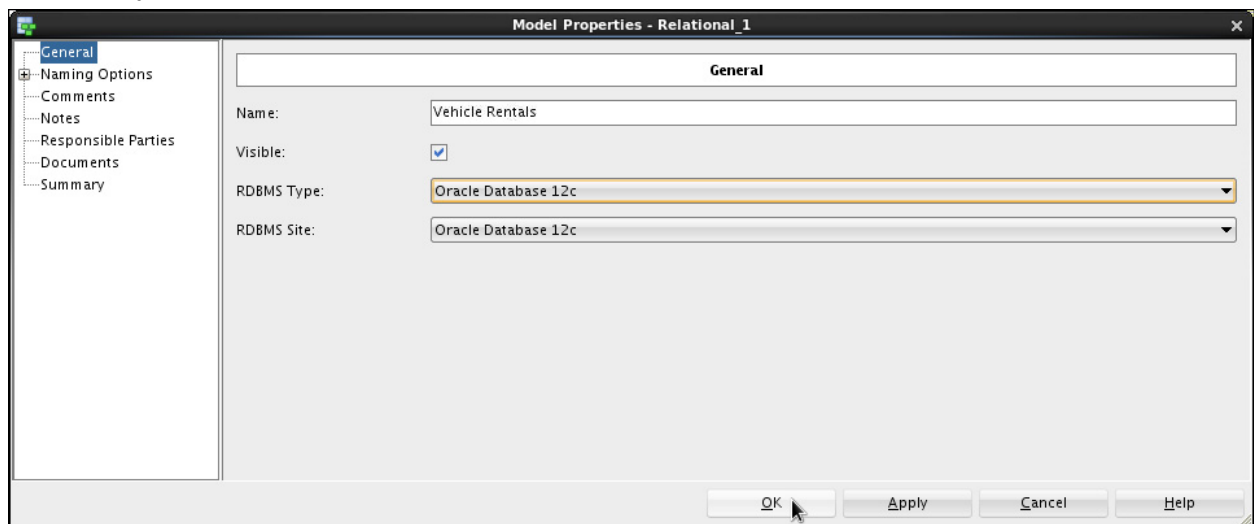
`Rental Agreement.Number1` was renamed to `Rental Agreement.Company_Number`.

`Rental Agreement.Number3` was renamed to `Rental Agreement.Office_Number`.

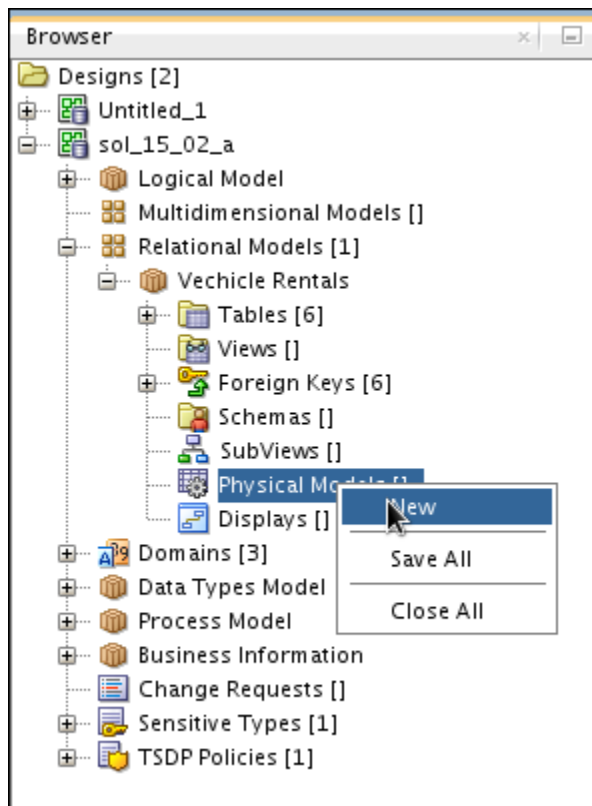
`Vehicle.Number` was renamed to `Rental Vehicle.Office_Number`.

Note: If the `Truck` and `Trailer` tables are not visible, right-click the `Vehicle` table and select **Send to Back**.

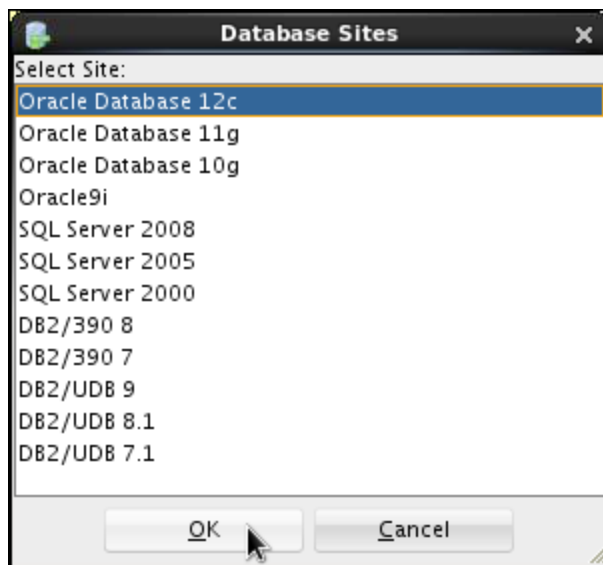
2. In the **Object Browser**, expand the **Relational Models** node, and then double-click `Relational_1`.
3. Change the **Name** to `Vehicle Rentals`, select the **Visible** check box, make sure that RDBMS Type is set to `Oracle Database 12c`, and then click **OK**.



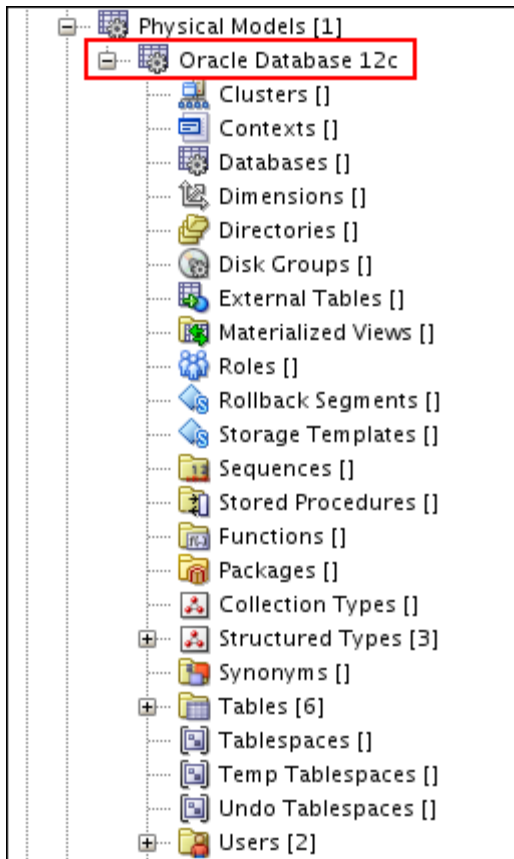
- Expand the **Vehicle Rentals** node, right-click **Physical Model**, and then select **New** from the pop-up menu. The **Database Sites** dialog box is displayed.



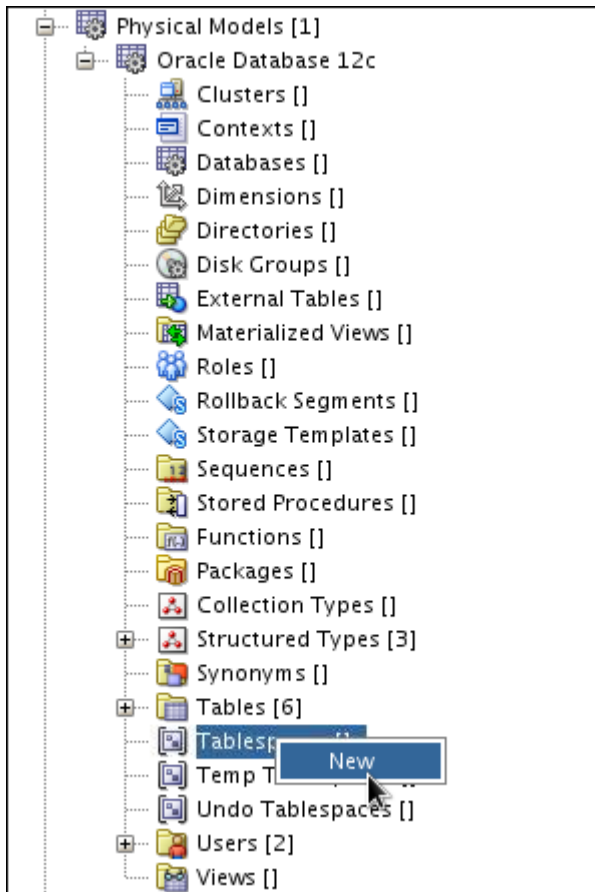
- Select **Oracle Database 12c** from the list, and then click **OK**.



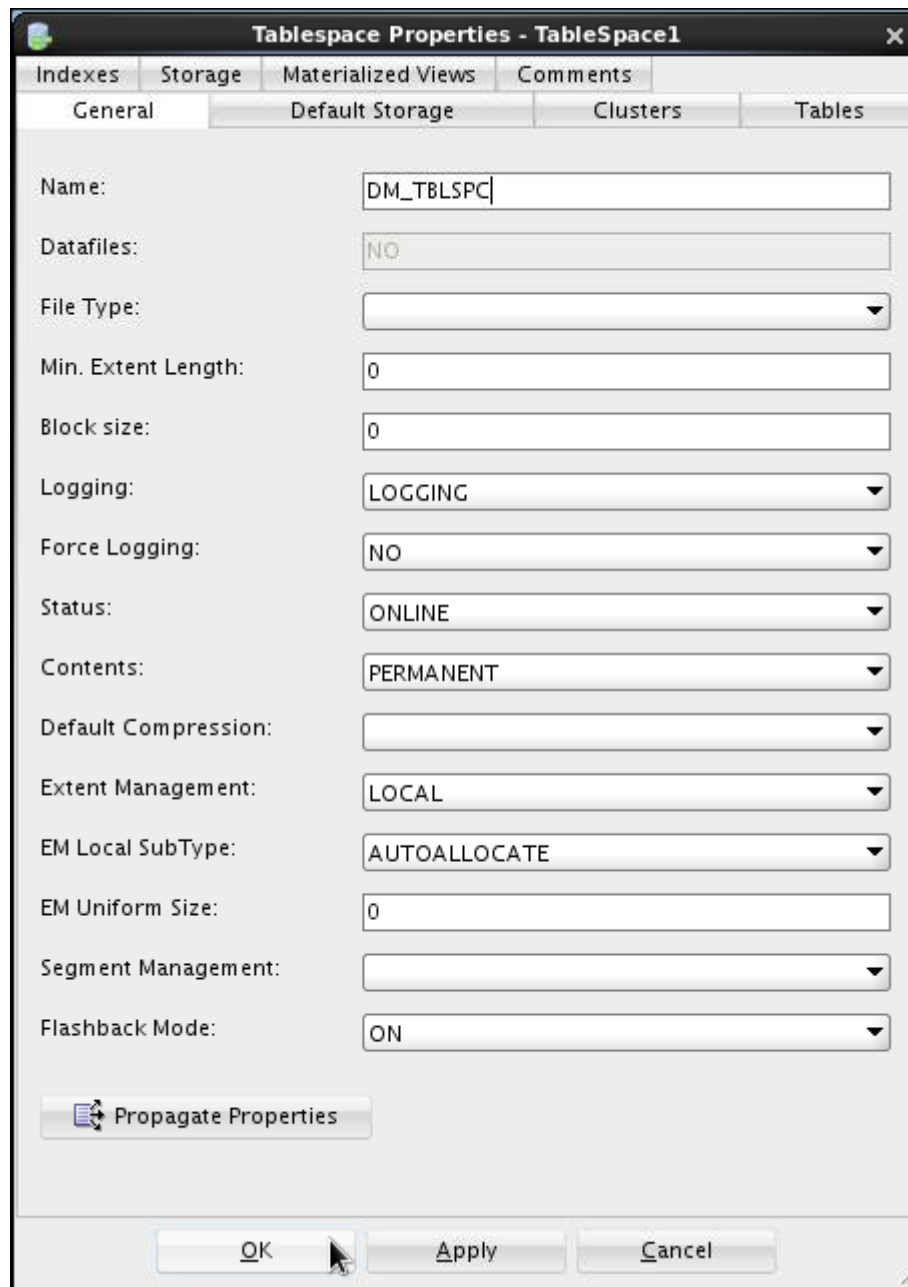
6. Your physical model is created successfully. Expand the **Physical Model > Oracle Database 12c** node in the **Object Browser**.



7. You want to create a tablespace. Right-click the **Tablespaces** node and then select **New** from the pop-up menu. The **Tablespace Properties** dialog box is displayed.



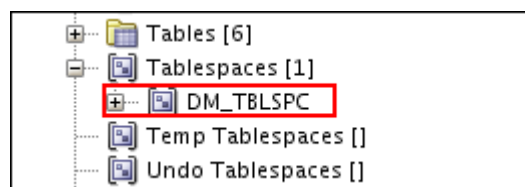
8. Enter `DM_TBLSPC` for the name, and then click **OK**. The new tablespace is displayed under the **Tablespaces** node.



The image shows the 'Tablespace Properties - TableSpace1' dialog box. It has tabs for 'Indexes', 'Storage', 'Materialized Views', and 'Comments'. The 'Storage' tab is active, showing sub-tabs for 'General', 'Default Storage', 'Clusters', and 'Tables'. The 'General' sub-tab is selected, displaying various configuration options:

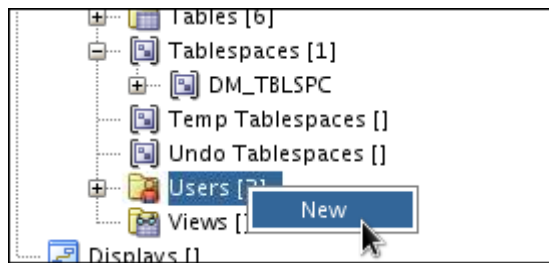
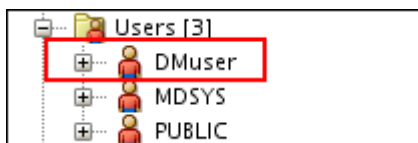
- Name: `DM_TBLSPC`
- Datafiles: `NO`
- File Type: (dropdown menu)
- Min. Extent Length: `0`
- Block size: `0`
- Logging: `LOGGING`
- Force Logging: `NO`
- Status: `ONLINE`
- Contents: `PERMANENT`
- Default Compression: (dropdown menu)
- Extent Management: `LOCAL`
- EM Local SubType: `AUTOALLOCATE`
- EM Uniform Size: `0`
- Segment Management: (dropdown menu)
- Flashback Mode: `ON`

At the bottom, there is a 'Propagate Properties' button and three buttons: 'OK', 'Apply', and 'Cancel'.

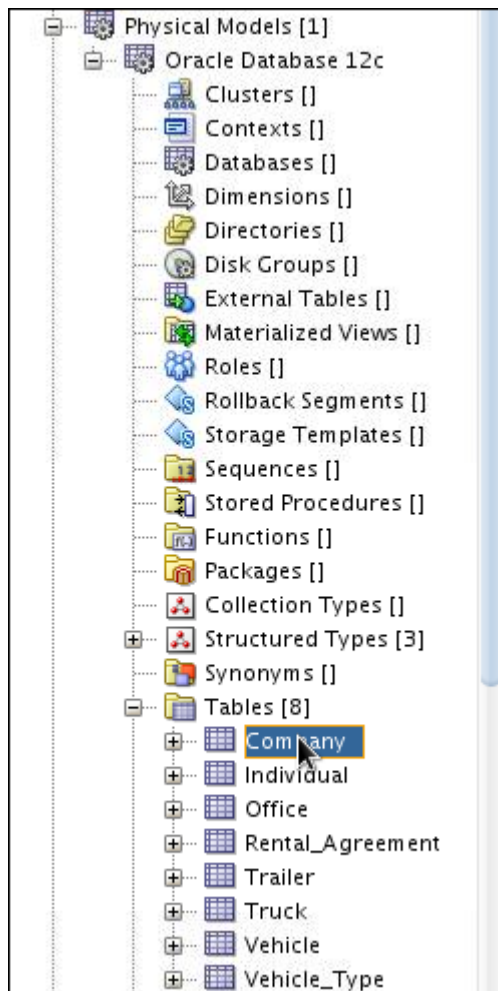


9. You want to also create a new user. Right-click **Users** and then select **New** from the pop-up menu. The **User Properties** dialog box is displayed.

10. Enter **DMuser** for the **name**, select **DM_TBLSPAC** for the **Tablespace**, and then click **OK**.
The new user is displayed under the **Users** node.

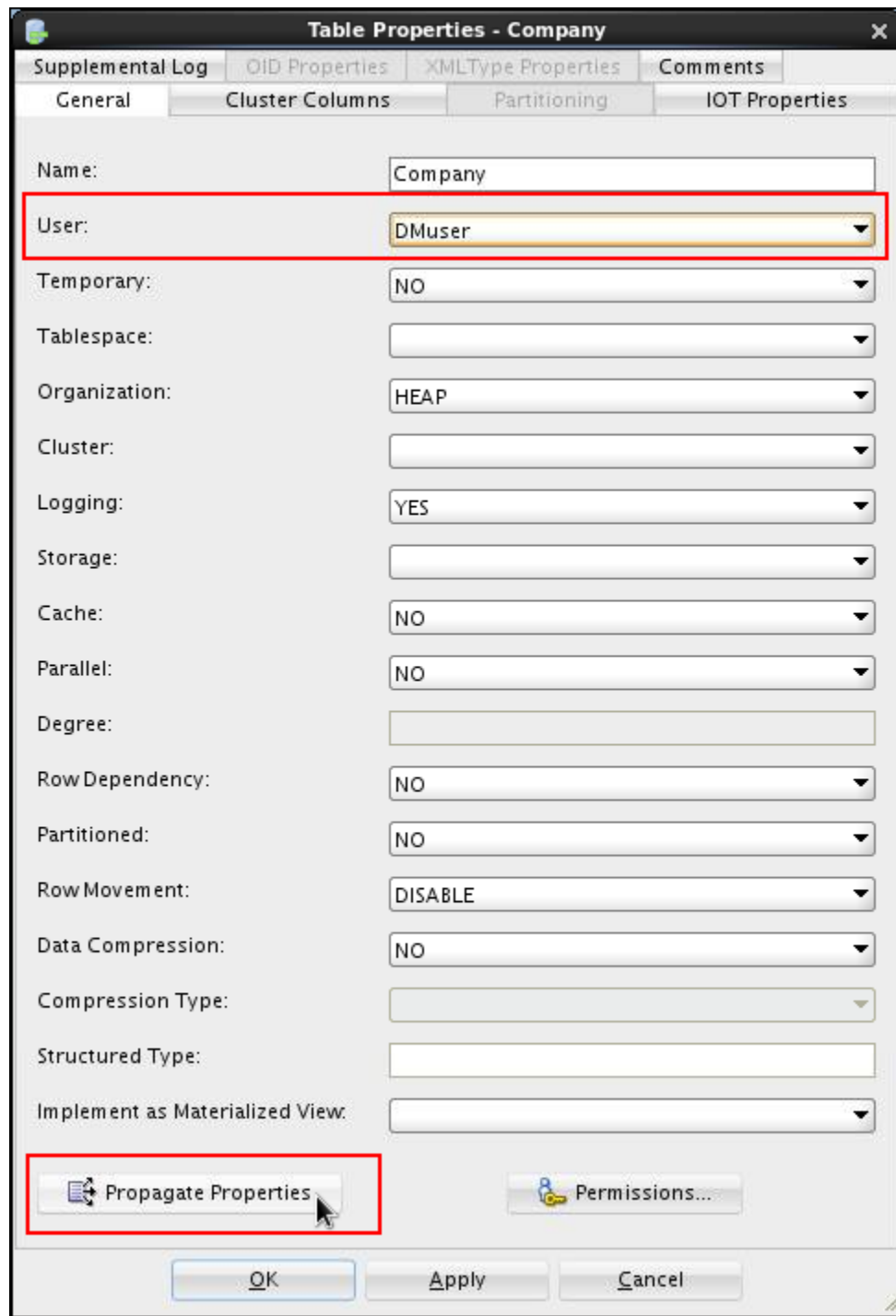
A screenshot of the 'User Properties - User3' dialog box. The 'General' tab is active. The 'Name' field contains 'DMuser'. The 'Authentication' dropdown is set to 'BY_PASSWORD'. The 'Tablespace' dropdown is set to 'DM_TBLSPAC'. Other fields like 'Identifier', 'Temp Tablespace', 'Temp Tablespace Group', 'Profile', 'Password Expire' (set to 'NO'), 'Account Lock' (set to 'NO'), 'External Name', and 'Implements Schema' are empty. At the bottom are 'Propagate Properties' and 'Permissions...' buttons, and 'OK', 'Apply', and 'Cancel' buttons at the very bottom.

11. Assign your tables to the new user. Expand the **Tables** node, and then double-click the first table, **Company**. The **Table Properties** dialog box is displayed.



12. Select **DMuser** from the **Users** drop-down list.

13. You want to propagate this change to the other tables. Click **Propagate Properties**. The **Properties Propagation** dialog box is displayed.



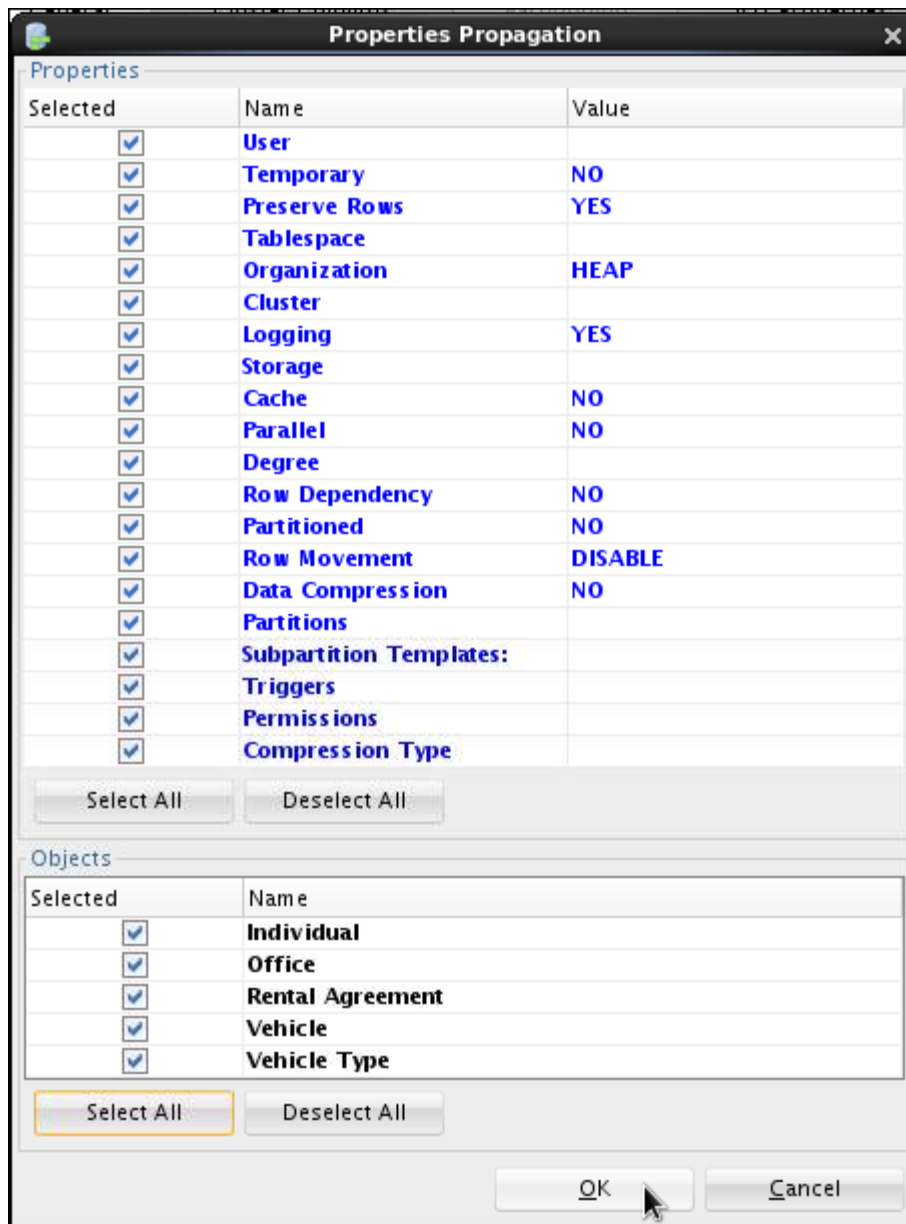
The image shows a screenshot of the 'Table Properties - Company' dialog box. The 'General' tab is selected. The 'User' dropdown menu is highlighted with a red box and contains the text 'DMuser'. The 'Propagate Properties' button at the bottom left is also highlighted with a red box. Other properties shown include Name: Company, Temporary: NO, Tablespace: (empty), Organization: HEAP, Cluster: (empty), Logging: YES, Storage: (empty), Cache: NO, Parallel: NO, Degree: (empty), Row Dependency: NO, Partitioned: NO, Row Movement: DISABLE, Data Compression: NO, Compression Type: (empty), Structured Type: (empty), and Implement as Materialized View: (empty). At the bottom are buttons for OK, Apply, and Cancel.

Property	Value
Name:	Company
User:	DMuser
Temporary:	NO
Tablespace:	
Organization:	HEAP
Cluster:	
Logging:	YES
Storage:	
Cache:	NO
Parallel:	NO
Degree:	
Row Dependency:	NO
Partitioned:	NO
Row Movement:	DISABLE
Data Compression:	NO
Compression Type:	
Structured Type:	
Implement as Materialized View:	

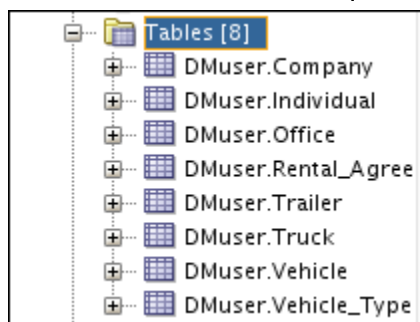
Propagate Properties **Permissions...**

OK **Apply** **Cancel**

14. In the **Objects** region, select the check box next to each of the other tables or click the **Select All** button, and then click **OK**. Next, click **Apply**, and then **OK** to exit the **Table Properties** dialog box.



15. Notice that the username qualifies each of the tables in the list.



16. You want to create a partition for the Rental Agreement table so that you can access the rental agreements for a given month quickly. Double-click the `DMuser.Rental` Agreements table. You must first designate this table a partitioned table. Select **Yes** from the **Partitioned** drop-down list, and then click **Apply**.

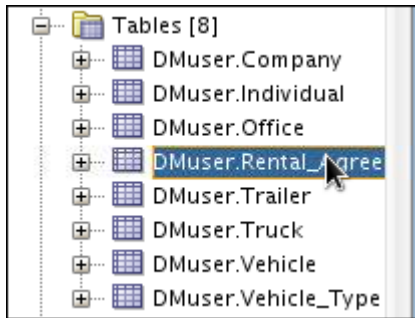


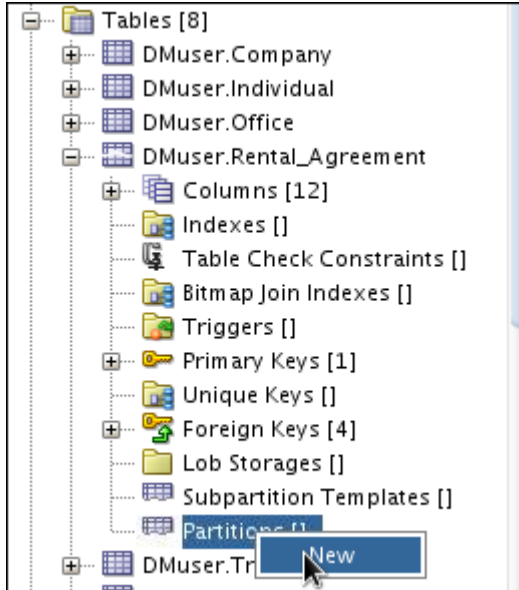
Table Properties - Rental Agreement		X
Supplemental Log		OID Properties
XMLType Properties		Comments
General	Cluster Columns	Partitioning
IOT Properties		
Name:	<input type="text" value="Rental Agreement"/>	
User:	<input type="text" value="DMuser"/>	
Temporary:	<input type="text" value="NO"/>	
Tablespace:	<input type="text"/>	
Organization:	<input type="text" value="HEAP"/>	
Cluster:	<input type="text"/>	
Logging:	<input type="text" value="YES"/>	
Storage:	<input type="text"/>	
Cache:	<input type="text" value="NO"/>	
Parallel:	<input type="text" value="NO"/>	
Degree:	<input type="text"/>	
Row Dependency:	<input type="text" value="NO"/>	
Partitioned:	<input type="text" value="YES"/>	
Row Movement:	<input type="text" value="DISABLE"/>	
Data Compression:	<input type="text" value="NO"/>	
Compression Type:	<input type="text"/>	
Structured Type:	<input type="text"/>	
Implement as Materialized View:	<input type="text"/>	
<input type="button" value="Propagate Properties"/>		<input type="button" value="Permissions..."/>
<input type="button" value="OK"/> <input type="button" value="Apply"/> <input type="button" value="Cancel"/>		

17. Click the **Partitioning** tab. You can define what type of partition and the column(s) on which it will be based. You will create a Range partition based on the Date of Rental column. Select Date_of_Rental, click **Add>** to move it to the **Selected Columns** area, and then click **OK**.

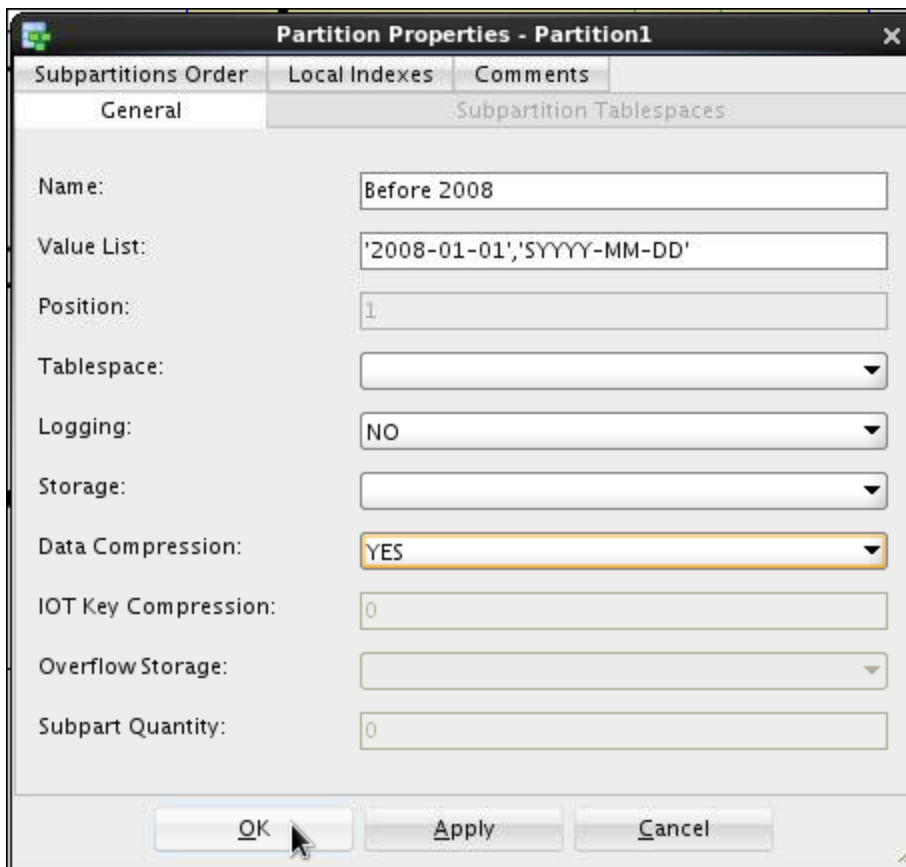
The screenshot shows the 'Table Properties - Rental_Agreement' dialog box with the 'Partitioning' tab selected. The 'Range Interval Clause' sub-tab is active. The 'Partition Type' is set to 'RANGE'. The 'Subpartition Type' is empty. 'Use Subpartition Template' is set to 'NO'. 'Hash Part Quantity' is 1, and 'Subpart Quantity' is 1. 'Reference Constraint' is empty. 'System Partitions' is 1. In the 'All Columns' list, 'Date_of_Rental' is selected. The 'Add >' button is highlighted. The 'Selected Columns' list contains 'Date_of_Rental'. The 'OK' button is highlighted with a mouse cursor.

Table Properties - Rental_Agreement	
Supplemental Log OID Properties XMLType Properties Comments	
General Cluster Columns Partitioning IOT Properties	
Subpart Columns Hash Subpart Tablespaces Partitions Order	
General Range Interval Clause Hash Part Tablespaces	
Partition Type:	RANGE
Subpartition Type:	
Use Subpartition Template:	NO
Hash Part Quantity:	1
Subpart Quantity:	1
Reference Constraint:	
System Partitions:	1
All Columns:	Selected Columns:
Number	Date_of_Rental
Duration	
Date_of_Return	
Deposit_Paid	
Daily_Rental_Rate	
Rate_Per_Mile	
Driver's_License_State	
Driver's_License_Number	
Company_Number	
ID	
Office_Number	
Add > < Remove	
OK Apply Cancel	

18. Now you can create the partition itself. Expand the `DMuser.Rental_Agreement` table, right-click **Partitions**, and then select **New** from the pop-up menu. The **Partition Properties** dialog box is displayed.



19. You can create a partition for rentals before 2008. Enter `Before 2008` in the **Name** field, enter the expression `TO_DATE('2008-01-01','YYYY-MM-DD')` in the **Value List** field, select **No** for **Logging**, **Yes** for **Data Compression**, and then click **OK**.



20. Your partition is created successfully.

