CREATING METADATA USING DATA MODELING TOOLS

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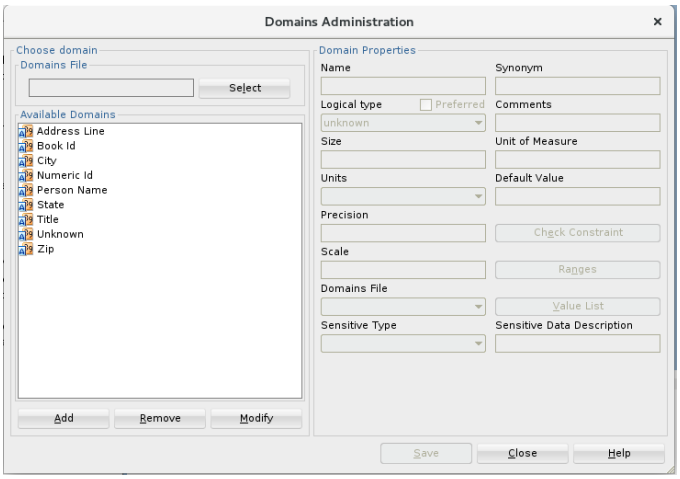
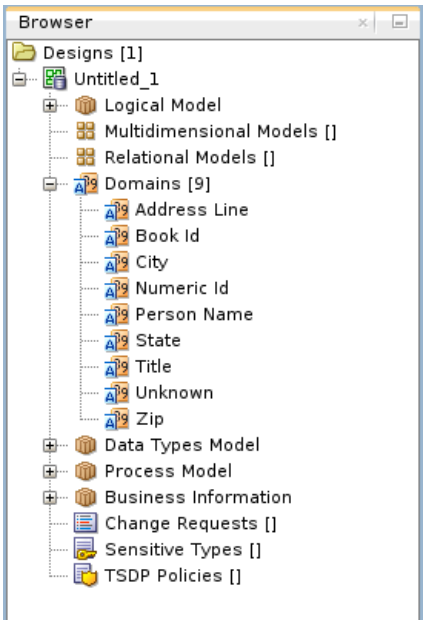
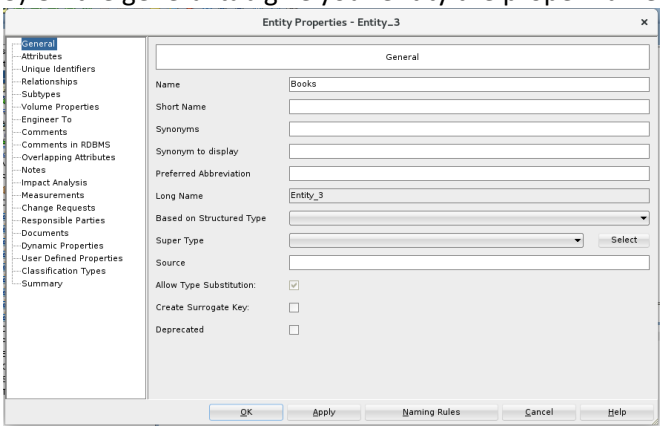
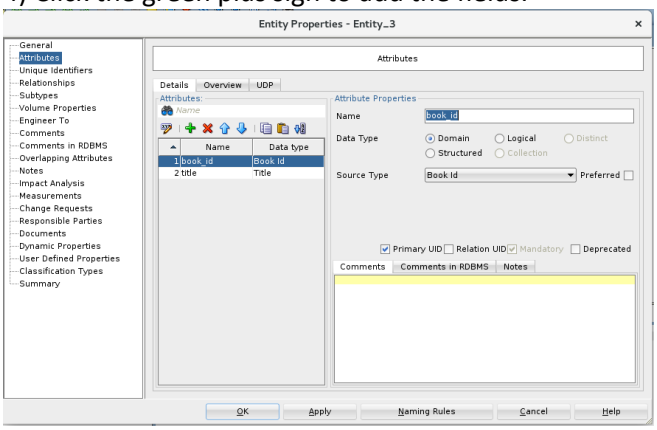
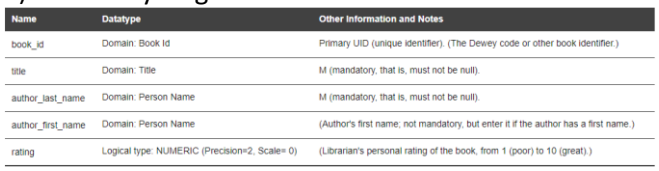
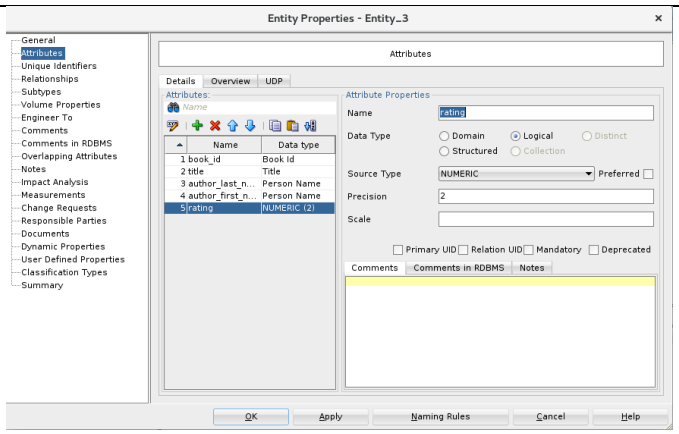
Introduction

Upon the beginning of the program we were faced with creating ERD diagrams in visio. Now we are learning that there are more efficient ways of producing diagrams with the use of metadata and Data Modeler. In this assignment the steps used to create such data will be broken down.

Activity List			
Project: Creating Metadata Using Data Modelling Tools			**Date:** 28/10/2018
Activity ID	**Activity Name**	**Description Of Work**	**Responsibility**

Develop the Logical Model	2.1.1 Adding Domains	1) The first step in modeling your data is to create the domains as a basis for the DDL. 2) Simply click on add and add the information in the table below.  3) Go through and add all the information below. **Name** / **Logical Type** / **Other Information** Person Name / VARCHAR / Size: 25 Address Line / VARCHAR / Size: 40 City / VARCHAR / Size: 25 State / VARCHAR / Size: 2 Zip / VARCHAR / Size: 10 Book Id / VARCHAR / Size: 20 Numeric Id / NUMERIC / Precision: 7, Scale: 0 Title / VARCHAR / Size: 50 4) Once you are complete the pane on the left should look like this.  5) Save your work. Your work should be saved in the “defaultdomains.xml” file.	

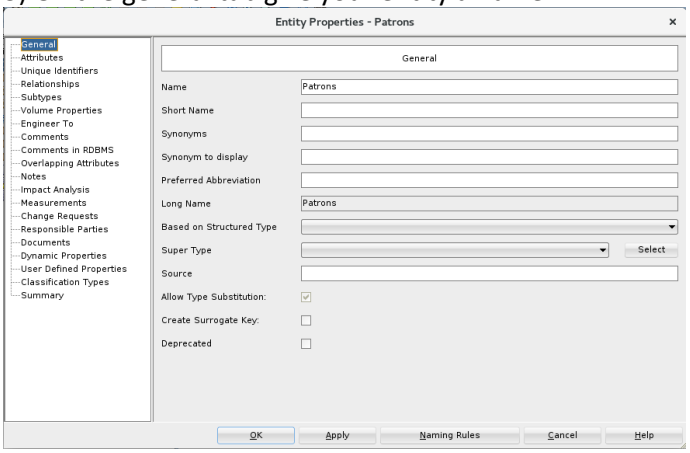
		6) Use the find command to locate this file. Once located copy it to your home directory and rename it to "library_domains.xml"	
	2.1.2 Creating The books entity	1) Right Click on "logical model" and select "show" 2) Click on "new entity" and drag into main area 3) On the general tab give your entity the proper name.  4) Click the green plus sign to add the fields.  5) Add every single field in the table below.  6) Once complete all your fields should show in the box in the middle. 7) Be sure to add all the information	



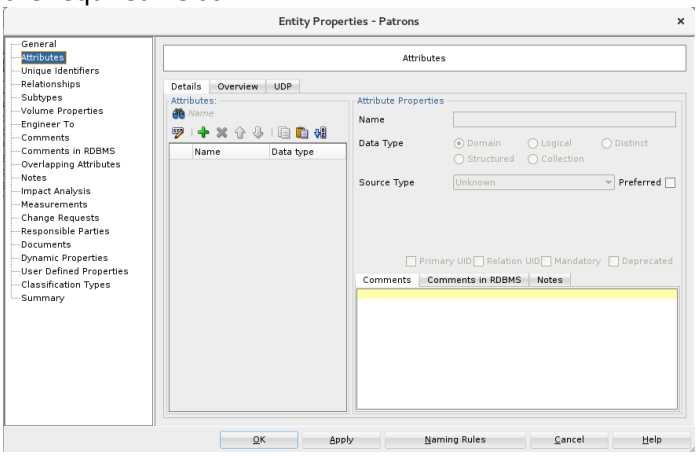
8) Click “Apply” and “OK”

2.1.3 Creating Patrons Entity

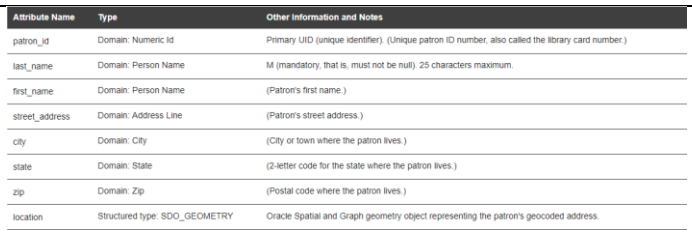
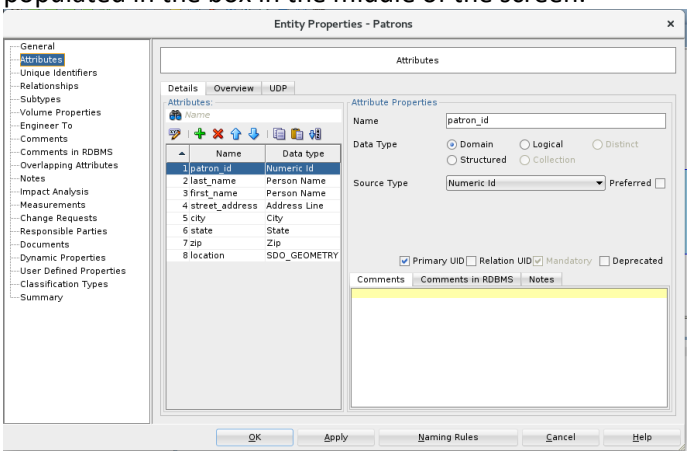
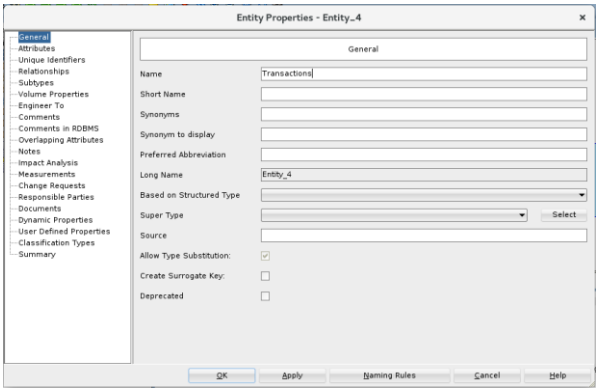
1) Right Click on “logical model” and select “show”
2) Click on “new entity” and drag into main area
3) On the general tab give your entity a name.

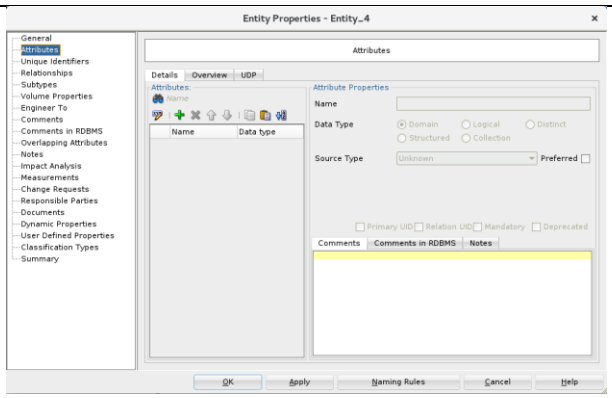


4) On the attributes tab click the green plus sign to add the required fields.



5) Keep going until you have added all the fields in the table below. Make sure to enter all the information.

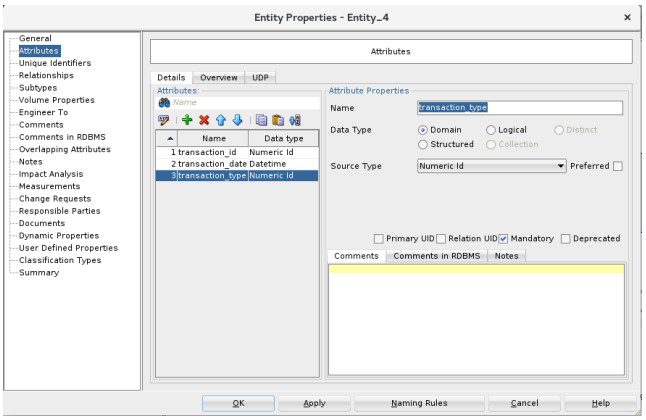
		 6) Once you are complete you should see all the data populated in the box in the middle of the screen.  Click “Apply” and “OK”	
	2.1.4 Creating the Transactions Entity	1) Right Click on “logical model” and select “show” 2) Click on “new entity” and drag into main area 3) On the “general tab” be sure to give your entity a name.  4) Click the green plus sign in the middle of the screen to add fields.	



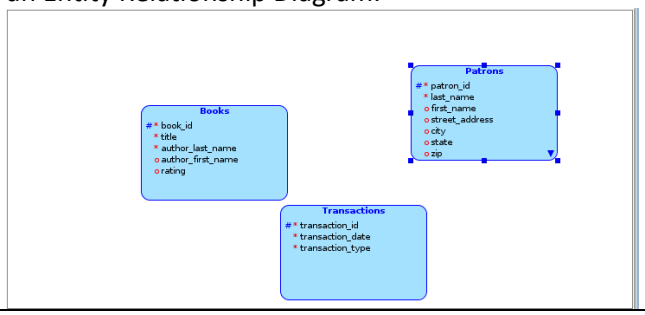
5) Keep adding fields until you have added all the fields in the table below.

Attribute Name	Type	Other Information and Notes
transaction_id	Domain: Numeric Id	Primary UID (unique identifier). (Unique transaction ID number)
transaction_date	Logical type: Datetime	M (mandatory, that is, must not be null). Date and time of the transaction.
transaction_type	Domain: Numeric Id	M (mandatory, that is, must not be null). (Numeric code indicating the type of transaction, such as 1 for checking out a book.)

6) Once complete you should see all your data populated in the screen.

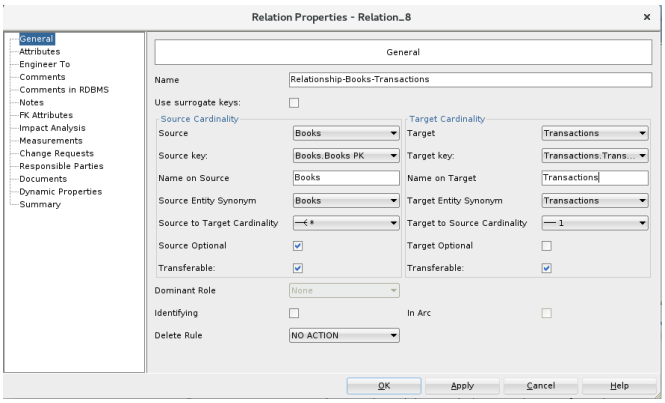
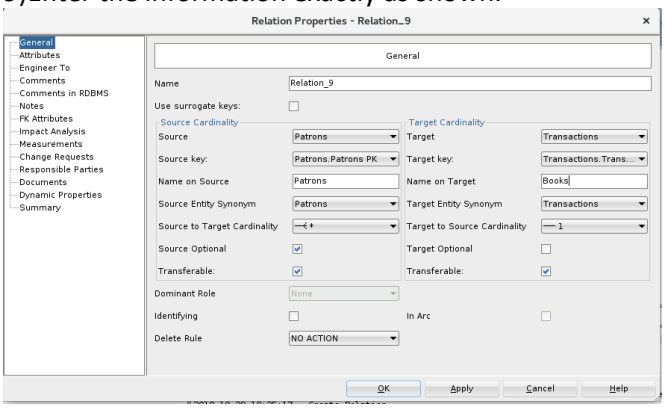
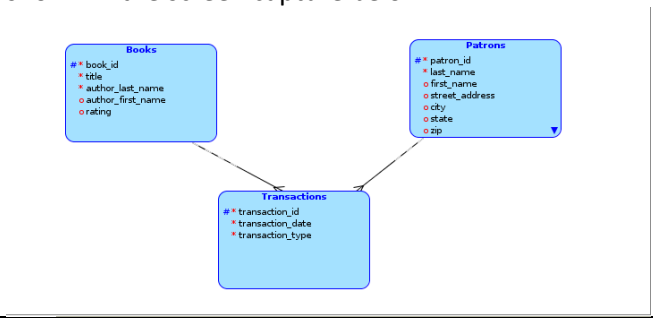


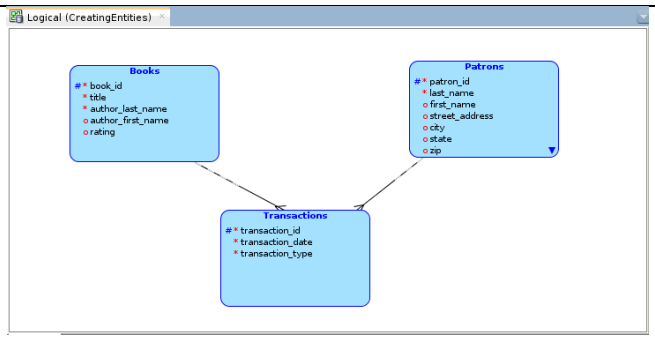
7) Once complete press “Apply” and “OK”
8) The box will close and you should see what looks like an Entity Relationship Diagram.



2.1.5 Create Relations Between Entities

1) At this point you should have a screen with 3 blue boxes. We will now create the relationships between them.
2) Click on the box with the green arrow that says “1 to many” and click on the “Books” entity and then click on the “Transactions” entity.
3) A box should pop up like the one below.

		4) Enter the information in the window exactly like shown below.  5) Repeat the same steps 6) So click on the box with the green arrow that says “one-many” 7) Then click on the “Patrons” entity 8) After clicking on the “Transactions” entity a box like the one below will pop up. 9)Enter the information exactly as shown.  10) You will now see lines followed with crows feet as shown in the screen capture below.  	
	2.2 Develop the Relational Model	1) To start off you should have the screen below.	

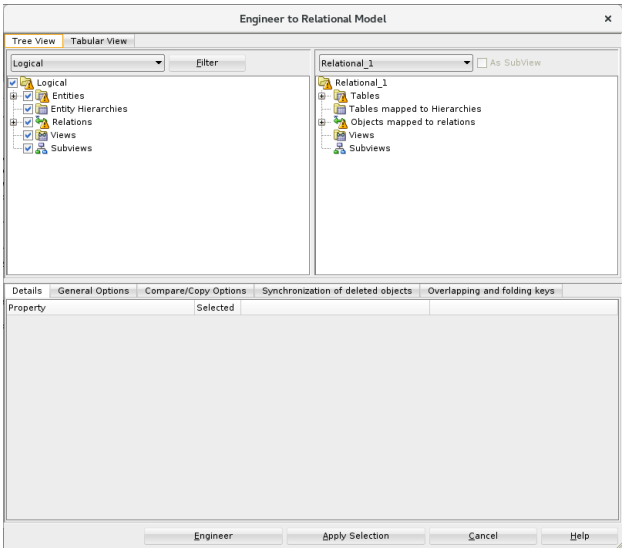


2) To achieve the relational model you should do the following.

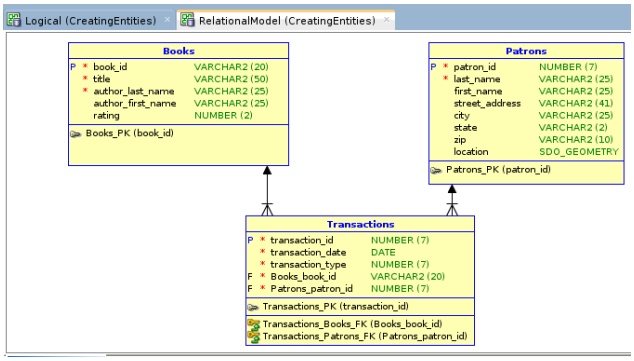
3) With the logical model selected, click the engineer to Relational Model icon, then select Engineer to Relational Model. A box should now be displayed.

4) Accept all defaults and click “Engineer”

5) This will cause the relational model to be populated with tables and other objects that reflect the logical model.



6) At this point you can position the boxes or expand them to see all the information.

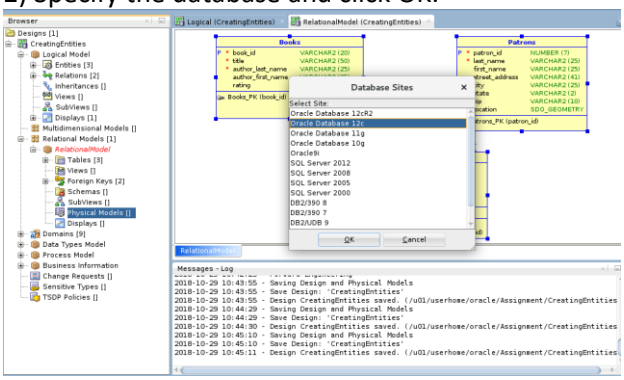


7) You can now save this new model as something descriptive so that you can reference it later.

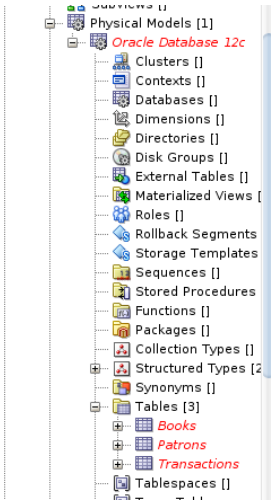
2.3 Generate DDL

1) With the relational model selected and expanded, right click the Physical Models node and select New. A dialog box is displayed for selecting the type of database for which to create the physical model.

2) Specify the database and click OK.

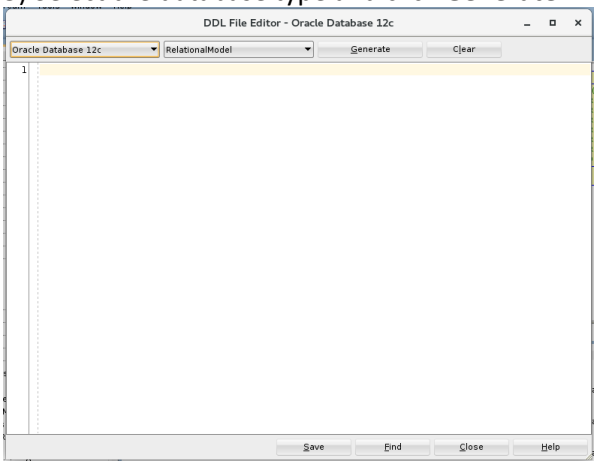


3) You should see the text in red added to your Physical models.

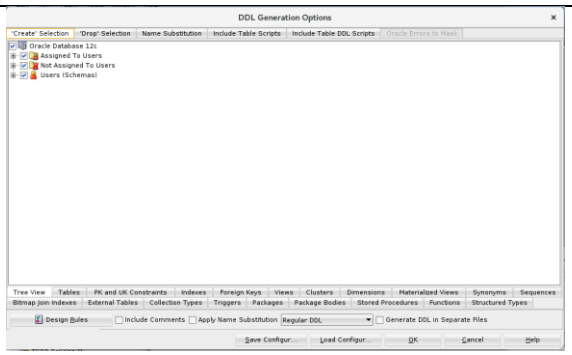


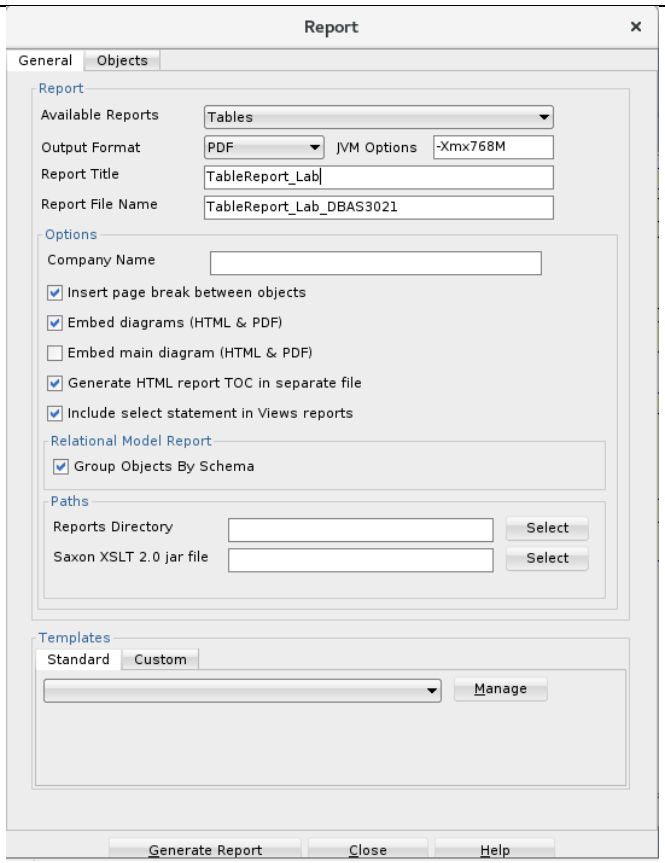
4) Click **File**, then **Export**, then **DDL** File.

5) Select the database type and click **Generate**

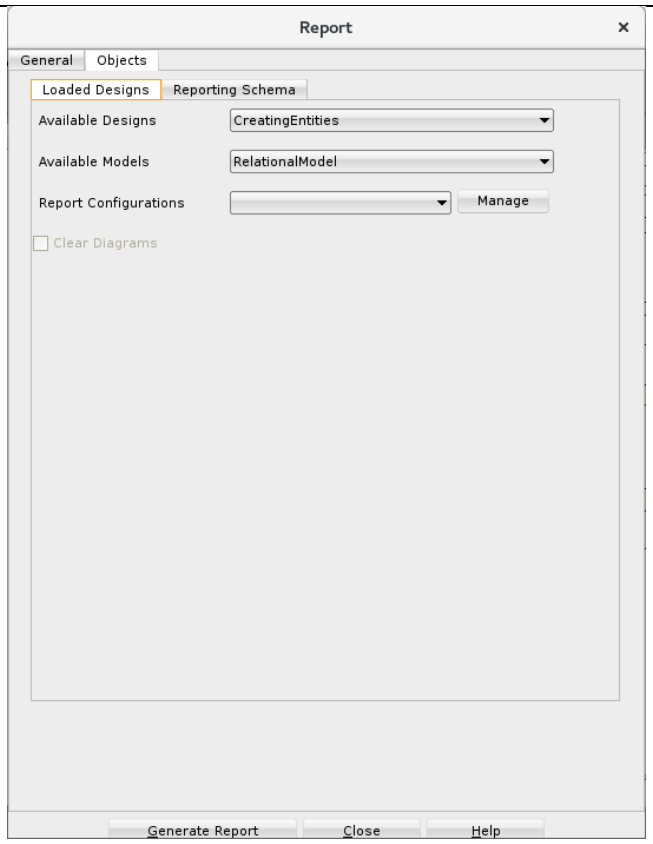


6) Accept all defaults and click **OK** on the screen below**.**

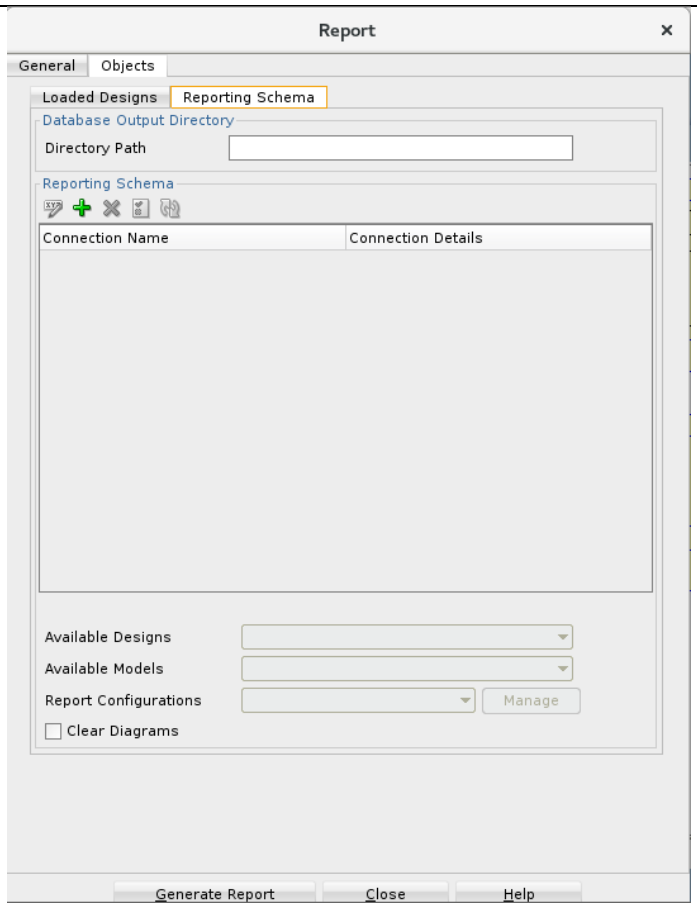
		 7) A DDL editor should be displayed with the SQL statements to create the tables and add constraints 8) Save the DDL file as SQL file somewhere that you can remember.	
	Create a MetaData Report	1) Creating reports is an important task for a DBA to learn. Here is how to create a report in DataModeler. 2) On the General Tab select what you want the report to be of. For the purpose of this assignment I selected “Tables” 3) You should also select the output format. I selected pdf but there are other options. 4) You should give your report a Title and a file name.	



5) On the Object tab there are some more settings that you can configure.
6) The Loaded design tab allows you to select a specific design or model to base your report off of. For the purpose of this assignment I went with the default settings.



7) On the reporting schema tab there are more settings to allow you to trully customize your report.
8) You can select a directory path or database output directory.
9) The green plus sign allows you to add a reporting schema.
10) With the schema in place you can select a specific Available design or model.



11) After you click generate report a file should pop up. Simply save the file.

Summary

Data Modeler is a great tool for DBA's because it allows you to build databases without the trouble of creating ERD's in visio which is good because visio is expensive. But also, Data Modeler is quicker to use by simply entering the entities you are dealing with and then data modeler generates the DDL for you which can be time consuming to create manually.

References

Oracle. (2018). Data Modeler Tutorial-Modeling for a small database. Retrieved from https://docs.oracle.com/cd/E39885_01/doc.40/e48205/tut_data_modeling.htm#DMDUG36179

Glossary

Commands Used
Find /u01 -name "defaultdomains.xml"