ITC 5104 Database Design and SQL

Lab Exercise 11

Install and Use of Oracle SQL Developer Modeller

This lab is to introduce to you the install and use of Oracle SQL Developer Modeller. This is a stand-alone product that is in the SQL Developer family and developed by the same team. Its purpose is to allow you to model ER diagrams and convert the ER diagram to a relational model. It will then permit you to generate the DDL script of SQL commands that could be run against your SQL account to create your schema.

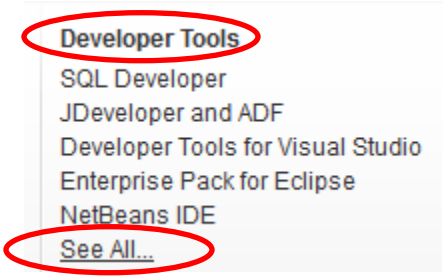
We will go through several steps to install and configure. Then walk you through the creation of the ERD. Then you will generate the relational model and the DDL script.

Step 1 – Download SQL Developer Modeller

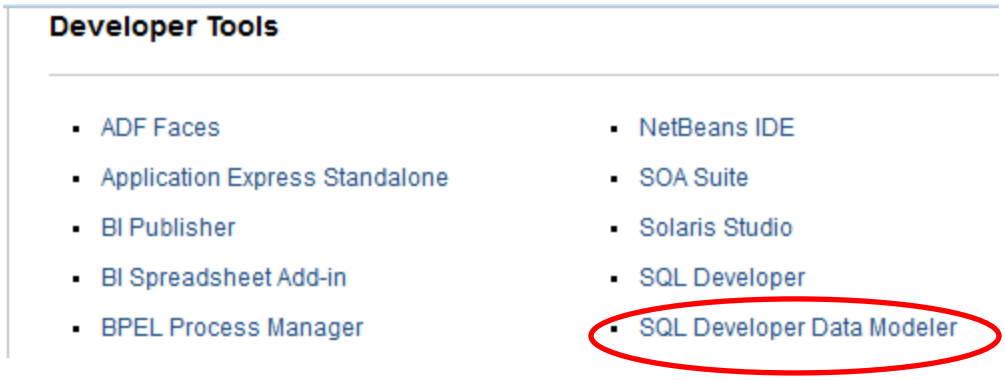
Go to the Oracle Technology Network (OTN) to find the software to download.

http://www.oracle.com/technetwork

Click Downloads

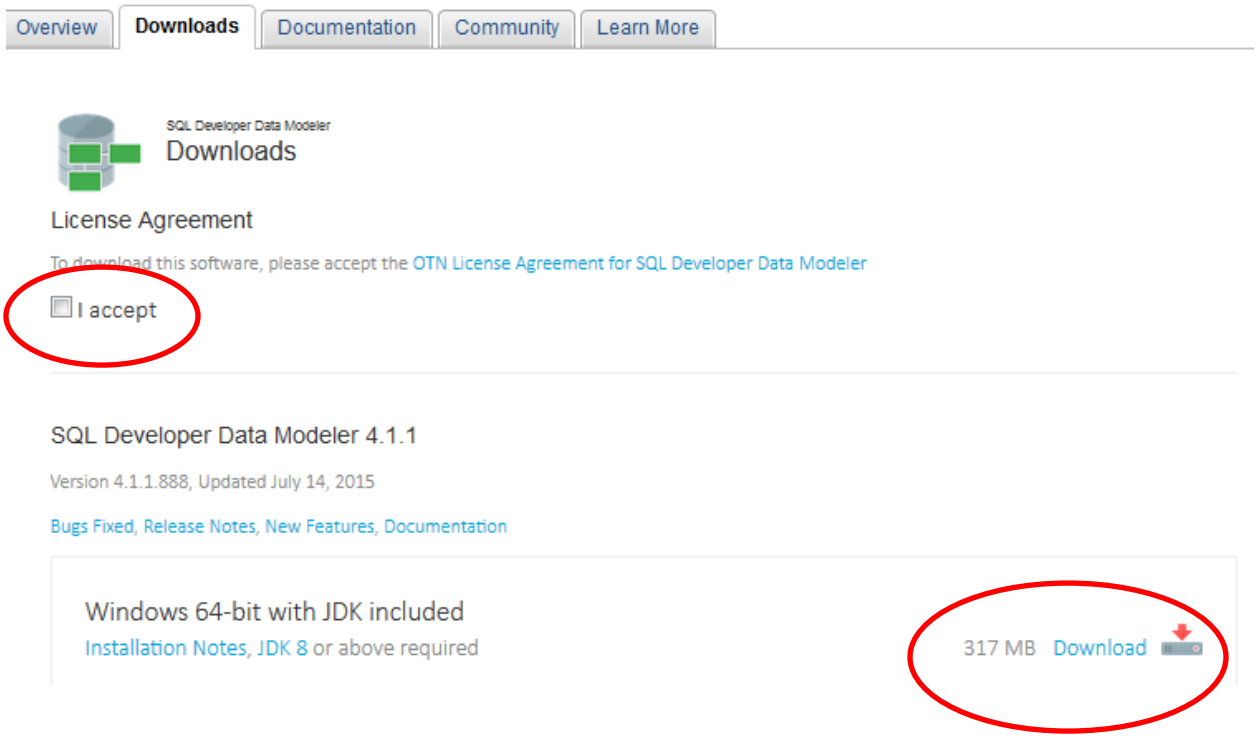


Then under Developer Tools select **See All …** from the expanded menu select **SQL Developer Data Modeller**

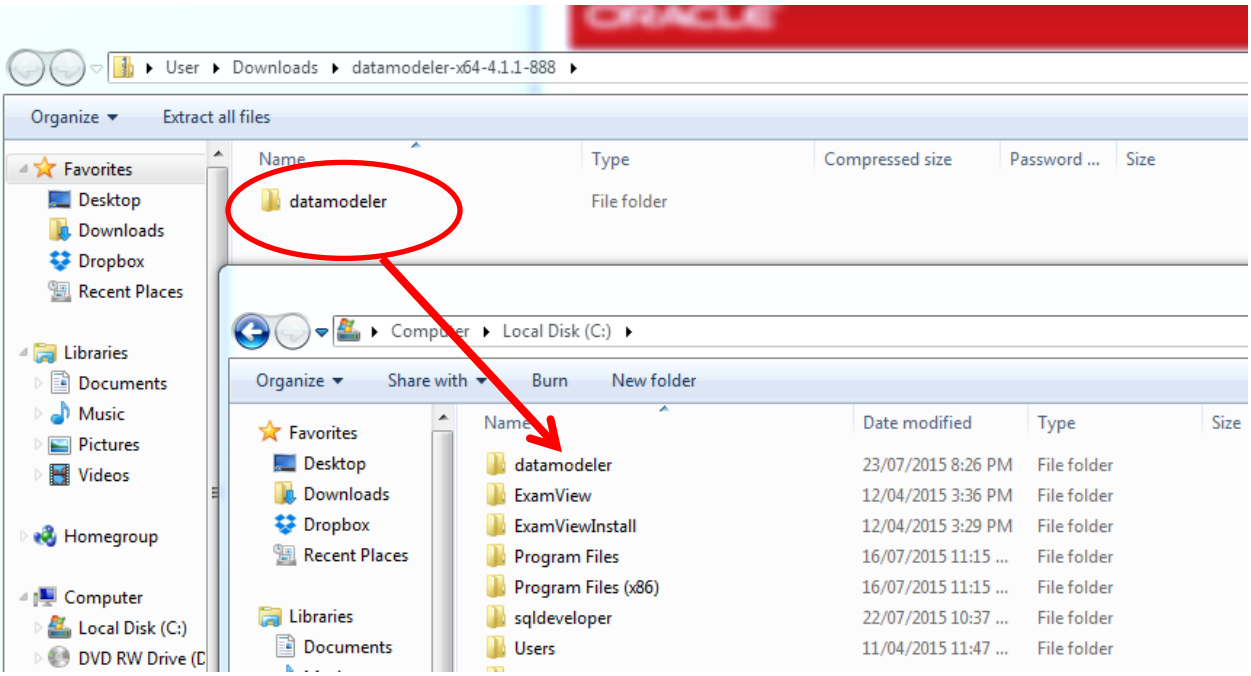


Select the Windows 64-bit with JDK included option.

Accept the license agreement then click Download. You will need to connect to the OTN network. It is free. You used it to download SQL developer at the beginning of class. If you do not remember your credentials follow any steps to retrieve your password etc.



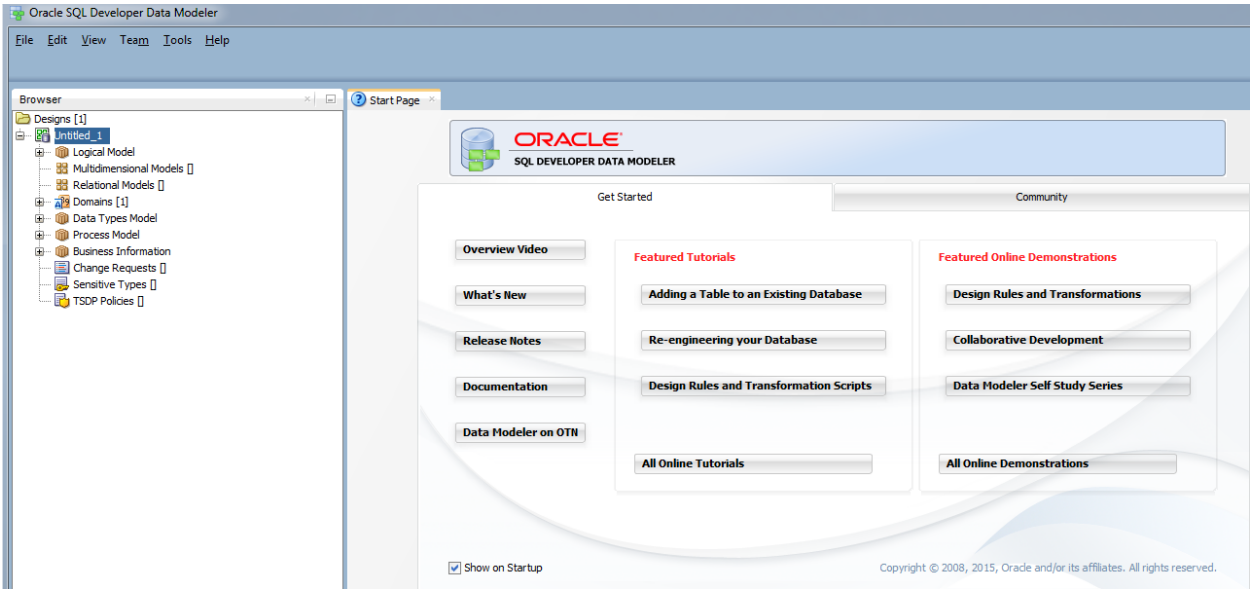
When the download is complete open the zip file that is downloaded.



Drag the folder inside the zip file to a location where you would like to extract the files to. In my case I did it to the C:\ drive root.

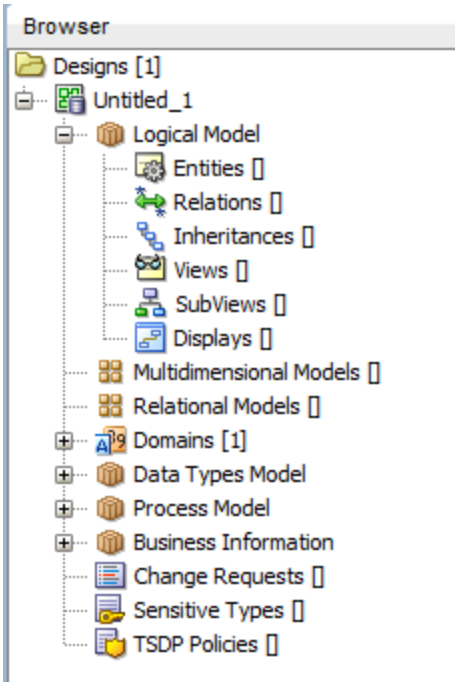
You can right-click the entry to create a shortcut or add to the tray.

Step 2: Open SQL Developer to create a logical model



You will see the screen. It looks very much like its cousin SQL Developer.

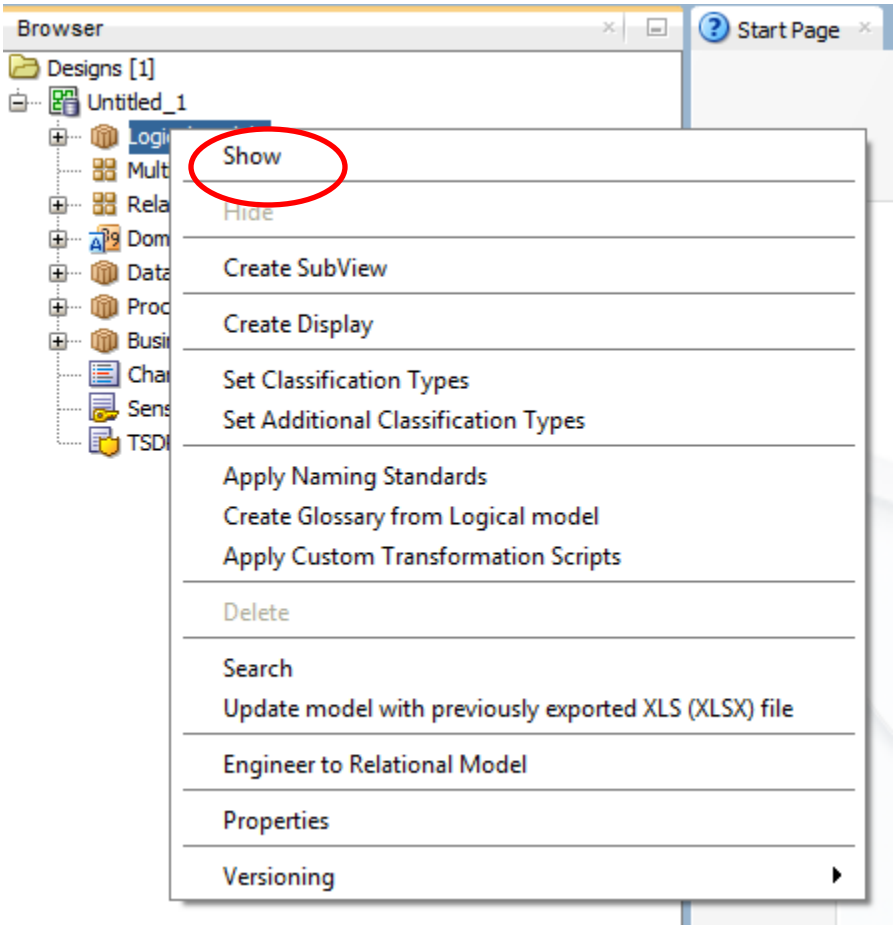
First we want to develop the Logical Model. Expand the node on the left for Logical Model.



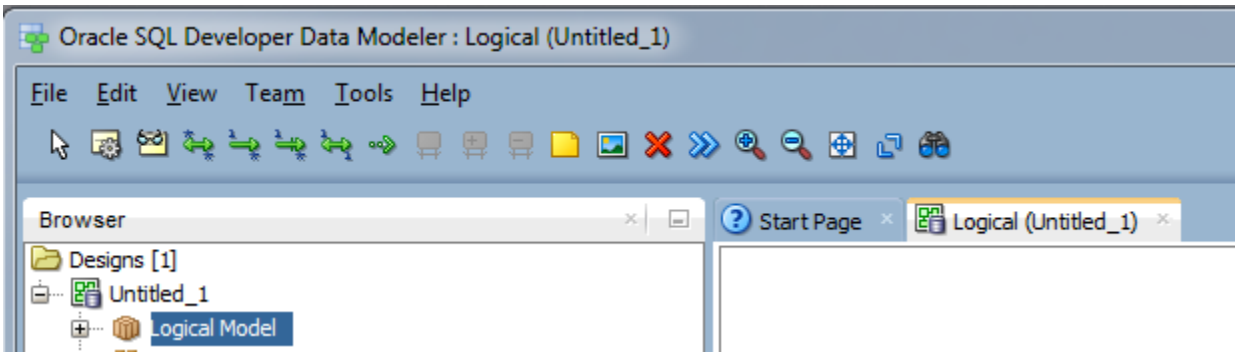
To start drawing our ER Diagram (ERD), do the following:

Right-click Logical Model

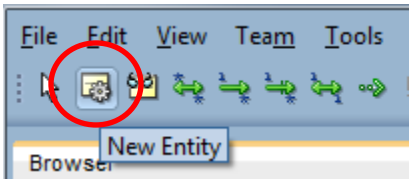
Click-on Show



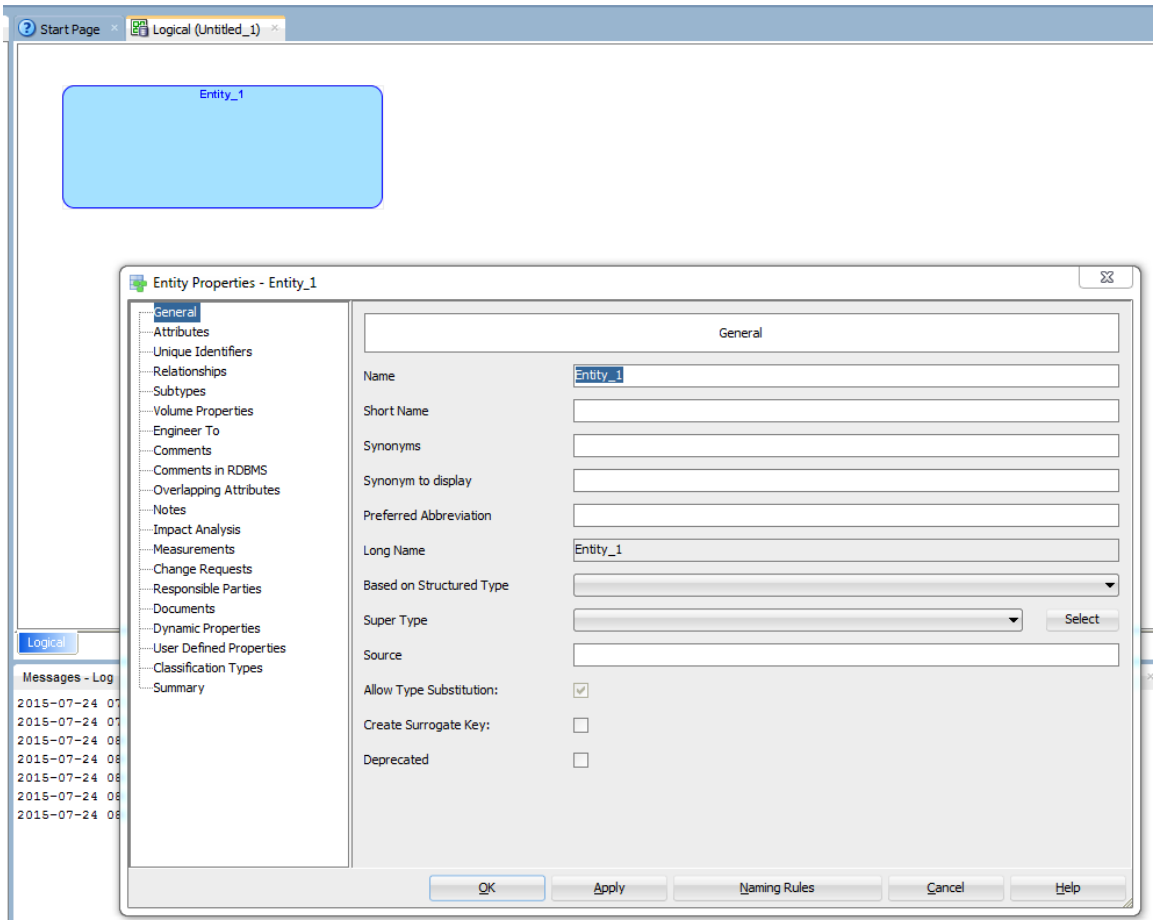
You will notice the screen changes in addition to the toolbar.



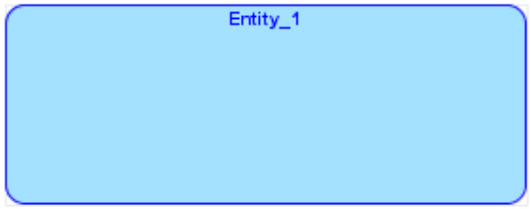
On the toolbar if you do a mouse over the buttons will give you their use.

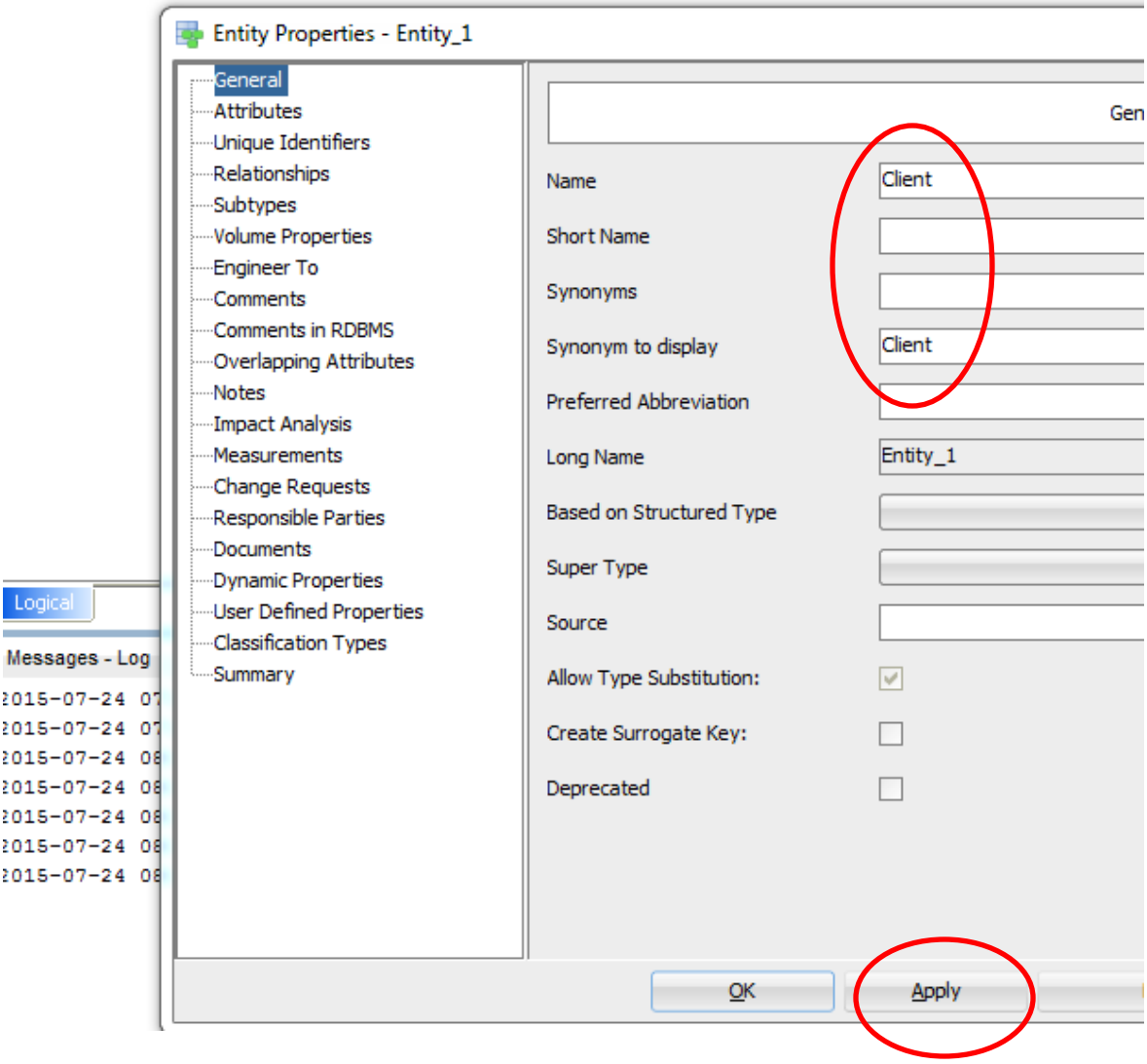


We start by adding entities to the screen. Click the New Entity button to draw an entity.

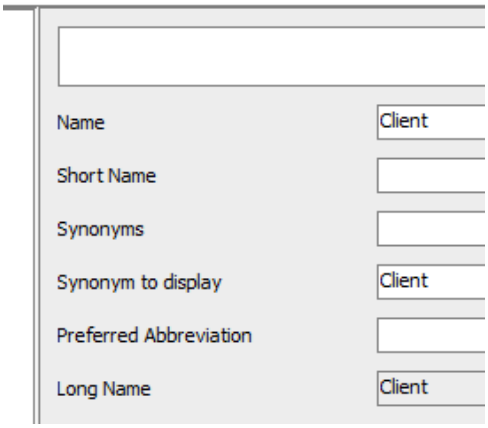


An entity appears on the canvas and a property box opens as well. In the property box name the entity Client.


Entity_1


Entity Properties - Entity_1
General
Attributes
Unique Identifiers
Relationships
Subtypes
Volume Properties
Engineer To
Comments
Comments in RDBMS
Overlapping Attributes
Notes
Impact Analysis
Measurements
Change Requests
Responsible Parties
Documents
Dynamic Properties
User Defined Properties
Classification Types
Summary
Name
Client
Short Name
Synonyms
Synonym to display
Client
Preferred Abbreviation
Long Name
Entity_1
Based on Structured Type
Super Type
Source
Allow Type Substitution:
Create Surrogate Key:
Deprecated
OK
Apply
Logical
Messages - Log
2015-07-24 07
2015-07-24 07
2015-07-24 08
2015-07-24 08
2015-07-24 08
2015-07-24 08
2015-07-24 08

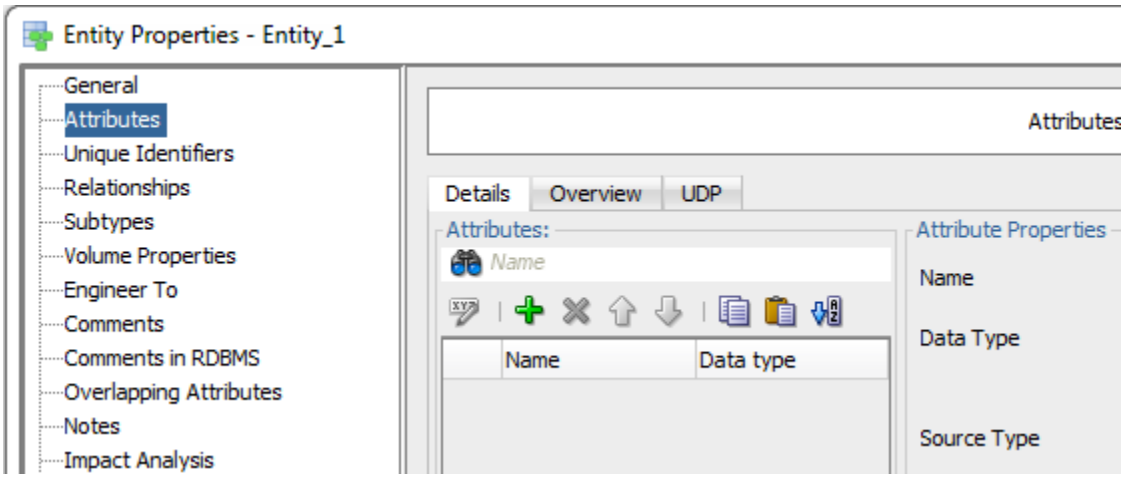
Click Apply



Notice the Long Name is now Client as well. The name on the entity also changes to Client.

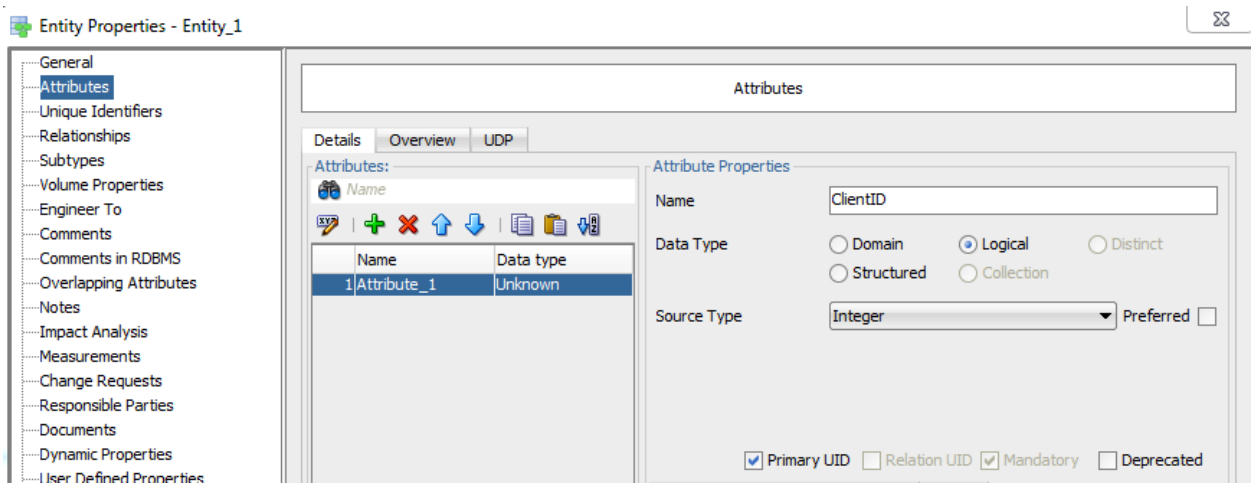
Our entity now needs attributes.

Click the Attribute entry.



Click the Green Plus Sign.

Enter the following:



Name: Client

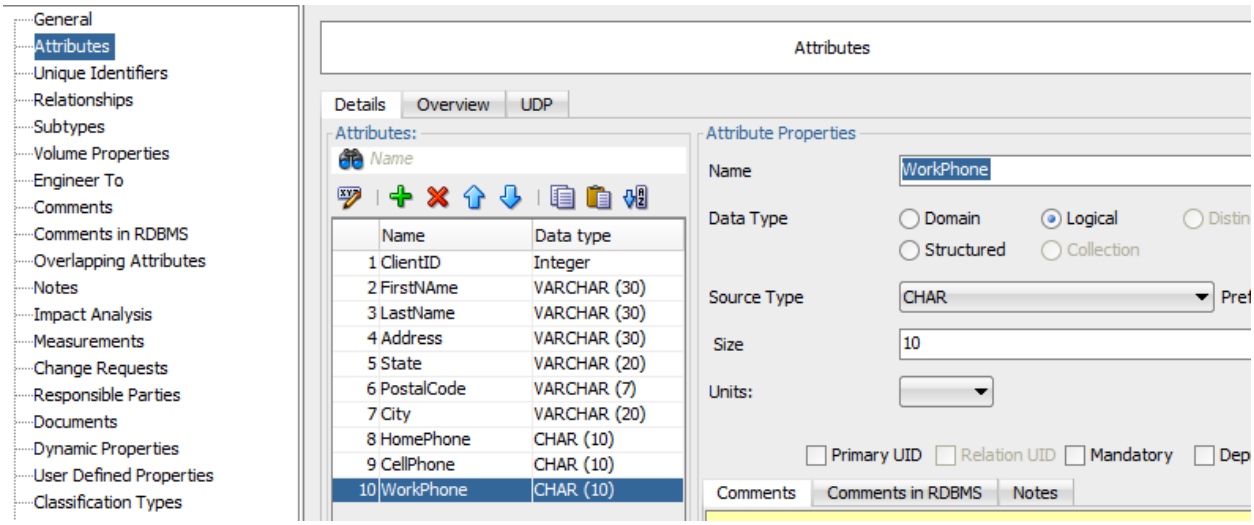
Click Data Type set to Logical

Source Type set to Integer

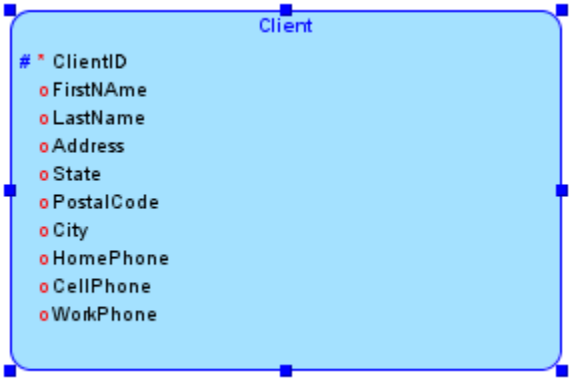
Select the Primary UID to make this the Primary Key.

Click Apply

Continue to do this for the rest of the attributes.

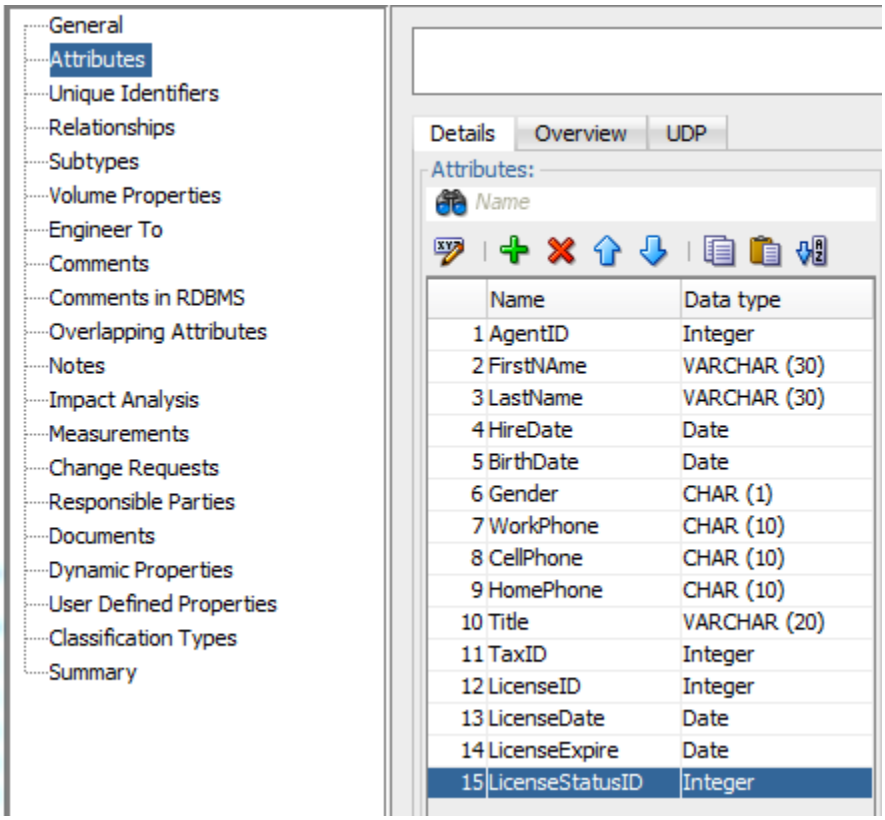


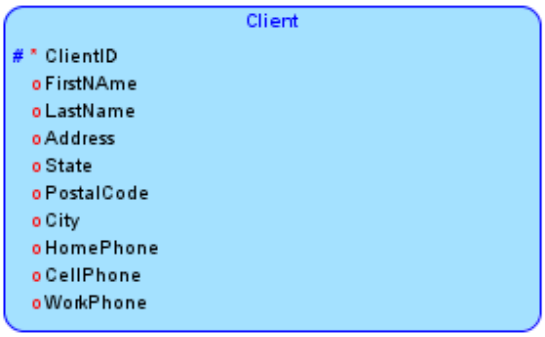
Click OK when finished.

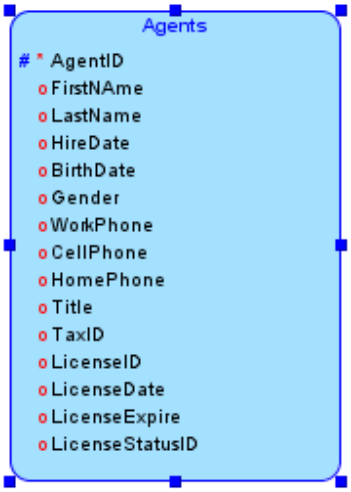


The finished entity showing all attributes.

Add a second entity: Using the screen capture below, create a second entity called Agents with AgentID as the Primary UID. Use the data types and sizes shown below.

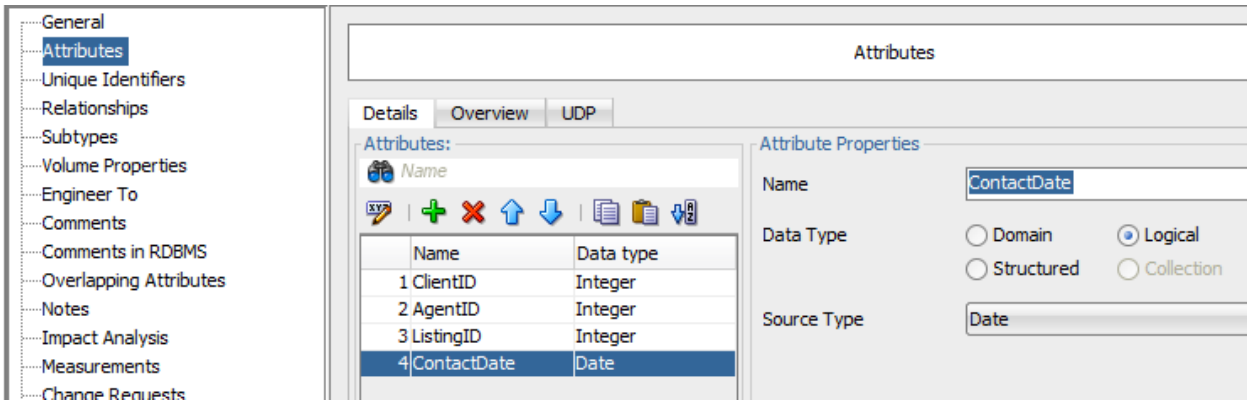






Two entities now exist

Create a third entiy called ClientAgentList. Use the attribute names and data types shown below. Identity both ClientID and AgentID as primary UID values.



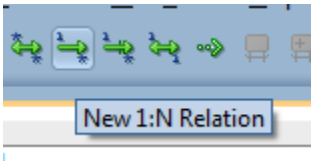
The three entities:

You can drag them in the drawing area to place them where you wish.

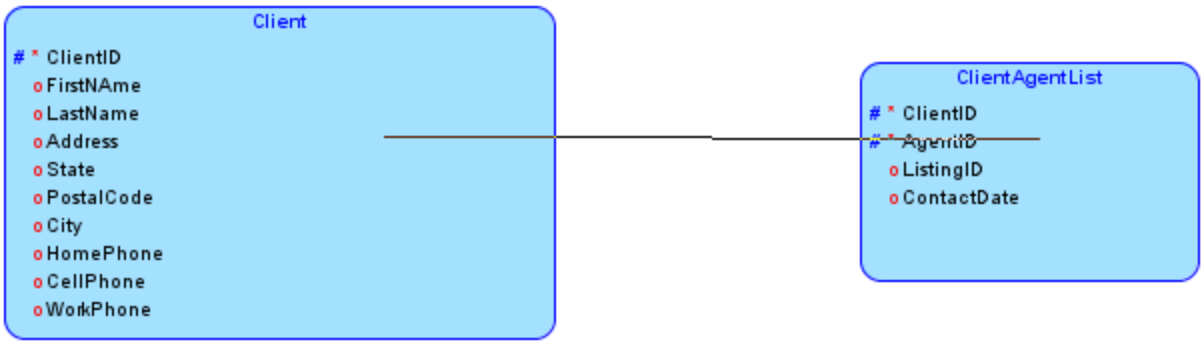
Step 3: Adding Relationships

We can add relationships between our entities. We will start with the relationship between Client and ClientAgentList.

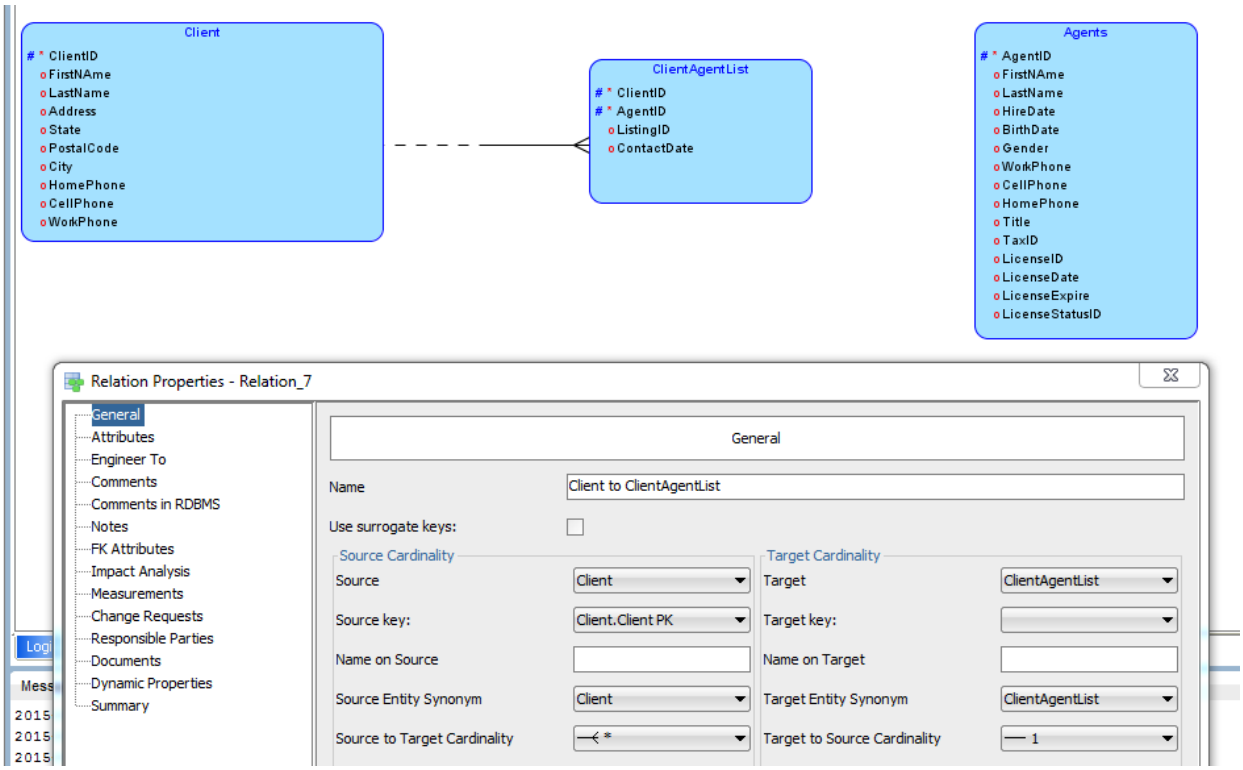
Using the tool bar again do a mouse over to see the tools to define a 1:M relationship.



Click this button

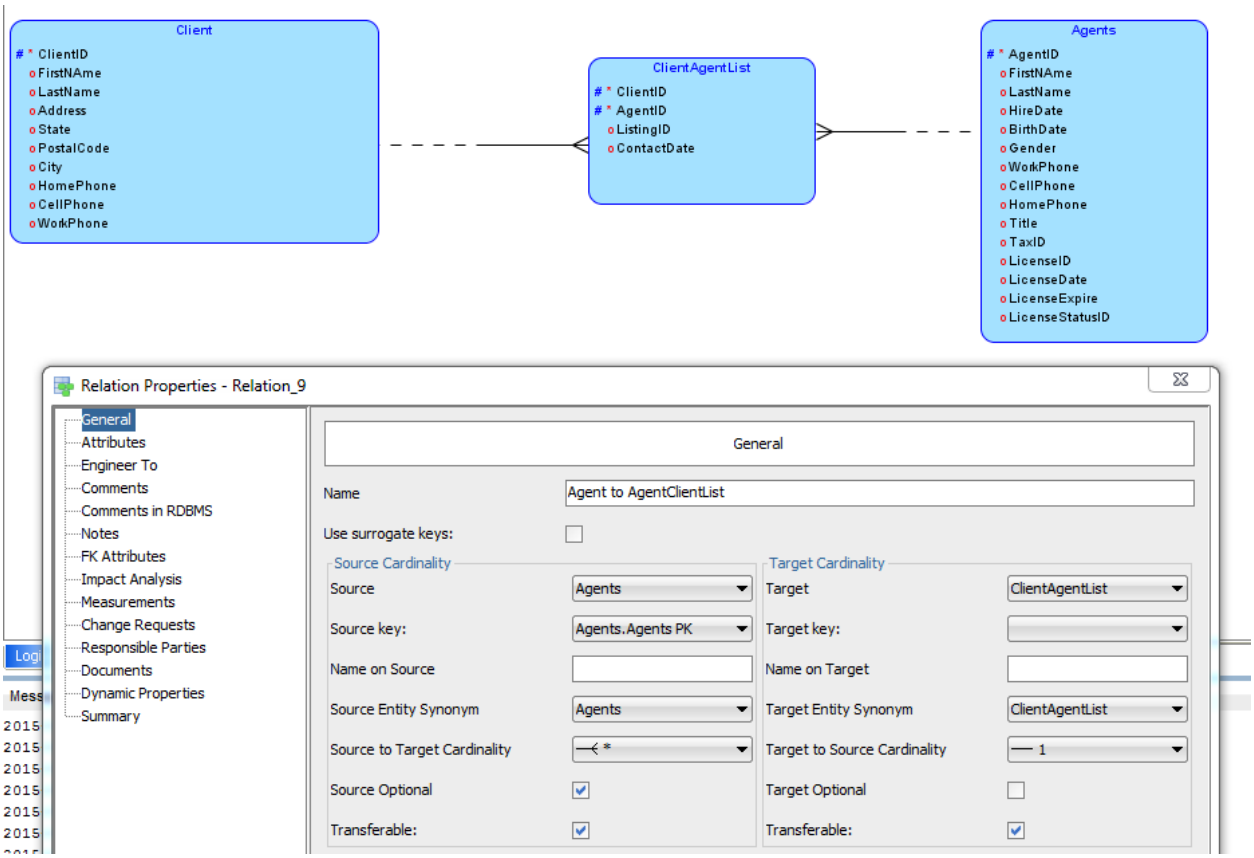


Starting in the Client entity click the mouse, and then move the cursor to the ClientAgentList entity and you should see the line appear. Click in the ClientAgentList entity to finalize.



When the relationship is drawn a dialog box opens. I changed the name on the relationship. Click Apply then OK.

Perform the steps to identify the relationship between the Agents and the ClientAgentList entity.



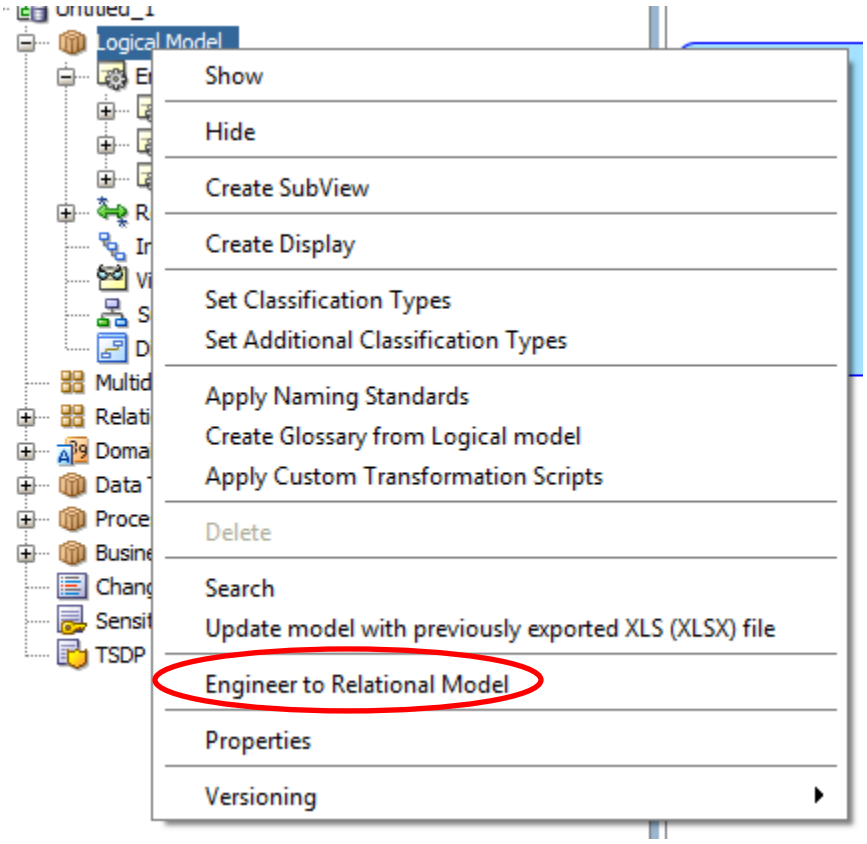
ERD with the three entities and two relationships defined.

Save your design.

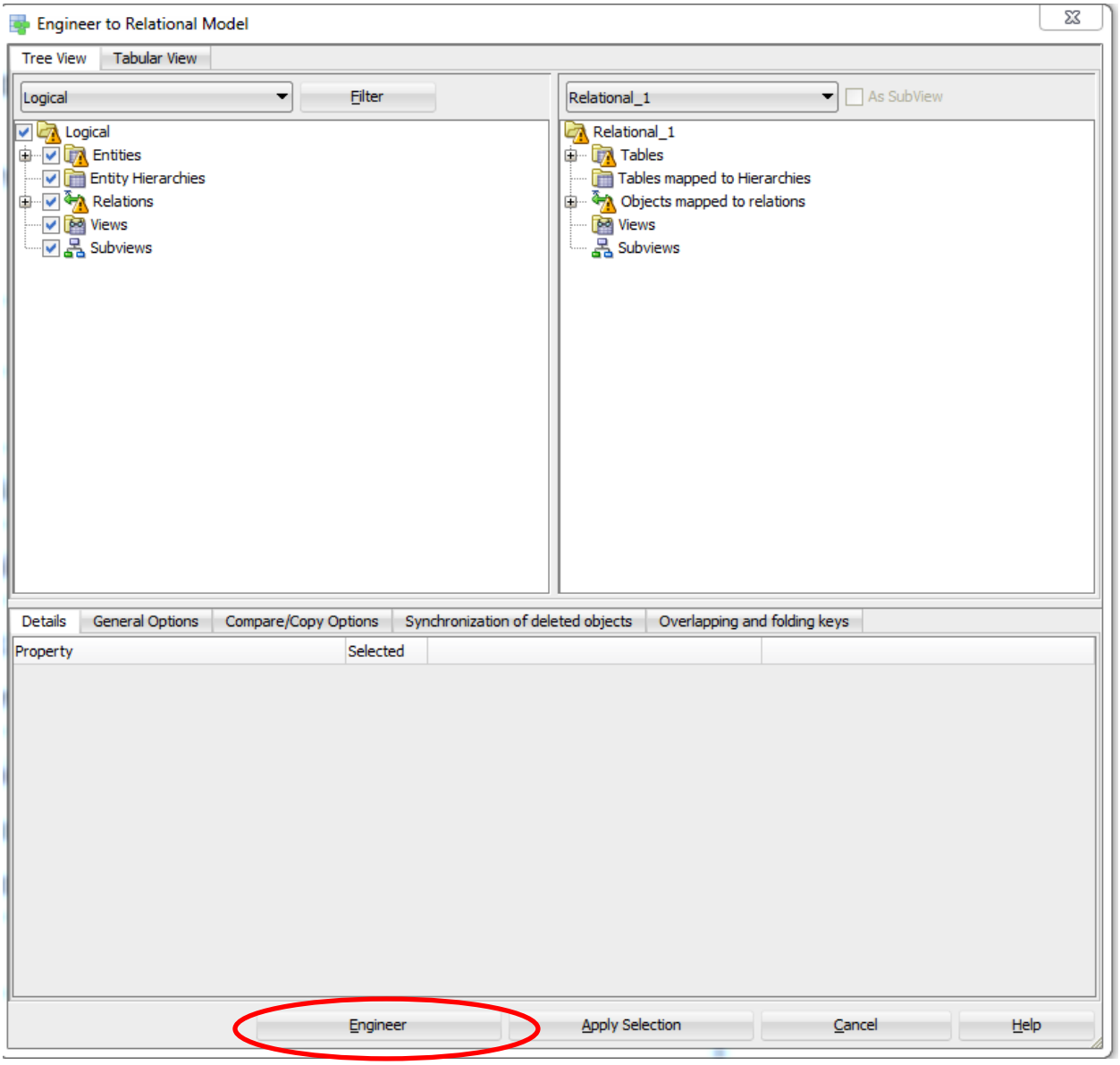
Right-click Untitled_1, select Save Design, select the location to save your design. Then click Save.

Step 4: Convert to a Relational Diagram

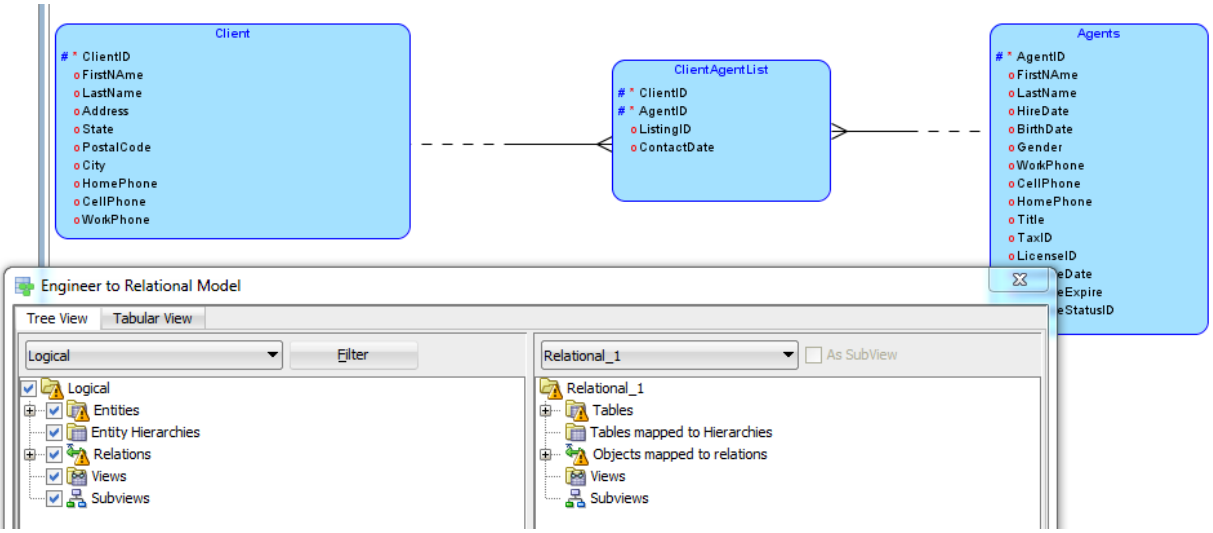
In the tree on the left you need to right-click the Logical Model entry.



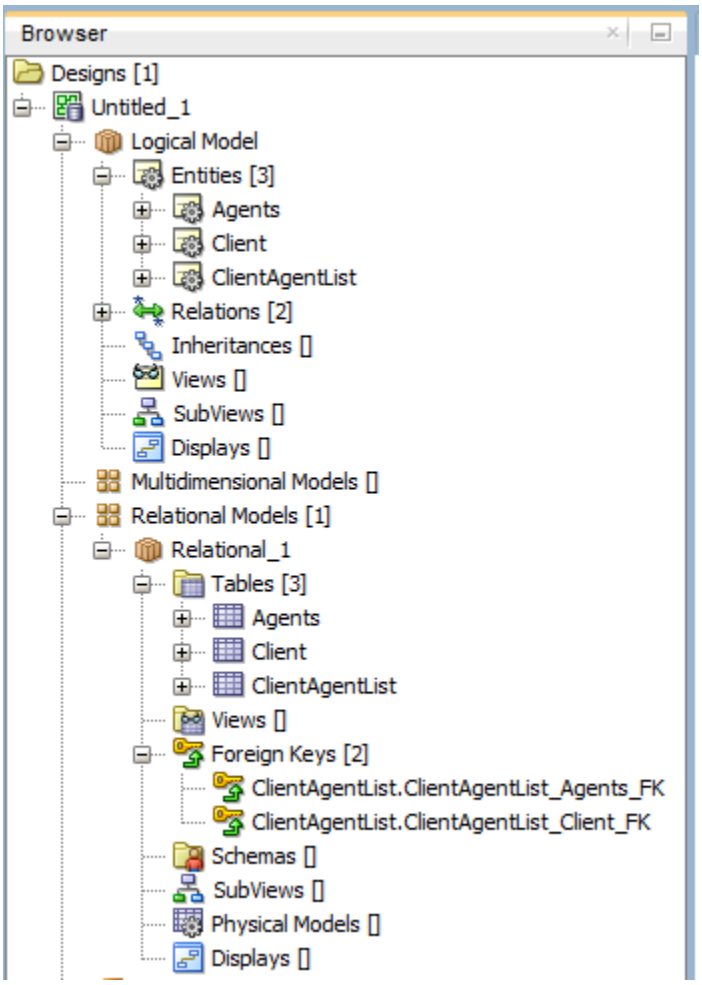
This will open a short-cut menu. Select the Engineer to Relational Model entry. This will open the following dialog box.



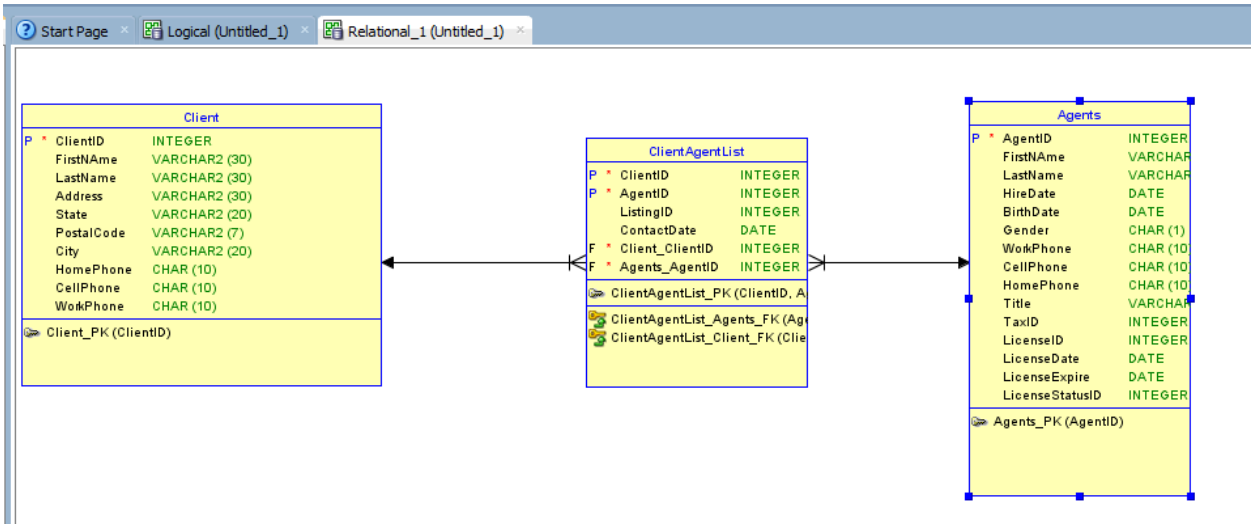
Click the Engineer button



I expanded the tree on the left to show the pieces that were created for the relational model.



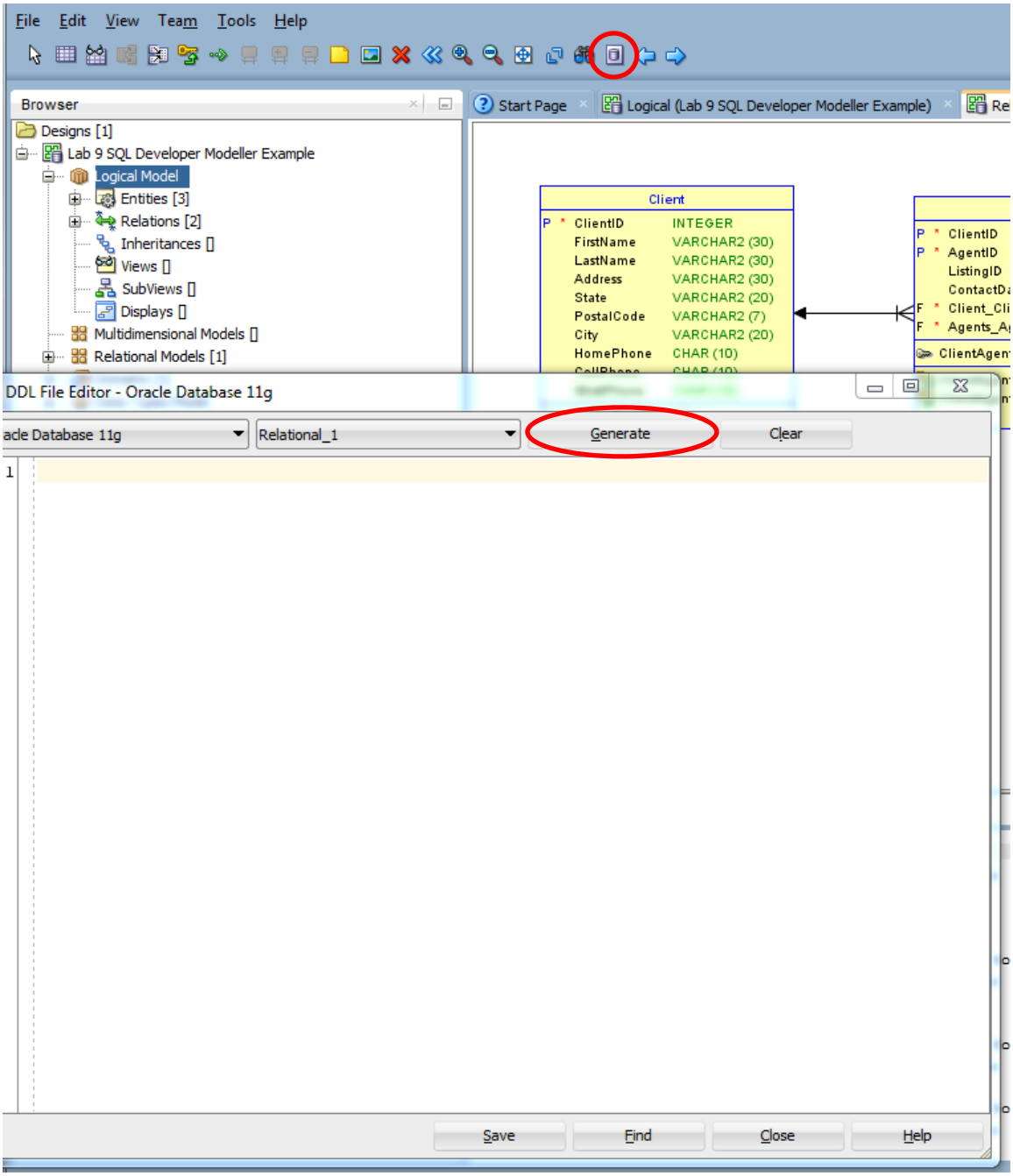
The following model was also created automatically from the ERD model.



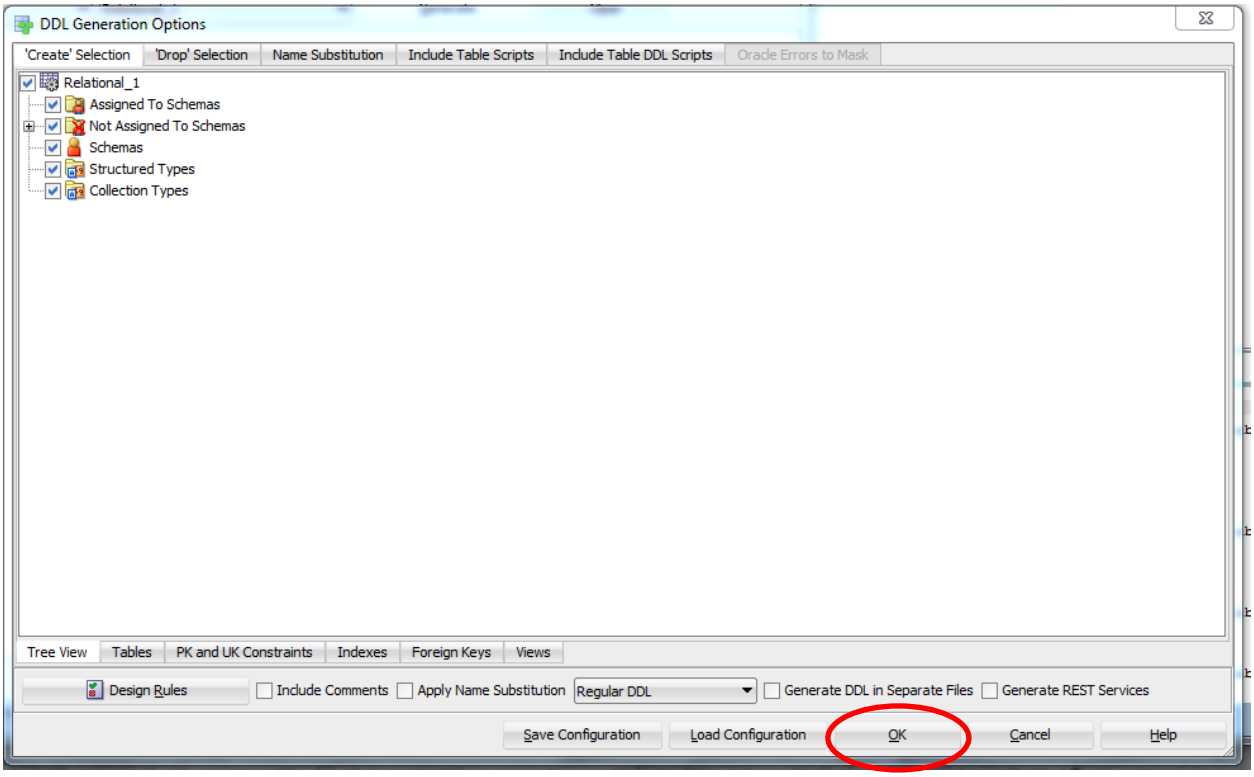
Resave your design now.

Step 5

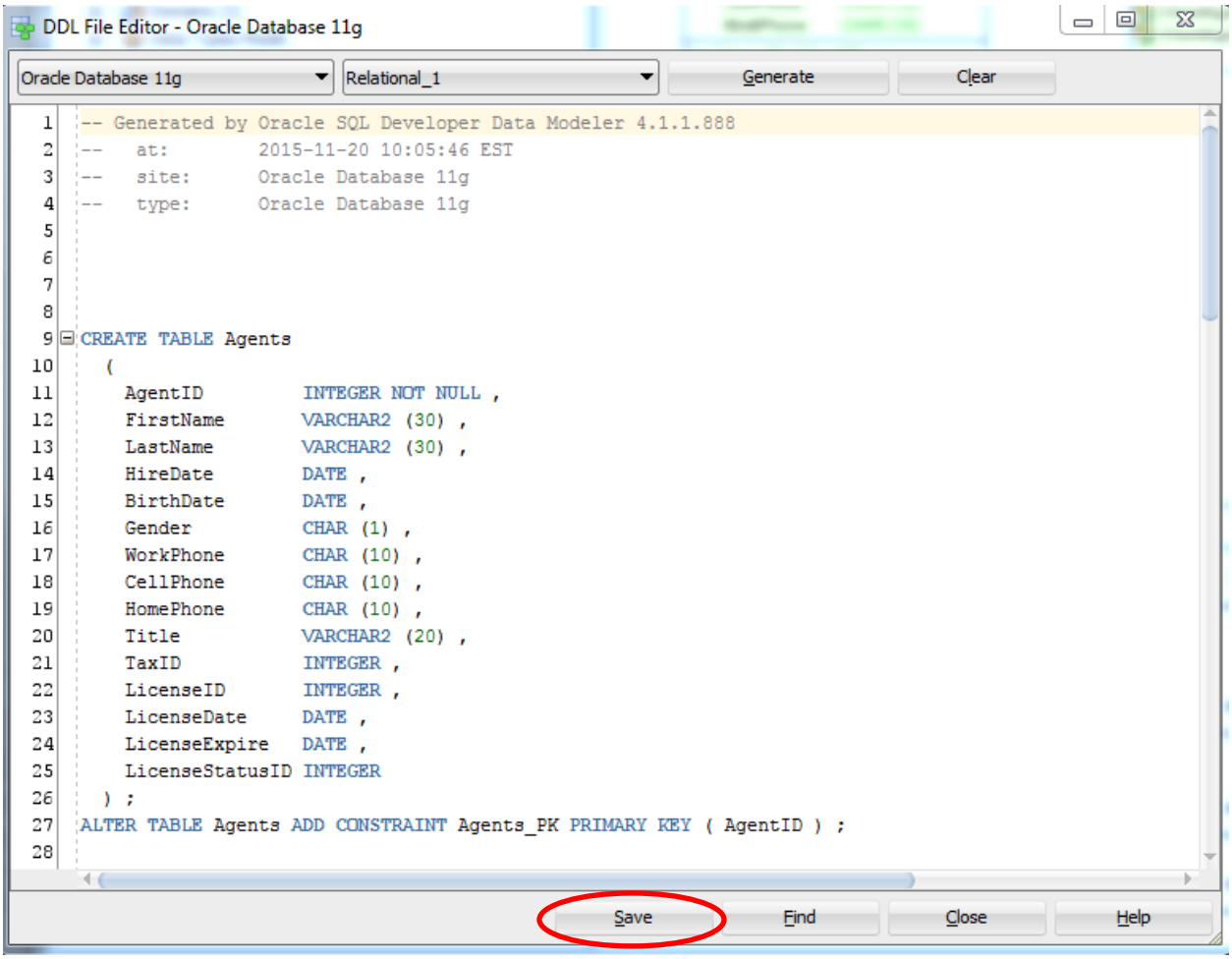
The next step is to generate the DDL to take the diagram we have completed and turn this into DDL commands to create the actual tables with columns and the keys we have defined.



Click the button shown on the toolbar. It will open the DDL File Editor. Click Generate to generate the DDL.



Then click OK



The DL commands to create the schema are shown. You may save this script to run through SQL Developer. You will be prompted for a location to save your script.

**** Please submit the following: ****

1. Screen capture of your ERD Diagram
2. Screen Capture of your Relational Model
3. And the file that you created when you saved the script that was generated.
4. Use SQL Developer and run your script against your schema on Calvin. Take a screen capture to show its success.