Database Foundations
4-1: Using Oracle SQL Developer Data Modeler to Build ERDs Practices

Exercise 0: Installing Oracle SQL Developer Data Modeler

Overview

In this practice, you will install Oracle SQL Developer Data Modeler. Follow the instructions depending on whether you have a Linux or Windows or Mac operating System

Assumptions

Here the assumption is you have downloaded the installation files from Oracle Technology Network. You can download the files from the link provided:

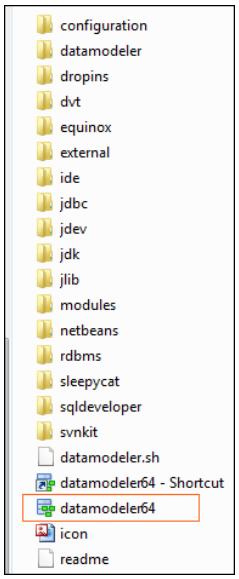
http://www.oracle.com/technetwork/developer-tools/datamodeler/downloads/index.html

Tasks

1. To install in a Windows 32-Bit or 64-Bit platform:
   a. Ensure you have a JRE installed, if not, download the JRE from the Oracle Technology Network website

   Note: The link to download the JRE is : http://www.oracle.com/technetwork/java/javase/downloads/index.html

   b. Download Data Modeler zip file
   c. Extract the zip file into any folder
   d. Within that folder
   e. Expand the datamodeler folder
   f. Double-click datamodeler.exe for 32-bit and double-click datamodeler64.exe for 64-bit



2. To install in a Linux platform:
   a. Ensure you have a JRE installed, if not, download the JRE from the Oracle Technology

   Note: The link to download the JRE is : http://www.oracle.com/technetwork/java/javase/downloads/index.html

   b. Download the `<datamodeler...noarch.rpm>` file
   c. To extract the rpm file, execute the following command

   ```
   rpm -Uhv <datamodeler...noarch.rpm>
   ```

   d. Assuming the `rpm` file has been extracted under the /opt/datamodeler folder, set the privileges :

   ```
   chmod -R 777 /opt/datamodeler
   ```

   e. Run Data Modeler, login as configured user
   f. Set the timezone environment variable by executing the following command:

   ```
   export TMZ="GMT"
   ```

3. To install in a Mac platform:
   a. Ensure you have a JRE installed.

   Note the link to download the JRE is: http://developer.apple.com/java/download/

   b. Download the zip file (archive file)
   c. Extract the archive into any folder
   d. Double-click the OracleDataModeler`.app` file

Exercise 1: Identify and Create Entities, Attributes and Relationships

Overview

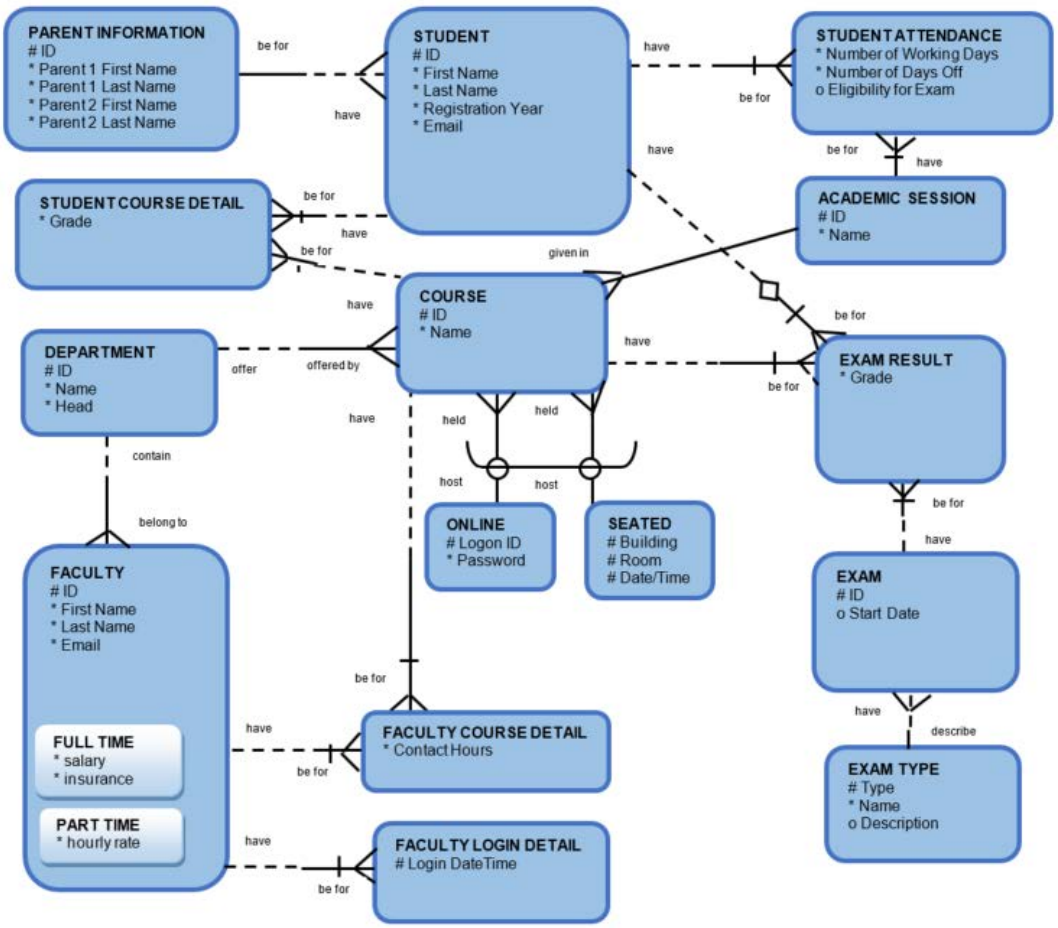
In this practice, you identify and model the entities and attributes for an Academic Database, or in other words a School Management System.

Tasks

For your convenience, here is a summary of how the Academic Database (School Management System) works:

a. A School/University has many Departments which offer courses to students in a given academic session.
b. Each of these courses are taught by a faculty.
c. Students enroll for different courses in an academic session.
d. Besides the registration details, the parent information of the student also needs to be maintained by the University/School.
e. The Department maintains the student's attendance details which would decide the eligibility of the student to take up the exams for that academic session.
f. For each academic session, exams are conducted and the results are shared with the student within a stipulated period of time.
g. The Department also maintains a log of the Faculty login and logout time for their reporting needs.

Here is a sample ERD:



1. With the information provided above, use Oracle SQL Developer Data Modeler to identify and create the
   - Entities for an School Management System
   - Attributes for each of the Entities identified
   - Relationship between the entities