Instructions

Read these instructions all the way through before you start.

Download the answer document. Be sure to put your name at the top of the answer document where that's indicated. Answer the questions below in that document and when you are done, upload it into Blackboard.

Overview

In this assignment you'll create a database (schema) from scratch and add records into it. This is a small-scale version of the kind of work you'll be doing in your project.

This database is small, but demonstrates several important features of databases

- It has a one-to-many relationship.
- It has a many-to-many relationship.
- It has four entities – three principle entities and one that implements the many-to-many relationship.

Unlike earlier assignments you'll submit all your work files in addition to your answer document. See the end of the instructions for details

Steps

1. [15] Create an EER diagram for a database that keeps track of information for a mythical company. The database will keep track of the company's **Parts** and the **Suppliers** from whom they buy the parts.

   All of the tables in your design must have a primary key named ID that's an INT and is Auto Incremented.

   The **Part** table records the part number (which is not the same as its primary key ID field) and the name of the part. For example, a part might be "Wiring Harness," with the part number F006.

   The **Supplier** table represents the companies who supply us with parts. It holds the supplier's company name, city and phone number.

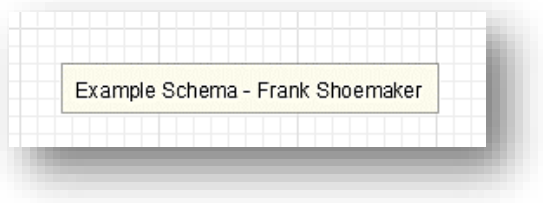
   The **State** table that records the states in the US. You use it to record what state each supplier is in. It holds, in addition to the ID primary key, the two-character state abbreviation and the state name.

   The mythical company can buy a given part from several different suppliers and a supplier can provide a variety of parts. In other words, there is a many-to-many relationship between Part and Supplier. For a given part, the suppliers that supply it may charge different prices. For example,

part Wiring Harness may be sold by Acme Widgets for $1,000 and sold by Zoom Widgets for $990. Your need to store in the database the amount each supplier charges for the parts they supply.

A. Name the database ExampleXXX where XXX are your initials. For me, it would be ExampleFES.

B. Put a note on the diagram with your name, like this.



C. Add a **Supplier** table to the diagram with the fields listed above and at least two other useful fields of your choosing, one of your fields must be a date field.

D. Add a **Part** table with the fields listed above and at least one more useful field of your choosing.

E. Add a **State** table with the fields listed above.

F. Create a the many-to-many relationship between Supplier and Part. This will create a new table. Name the table **Supplies**.

G. Add the **Cost** field to the design. Make its data type DECIMAL.

H. Layout your diagram neatly – there may not be any crossed lines or lines that pass behind and entity. Position the Supplier on the left and Part to its right.

I. Save your Model in a file named ExampleXXX.mdw. Attach the file as an additional file in your Blackboard submission.

2. [5] Forward Engineer your diagram and save the generated SQL script into a file named ExampleXXX.SQL. Attach the SQL file as an additional file in your Blackboard submission. Then execute your generated SQL Script to create the database in MySQL.

3. [15] Load records in the tables.

   Write a script to load the **State** table with all the states in the US. Tip: I searched the web for "sql to create us state table" and quickly found several sites with the INSERT statement to load all the US states.

   Write a script by hand with INSERT statements to add four records to the **Supplier** table. Make up

your own supplier names, but use your name for the first record. Assign each supplier to a different state.

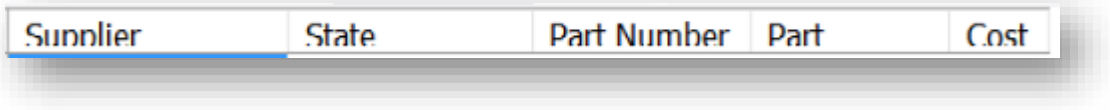
Then write INSERT statements to add three parts in the **Parts** table. Make up your own part names and numbers. In your INSERT statements supply values for every field except the primary key.

Then write INSERT statements for the **Supplies** table to link each part to every supplier *except* the fourth supplier; set a different cost for every supplier of a part. You'll need nine insert statement for this. Your fourth supplier will not have any Supplies records.

Run your script to add the records into the tables. Save SQL script into a file named ExampleXXXCreate.SQL. Attach the file as an additional file in your Blackboard submission. Run these three SQL statements and show the results in your answer document.

```
SELECT * FROM Supplier ;
SELECT * FROM Part ;
SELECT * FROM State ;
SELECT * FROM Supplies ;
```

4. [5] Write a query that shows these fields from your tables: Supplier Name, State, Part Number, Part Name, Cost. Sort on Supplier Name and Part Number. This query must output your forth supplier, even though that supplier has no supplies records. Be sure your screen shot of the result grid includes the supplier with no parts. Your columns should look like this:



Uploading your files

Upload each of these files individually in your submission on Blackboard in the following order.

1. Answer document
2. SQL to create your database
3. SQL to insert records into your tables
4. Model file

Upload your Answer Document first, then just click on the *Browse...* button and attach each of the other files one at a time. Only individual files will be graded on Blackboard so DO NOT combine the files into a zip file.