**CS3431-A18: Project Description**

**Building a Database Application**

**Phase 1: Initial Design and Implementation**

**Due Date:** F 9/21 at 11:59pm

**Late Policy:** 10% off until Sa 9/24 at 5pm

**Teams:** The project is done in teams of two. I highly recommend completing the assignment one day in

advance to give yourselves time to debug and combine your code together for submission.

**Submission:** Make sure to include both of your names on the project submission. The ERD and relational schema is to be put in either Word or PDF format. The SQL code files should be in a p1.sql file. Zip your files and submit them using the Project 1 link.

**Description:**

In the United States, labels on bottled wines must comply to certain regulations and be approved by the government. In this initial project phase you will be designing a good ERD, relational schema, and writing the SQL to create the database that software engineers will use in implementing a wine label software application that permits companies to submit wine label forms for approval by government officials. I have included with this assignment an example of the components of a wine label in **Wine Label Requirements.pdf**.

The database includes the following:

1. Accounts – login name, password
2. Government agents – ttbID, if they are a super agent (ability to assign wine label applications to government agents or not), email address, phone, name, login name
3. Wine company representatives – repID, email address, phone, name, login name, company name
4. Wines – wineID, brand name, class/type, alcohol content in percentages, appellation (location of the grapes grown to make the wine), net contents (amount of liquid in milliliters or fluid ounces), bottler’s name. For the class project, do not include the sulfite declaration or health warning statement.
5. Wine label forms – formID, dateSubmitted, dateRejected, dateApproved, status, wineID, vintage (year the wine was produced), currentReviewerID, ttbID, repID
6. Both agents and representatives can login to accounts to access the wine label software application. Each login account is used by a single agent or representative. An agent or representative is permitted to have only a single login account.
7. A wine label form can only have a single wine, but a specific wine can appear on multiple wine label forms each with a different year. The wine label form can only have a single company representative, but a representative can appear on many wine applications. A newly assigned company representative may not yet have submitted any wine label forms.
8. The wine label form may have only a single currently reviewing TTB agent but there may be many agents who work on a single wine label form. Note that a single TTB agent can work on many wine label forms (and usually do). When TTB agents process the forms, they enter the date they began their work and a comment about what they did.

**Requirements:**

1. Design a conceptual ERD that captures the above requirements. Follow the notations given in the course slides, and also follow the given guidelines for Good Design. State any assumptions that you make in addition to the above requirements. Do not add any fields to the ones listed above.
2. Create a relational schema for the above application including the foreign keys. For example:

Books(ISBN, title, ***publisherID***)

Foreign key (Books.publisherID) references (Publishers.publisherID)

You need to follow the rules in the PowerPoint slides to convert the ERD to relational schema. If you have any ISA relationships, use ISA method A disjoint solution (take a look at the PowerPoint slides and especially the demo PersonA2.sql). The only field(s) that may be added would be to support the ISA relationship.

1. Write the SQL code in a file named p1.sql to create the tables including the constraints. Use the following data types for the fields:
   1. All IDs are number sequences that begin with 100 and are incremented by 1
   2. Boolean fields are number fields with the values of 0 or 1
   3. All names (login, rep, agent, company, wine brand, bottler), appellations, wine class/type, form status, and passwords are variable strings of up to 25 characters
   4. Email addresses are variable strings of up to 50 characters
   5. Phone numbers should be stored as variable strings of up to 15 characters
   6. Alcohol content is a number with a single decimal
   7. Wine net content is a number with up to 5 digits and one decimal
   8. Vintage is a number with up to four digits
   9. Comments are a variable string with up to 100 characters
2. Enter data for the tables and include these SQL commands in the p1.sql file.
   1. 10 TTB agents
   2. 10 wine company representatives
   3. login accounts for agents and representatives
   4. 10 wines (research online and enter actual wines)
   5. 20 wine forms
3. Include select \* for each of your tables and include these commands in the p1.sql file.