CSCI3287 Database Systems

Homework Four – Case Study

Overview

This project is worth 100 points (out of 1000) toward your final grade. It is due on Sunday, March 15, at 11:59 p.m. Late submissions will be penalized 20% during a 3-day grace period up until Wednesday, March 18, 11:59 p.m. After that time, no late work will be accepted. Your submission should be a document saved and submitted as a PDF file via the link found in the assignment section of the "Week 8, March 2 - 8" in Moodle -- which is the same place where you found this file.

This project will give you hands-on practice in working with MySQL Workbench (or similar tool) to create a key-based, fully attributed, 3NF data model. In this project you will design a database, draw a data model to represent the design, then create DDL (table create statements.) You will run the DDL to create the database and populate it with a few rows of sample data. Then you will run some queries against your database.

You may use a "pair programming" approach on this assignment. When you turn in the assignment, the document must contain the names of all students who worked on the project together. Each student must turn in a copy of the team's final document.

Objectives

1. Familiarize yourself with an unfamiliar company via the Case Study
2. Gain an understanding of the unfamiliar company's data as presented in the Case Study
3. Use a data modeling tool to design a database to meet the needs of the client company
4. Use the data modeling tool to generate the DDL to create the database you have designed
5. Create the database you have designed by executing the DDL you have created
6. Insert data into the database you have created, and run some queries against your database

Deliverables

1. A key-based, fully-attributed data model depicting your database design using the information in the case study as your input. Your model should include:

    - All tables with primary key attributes defined
    - All attributes with data type, length, and constraints defined
    - Proper table names, key names and attribute names

- All relationships between tables showing captions (1-way is OK), and proper optionality and cardinality

2. The output of a DESCRIBE <table> for each of the tables in your database.

3. The SQL and the output of some SELECT queries against your database as described in detail requirement # 8 below on page 3.

Submission

Use the submission link in the **Project Assignment** section of the **Week 8 Moodle March 2 – 8** -- which is the same place where you got this file.

Your results for this project assignment can be captured in a document (such as a .txt file, MS Word or similar tool.) Please then save your final deliverable document as a **PDF** for submission. The final deliverable document you submit for this project must consist of three sections:

- The first section is a picture (screen shot or PDF) of your complete data model.
- The second section is text containing the results of a DESCRIBE command for each table in the database you have designed and created.
- The third section contains your SQL and the output of several queries against your database.

Case Study Scenario

For this assignment, you must read and analyze the Fairbanks Veterinary Clinic Case Study. As you read the Case Study, you must pay close attention to every reference to the data that is collected and used by the clinic.

For this assignment, you must play the role of a consultant who has been hired by the client (Fairbanks Veterinary Clinic) to design and create a database for them.

The SCOPE of this assignment includes your database design from Homework # 2 PLUS any additional tables necessary to support the business process of **SCHEDULING TRAINING** for pets.

Your scope for this project includes the following from Homework # 1 and Homework # 2

- Capturing and storing **OWNER** data
- Capturing and storing **PET** data

Your scope for this project also includes the following additional business area:

- The scheduling of Pet Training events as described in "Journal 3" on pages 55-56 of the case study.

Your scope for this project **DOES NOT** include any other activities going on at the clinic, such as:

- Pet visits, Pet vaccinations, Pet surgeries, Pet allergies (from HW 1 & 2)
- Pet Boarding/Kenneling
- Pet Grooming
- Clinic Business Administration, Accounting, Payroll, etc.

Step-By-Step Instructions

1. Read the entire Fairbanks Veterinary Case Study
2. As you read the case study, you must document the ENTITIES and ATTRIBUTES you gather as you learn about how Fairbanks **schedules and manages Pet Training Events**.
3. As you finish identifying entities and attributes, then you can begin to design the tables necessary for the Training Events business area of the database.
4. Add to your data model from HW # 2 all new entities and attributes necessary for scheduling and managing pet training events.
5. Once the data model is complete, generate the DDL to create the database.
6. Execute your DDL to create the complete database
7. Populate (via SQL INSERT statements) each table in your database with several rows of test data of your own creation:
    - Add some Pets (at least 4)
    - Add some Owners (at least 4)
    - Add some Trainers – Including Shey and Marie
    - Add some Training Events (at least 6) coming up during the current month – Including Basic Skills, Walk-Train-Play, Off-Leash Operation

8. Create and run queries to show the following:

    A list of Owners and Pets showing the owner name, pet name, breed, gender, date of birth

    A list of Upcoming Training Events showing the date, time, trainer, event type, owner, pet