CSCI 225: Homework 5

Overview

For this assignment you will be designing a database for Coastal Veterinary Clinic. This is a new clinic, so they have hired you to help them design a database to hold information about the animals to be treated, their owner, and information related to each visit. As you are unfamiliar with this sort of thing, your research will involve looking online at examples of Veterinary bills.

Examples:

http://iloverescueanimals.org/wp-content/uploads/2012/03/omalleymed01-edit.jpg

http://friskyfelinesfoundation.weebly.com/our-veterinary-bills.html

You are encouraged to search for more examples to help you determine the information that needs to be stored. Your goal should be to make your database as compact as possible, meaning as Entities (tables) as possible to store all of the pertinent data.

Part A: ER Diagram (~~Due by the beginning of class Tuesday November 17th~~)

For the first part of this assignment, you task is to analyze Veterinary bills and create an ER Diagram to represent all of the required information. Note that you MUST complete this by Tuesday, so we can discuss this in class.

Part B: Schema (~~Due by the beginning of class Thursday November 19th~~)

Update – Due with the rest of the assignment as an Image saved from the WorkBench

Create a Database Schema based on your ER Diagram

Part C: Database Implementation (Due by 11:55 pm Wednesday December 2nd)

For the next part, you will be implementing your Database Schema via MySQL Workbench.

- You are expected to submit a VetSetup.sql script that creates your tables – you may save this when it is generated from your Schema.
- You are expected to submit a VetInserts.sql scrip that loads your tables with data that you come up with.
- You are expected to submit a VetQueries.sql script that contains your SQL queries based on the following:

    1. Display the Staff Member ID and Staff Member Name for all Staff member at the clinic.
    2. Display the total number of Pets that have been treated by the Veterinary clinic.
    3. Display only once all of the species of Pets that have been treated in alphabetical order.
    4. Display each Client's unique ID and Name along with the name and age of each Pet that Client has brought in sorted by Client and Pet Name.
    5. Display the total number of Invoices with the Column header "Invoice Total".
    6. Display each Invoice ID, Date, and Balance along with the Client ID and Name for each invoice that is greater than the average balance of all Invoices.
    7. Display each Staff member sorted by name along with the total number of treatments they have administered in a column named "Total Treatments".
    8. Might add a couple more…

- You are expected to submit a VetTrigger.sql script that contains a trigger to:

    1. Due to an anonymous benefactor of the clinic, if an attempt is made to create an invoice (insert data) with an Invoice total that is greater than $3,000, then the balance will be set to $1.00.
    2. Might add another trigger…

Part C: Java Implementation extra-credit (Due by 11:55 pm Wednesday December 2nd)

For this part, you will be implementing a Java front end.

You will be creating a Java program that allows interaction with your database. Here is a link to a quick tutorial on how to connect and query a database: http://www.tutorialspoint.com/jdbc/jdbc-select-records.htm

You will need to download the jdbc connector for MySQL: https://dev.mysql.com/downloads/connector/odbc/

If you want to connect to your local database on your machine:
```
String url = "jdbc:mysql://127.0.0.1:3306/dbNameHere";
```
If you want to connect to the Coastal Research server (what we were developing on before), let me know so we can make it accessible (though only via physical network connection in the Coastal Science Center):
```
String url =
"jdbc:mysql://ccuresearch.coastal.edu:3306/dbNameHere";
```

Next, you program should allow user interaction by providing a menu and allowing the user to make selections until they enter quit.

1. The first menu item should allow the user to make the query described above (Display the Staff Member ID and Staff Member Name for all Staff member at the clinic).
2. The second menu item should allow the user to make the query described above (Display the total number of Pets that have been treated by the Veterinary clinic).
3. The third menu item should allow the user to make the query described above (Display each Client's unique ID and Name along with the name and age of each Pet that Client has brought in sorted by Client Name and Pet name).
4. The fourth menu item should allow the user to make the query to "look up" an individual Pet's info by ID.
5. The fifth menu item should allow the user to make a query to "look up" an invoice by ID.

6. The sixth menu item should allow the user to update an individual Pet's record.
7. May add another one or two…

Example Output

```
Welcome to the Vet database program.


**************************************************(
* Enter "staff" to display all Staff members info    *
* Enter "pet count" to see the total number of pets  *
* Enter "client info" to see all Clients and their   *
*                     Pet's info                     *
* Enter "lookup pet" to find a Pet's info            *
* Enter "lookup invoice" to see a particular invoice *
* Enter "update pet" to modify a Pet's info          *
* Enter "exit" to quit the Vet Database Program      *
**************************************************
Please enter you selection: lookup pet
…

Note: this is just a sample, yours doesn't have to look
exactly like this.
```

Files you are required to upload to Moodle:

- Vet.png (or any other image for your EER diagram)
- VetSetup.sql
- VetInserts.java
- VetQueries.sql
- VetTriggers.sql
- ?????