Lab 9: Views & Triggers (8% of total grade)

Submission: Use the included .sql file to put your answers in, then upload only the SQL file to Blackboard (Assessments > Lab 9 - Views & Triggers).

Name your file: HTTP5126-L9-ViewsTriggers-*LastNameFirstName*.SQL, replace *LastNameFirstName* with your name as displayed in Blackboard.

Purpose: To practice and understand views and triggers using SQL.

Requirements: For this assignment, use the provided lab_9_pet_store_tables.sql data tables.

NOTE: *When you have completed the lab and are testing your sql file using the import/execute feature of the client, make sure to uncheck the "Stop on error" option. This will allow all your queries to run by ignoring the expected constraint error in the one query from part 3.*

Pre-Lab

1. Start your mySQL server and open phpMyAdmin or Adminer.
2. Create a database for this lab (eg. http5126_lab9). Set the collation as utf8_unicode_ci.
3. Import and execute the the lab_9_pet_store_tables.sql file on your database.

Part 1: Views (1.5%)

A. The inventory department wants a list of low inventory items. Create a view with items that have 20 or less in stock. Name the view stock_item_under_twenty. Include the category, item name and inventory. (1%)
B. Select all the values in the view that was created in part 1A. (0.25%)
C. Select all the values from the stock_item_under_twenty that are out of stock. (0.25%)

Part 2: Views 2 - Electric Boogaloo (1.5%)

A. The manager has requested a list of all employees who have made sales. Create a view showing their name (first and last name) and each employee's "Total Sales ($)" by descending order (highest sales at the top). Name the view sale_total_by_employee. (1%)
B. Select all the values in the view that was created in part 2A. (0.25%)
C. Select all the information from the sale_total_by_employee view, only for employees with over 1000 dollars in `Total Sales ($)`. (0.25%)
Hint: We can reuse an alias later in a query using the backtick character (`)

Part 3: Triggers (1.5%)

A. Create a trigger that will deduct 1 from the inventory of an item in the stock_item table when a sale is made for that item. (1%)
B. Insert a sale into the sale table for any item. Be sure to include all the values. (0.25%)
C. Insert a sale into the sale table for the 'Luxury cat bed' item. (0.25%)

Hint: One of your queries in Part 3 will result in an error, this is expected, review the stock_item CREATE TABLE code and leave a comment explaining why this is an error.

Part 4: Triggers 2 - Double the Triggers, Double the SQL (3%)

In this part you will create 3 triggers that will log changes that occur to the stock_items table. The logs will be stored in the stock_item_log table, which will have the following fields: action, stock_item_id, old_name, old_price, old_inventory, old_category, and timestamp. The action column will be a string value of the trigger event that occurred (Insert, Update, or Delete). The table was created when you ran the lab_9_pet_store_tables.sql file on your database.

A. Create a trigger that will be called when a record is *INSERTED* in the stock_item table. When the insert occurs it should trigger a new row to be inserted into the stock_item_log table. The new row should include the action, stock_item_id, and the current timestamp. (1%)
B. Create a trigger that will be called when a record is *UPDATED* in the stock_item table. When the update occurs it should trigger a new row to be inserted into the stock_item_log table. The new row should include the action, stock_item_id, the current timestamp, and all the old values for that item. (1%)
C. Create a trigger that will be called when a record is *DELETED* from the stock_item table. When the delete occurs it should trigger a new row to be inserted into the stock_item_log table. The new row should include the action, stock_item_id, the current timestamp, and all the old values for that item. (1%)

Part 5: Testing (0.5%)
A. Run the SQL scripts provided in part 5A of the answers file provided. (0.25%)
B. Create a query to select all the logs from the stock_item_log table for the item with item_id 1025. (0.25%)