EXSM 3937: SQL Fundamentals Final Project

Deadline: Sunday Mar 6, 2022 at 11:59 PM

Introduction

In this project, you will use all the skills you've learned over this course to create, read, update, and delete from a database. You will use a series of transactions to complete each section of this assignment.

Instructions

1. Create a database named after your CCID (the bold part of your email address is your CCID: **achampag**@ualberta.ca).
2. In the first transaction you will create all of tables for the database
    a. Be sure to follow the schema outlined in the Tables section of this document exactly
    b. At the end of the transaction make sure you COMMIT your changes
3. In the second transaction you must copy and paste the script included in the Insert Script section of this document.
    a. You may not alter the script in any way. When your assignment is being marked the instructor will delete your second transaction and replace it with the contents of the Insert Script.
    b. At the end of the transaction make sure you COMMIT your changes
4. In the third transaction you will write a series of SELECT statements as follows. Be sure to pay special attention to column aliases, and the formatting of the query results:
    a. Query 1: Select our most frequent customers - the customers who have made the most transactions.
        i. Results:

Customer	**Number of Purchases**
Aaron Champagne	2
Bo Cen	1
Emily Nelson	1

James Grieve	1
Sean Townsend	1
Stephanie Smothers	1

b. Query 2: Select the customer who has spent the most money.
    i. Results:

Customer	**Sum of Purchase Totals**
Emily Nelson	$1,951.98
James Grieve	$1,177.97
Bo Cen	$1,103.00
Stephanie Smothers	$876.24
Aaron Champagne	$799.59
Sean Townsend	$375.99

c. Query 3: Select the product_name, and the total quantity sold
    i. Results:

Number of Products Sold	**product_name**
4	50-Watt Amplifier
3	Guitar
3	MIDI Keyboard
2	Microphone
1	Tambourine
1	Electric Guitar

d. Query 4: Select the order_header_id, product_name, order_qty, customer_name, order_date, and total_price for all the orders between 2022-01-01 and 2022-01-07.
    i. Results:

order_head	**product_na**	**order_qty**	**customer_**	**order_date**	**total_price**

er_id	me		name		
1	Electric Guitar	1	Aaron Champagne	2022-01-01	775.99
2	Guitar	2	James Grieve	2022-01-02	1177.97
2	50-Watt Amplifier	1	James Grieve	2022-01-02	1177.97
3	MIDI Keyboard	1	Bo Cen	2022-01-04	1103
3	Microphone	2	Bo Cen	2022-01-04	1103

e. Query 5: Find out how many guitars we have sold (include both electrics, and acoustics)
    i. Results:

Number of Guitars Sold
5

5. In the fourth transaction you will have to write several SQL statements. Chloe Beale will be purchasing a bass guitar, and an amplifier on February 22, 2022.
    a. Insert a new record with the appropriate information into the order_header table
    b. Insert two new records with the appropriate information into the order_detail table
    c. Update the product table to show the new quantity_in_stock values for the bass guitars and amplifiers.
    d. Select the order_header_id, order_date, customer_name, product_name, quantity_in_stock,sub_total, total_price from the order_header, order_detail, customer, and product tables to verify that the purchase has been saved to the database.
        i. Results:

order_header_id	order_date	customer_name	product_name	quantity_in_stock	sub_total	total_price
8	2022-02-22	Chloe Beale	Bass Guitar	1	450.25	876.24
8	2022-02	Chloe	50-Watt	5	425.99	876.24

	-22	Beale	Amplifier			

Tables

Customer		
PK	customer_id	INT, AUTO_INCREMENT
	customer_name	VARCHAR(50), NOT NULL
	customer_email	VARCHAR(100), NULL
	street_address	VARCHAR(50), NULL
	city	VARCHAR(50), NULL
	province	CHAR(2), NULL
	postal_code	CHAR(6), NULL

Product		
PK	product_id	INT, AUTO_INCREMENT
	product_name	VARCHAR(50), NOT NULL
	product_description	VARCHAR(200), NOT NULL
	price	DECIMAL(15,2), NOT NULL
	quantity_in_stock	INT, NOT NULL

Order_Header		
PK	order_header_id	INT, AUTO_INCREMENT
FK	customer_id	INT, NOT NULL
	order_date	DATE, NOT NULL
	total_price	DECIMAL(15,2) NOT NULL

Order_Detail		
PK	order_detail_id	INT, AUTO_INCREMENT
FK	order_header_id	INT, NOT NULL
FK	product_id	INT, NOT NULL
	order_qty	INT, NOT NULL
	sub_total	DECIMAL(15,2), NOT NULL

Insert Script

```
INSERT INTO Customer (customer_name, customer_email,
street_address, city, province, postal_code)
    VALUES
        ('Aaron Champagne', 'achampag@ualberta.ca', '2317 138 A
Avenue', 'Edmonton', 'AB', 'T5Y1B9'),
        ('James Grieve', 'jgrieve@ualberta.ca', '1234 123
Street', 'Edmonton', 'AB', 'T2B1G4'),
        ('Bo Cen', 'bcen@ualberta.ca', '5672 98 Avenue',
'Edmonton', 'AB', 'T3C4B7'),
        ('Stephanie Smothers', 'ssmoth@ualberta.ca', NULL, NULL,
NULL, NULL),
        ('Emily Nelson', NULL, '1 Winston Churchill Square',
'Edmonton', 'AB', 'T4A1B7'),
        ('Sean Townsend', 'stown@ualberta.ca', NULL, NULL, NULL,
NULL),
        ('Diana Hyland', NULL, NULL, NULL, NULL, NULL),
        ('Dennis Nylon', 'dnylon@ualberta.ca', '1298 76 Street',
'Edmonton', 'AB', 'T5R6F8'),
        ('Chloe Beale', NULL, '7393 78 Ave', 'Edmonton', 'AB',
'T8FW7C');

INSERT INTO Product (product_name, product_description, price,
quantity_in_stock)
    VALUES
        ('Guitar', 'An acoustic guitar made by Epiphone.',
375.99, 5),
        ('Microphone', 'A Shure microphone ideal for stage.',
276.5, 3),
        ('Tambourine', 'Mother of pearl handle.', 23.60, 15),
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        ('Bass Guitar', 'A four-string, fretless bass guitar by
Ibanez.', 450.25, 2),
        ('Electric Guitar', 'An electric guitar made by
Epiphone', 775.99, 1),
        ('MIDI Keyboard', 'A two-octave keyboard with USB cable
for making digital music.', 550, 4),
        ('50-Watt Amplifier', 'A medium sized amp by Marshall.',
425.99, 6);

INSERT INTO Order_Header (customer_id, order_date, total_price)
    VALUES
        (1, '2022-01-01', 775.99),
        (2, '2022-01-02', 1177.97),
        (3, '2022-01-04', 1103),
        (1, '2022-01-12', 23.6),
        (4, '2022-01-14', 876.24),
        (5, '2022-01-20', 1951.98),
        (6, '2022-01-22', 375.99);

INSERT INTO Order_Detail (order_header_id, product_id,
order_qty, sub_total)
    VALUES
        (1, 5, 1, 775.99),
        (2, 1, 2, 751.98),
        (2, 7, 1, 425.99),
        (3, 6, 1, 550),
        (3, 2, 2, 553),
        (4, 3, 1, 23.6),
        (5, 4, 1, 450.25),
        (5, 7, 1, 425.99),
        (6, 6, 2, 1100),
        (6, 7, 2, 851.98),
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(7, 1, 1, 375.99);
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Criteria

Requirement Description	Maximum Point(s)
☐ Create a database named with your CCID and set the character set to utf8	1
Transaction 1	
☐ Create Customer table with correct properties	1
☐ Create Product table with correct properties	1
☐ Create Order Header table with correct properties	1
☐ Create Order Detail table with correct properties	1
Transaction 2	
☐ The Insert Script included in this document must run without error	1
Transaction 3	
☐ Query 1 selects the correct data, in the correct format, in the correct order	1
☐ Query 2 selects the correct data, in the correct format, in the correct order	1
☐ Query 3 selects the correct data, in the correct format, in the correct order	1
☐ Query 4 selects the correct data, in the correct format, in the correct order	1
☐ Query 5 selects the correct data, in the correct format, in the correct order	1
☐ Query 6 selects the correct data, in the correct format, in the correct order	1

Transaction 4	
☐ Order_header record is inserted with correct customer_id, order_date, and total_price	1
☐ Order_detail records are inserted with correct order_header_id, product_id, order_qty, and sub_total	2
☐ Product table is updated correctly. Only the correct quantities have been updated	1
☐ Select statement shows all the correct data	1
Grand total:	17