

## MEMO

**DATE:** February 25, 2021  
**TO:** Cambria Art Gallery Development Teams  
**FROM:** Leonard

**SUBJECT:** Development Guidelines

**DUE DATE:** Wednesday, March 10, 2021 11:59pm

### SQL Chapters needed to complete this task:

SQL 1: Retrieving Data Using the SQL Select Statement (SELECT)

SQL 2: Restricting and Sorting Data (ORDER BY)

SQL 3: Using Single-Row Functions to Customize Output (CONCATENATE ... or use ||)

SQL 4: Using Conversion Functions and Conditional Expressions (NVL function)

SQL 5: Reporting Aggregated Data Using the Group Functions (IMPORTANT)

SQL 6: Displaying Data from Multiple Tables (IMPORTANT)

SQL 9: Manipulating Data (INSERT)

SQL 10: Using DDL Statements to Create and Manage Tables (CREATE TABLE)

SQL 11: Creating Other Schema Objects (CREATE VIEW, IMPORTANT)

DISCUSSION ON HOW TO DEAL WITH IMPLEMENTING SUPERTYPE/SUBTYPES

- STATE ANY ASSUMPTIONS YOU HAVE MADE
- CHECK YOUR WORK TO ASSURE IT IS CORRECT
- IF YOU ARE UNABLE TO ACCOMPLISH ANY PART OF THIS TASK, THIS MUST BE STATED AT THE BEGINNING OF YOUR SUBMISSION. NO PARTIAL CREDIT WILL BE GIVEN FOR THIS TASK IF IT CAN BE EASILY DETERMINED THAT YOU HAVE SUBMITTED WORK THAT IS INCORRECT.
- CHECK YOUR SCRIPT TO ASSURE YOUR CODE MATCHES YOUR ERA DIAGRAM.

### TASK 5: BUSINESS DOCS / Artwork Business Transactions

**READ THIS:** In this task, you are asked to create the tables to hold the data for the business documents. Once these tables are created, you are asked to 'operate the business' by inputting transactions. Oracle SQL transactions are a set of Oracle SQL DML statements (insert, update, and delete) that perform a business transaction such as selling a work of art. Follow the instructions below as stated. Be sure to place a COMMENT as specified at the beginning of each Oracle SQL transaction (set of SQL DML statements). Also, be certain to refer to your entity relationship diagrams when creating your table. You should update your list of attributes if you find that you need to make changes to the list based on and newfound understanding of designing your tables. Also, be certain to not add attributes to your table that is information that you are asked to determine through queries (e.g., adding an attribute to the customer table that indicates the number of pieces of art the customer has purchased ... this can be calculated via SQL queries).

**READ THIS TOO:** NOTE: When INSERTing instances into the business documents, be sure to refer to the right Employee. For example, when creating an instance of a Service Invoice, be sure to use the Employee ID of the Service employee. You do not need to set any constraints on the Service Invoice table (or the other tables) to assure you are referring to a Service employee. The intelligence for this is YOU; you'll simply be smart enough to refer to the right employee. For those of you (I think there is only

one team doing this) who are creating the project using a multi-table approach, you will refer to your Service Employee table.

1. Creating Tables:
  - a. For the Purchase Agreement, Consignment Agreement, Sales Invoice, and Service Invoice., review these business documents and determine which attributes are stored in the business document tables, which ones are derived (and only show up in views) and which come from other tables. Using this review, write CREATE TABLE statement for the Purchase Agreement, Consignment Agreement, Sales Invoice, and Service Invoice.
2. Quality Control Check List:
  - a. Include reasonable PRIMARY KEY, UNIQUE, CHECK, and NOT NULL constraints.
  - b. Reference integrity as appropriate

RUNNING THE BUSINESS ... USING Oracle SQL DML statements, perform the following steps for each business transaction:

### **BUYING ARTWORK WITH A PURCHASE AGREEMENT**

3. Add at least seven to ten new purchases (ideally each person in your team would conduct 2 or 3 transactions for this and each of the following business events). I have provided some hints for the command you would use for each step in the “Buying Artwork” business process, but not in the others ... you should be able to figure it out based on doing this set of transactions. Vary the Manager who purchases the artwork (there are three managers).

#### **Steps in buying artwork**

##### **ADD A COMMENT BEFORE EACH TRANSACTION SIMILAR TO:**

**-- TRANSACTION ARTWORK PURCHASE 1 ← example comment, do this for each purchase agreement, you should have 7 to 10 of these.**

- a. Add the new artwork being purchased to Artwork Item Sales table (INSERT). The status of the artwork should be FORSALE.
- b. Add a new Vendor to the Vendor table if needed. (INSERT)
- c. Add the new Purchase Agreement to the Purchase Agreement table (INSERT). Give some purchases a discount, some a shipping charge, some miscellaneous charges .. mix it up.

### **ACQUIRING ARTWORK WITH A CONSIGNMENT AGREEMENT**

4. Add five to seven new consignments. Have at least two consignment agreements end on or before March 2, 2021. Vary the Manager who signs the consignment agreement (there are three managers)

#### **Steps in acquiring artwork through consignment:**

##### **ADD A COMMENT BEFORE EACH TRANSACTION SIMILAR TO:**

**-- TRANSACTION CONSIGNMENT 1 ← example comment, do this for each consignment agreement, you should have 5 to 7 of these.**

- a. Add the new artwork to Artwork Item Sales table. The status of the artwork should be FORSALE.
- b. Add a new Vendor to the Vendor table if needed.
- c. Add the new Consignment Agreement to the Consignment Agreement table

## **SELLING ARTWORK TO A CUSTOMER**

- 5. Sell seven to ten pieces of art, some with a warranty, some without a warranty, some where they were acquired via a Purchase Agreement and some acquired via Consignment. Vary who the sales agent is. Have at least two customers buy more than one artwork. Have one customer buying the most works of art.

### **Steps in selling artwork:**

#### **ADD A COMMENT BEFORE EACH TRANSACTION SIMILAR TO:**

**-- TRANSACTION ARTWORK SALE 1 ← example comment, do this for each sales invoice, you should have 7 to 10 of these.**

- a. Add Customer to Customer table as needed.
  - b. Add new Sales Invoice to Sales Invoice table. Give some customers a discount, some a shipping charge, some miscellaneous charges .. mix it up.
  - c. Update Sales Invoice to *approved* by Leonard (or by a sales manager).
  - d. Update status of artwork item in artwork table from FORSALE to SOLD.
- 6. Service at least 6 to 10 artwork items, at least three which were ones we sold and at least three which have not been sold by us. Vary the Service invoices so that you do framing, cleaning, etc. Do more of one service type than the others. If you are doing the extra credit aspect of the Service Invoice, have some of the service invoices be for only one service, say framing; have the others include multiple services.

### **Steps in servicing an artwork item:**

#### **ADD A COMMENT BEFORE EACH TRANSACTION SIMILAR TO:**

**-- TRANSACTION ARTWORK SERVICE NOT SOLD BY US 1 ← example comment, do this for each service invoice, you should have 3 to 5 of these.**

- a. Artwork not sold by us
  - i. Add Customer to Customer table.
  - ii. Add customer's artwork to Artwork Item Service table.
  - iii. Add new Service Invoice to the Service Invoice table. In doing so, give some customers a discount, but not others, have some service invoices have a miscellaneous charge, but not others; do not give any Shipping / Handling. You may remove this attribute from the Service Invoice Table.
  - iv. If you are doing extra credit: Add the service(s) the customer is buying to ServiceInv-Services table

**ADD A COMMENT BEFORE EACH TRANSACTION SIMILAR TO:**

**-- TRANSACTION ARTWORK SERVICE SOLD BY US 1 ← example comment, do this for each service invoice, you should have 3 to 5 of these.**

- b. Artwork sold by us
  - i. Add customer to customer table, if needed
  - ii. Add Artwork to Artwork Item Service table using an INSERT / SELECT subquery copying the data from the Artwork Item Sales table to Artwork Item Service table. Note you only need to copy the data that the Artwork Item Service table needs. (see example in SQL book chapter on DML SQL Lesson 9)
  - iii. Add new Service Invoice to Service Invoice table.
  - iv. If you are doing extra credit: Add the service(s) the customer is buying to ServiceInv-Services table
- 7. Queries: Write SELECT statements that returns the following. Run each query in the SQL Window and take a print screen to show the SQL statement along with the results as part of your submission for this task. Then put the code in a CREATE OR REPLACE VIEW statement and include it in your script. NOTE: (Concatenate names with a blank between first and last name)
  - a. Artwork Sales List (list of all Sales Invoices): Invoice Number, Date, Sales person name, Approved by Manager Name, Customer Name, Artwork ID, Artwork Category, Artwork Title, Selling price, Discount, Shipping, Miscellaneous charges, Warranty Price, Subtotal, Taxes (8.25% on the subtotal), Total Selling Price (Order by Invoice Number)
  - b. Artwork Purchase List (list of all Purchase Agreements): Purchase Agreement Number, Date, Company Name, Contact Name, Purchased by Manager Name, Artwork ID, Art Category, Art Title, Purchase Amount, Shipping and Handling, Miscellaneous charges, Subtotal, Taxes (8.25% on the subtotal), Total Purchase Cost.
  - c. Artwork Consignment Agreement List (list of all Consignment Agreements): Consignment Agreement Number, Date, Company Name, Contact Name, Consigned by Manager Name, Artwork ID, Art Category, Art Title, Proposed Selling Price, Minimum Selling Price, Commission Percent, Start Date, End Date.
  - d. Service Invoice List (list of all Service Invoices): Invoice Number, Date, Customer Name, Service Provided, Item Description, Service Price, Discount, Miscellaneous Charges, Subtotal, Taxes (8.25% on the subtotal), Total Service Price.

## **SUBMISSION REQUIREMENTS**

### **SUBMISSION PART 1: SCRIPT consisting of the following:**

Comment statements with the names of your team members and required comments as mentioned above.

DROP TABLE statements

CREATE TABLE statements

BUSINESS TRANSACTIONS

Transaction Title

DML statements for that transaction

CREATE VIEWs

### **SUBMISSION PART 2: PDF document showing Query statements and their results**

Present your work as follows:

*If the results are wide, you will need to submit two print screens showing left and right sides of the output.*

Query 7A: Artwork Sales List

Print Screen showing SQL statement and results

Query 7B: Artwork Purchase List

Print Screen showing SQL statement and results

Etc.