# Lab 07 - Transactions

**Due** Mar 25 at 11:59pm **Points** 40 **Questions** 12 **Available** after Mar 24 at 9am **Time Limit** None
**Allowed Attempts** Unlimited

## Instructions

This lab will focus on numerous aspects of transactions and concurrency control. The first part of the lab will have you implement some transaction infrastructure into the familiar SaleCo database and the new ABC Markets. Please use the files:

COMP_420_Spring_2021_Lab_07_saleco.sql for the SaleCo database

COMP_420_Spring_2021_Lab_07_abc.sql for the ABC database

If you already have the SaleCo database setup in your MySQL instance, please delete the current tables and start with a fresh copy for this lab.

Take the Quiz Again

### Attempt History

| | Attempt | Time | Score |
|---|---|---|---|
| **LATEST** | Attempt 1 | 11,872 minutes | 33 out of 40 |

Correct answers are hidden.

Score for this attempt: **33** out of 40
Submitted Apr 1 at 2:55pm
This attempt took 11,872 minutes.

### Part 1: SaleCo Manipulation

In this section please load the SaleCo database file.

**Question 1** **5 / 5 pts**

Add a new table ACCT_TRANSACTION to the SaleCo database, it should contain:

1. An account transaction number as primary key
2. A transaction date
3. A link to a customer record
4. A transaction type of either “charge” or “payment”
5. A transaction amount

***Please upload a screenshot of your table creation code and its successful creation in your database.***

Lab7_1.JPG (https://cilearn.csuci.edu/files/2761188/download)

**Question 2** **0 / 6 pts**

Create a stored procedure sp_purchase_order that executes a purchase order transaction based on an input product code, customer code, and amount of products purchased.

Since this is an order transaction, you are creating an invoice and line item, charging the customer, and updating the inventory.

***Please upload an image of your stored procedure and its successful creation in your database.***

Lab7_2.JPG (https://cilearn.csuci.edu/files/2761190/download)

need the code for your procedure

**Question 3** 1 / 1 pts

Run your stored procedure sp_purchase_order to record a transaction for Alfred Ramas where he ordered three 3-nozzle, 15 psi. Power Painters.

***Please upload an image of your stored procedure being "CALL"ed and the corresponding output of a "select * from products" query.***

Lab7_3.pdf (https://cilearn.csuci.edu/files/2761194/download)

**Question 4** 1 / 1 pts

Run your stored procedure sp_purchase_order to record a transaction for Amy O'Brian where she ordered six 12lb Sledge Hammers.

***Please upload an image of your stored procedure being "CALL"ed and the corresponding output of a "select * from products" query.***

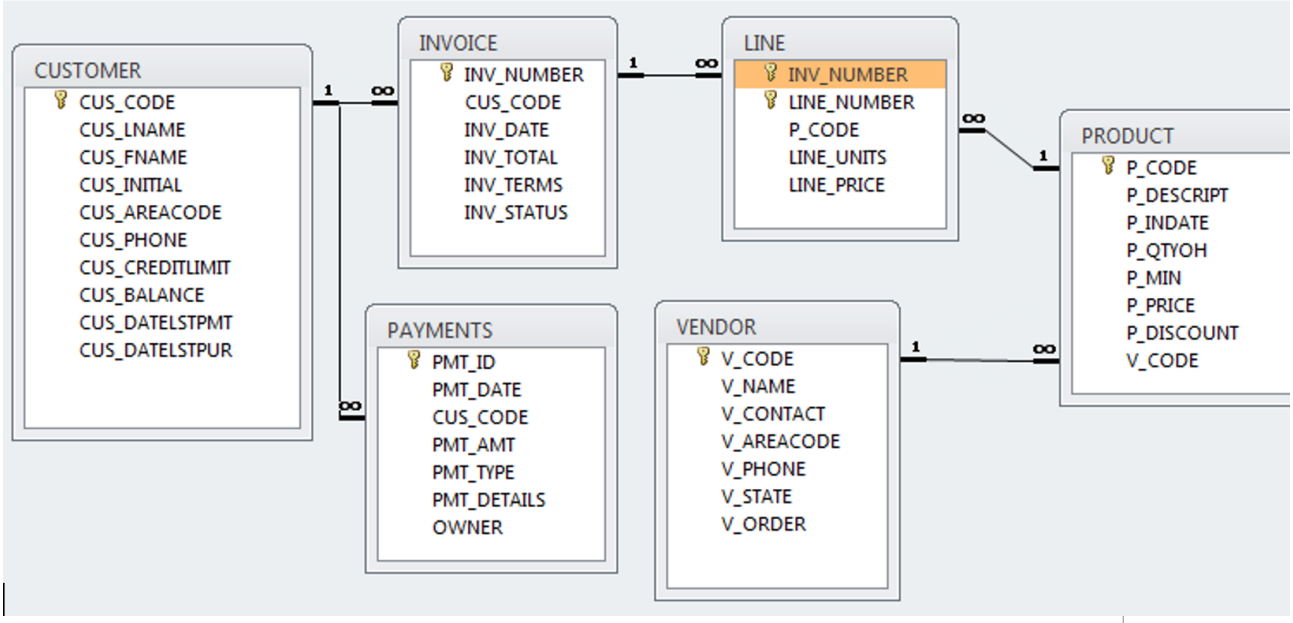
Lab7_4.pdf (https://cilearn.csuci.edu/files/2761198/download)

## Part 2: ABC Markets Implementation

In this section of the lab, you will be modifying a database schema for the ABC Markets. Below is an ERD of the database and a selection of information relevant to the implementation questions below.

## ABC Markets ERD Diagram

The figure below shows the primary entities in the ABC Markets database. Note that the PAYMENTS table is not implemented in the provided SQL file. You will be implementing it below.




## ABC Markets Relevant Details and Business Rules

1. A CUSTOMER may make many purchases, each one represented by an invoice:
    1. The CUS_BALANCE is updated with each credit purchase or payment and represents the amount the customer owes.
    2. The CUS_BALANCE is increased with every credit purchase and decreased with every customer payment.
    3. CUS_DATELSTPUR is updated with each new purchase made by the customer
    4. CUS_DATELSTPMT is updated with each new payment made by the customer.
2. An INVOICE represents a single product purchased by a customer.
    1. INVOICE can have many invoice LINEs, one for each product purchased.
    2. INV_TOTAL represents the total cost of the invoice, including taxes.
    3. INV_TERMS can be “30”, “60”, or “90” (representing the number of days of credit) or “CASH”, “CHECK”, or “CC”.
    4. INV_STATUS can be “OPEN”, “PAID”, or “CANCEL”.
3. A product’s quantity on hand (P_QTYOH) is updated (decreased) with each product sale.
4. A customer may make many payments. The payment type (PMT_TYPE) can be one of the following:
    1. "CASH" for cash payments
    2. "CHECK" for check payments.
    3. "CC" for credit card payments.
5. The payment details (PMT_DETAILS attribute in PAYMENT) are used to record data about check or credit card payments:
    1. The bank, account number, and check number for check payments.
    2. The issuer, credit card number and expiration date for credit card payments.

### Question 5

6 / 6 pts

1. Run sql to create the ABC Markets database.
2. Add one additional entity {YOURNAME} (i.e. if I, Eric, were doing this the entity would be named "ERIC") with a single attribute to store a CUS_CODE. Link this entity to CUSTOMER as a foreign key reference.
3. Insert into CUSTOMER, information for your customer. Also add your CUS_CODE to {YOURNAME}.
4. Create the PAYMENTS table based on the attributes shown in ERD diagram.

1. The primary key will be Payment ID and should be AUTO_INCREMENT.
2. OWNER is a derived field that will be used to store *yourname*.
3. Establish all foreign key relationships based on the ERD diagram above.
4. (You may also create another PMT_DETAILS entity if that makes the procedures below easier to implement.)

***Please reverse engineer your database after implementing the above modifications and upload an image of it.***

Lab7_5.png (https://cilearn.csuci.edu/files/2761200/download)

## Part 3: Transacting ABC Markets

Create the following database procedures to handle purchases and payments made at ABC Markets. Remember all hardcoded values should become parameters for the procedures. Also remember that for table inserts into PAYMENT you also need to insert *yourname* into the OWNER field.

### Question 6

**7 / 8 pts**

Create a stored procedure sp_cust_purchase that will be used for single customer purchases. Based on the business rules above, ensure that all tables are properly updated within a single purchase transaction.

***Please upload an image of your stored procedure and its successful creation in your database.***

Lab7_6.pdf (https://cilearn.csuci.edu/files/2761201/download)

### Question 7

**1 / 1 pts**

Run your stored procedure for the following task and upload a screenshot of your procedure and the invoice and line records created by it. (Please use a join to show the newly created records from both tables.)

On March 12th, 2021, a customer with your customer code makes a credit purchase (30 days) of three units of product 11QER/31 with a unit price of $110.00. The tax rate is 10%.

***Please upload a screenshot of your procedure "CALL" and the requested SELECT query for new records.***

Lab_7.pdf (https://cilearn.csuci.edu/files/2761207/download)

### Question 8

**1 / 1 pts**

Run your stored procedure for the following task and upload a screenshot of your procedure and the invoice and line records created by it. (Please use a join to show the newly created records from both tables.)

On March 17th, 2021, a customer with your customer code makes a cash purchase of three units of product 89-WRE-Q with a unit price of $256.99. The tax rate is 8%.

***Please upload a screenshot of your procedure "CALL" and the requested SELECT query for new records.***

Lab7_8.pdf (https://cilearn.csuci.edu/files/2761217/download)

Cash would be a paid invoice

## Question 9

8 / 8 pts

Create a stored procedure sp_cust_payment that will be used for single customer payments. Follow the above business rules and ensure that all tables and fields are updated according to a single payment transaction.

***Please upload an image of your stored procedure and its successful creation in your database.***

Lab7_9.pdf (https://cilearn.csuci.edu/files/2761224/download)

## Question 10

1 / 1 pts

Run your stored procedure for the following task and upload a screenshot of your procedure and payment records created by it.

On March 23rd, 2021 a customer with your customer code makes a payment of $100 in cash.

***Please upload a screenshot of your procedure "CALL" and the requested SELECT query for new records.***

Lab7_10.pdf (https://cilearn.csuci.edu/files/2761231/download)

## Question 11

1 / 1 pts

Run your stored procedure for the following task and upload a screenshot of your procedure and payment records created by it.

On March 24th, 2021 a customer with your customer code makes an additional payment of $200 with check number 10001 from "Database Bank" account number 123456789.

***Please upload a screenshot of your procedure "CALL" and the requested SELECT query for new records.***

Lab7_11.pdf (https://cilearn.csuci.edu/files/2761235/download)

## Question 12

1 / 1 pts

Run your stored procedure for the following task and upload a screenshot of your procedure and payment records created by it.

On March 25th, 2021 a customer with your customer code pays off the remainder of your owed balance with credit card from "CSUCI Bank" numbered 2002-0101-0311-2021 with expiration 05/2021.

***Please upload a screenshot of your procedure "CALL" and the requested SELECT query for new records.***

Lab7_12.pdf (https://cilearn.csuci.edu/files/2761240/download)

Quiz Score: **33** out of 40