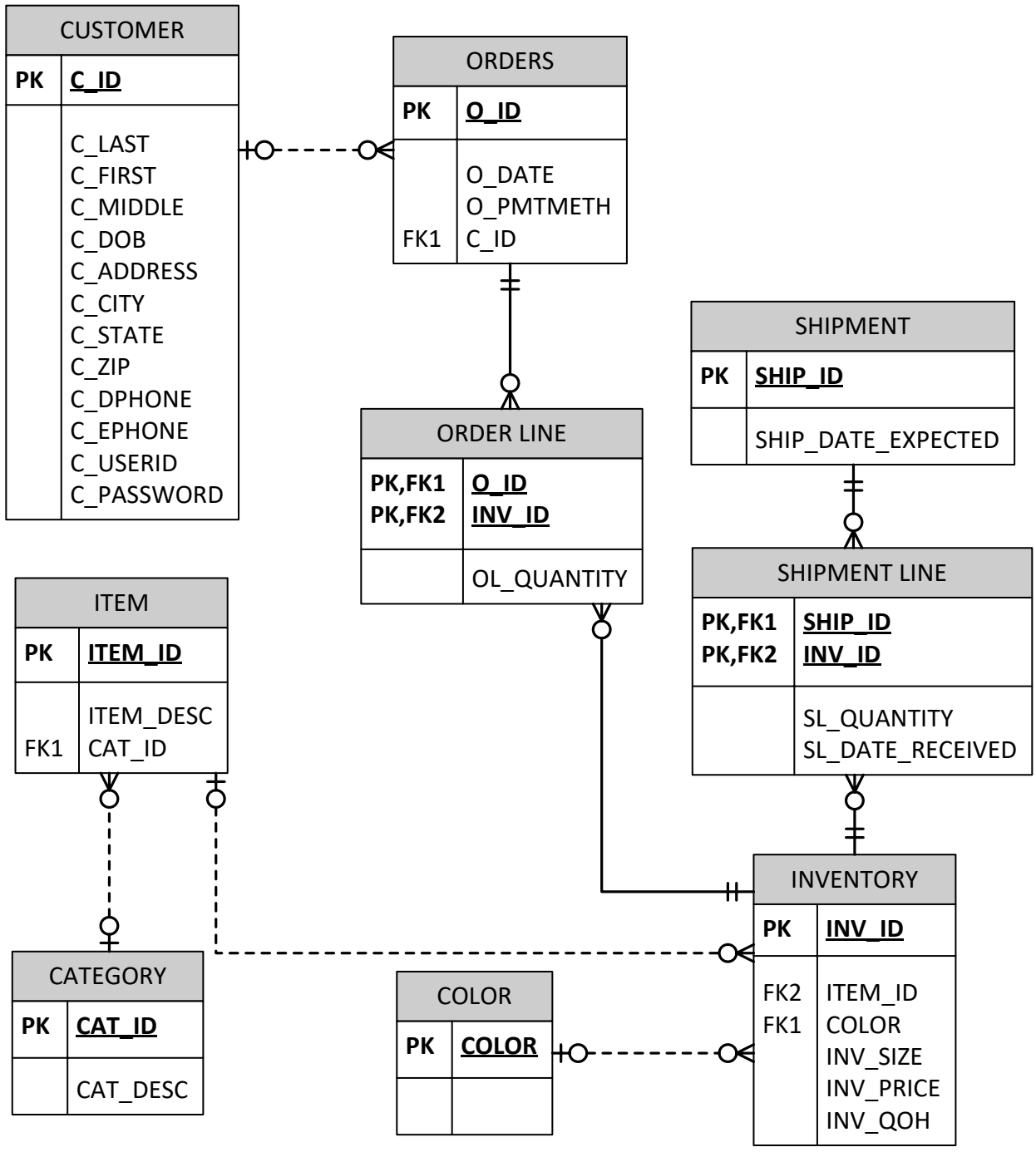
Basic SQL using the Retailing Database

Conceptual Design in the form of an ER Diagram:



This ER diagram shows the table contents for a small company. Each table displays the table name and the attributes. The primary keys would be positioned as the first column. The followings are the brief explanations for the relationship between each table:

Customer can order items. Customers can make many orders.

All the items are stored in the inventory. If the Item is in stock, the system would also show the available quantity on hand.

The Category table displays different product categories.

The Inventory table contains the inventory ID for a specific item, size of the item and colors, also shows the price and quantity on hand for each item. And each Inventory can provide many Order Lines and Shipment Lines. After the order has completed, the quantity on hand or each item would change base the quantity has been sold.

The Color table shows the color of each item that stored in the inventory.

The Order Line table represents the inventory items in a customer's order. And the quantity that customer had order for this specific item. One Order can have many Order Lines.

The Shipment table represents the schedule shipment and the date each shipment is expected.

The Shipment Line table contains the shipment ID, the inventory ID, the quantity of each item and data each was received. One Shipment can have many Shipment Lines.

Most of the tables are one to many relationship.  These two figures both represent the one to many relationship.

Conceptual Design in the form of Relations:

CUSTOMER (C_ID, C_LAST, C_FIRST, C_MIDDLE, C_DOB, C_ADDRESS, C_CITY, C_STATE, C_ZIP, C_DPHONE, C_EPHONE, C_USERID, C_PASSWORD)

C_ID	Customer Identify Key
C_LAST	Customer Last Name
C_FIRST	Customer First Name
C_MIDDLE	Customer Middle Name
C_DOB	Date of Birth
C_ADDRESS	Customer Address
C_CITY	City
C_STATE	State
C_ZIP	Zip Code
C_DPHONE	Customer Daytime phone number
C_EPHONE	Customer Evening Phone number
C_USERID	Customer UserName

C_PASSWORD	Customer Password

COLOR (COLOR)

INVENTORY (INV_ID, ITEM_ID, COLOR, INV_SIZE, INV_PRICE, INV_QOH)

INV_ID	Inventory Identify Key
ITEM_ID	Item Identify Key (As a foreign key)
COLOR	Color (As a foreign key)
INV_SIZE	Size of the Inventory
INV_PRICE	Price of the Inventory
INV_QOH	Quantity on hand

CATEGORY (CAT_ID, CAT_DESC)

CAT_ID	Category Identify Key
CAT_DESC	Descriptions of the Category

ITEMS (ITEM_ID, ITEM_DESC, CAT_ID)

ITEM_ID	Item Identify Key
ITEM_DESC	Description of the Item
CAT_ID	Category Identify Key(As a foreign key)

ORDERS (O_ID, O_DATE, O_PMTMETH, C_ID)

O_ID	Order Identify Key
O_DATE	Order Date
O_PMTMETH	Payment Method
C_ID	Customer Identify Key(As a foreign key)

ORDER LINE (O_ID, INV_ID, OL_QUANTITY)

O_ID	Order Identify Key
INV_ID	Inventory Identify Key
OL_QUANTITY	Quantity of Order Line

SHIPMENT (SHIP_ID, SHIP_DATE_EXPECTED)

SHIP_ID	Shipment Identify Key
SHIP_DATE_EXPECTED	Shipment Expected Date

SHIPMENT LINE (SHIP_ID, INV_ID, SL_QUANTITY, SL_DATE_RECEIVED)

SHIP_ID	Shipment Identify Key
INV_ID	Inventory Identify Key
SL_QUANTITY	Quantity of Shipment Line
SL_DATE_RECEIVED	Shipment Line Received Date

Exercises:

1) Using the script to create a database (found on myWPI, under Assignments, Tutorial 1), create the Retailing Database.
2) Now modify the script with changes a, b, c, and d below. Then, re-create the database with the modified script. Name the script with your name, that name it LastFirst_Tutorial1.
    a. Delete the **C_DPHONE** column from **CUSTOMER** table.
    b. Change the definition of **CAT_DESC** column of **CATEGORY** table so it is defined as a NVARCHAR2 data type that stores 10 characters.
    c. Add a new a column named **SHIPPING ADDRESS** in **SHIPMENT** table.
    d. Change the name of **ORDER LINE** table to **ORDER DETAIL**.

    For each of the above changes, be sure you make any associated changes needed in the rest of the script. For example, changing a table name may require changes in other parts of the script, in addition to the CREATE TABLE command.
3) Run the following queries against the newly created database:
    a. List the customer id, name (last, first, and middle), date of birth (DOB), and address (address, city, state, and zip) for customers whose city is Seattle or whose state is FL. (where with a union clause for Seattle OR florida)
    b. For the items on order, list the order id, the inventory id, and the quantity ordered for those items whose quantity ordered is less than 2. (where quantity order is less than or equal to 2)
    c. List all the orders (include order id, order date, and order payment method (PMTMETH) whose payment method is not check. (=! to check)
    d. List the total value of the inventory for all inventory items whose color is navy. (sum(variable))s
    e. List the number of customer orders that are in the database. (counting)
    f. List the average price and average quantity on hand (QOH) of all inventory items. Avg(price) and avg(quantity on hand)
4) Submit to myWPI:
    a. Your revised script for creating the database

b. The output from running this script

c. Your script for the SQL queries

d. The output from running the queries