

Metropolitan State University
ICS 311 —Database Management Systems

Homework #3

What to submit:

Submit SQL Script that includes SQL statements to answer Part 1, Part 2, and Part 3. Make sure that your SQL script runs without any errors. Submit answers to Part 4 separately in a text file to be able to explain the system response in case of errors.

Part 1 (3 Points): Creating the database:

Create the following tables. The underlined column names are the primary keys. Make sure to specify the primary and foreign key constraints in your create table statements.

1. **customer:** (cus_code:integer, **cus_lname**:varchar(20), **cus_fname**:varchar(20), **cus_initial**:char, **cus_areacode**:integer, **cus_phone**:integer).
2. **invoice:** (inv_number:integer, **cus_code**:integer, **inv_date**:date, foreign key cus_code references customer(cus_code))
3. **line:** (inv_number:integer, prod_code:integer, **line_units**:integer, foreign key (inv_number) references Invoice(inv_number), foreign key (prod_code) references Product (prod_code))
4. **product:**(prod_code:integer, **prod_desc**:varchar(50), **prod_price**:integer, **prod_quant**:integer, **vend_code**:integer, foreign key (vend_code) referenecs Vendor(vend_code))
5. **vendor:**(vend_code:integer, **vend_name**:varchar(30), **vend_contact**:varchar(30), **vend_areacode**:integer, **vend_phone**:integer)

Part 2 (3 Points): Inserting data:

Insert the following data in the tables using `insert into` statements:

1. customer:

10010, Ramas, Alfred, A, 615, 8442573
10011, Dunne, Leona, K, 713, 8941238
10012, Smith, Kathy, W, 615, 8942285
10013, Olowski, Paul,F, 615, 2221672
10014, Orlando, Myron, NULL, 615, 2971228

2. invoice:

1001, 10011, 2008-08-03
1002, 10014, 2008-08-04
1003, 10012, 2008-03-20
1004, 10011, 2008-09-23

3. line:

1001, 12321, 1
1001, 65781, 3
1002, 34256, 6
1003, 12321, 5
1002, 12333, 6

4. product:

12321, hammer, 189 ,20, 232
65781, chain, 12, 45, 235
34256, tape, 35, 60, 235
12333, hanger, 200 ,10, 232

5. vendor:

232, Bryson, Smith, 615, 2233234
235, SuperLoo, Anderson, 615, 2158995

Part 3 (9 Points): SQL Queries

Write SQL statements to answer each of the following questions.

1. List the First name, middle initial, last name, and area code for all customers.
2. List the invoice number and invoice date for all invoices of customer number 10011

3. List the product number and product quantity for products in invoice number 1001
4. List all product description and product price supplied by vendor whose vendor contact name is Smith
5. Produce a list of product description, vendor name, and vendor phone for all products with price less than 50.
6. For each product bought by a customer, list product description and customer's first name and last name.

Part 4 (5 Points): Checking entity and referential integrity:

Write an SQL statement to do each of the following tasks in the given order (try 1, 2, 3, 4, then 5). Explain whether and why the statement is correctly executed or not

1. Insert the following entry in CUSTOMER
10012, Juan, Rodriguez, J, 612, 7788776
2. Insert the following entry in INVOICE
1005, 10017, 2008-11-30
3. Insert the following entry in PRODUCT
12322, hammer, 189, 20, 231
4. Insert the following entry to the VENDOR table
231, Adam, Eric, 615, 2158995
5. Insert the following entry in PRODUCT
12322, coil, 189, 20, 231