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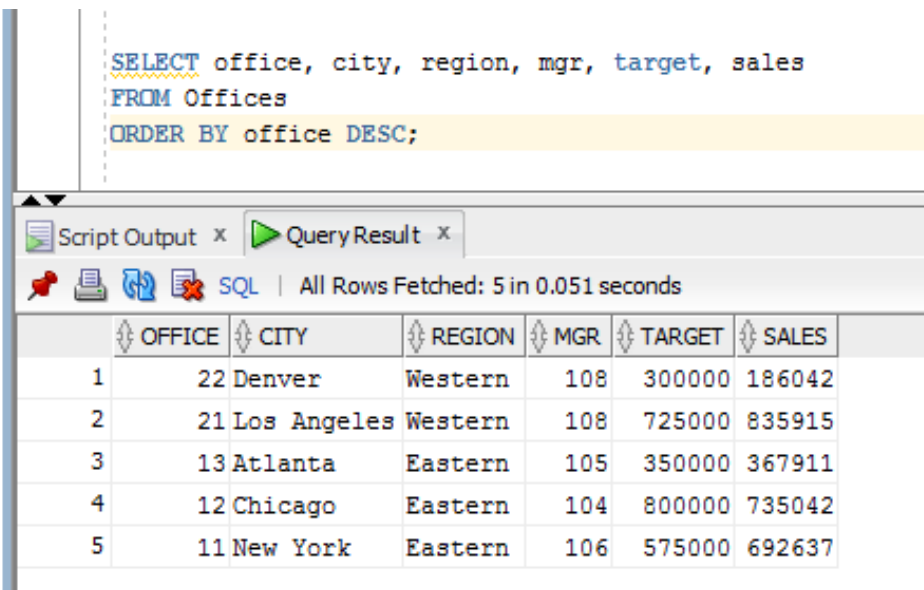
CS443 - Database Management Systems

14 November, 2023

Assignment 1

1) Write a select statement to list all the columns from the Offices table. 'Select *' is not allowed. Return the list in DESC Office order

```
SELECT office, city, region, mgr, target, sales  
FROM Offices  
ORDER BY office DESC;
```



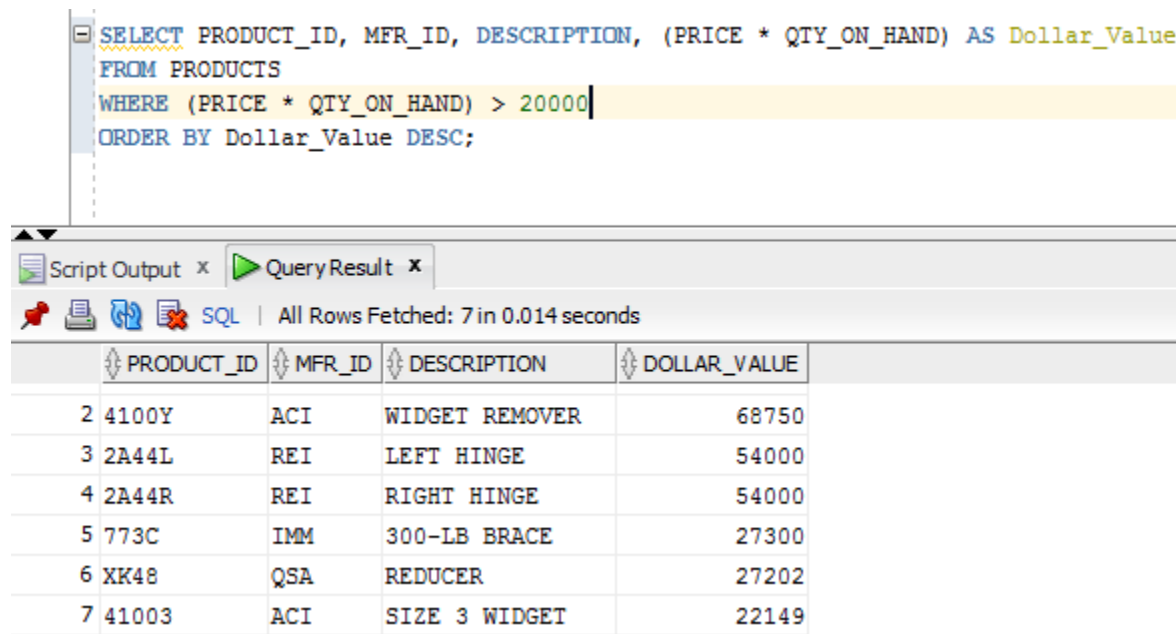
Script Output x Query Result x

SQL | All Rows Fetched: 5 in 0.051 seconds

	OFFICE	CITY	REGION	MGR	TARGET	SALES
1	22	Denver	Western	108	300000	186042
2	21	Los Angeles	Western	108	725000	835915
3	13	Atlanta	Eastern	105	350000	367911
4	12	Chicago	Eastern	104	800000	735042
5	11	New York	Eastern	106	575000	692637

2) List the product ID, mfr ID, Name (its description), and dollar value of quantity on hand (price * quantity) of the products whose dollar value is greater than 20000. Return the list in descending order by their dollar value

```
SELECT PRODUCT_ID, MFR_ID, DESCRIPTION, (PRICE * QTY_ON_HAND) AS Dollar_Value
FROM PRODUCTS
WHERE (PRICE * QTY_ON_HAND) > 20000
ORDER BY Dollar_Value DESC;
```



The screenshot shows a SQL query editor with the following query:

```
SELECT PRODUCT_ID, MFR_ID, DESCRIPTION, (PRICE * QTY_ON_HAND) AS Dollar_Value
FROM PRODUCTS
WHERE (PRICE * QTY_ON_HAND) > 20000
ORDER BY Dollar_Value DESC;
```

Below the query editor, the 'Query Result' window displays the results of the query. It shows 7 rows of data, sorted by dollar value in descending order. The columns are PRODUCT_ID, MFR_ID, DESCRIPTION, and DOLLAR_VALUE.

	PRODUCT_ID	MFR_ID	DESCRIPTION	DOLLAR_VALUE
2	4100Y	ACI	WIDGET REMOVER	68750
3	2A44L	REI	LEFT HINGE	54000
4	2A44R	REI	RIGHT HINGE	54000
5	773C	IMM	300-LB BRACE	27300
6	XK48	QSA	REDUCER	27202
7	41003	ACI	SIZE 3 WIDGET	22149

3) List the Order Number, Order Date, Customer Number, and Sales Rep Number for orders for part '779C' or '773C'. (Use a compound search condition - OR.)

```
SELECT ORDER_NUM, ORDER_DATE, CUST, REP
FROM ORDERS
WHERE PRODUCT= '779C' OR PRODUCT= '773C';
```





<pre>SELECT ORDER_NUM, ORDER_DATE, CUST, REP FROM ORDERS WHERE PRODUCT= '779C' OR PRODUCT= '773C';</pre>				
Script Output x QueryResult x				
SQL All Rows Fetched: 3 in 0.009 seconds				
	ORDER_NUM	ORDER_DATE	CUST	REP
1	113007	08-JAN-18	2112	108
2	113048	10-FEB-21	2120	102
3	113003	25-JAN-17	2108	109

4) List the Name and Age of all Sales Reps in the following offices: 11; 13. (Use the set membership test - IN.)

```
SELECT name, age
FROM salesreps
WHERE rep_office IN (11,13);
```

```
SELECT name, age
FROM salesreps
WHERE rep_office IN (11,13);
```

Script Output x QueryResult x

    SQL | All Rows Fetched: 3 in 0.029 seconds

	NAME	AGE
1	Bill Adams	37
2	Mary Jones	31
3	Sam Clark	52

5) List the names of all Sales Reps who have the letter 'a' (this is lowercase a) as the second character of their name.

```
SELECT name
FROM salesreps
WHERE Name LIKE '_a%';
```

<pre> SELECT name FROM salesreps WHERE Name LIKE '_a%'; </pre>	
Script Output x	QueryResult x
All Rows Fetched: 6 in 0.017 seconds	
NAME	
1 Mary Jones	
2 Sam Clark	
3 Dan Roberts	
4 Larry Fitch	
5 Paul Cruz	
6 Nacy Angelli	

6) Return the Sales Rep ID and Name of any Sales Rep not assigned to an office yet.

```

SELECT empl_num, name
FROM salesreps
WHERE rep_office IS NULL;

```

<pre> SELECT empl_num, name FROM salesreps WHERE rep_office IS NULL; </pre>	
Script Output x	QueryResult x
All Rows Fetched: 1 in 0.009 seconds	
EMPL_NUM	NAME
1	110 Tom Synder

7) Show all the sales rep names with last names “Smith” or “Jones”.

```

SELECT name
FROM salesreps
WHERE name LIKE '% Smith' OR name LIKE '% Jones';

```

<pre>SELECT name FROM salesreps WHERE name LIKE '% Smith' OR name LIKE '% Jones';</pre>	
Script Output x QueryResult x	
SQL All Rows Fetched: 3 in 0.006 seconds	
NAME	
1 Mary Jones	
2 Sue Smith	
3 Bob Smith	

8) List different titles in the sales reps table. Only list each title once and unknown titles should be ignored. Duplicate rows are not allowed.

```
SELECT DISTINCT title
FROM salesreps
WHERE title IS NOT NULL;
```

<pre>SELECT DISTINCT title FROM salesreps WHERE title IS NOT NULL;</pre>	
Script Output x QueryResult x	
SQL All Rows Fetched: 3 in 0.014 seconds	
TITLE	
1 Sales Rep	
2 Sales Mgr	
3 VP Sales	

9) List the description of the products which are more than 6 characters and less than 10 characters long. No duplicate row is allowed. You can use the built in function length() to do this. For example, length(name) returns the number of characters for an attribute called "name".

```
SELECT DISTINCT description
FROM products
WHERE length(description) > 6 AND length(description) < 10;
```

<pre>SELECT DISTINCT description FROM products WHERE length(description) > 6 AND length(description) < 10;</pre>	
Script Output x	Query... x
SQL All Rows Fetched: 5 in 0.009 seconds	
DESCRIPTION	
1 REDUCER	
2 HINGE PIN	
3 BRACE PIN	
4 HOUSING	
5 RETAINER	

10) For all order Amount less than \$700, list the order num with the name of the rep who placed the order and the name of the customer who made the order and the name of the rep for that customer

```
SELECT ORDER_NUM, s.name AS "REP_NAME", company, cust.name AS "CUST_REP"
FROM ORDERS, salesreps s, customers, salesreps cust
WHERE rep = s.empl_num AND cust_num = cust AND cust_rep = cust.empl_num AND
amount < 700.00;
```

```

SELECT ORDER_NUM, s.name AS "REP_NAME", company, cust.name AS "CUST_REP"
FROM ORDERS, salesreps s, customers, salesreps cust
WHERE rep = s.empl_num AND cust_num = cust AND cust_rep = cust.empl_num AND amount < 700.00;

```

Script Output x

Query Result x

SQL | All Rows Fetched: 5 in 0.022 seconds

	ORDER_NUM	REP_NAME	COMPANY	CUST_REP
1	113055	Dan Roberts	Holm and Landis	Mary Jones
2	113034	Tom Synder	Ace International	Tom Synder
3	113013	Larry Fitch	Midwest Systems	Larry Fitch
4	113057	Paul Cruz	JCP Inc.	Paul Cruz
5	112997	Nacy Angelli	Peter Brothers	Nacy Angelli

11) List the Mfr Id, the Product Id, Company and PRICE of all products bought by customers where customer number is one of (2111,2112,2105,2119) and where the amount of the order < \$10,000. Order the results by ascending Company. Duplicate rows are not allowed.

```
SELECT DISTINCT MFR_ID, PRODUCT_ID, COMPANY, PRICE
FROM PRODUCTS, customers, ORDERS
WHERE product = PRODUCT_ID AND mfr = MFR_ID AND cust = CUST_NUM AND
CUST_NUM IN (2111,2112,2105,2119) AND amount < 10000.00
ORDER BY COMPANY ASC;
```

<pre> SELECT DISTINCT MFR_ID, PRODUCT_ID, COMPANY, PRICE FROM PRODUCTS, customers, ORDERS WHERE product = PRODUCT_ID AND mfr = MFR_ID AND cust = CUST_NUM AND CUST_NUM IN (2111,2112,2105,2119) AND amount < 10000.00 ORDER BY COMPANY ASC; </pre>			
Script Output x QueryResult x			
SQL All Rows Fetched: 4 in 0.072 seconds			
MFR_ID	PRODUCT_ID	COMPANY	PRICE
1 REI	2A44G	JCP Inc.	350
2 ACI	41003	JCP Inc.	107
3 ACI	4100X	JCP Inc.	25
4 IMM	773C	Zetacorp	975

12) List all orders number, the name of the rep who took the order , the city where the rep has his/her office. Print the employee whose office is in either Chicago or Denver.

```

SELECT ORDER_NUM, salesreps.name, offices.city
FROM offices, salesreps, ORDERS
WHERE salesreps.empl_num = ORDERS.REP AND salesreps.rep_office = offices.office AND
offices.city IN ('Chicago','Denver');

```

<pre> SELECT ORDER_NUM, salesreps.name, offices.city FROM offices, salesreps, ORDERS WHERE salesreps.empl_num = ORDERS.REP AND salesreps.rep_office = offices.office AND offices.city IN ('Chicago','Denver'); </pre>			
Script Output x QueryResult x			
SQL All Rows Fetched: 8 in 0.019 seconds			
ORDER_NUM	NAME	CITY	
1	112968 Dan Roberts	Chicago	
2	112997 Nancy Angelli	Denver	
3	113062 Nancy Angelli	Denver	
4	113069 Nancy Angelli	Denver	
5	112975 Paul Cruz	Chicago	
6	113055 Dan Roberts	Chicago	
7	113057 Paul Cruz	Chicago	
8	113042 Dan Roberts	Chicago	

13) List all customers (Customer number, Company, and Credit Limit) and orders (Order Number, Amount) where the Amount is within \$10,000 of the Credit Limit. Therefore:

- Credit_limit should be greater than zero and
- Amount should be greater than zero and
- Amount should be less than credit_limit and
- Credit_limit – Amount <= \$10000

```

SELECT CUST_NUM, COMPANY, CREDIT_LIMIT, ORDER_NUM, AMOUNT
FROM customers, ORDERS
WHERE CREDIT_LIMIT > 0.00 AND AMOUNT > 0.00 AND AMOUNT < CREDIT_LIMIT
AND (CREDIT_LIMIT - AMOUNT) <= 10000.00 AND CUST_NUM = CUST;

```

```

SELECT CUST_NUM, COMPANY, CREDIT_LIMIT, ORDER_NUM, AMOUNT
FROM customers, ORDERS
WHERE CREDIT_LIMIT > 0.00 AND AMOUNT > 0.00 AND AMOUNT < CREDIT_LIMIT AND (CREDIT_LIMIT - AMOUNT) <= 10000.00 AND CUST_NUM = CUST;

```

	CUST_NUM	COMPANY	CREDIT_LIMIT	ORDER_NUM	AMOUNT
1	2117	J.P. Sinclair	35000	112961	31500
2	2112	Zetacorp	50000	113045	45000
3	2114	Orion Corp.	20000	112979	15000

14) List all salesreps names and their managers' names where the salesrep is at least as old as the manager. Duplicate rows are not allowed.

```

SELECT e.name AS "EMPL_NAME", m.name AS "MANAG_NAME"
FROM salesreps s1, salesreps s2
WHERE s2.empl_num = s1.manager AND s1.age >= s2.age;

```

```

SELECT s1.name AS "EMPL_NAME", s2.name AS "MANAG_NAME"
FROM salesreps s1, salesreps s2
WHERE s2.empl_num = s1.manager AND s1.age >= s2.age;

```

	EMPL_NAME	MANAG_NAME
1	Larry Fitch	Sam Clark
2	Bill Adams	Bob Smith
3	Dan Roberts	Bob Smith

15) List all salesreps (Name) and the City they work in where either the sales of the salesrep < Quota or the sales for the office is < Target.

```

SELECT name, city
FROM salesreps, offices
WHERE salesreps.rep_office = offices.office AND (salesreps.sales < salesreps.quota OR offices.sales < offices.target);

```

```

SELECT name, city
FROM salesreps, offices
WHERE salesreps.rep_office = offices.office AND (salesreps.sales < salesreps.quota OR offices.sales < offices.target);

```

	NAME	CITY
1	Bob Smith	Chicago
2	Dan Roberts	Chicago
3	Paul Cruz	Chicago
4	Nacy Angelli	Denver

16) List the name, ID, and hire date of the salesreps where the following two conditions hold:

- a) The salesreps sales should be greater than the quota and**
- b) The rep should be either “Sam Clark”, or “Mary Jones.”**

```
SELECT empl_num, name, hire_date
FROM salesreps
WHERE (sales > quota) AND name LIKE '%Mary Jones' OR name LIKE '%Sam Clark';
```



The screenshot shows a SQL query execution window. The query is: `SELECT empl_num, name, hire_date FROM salesreps WHERE (sales > quota) AND name LIKE '%Mary Jones' OR name LIKE '%Sam Clark';`. The results are displayed in a table with 3 columns: EMPL_NUM, NAME, and HIRE_DATE. There are 2 rows of data.

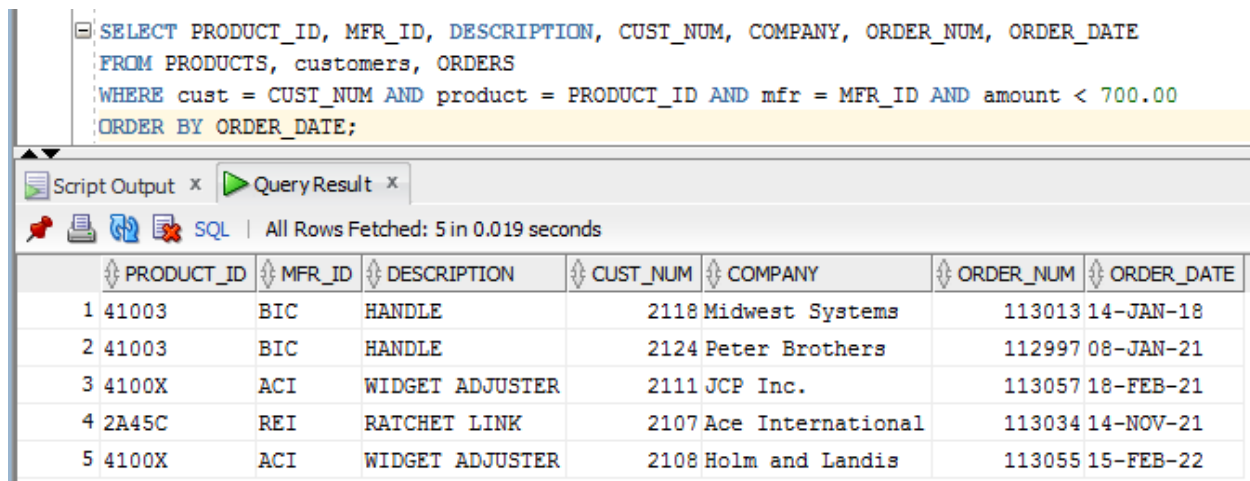
EMPL_NUM	NAME	HIRE_DATE
1	109 Mary Jones	12-OCT-19
2	106 Sam Clark	14-JUN-21

17) List all orders (Order Number) over \$7,000 showing the company placing the order, the Customer Rep assigned to the company, the Office id and the city , and the rep who took the order where such that the Customer Rep’s is not the rep who took the order.

```
SELECT
    o.ORDER_NUM AS "Order Number",
    c.COMPANY AS "Company",
    c.CUST_REP AS "Customer Rep ID",
    s.rep_office AS "Office ID",
    ofc.CITY AS "City",
    o.REP AS "Rep Who Took the Order"
FROM
    ORDERS o
JOIN
    CUSTOMERS c ON o.CUST = c.CUST_NUM
JOIN
    SALESREPS s ON c.CUST_REP = s.empl_num
JOIN
    OFFICES ofc ON s.rep_office = ofc.OFFICE
WHERE
    o.AMOUNT > 7000
    AND c.CUST_REP <> o.REP;
```


19) List all products (ProductId, MFR_Id, and Description), customers (CustNum, Company) who have bought that product, and orders (Order Number, and Order Date) where the order < \$700. Sort the rows by the OrderDate. Duplicate rows are not allowed.

```
SELECT PRODUCT_ID, MFR_ID, DESCRIPTION, CUST_NUM, COMPANY,
ORDER_NUM, ORDER_DATE
FROM PRODUCTS, customers, ORDERS
WHERE cust = CUST_NUM AND product = PRODUCT_ID AND mfr = MFR_ID AND
amount < 700.00
ORDER BY ORDER_DATE;
```



The screenshot shows a SQL query execution window. The query is as follows:

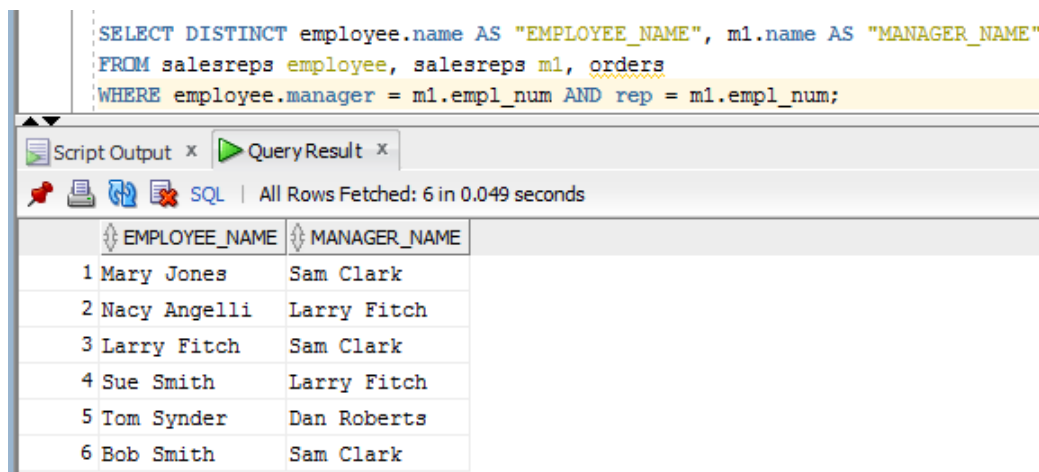
```
SELECT PRODUCT_ID, MFR_ID, DESCRIPTION, CUST_NUM, COMPANY, ORDER_NUM, ORDER_DATE
FROM PRODUCTS, customers, ORDERS
WHERE cust = CUST_NUM AND product = PRODUCT_ID AND mfr = MFR_ID AND amount < 700.00
ORDER BY ORDER_DATE;
```

The results are displayed in a table with 7 columns: PRODUCT_ID, MFR_ID, DESCRIPTION, CUST_NUM, COMPANY, ORDER_NUM, and ORDER_DATE. There are 5 rows of data.

	PRODUCT_ID	MFR_ID	DESCRIPTION	CUST_NUM	COMPANY	ORDER_NUM	ORDER_DATE
1	41003	BIC	HANDLE	2118	Midwest Systems	113013	14-JAN-18
2	41003	BIC	HANDLE	2124	Peter Brothers	112997	08-JAN-21
3	4100X	ACI	WIDGET ADJUSTER	2111	JCP Inc.	113057	18-FEB-21
4	2A45C	REI	RATCHET LINK	2107	Ace International	113034	14-NOV-21
5	4100X	ACI	WIDGET ADJUSTER	2108	Holm and Landis	113055	15-FEB-22

20) List the name of the salesreps and the name of their managers only if the manager has taken care of some orders.

```
SELECT DISTINCT employee.name AS "EMPLOYEE_NAME", managerr.name AS
"MANAGER_NAME"
FROM salesreps employee, salesreps m1, orders
WHERE employee.manager = m1.empl_num AND rep = m1.empl_num;
```



The screenshot shows a SQL query execution window. The query is as follows:

```
SELECT DISTINCT employee.name AS "EMPLOYEE_NAME", m1.name AS "MANAGER_NAME"
FROM salesreps employee, salesreps m1, orders
WHERE employee.manager = m1.empl_num AND rep = m1.empl_num;
```

The results are displayed in a table with 2 columns: EMPLOYEE_NAME and MANAGER_NAME. There are 6 rows of data.

	EMPLOYEE_NAME	MANAGER_NAME
1	Mary Jones	Sam Clark
2	Nacy Angelli	Larry Fitch
3	Larry Fitch	Sam Clark
4	Sue Smith	Larry Fitch
5	Tom Synder	Dan Roberts
6	Bob Smith	Sam Clark

Oracle SQL Developer : TigerConnection

Worksheet:

```
drop table customers;  
drop table offices;  
DROP TABLE PRODUCTS;  
drop table salesreps;  
DROP TABLE ORDERS;
```

```
CREATE TABLE CUSTOMERS  
(  
  CUST_NUM NUMBER(4,0) PRIMARY KEY,  
  COMPANY VARCHAR(20) NOT NULL,  
  CUST_REP NUMBER(3,0),  
  CREDIT_LIMIT NUMBER(10,2)  
);  
insert into customers values(2111,'JCP Inc.',103,50000);  
insert into customers values(2102,'First Corp.',101,65000);  
insert into customers values(2103,'Acme Mfg.',105,50000);  
insert into customers values(2123,'Carter and Sons',102,40000);  
insert into customers values(2107,'Ace International',110,35000);  
insert into customers values(2115,'Smithson Corp.',101,20000);  
insert into customers values(2101,'Jones Mfg.',106,65000);  
insert into customers values(2112,'Zetacorp',108,50000);  
insert into customers values(2121,'QMA Assoc.',103,45000);  
insert into customers values(2114,'Orion Corp.',102,20000);  
insert into customers values(2124,'Peter Brothers',107,40000);  
insert into customers values(2108,'Holm and Landis',109,55000);  
insert into customers values(2117,'J.P. Sinclair',106,35000);  
insert into customers values(2122,'Three-Way Lines',105,30000);  
insert into customers values(2120,'Rico Enterprises',102,50000);  
insert into customers values(2106,'Fred Lewis Corp.',102,65000);  
insert into customers values(2119,'Solomon Inc.',109,25000);  
insert into customers values(2118,'Midwest Systems',108,60000);  
insert into customers values(2113,'Ian and Schmidt',104,20000);  
insert into customers values(2109,'Chen Associates',103,25000);  
insert into customers values(2105,'AAA Investments',101,45000);
```

```
create table offices  
(  
  office number(2,0) primary key,  
  city varchar2(15) not null,  
  region varchar2(10) not null,  
  mgr number(3,0),  
  target number(10,2),
```

```

sales number(10,2) not null
);
insert into offices values(22,'Denver','Western',108,300000,186042);
insert into offices values(11,'New York','Eastern',106,575000,692637);
insert into offices values(12,'Chicago','Eastern',104,800000,735042);
insert into offices values(13,'Atlanta','Eastern',105,350000,367911);
insert into offices values(21,'Los Angeles','Western',108,725000,835915);

```

```

CREATE TABLE PRODUCTS

```

```

(
MFR_ID VARCHAR2(3) NOT NULL,
PRODUCT_ID VARCHAR2(5) NOT NULL,
DESCRIPTION VARCHAR2(20) NOT NULL,
PRICE NUMBER(9,2) NOT NULL,
QTY_ON_HAND NUMBER(5,0) NOT NULL
);
INSERT INTO PRODUCTS VALUES('REI','2A45C','RATCHET LINK',79,210);
INSERT INTO PRODUCTS VALUES('ACI','4100Y','WIDGET REMOVER',2750,25);
INSERT INTO PRODUCTS VALUES('QSA','XK47','REDUCER',355,38);
INSERT INTO PRODUCTS VALUES('BIC','41672','PLATE',180,0);
INSERT INTO PRODUCTS VALUES('IMM','779C','900-LB BRACE',1875,9);
INSERT INTO PRODUCTS VALUES('ACI','41003','SIZE 3 WIDGET',107,207);
INSERT INTO PRODUCTS VALUES('ACI','41004','SIZE 4 WIDGET',117,139);
INSERT INTO PRODUCTS VALUES('BIC','41003','HANDLE',652,3);
INSERT INTO PRODUCTS VALUES('IMM','887P','BRACE PIN',250,24);
INSERT INTO PRODUCTS VALUES('QSA','XK48','REDUCER',134,203);
INSERT INTO PRODUCTS VALUES('REI','2A44L','LEFT HINGE',4500,12);
INSERT INTO PRODUCTS VALUES('FEA','112','HOUSING',148,115);
INSERT INTO PRODUCTS VALUES('IMM','887F','BRACE HOLDER',54,223);
INSERT INTO PRODUCTS VALUES('BIC','41089','RETAINER',225,78);
INSERT INTO PRODUCTS VALUES('ACI','41001','SIZE 1 WIDGET',55,277);
INSERT INTO PRODUCTS VALUES('IMM','775C','500-LB BRACE',1425,5);
INSERT INTO PRODUCTS VALUES('ACI','4100Z','WIDGET INSTALLER',2500,28);
INSERT INTO PRODUCTS VALUES('QSA','XK48A','REDUCER',177,37);
INSERT INTO PRODUCTS VALUES('ACI','41002','SIZE 2 WIDGET',76,167);
INSERT INTO PRODUCTS VALUES('REI','2A44R','RIGHT HINGE',4500,12);
INSERT INTO PRODUCTS VALUES('IMM','773C','300-LB BRACE',975,28);
INSERT INTO PRODUCTS VALUES('ACI','4100X','WIDGET ADJUSTER',25,37);
INSERT INTO PRODUCTS VALUES('FEA','114','MOTOR MOUNT',243,15);
INSERT INTO PRODUCTS VALUES('IMM','887X','BRACE RETAINER',475,32);
INSERT INTO PRODUCTS VALUES('REI','2A44G','HINGE PIN',350,14);

```

```

create table salesreps

```

```

(
empl_num number(3,0) primary key,
name varchar2(15) not null,

```

```

age number(3,0),
rep_office number(2,0),
title varchar2(10),
hire_date varchar2(10) not null,
manager number(3,0),
quota number(10,2),
sales number(10,2) not null
);
insert into salesreps values (105,'Bill Adams',37,13,'Sales Rep','12-FEB-18',104,350000,367911);
insert into salesreps values (109,'Mary Jones',31,11,'Sales
Rep','12-OCT-19',106,300000,392725);
insert into salesreps values (102,'Sue Smith',48,21,'Sales Rep','10-DEC-20',108,350000,474050);
insert into salesreps values (106,'Sam Clark',52,11,'VP
Sales','14-JUN-21',NULL,275000,299912);
insert into salesreps values (104,'Bob Smith',33,12,'Sales
Mgr','19-MAY-22',106,200000,142594);
insert into salesreps values (101,'Dan Roberts',45,12,'Sales
Rep','20-OCT-18',104,300000,305673);
insert into salesreps values (110,'Tom Synder',41,NULL,'Sales
Rep','13-JAN-19',101,NULL,75985);
insert into salesreps values (108,'Larry Fitch',62,21,'Sales
Mgr','12-OCT-20',106,350000,361865);
insert into salesreps values (103,'Paul Cruz',29,12,'Sales Rep','01-MAR-22',104,275000,286775);
insert into salesreps values (107,'Nacy Angelli',49,22,'Sales
Rep','14-NOV-21',108,300000,186042);

```

```

CREATE TABLE ORDERS

```

```

(
ORDER_NUM NUMBER(6,0) PRIMARY KEY,
ORDER_DATE Date NOT NULL,
CUST NUMBER(4,0) NOT NULL,
REP NUMBER(3,0),
MFR VARCHAR2(3) NOT NULL,
PRODUCT VARCHAR2(5) NOT NULL,
QTY NUMBER(4,0) NOT NULL,
AMOUNT NUMBER(9,2) NOT NULL
);
INSERT INTO ORDERS VALUES (112961,'17-DEC-18',2117,106,'REI','2A44L',7,31500);
INSERT INTO ORDERS VALUES (113012,'11-JAN-19',2111,105,'ACI','41003',35,3745);
INSERT INTO ORDERS VALUES (112989,'03-JAN-20',2101,106,'FEA','114',6,1458);
INSERT INTO ORDERS VALUES (113051,'10-FEB-22',2118,108,'QSA','K47',4,1420);
INSERT INTO ORDERS VALUES (112968,'14-NOV-21',2102,101,'ACI','41004',34,3978);
INSERT INTO ORDERS VALUES (113036,'30-JAN-22',2107,110,'ACI','4100Z',9,22500);
INSERT INTO ORDERS VALUES (113045,'02-FEB-21',2112,108,'REI','2A44R',10,45000);
INSERT INTO ORDERS VALUES (112963,'10-DEC-20',2103,105,'ACI','41004',28,3276);
INSERT INTO ORDERS VALUES (113013,'14-JAN-18',2118,108,'BIC','41003',1,652);

```

```

INSERT INTO ORDERS VALUES (113058,'23-FEB-22',2108,109,'FEA','112',10,1480);
INSERT INTO ORDERS VALUES (112997,'08-JAN-21',2124,107,'BIC','41003',1,652);
INSERT INTO ORDERS VALUES (112983,'27-DEC-19',2103,105,'ACI','41004',6,702);
INSERT INTO ORDERS VALUES (113024,'20-JAN-18',2114,108,'QSA','XK47',20,7100);
INSERT INTO ORDERS VALUES (113062,'24-FEB-17',2124,107,'FEA','114',10,2430);
INSERT INTO ORDERS VALUES (112979,'10-DEC-20',2114,102,'ACI','4100Z',6,15000);
INSERT INTO ORDERS VALUES (113027,'22-JAN-17',2103,105,'ACI','41002',54,4104);
INSERT INTO ORDERS VALUES (113007,'08-JAN-18',2112,108,'IMM','773C',3,2925);
INSERT INTO ORDERS VALUES (113069,'02-MAR-19',2109,107,'IMM','775C',22,31350);
INSERT INTO ORDERS VALUES (113034,'14-NOV-21',2107,110,'REI','2A45C',8,632);
INSERT INTO ORDERS VALUES (112992,'04-NOV-21',2118,108,'ACI','41002',10,760);
INSERT INTO ORDERS VALUES (112975,'12-OCT-18',2111,103,'REI','2A44G',6,2100);
INSERT INTO ORDERS VALUES (113055,'15-FEB-22',2108,101,'ACI','4100X',6,150);
INSERT INTO ORDERS VALUES (113048,'10-FEB-21',2120,102,'IMM','779C',2,3750);
INSERT INTO ORDERS VALUES (112993,'04-JAN-19',2106,102,'REI','2A45C',24,1896);
INSERT INTO ORDERS VALUES (113065,'27-FEB-18',2106,102,'QSA','XK47',6,2130);
INSERT INTO ORDERS VALUES (113003,'25-JAN-17',2108,109,'IMM','779C',3,5625);
INSERT INTO ORDERS VALUES (113049,'10-FEB-17',2118,108,'QSA','XK47',2,776);
INSERT INTO ORDERS VALUES (112987,'31-DEC-18',2103,105,'ACI','4100Y',11,27500);
INSERT INTO ORDERS VALUES (113057,'18-FEB-21',2111,103,'ACI','4100X',24,600);
INSERT INTO ORDERS VALUES (113042,'02-FEB-22',2113,101,'REI','2A44R',5,22500);

```

```

SELECT office, city, region, mgr, target, sales
FROM Offices
ORDER BY office DESC;

```

```

SELECT PRODUCT_ID, MFR_ID, DESCRIPTION, (PRICE * QTY_ON_HAND) AS
Dollar_Value
FROM PRODUCTS
WHERE (PRICE * QTY_ON_HAND) > 20000
ORDER BY Dollar_Value DESC;

```

```

SELECT ORDER_NUM, ORDER_DATE, CUST, REP
FROM ORDERS
WHERE PRODUCT= '779C' OR PRODUCT= '773C';

```

```

SELECT name, age
FROM salesreps
WHERE rep_office IN (11,13);

```

```

SELECT name
FROM salesreps
WHERE Name LIKE '_a%';

```

```

SELECT empl_num, name
FROM salesreps

```

WHERE rep_office IS NULL;

SELECT name
FROM salesreps
WHERE name LIKE '% Smith' OR name LIKE '% Jones';

SELECT DISTINCT title
FROM salesreps
WHERE title IS NOT NULL;

SELECT DISTINCT description
FROM products
WHERE length(description) > 6 AND length(description) < 10;

SELECT ORDER_NUM, s.name AS "REP_NAME", company, cust.name AS "CUST_REP"
FROM ORDERS, salesreps s, customers, salesreps cust
WHERE rep = s.empl_num AND cust_num = cust AND cust_rep = cust.empl_num AND
amount < 700.00;

SELECT DISTINCT MFR_ID, PRODUCT_ID, COMPANY, PRICE
FROM PRODUCTS, customers, ORDERS
WHERE product = PRODUCT_ID AND mfr = MFR_ID AND cust = CUST_NUM AND
CUST_NUM IN (2111,2112,2105,2119) AND amount < 10000.00
ORDER BY COMPANY ASC;

SELECT ORDER_NUM, salesreps.name, offices.city
FROM offices, salesreps, ORDERS
WHERE salesreps.empl_num = ORDERS.REP AND salesreps.rep_office = offices.office AND
offices.city IN ('Chicago','Denver');

SELECT CUST_NUM, COMPANY, CREDIT_LIMIT, ORDER_NUM, AMOUNT
FROM customers, ORDERS
WHERE CREDIT_LIMIT > 0.00 AND AMOUNT > 0.00 AND AMOUNT < CREDIT_LIMIT
AND (CREDIT_LIMIT - AMOUNT) <= 10000.00 AND CUST_NUM = CUST;

SELECT s1.name AS "EMPL_NAME", s2.name AS "MANAG_NAME"
FROM salesreps s1, salesreps s2
WHERE s2.empl_num = s1.manager AND s1.age >= s2.age;

SELECT name, city
FROM salesreps, offices
WHERE salesreps.rep_office = offices.office AND (salesreps.sales < salesreps.quota OR
offices.sales < offices.target);

SELECT empl_num, name, hire_date
FROM salesreps

WHERE (sales > quota) AND name LIKE '%Mary Jones' OR name LIKE '%Sam Clark';

```
SELECT
  o.ORDER_NUM AS "Order Number",
  c.COMPANY AS "Company",
  c.CUST_REP AS "Customer Rep ID",
  s.rep_office AS "Office ID",
  ofc.CITY AS "City",
  o.REP AS "Rep Who Took the Order"
FROM
  ORDERS o
JOIN
  CUSTOMERS c ON o.CUST = c.CUST_NUM
JOIN
  SALESREPS s ON c.CUST_REP = s.empl_num
JOIN
  OFFICES ofc ON s.rep_office = ofc.OFFICE
WHERE
  o.AMOUNT > 7000
  AND c.CUST_REP <> o.REP;
```

```
SELECT DISTINCT employee.empl_num, employee.name AS "EMPLOYEE_NAME",
managerr.name AS "MANAGER_NAME"
FROM customers, offices, salesreps employee, salesreps m1
WHERE employee.manager = m1.empl_num AND m1.empl_num = offices.mgr AND
offices.city IN ('New York');
```

```
SELECT PRODUCT_ID, MFR_ID, DESCRIPTION, CUST_NUM, COMPANY,
ORDER_NUM, ORDER_DATE
FROM PRODUCTS, customers, ORDERS
WHERE cust = CUST_NUM AND product = PRODUCT_ID AND mfr = MFR_ID AND
amount < 700.00
ORDER BY ORDER_DATE;
```

```
SELECT DISTINCT employee.name AS "EMPLOYEE_NAME", m1.name AS
"MANAGER_NAME"
FROM salesreps employee, salesreps m1, orders
WHERE employee.manager = m1.empl_num AND rep = m1.empl_num;
```