Name:Zikry Danial bin Majuning/A22EC0298

Database Design Project

Oracle Baseball League Store Database

Project Scenario:

You are a small consulting company specializing in database development. You have just been awarded the contract to develop a data model for a database application system for a small retail store called Oracle Baseball League (OBL).

The Oracle Baseball League store serves the entire surrounding community selling baseball kit. The OBL has two types of customer, there are individuals who purchase items like balls, cleats, gloves, shirts, screen printed t-shirts, and shorts. Additionally customers can represent a team when they purchase uniforms and equipment on behalf of the team.

Teams and individual customers are free to purchase any item from the inventory list, but teams get a discount on the list price depending on the number of players. When a customer places an order we record the order items for that order in our database.

OBL has a team of three sales representatives that officially only call on teams but have been known to handle individual customer complaints.

Section 6 Lesson 9 Exercise 1: Joining Tables Using JOIN

Write SELECT Statements Using Data From Multiple Tables Using Equijoins and Non-Equijoins (S6L9 Objective 1)

In this exercise you will write SELECT statements to access data from more than one table.

Part 1: Creating Natural Joins.

1. Display all of the information about sales representatives and their addresses using a natural join.

Code:

SELECT id, email, first_name, last_name, phone_number, commission_rate, supervisor_id

FROM sales_representatives

NATURAL JOIN sales_rep_addresses

Output:

ID	EMAIL	FIRST_NAME	LAST_NAME	PHONE_NUMBE	COMMISSION_RATE	SUPE
sr01	chray@obl.com	Charles	Raymond	0134598761	10	sr01
sr02	vwright@obl.com	Victoria	Wright	0134598762	5	sr01
sr03	bspeed@obl.com	Barry	Speed	0134598763	5	sr01

2. Adapt the query from the previous question to only show the id, first name, last name, address line 1, address line 2, city, email and phone_number for the sales representatives.

Code:

SELECT id, first_name, last_name, address_line_1, address_line_2, city, email, phone_number
FROM sales_representatives
NATURAL JOIN sales_rep_addresses

Output:

```
SELECT id, first_name, last_name, address_line_1, address_line_2, city, email, phone_number
FROM sales_representatives
NATURAL JOIN sales_rep_addresses
```

Script Output | Task completed in 2.325 seconds

```
    commission_rate = 5
ORDER BY
    last_name
```

First Name	Last Name	Commission Rate
Barry	Speed	5
Victoria	Wright	5

ID	FIRST_NAME	LAST_NAME	ADDRESS_LINE_1	ADDRESS_LINE_2	CITY	EMAIL
sr01	Charles	Raymond	12 Cherry Lane	Denton	Detroit	chray@obl.com
sr02	Victoria	Wright	87 Blossom Hill	Uptown	Detroit	vwright@obl.com
sr03	Barry	Speed	12 Junction Row	Skinflats	Detroit	bspeed@obl.com

Part 2: Creating Joins with the USING Clause

1. Adapt the previous query answer to use the USING clause instead of a natural join.

Code:

```
SELECT id, first_name, last_name, address_line_1, address_line_2, city, email, phone_number
FROM sales_representatives
JOIN sales_rep_addresses USING (id);
```

Output:

ID	FIRST_NAME	LAST_NAME	ADDRESS_LINE_1	ADDRESS_LINE_2	CITY	EMAI
sr01	Charles	Raymond	12 Cherry Lane	Denton	Detroit	chra
sr02	Victoria	Wright	87 Blossom Hill	Uptown	Detroit	vwri
sr03	Barry	Speed	12 Junction Row	Skinflats	Detroit	bspe

2. Display all of the information about items and their price history by joining the items and price_history tables.

Code:

```
SELECT itm_number, name, description, category, color, "Size", ilt_id
FROM items
JOIN price_history
USING (itm_number)
```

Output:

Script Output | Query Result

All Rows Fetched: 7 in 0.017 seconds

	ITM_NUMBER	NAME	DESCRIPTION	CATEGORY	COLOR	Size	ILT_ID
1	im01101044	gloves	catcher mitt	clothing	brown	m	il1010230124
2	im01101045	under shirt	top worn under the game top	clothing	white	s	il1010230125
3	im01101045	under shirt	top worn under the game top	clothing	white	s	il1010230125
4	im01101045	under shirt	top worn under the game top	clothing	white	s	il1010230125
5	im01101046	socks	team socks with emblem	clothing	range	l	il1010230126
6	im01101047	game top	team shirt with emblem	clothing	range	m	il1010230127
7	im01101048	premium bat	high quaity basball bat	equipment	(null)	(null)	il1010230128

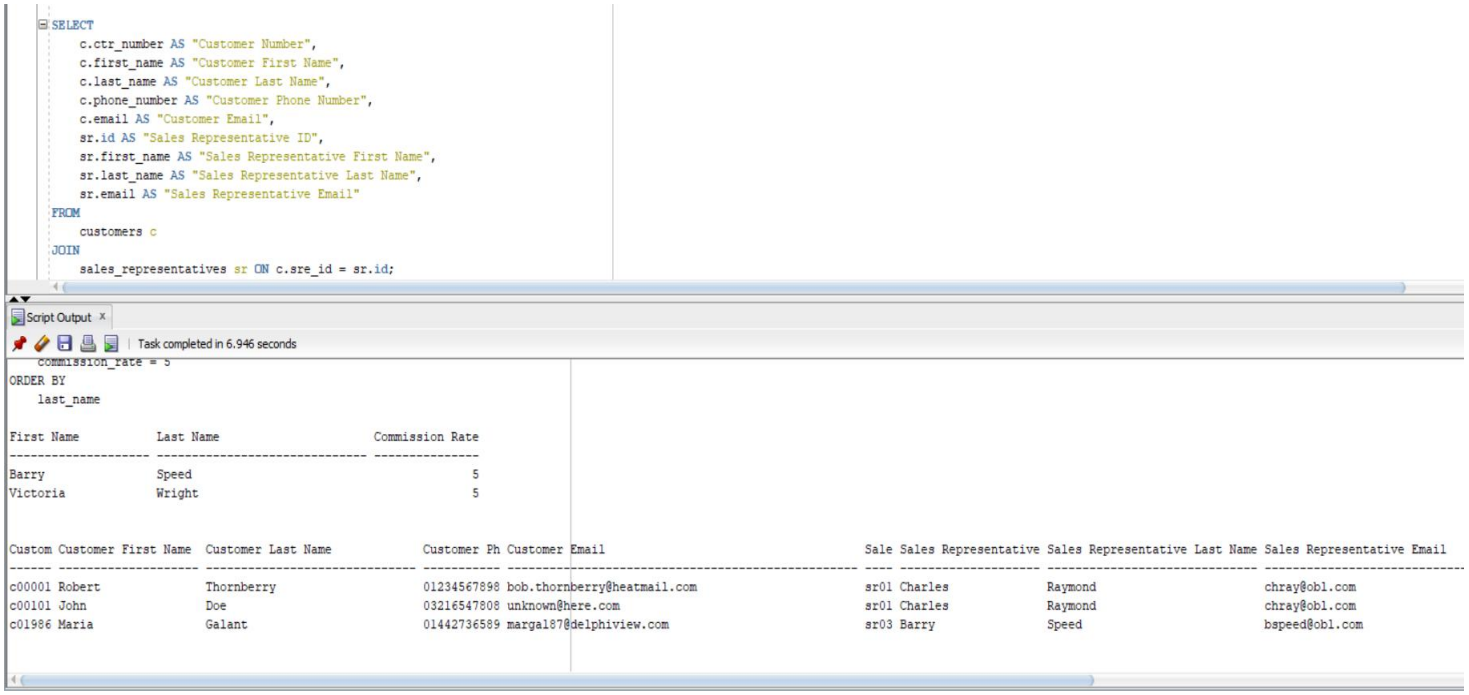
Part 3: Creating Joins with the ON Clause

1. Use an ON clause to join the customer and sales representative table so that you display the customer number, customer fist name, customer last name, customer phone number, customer email, sales representative id, sales representative first name, sales representative last name and sales representative email. You will need to use a table alias in your answer as both tables have columns with the same name.

Code:

```
SELECT
c.ctr_number AS "Customer Number",
c.first_name AS "Customer First Name",
c.last_name AS "Customer Last Name",
c.phone_number AS "Customer Phone Number",
c.email AS "Customer Email",
sr.id AS "Sales Representative ID",
sr.first_name AS "Sales Representative First Name",
sr.last_name AS "Sales Representative Last Name",
sr.email AS "Sales Representative Email"
FROM
customers c
JOIN
sales_representatives sr ON c.sre_id = sr.id;
```

Output:



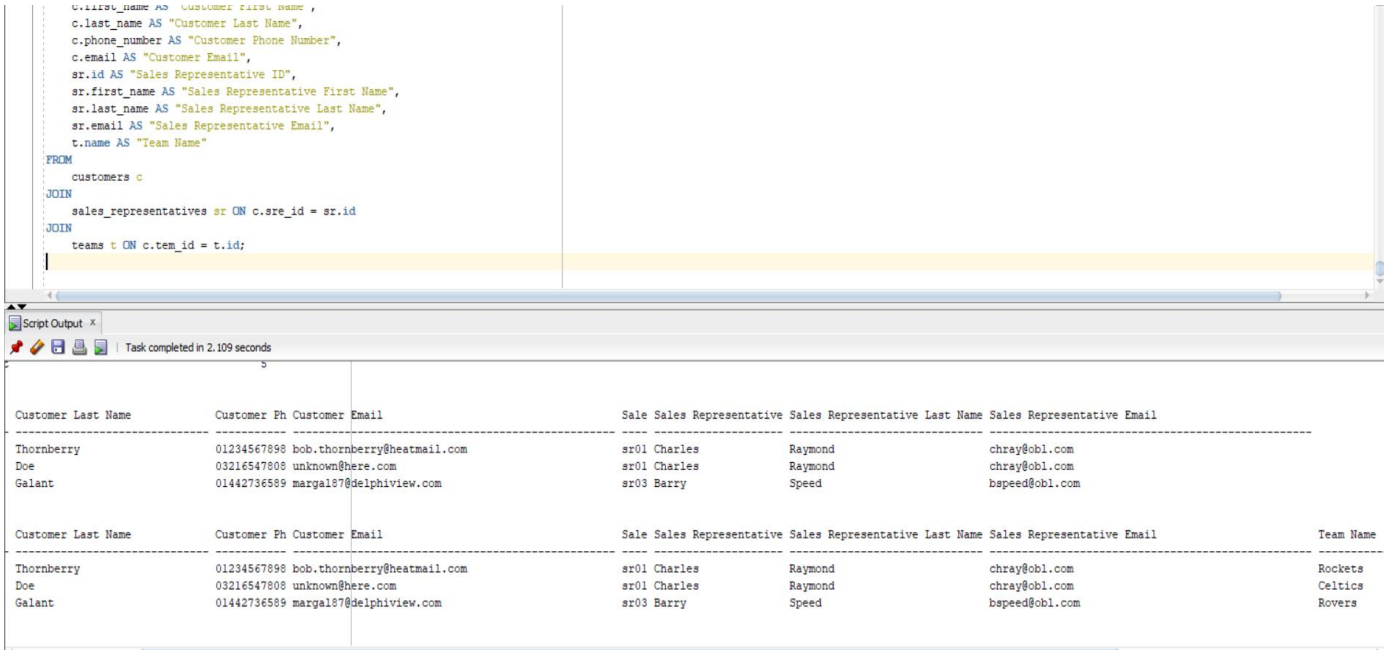
Part 4- Creating Three-Way Joins with the ON Clause

1. Using the answer to Task 3 add a join that will allow the team name that the customer represents to be included in the results.

Code:

```
SELECT
c.ctr_number AS "Customer Number",
c.first_name AS "Customer First Name",
c.last_name AS "Customer Last Name",
c.phone_number AS "Customer Phone Number",
c.email AS "Customer Email",
sr.id AS "Sales Representative ID",
sr.first_name AS "Sales Representative First Name",
sr.last_name AS "Sales Representative Last Name",
sr.email AS "Sales Representative Email",
t.name AS "Team Name"
FROM
customers c
JOIN
sales_representatives sr ON c.sre_id = sr.id
JOIN
teams t ON c.tem_id = t.id;
```

Output:



Part 5: Applying Additional Conditions to a Join

1. Using the answer to Task 4 add an additional condition to only show the results for the customer that has the number - c00001.

Code:

```
SELECT
c.ctr_number AS "Customer Number",
c.first_name AS "Customer First Name",
c.last_name AS "Customer Last Name",
c.phone_number AS "Customer Phone Number",
c.email AS "Customer Email",
sr.id AS "Sales Representative ID",
sr.first_name AS "Sales Representative First Name",
sr.last_name AS "Sales Representative Last Name",
sr.email AS "Sales Representative Email",
t.name AS "Team Name"
FROM
customers c
JOIN
sales_representatives sr ON c.sre_id = sr.id
JOIN
teams t ON c.tem_id = t.id
WHERE
c.ctr_number = 'c00001';
```

Output:

```
FROM
    customers c
JOIN
    sales_representatives sr ON c.sre_id = sr.id
JOIN
    teams t ON c.tem_id = t.id
WHERE
    c.ctr_number = 'c00001';
```

Script Output

Task completed in 2.122 seconds

```
c00001 Robert          Thornberry          01234567898 bob.thornberry@heatmail.com sr01 Charles Raymond chray@obl.com
c00101 John            Doe                 03216547808 unknown@here.com            sr01 Charles Raymond chray@obl.com
c01986 Maria           Galant              01442736589 margal87@delphiview.com     sr03 Barry   Speed   bspeed@obl.com


Custom Customer First Name  Customer Last Name           Customer Ph Customer Email                          Sale Sales Representative Sales Representative Last Name Sales Representative Email
------ -------------------- ----------------------------- ----------- ---------------------------------------- ---- -------------------- ----------------------------- -----------------------------
c00001 Robert               Thornberry                  01234567898 bob.thornberry@heatmail.com             sr01 Charles              Raymond                       chray@obl.com
c00101 John                 Doe                         03216547808 unknown@here.com                        sr01 Charles              Raymond                       chray@obl.com
c01986 Maria                Galant                      01442736589 margal87@delphiview.com                 sr03 Barry                Speed                         bspeed@obl.com


Custom Customer First Name  Customer Last Name           Customer Ph Customer Email                          Sale Sales Representative Sales Representative Last Name Sales Representative Email
------ -------------------- ----------------------------- ----------- ---------------------------------------- ---- -------------------- ----------------------------- -----------------------------
c00001 Robert               Thornberry                  01234567898 bob.thornberry@heatmail.com             sr01 Charles              Raymond                       chray@obl.com
```

Part 6: Retrieving Records with Nonequijoins

1. Write a query that will display name and cost of the item with the number im01101045 on the 12th of December 2016. The output of the query should look like this:

The cost of the under shirt on this day was 14.99

Code:

```
SELECT
'The cost of the ', i.name, ' on this day was ', ph.price AS "Output"
FROM
items i
JOIN
price_history ph ON i.itm_number = ph.itm_number
WHERE
i.itm_number = 'im01101045'
AND TO_DATE('12-Dec-2016', 'DD-Mon-YYYY') BETWEEN ph.start_date AND NVL(ph.end_date,
TO_DATE('31-Dec-9999', 'DD-Mon-YYYY'))
```

Output:

```
WHERE
    c.ctr_number = 'c00001';

SELECT
    'The cost of the ', i.name, ' on this day was ', ph.price AS "Output"
FROM
    items i
JOIN
    price_history ph ON i.itm_number = ph.itm_number
WHERE
    i.itm_number = 'im01101045'
    AND TO_DATE('12-Dec-2016', 'DD-Mon-YYYY') BETWEEN ph.start_date AND NVL(ph.end_date, TO_DATE('31-Dec-9999', 'DD-Mon-YYYY'))
```

Script Output | Task completed in 2.791 seconds

```
Custom Customer First Name  Customer Last Name             Customer Ph Customer Email                                  Sale Sales
------ -------------------- ------------------------------ ----------- ---------------------------------------------- ---- ------
c00001 Robert               Thornberry                     01234567898 bob.thornberry@heatmail.com                    sr01 Charle
c00101 John                 Doe                            03216547808 unknown@here.com                               sr01 Charle
c01986 Maria                Galant                         01442736589 margal87@delphiview.com                        sr03 Barry

Custom Customer First Name  Customer Last Name             Customer Ph Customer Email                                  Sale Sales
------ -------------------- ------------------------------ ----------- ---------------------------------------------- ---- ------
c00001 Robert               Thornberry                     01234567898 bob.thornberry@heatmail.com                    sr01 Charle

'THECOSTOFTHE'   NAME                'ONTHISDAYWAS'        Output
---------------- ------------------- ----------------- ----------
The cost of the  under shirt          on this day was       14.99
```