

## **SECD2523-10 DATABASE**

# SEMESTER 1 SESSION 2023/2024

LAB 4 – DML3

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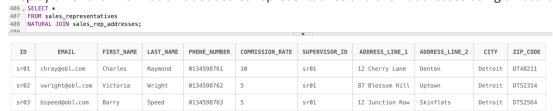
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## Write SELECT Statements Using Data From Multiple Tables Using Equijoins and Non-Equijoins (S6L9 Objective 1)

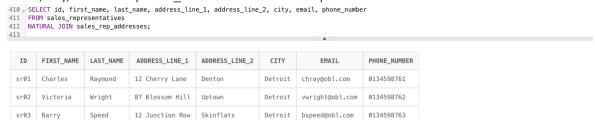
In this exercise you will write SELECT statements to access data from more than one table.

## Part 1: Creating Natural Joins.

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

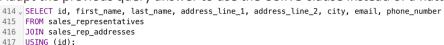


2. Adapt the query from the previous question to only show the id, first name, last name, address line 1, address line 2, city, email and phone number for the sales representatives.



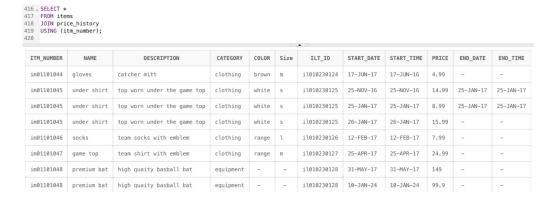
### Part 2: Creating Joins with the USING Clause

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



ID	FIRST_NAME	LAST_NAME	ADDRESS_LINE_1	ADDRESS_LINE_2	CITY	EMAIL	PHONE_NUMBER	
sr01	Charles	Raymond	12 Cherry Lane	Denton	Detroit	chray@obl.com	0134598761	
sr02	Victoria	Wright	87 Blossom Hill	Uptown	Detroit	vwright@obl.com	0134598762	
sr03	Barry	Speed	12 Junction Row	Skinflats	Detroit	bspeed@obl.com	0134598763	

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



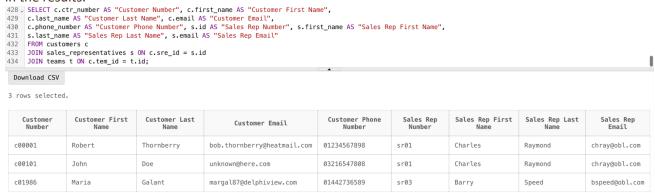
## Part 3: Creating Joins with the ON Clause

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.

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

#### 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.



## Part 5: Applying Additional Conditions to a Join

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



### 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 12<sup>th</sup> of December 2016. The output of the query should look like this:

The cost of the under shirt on this day was 14.99

```
SELECT 'The cost of the ' || i.name || ' on this day was ' || x.price AS "Item Details"

FROM items i JOIN price_history x

ON i.itm_number = x.itm_number

WHERE i.itm_number = 'im01101045'

AND TO_DATE('12-DEC-2016', 'DD-MON-YYYY') BETWEEN x.start_date AND x.end_date;

Item Details

The cost of the under shirt on this day was 14.99
```

## Section 6 Lesson 9 Exercise 2: Joining Tables Using JOIN

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

## Part 1: Use a Self-Join to Join a Table to Itself (S6L9 Objective 2)

1. Write a query that will display who the supervisor is for each of the sales representatives. The information should be displayed in two columns, the first column will be the first name and last name of the sales representative and the second will be the first name and last name of the supervisor. The column aliases should be Rep and Supervisor.

	epresentatives a Jo	.last_name AS "Rep",b.first_name    ' '    b.last_name AS "Supervisor" IN sales_representatives b
Rep	Supervisor	

Rep	Supervisor
Charles Raymond	Charles Raymond
Victoria Wright	Charles Raymond
Barry Speed	Charles Raymond

## Part 2: Use OUTER joins (S6L9 Objective 3)

1. Write a query that will display all of the team and customer information even if there is no match with the table on the left (team).

## SELECT \*

## FROM teams t LEFT OUTER JOIN customers c

## ON (t.id = c.tem\_id);

ID	NAME	NUMBER_OF_PLAYERS	DISCOUNT	CTR_NUMBER	EMAIL	FIRST_NAME	LAST_NAME	PHONE_NUMBER	CURRENT_BALANCE	SRE_ID	TEM_ID	LOYALTY_CARD_NUMBER
t001	Rockets	25	10	c00001	bob.thornberry@heatmail.com	Robert	Thornberry	1234567898	150	sr01	t001	-
t002	Celtics	42	20	c00101	unknown@here.com	John	Doe	3216547808	987.5	sr01	t002	-
t003	Rovers	8	-	c01986	margal87@delphiview.com	Maria	Galant	1442736589	125.65	sr03	t003	-
t004	Jets	10	5	-	-	-	-	-	-	-	-	-

## Part 3: Generating a Cartesian Product (S6L9 Objective 4)

1. Create a Cartesian product between the customer and sales representative tables.

#### SELECT\*

**FROM** customers

CROSS JOIN sales\_representatives;

CTR_NUMBER	EMAIL	FIRST_NAME	LAST_NAME	PHONE_NUMBER	CURRENT_BALANCE	SRE_ID	TEM_ID	LOYALTY_CARD_NUMBER	ID	EMAIL	FIRST_NAME	LAST_NAME	PHONE_NUMBER	COMMISSION_RATE   SUPERVISOR_ID
c00001	bob.thornberry@heatmail.com	Robert	Thornberry	1234567898	150	sr01	t001	-	sr01	chray@obl.com	Charles	Raymond	134598761	10 sr01
c00012	Jjones@freemail.com	Jennifer	Jones	1505214598	0	-	-	lc1015	sr01	chray@obl.com	Charles	Raymond	134598761	10 sr01
c00101	unknown@here.com	John	Doe	3216547808	987.5	sr01	t002		sr01	chray@obl.com	Charles	Raymond	134598761	10 sr01
c00103	MurciaA@globaltech.com	Andrew	Murcia	7715246890	85	-	-	lc2341	sr01	chray@obl.com	Charles	Raymond	134598761	10 sr01
c01986	margal87@delphiview.com	Maria	Galant	1442736589	125.65	sr03	t003	-	sr01	chray@obl.com	Charles	Raymond	134598761	10 sr01
c02001	brianrog@hootech.com	Brian	Rogers	1654564898	50	-	-	Ic4587	sr01	chray@obl.com	Charles	Raymond	134598761	10 sr01
c00001	bob.thornberry@heatmail.com	Robert	Thornberry	1234567898	150	sr01	t001		sr02	vwright@obl.com	Victoria	Wright	134598762	5 sr01
c00012	Jjones@freemail.com	Jennifer	Jones	1505214598	0	-	-	lc1015	sr02	vwright@obl.com	Victoria	Wright	134598762	5 sr01
c00101	unknown@here.com	John	Doe	3216547808	987.5	sr01	t002		sr02	vwright@obl.com	Victoria	Wright	134598762	5 sr01
c00103	MurciaA@globaltech.com	Andrew	Murcia	7715246890	85	-	-	lc2341	sr02	vwright@obl.com	Victoria	Wright	134598762	5 sr01
c01986	margal87@delphiview.com	Maria	Galant	1442736589	125.65	sr03	t003	-	sr02	vwright@obl.com	Victoria	Wright	134598762	5 sr01
c02001	brianrog@hootech.com	Brian	Rogers	1654564898	50	-	-	Ic4587	sr02	vwright@obl.com	Victoria	Wright	134598762	5 sr01
c00001	bob.thornberry@heatmail.com	Robert	Thornberry	1234567898	150	sr01	t001	-	sr03	bspeed@obl.com	Barry	Speed	134598763	5 sr01
c00012	Jjones@freemail.com	Jennifer	Jones	1505214598	0	-	-	lc1015	sr03	bspeed@obl.com	Barry	Speed	134598763	5 sr01
c00101	unknown@here.com	John	Doe	3216547808	987.5	sr01	t002	-	sr03	bspeed@obl.com	Barry	Speed	134598763	5 sr01
c00103	MurciaA@globaltech.com	Andrew	Murcia	7715246890	85	-	-	lc2341	sr03	bspeed@obl.com	Barry	Speed	134598763	5 sr01
c01986	margal87@delphiview.com	Maria	Galant	1442736589	125.65	sr03	t003	-	sr03	bspeed@obl.com	Barry	Speed	134598763	5 sr01
c02001	brianrog@hootech.com	Brian	Rogers	1654564898	50	-	-	Ic4587	sr03	bspeed@obl.com	Barry	Speed	134598763	5 sr01