

UNIVERSITI TEKNOLOGI MALAYSIA SEMESTER 1, SESSION 2023/2024

LAB EXERCISE 4

SECD2523 : DATABASE SECTION 10

NAME:	AINNUR ALIS NABELLA BINTI AHMAD SHUKRI
MATRIC NUMBER:	B23CS0003
LECTURER'S NAME:	MRS. ROZILAWATI BINTI DOLLAH @ MD ZAIN

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.



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.

```
1 v SELECT
2
       sr.id,
 3
       sr.first_name,
 4
       sr.last_name,
      sra.address_line_1,
 6
       sra.address_line_2,
       sra.city,
 8
      sr.email,
       sr.phone_number
10 FROM sales representatives sr
30IN sales_rep_addresses sra ON sr.id = sra.id;
```

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

Part 2: Creating Joins with the USING Clause

Victoria

Barrv

sr03

Wright

Speed

87 Blossom Hill

12 Junction Row

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

```
1 V SELECT
        id,
3
        first name.
        last name.
5
        address line 1,
 6
        address line 2,
        city,
 8
        email,
q
        phone_number
10
   FROM sales_representatives
11 JOIN sales_rep_addresses USING (id);
         FIRST_NAME
                                                                                      EMAIL
   ID
                      LAST NAME
                                   ADDRESS LINE 1
                                                     ADDRESS LINE 2
                                                                        CITY
                                                                                                    PHONE NUMBER
  sr01
         Charles
                      Raymond
                                   12 Cherry Lane
                                                     Denton
                                                                       Detroit
                                                                                 chray@obl.com
                                                                                                   0134598761
```

Skinflats

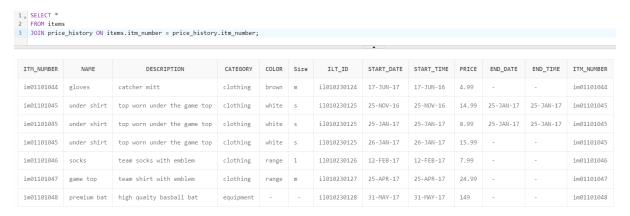
2. Display all of the information about items and their price history by joining the items and price_history tables.

Detroit

vwright@obl.com

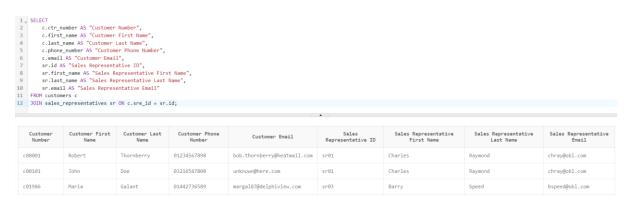
bspeed@obl.com

0134598762 0134598763



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.



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.

```
1 v SELECT
      c.ctr_number AS "Customer Number",
 3
      c.first_name AS "Customer First Name",
      c.last_name AS "Customer Last Name",
 4
      c.phone_number AS "Customer Phone Number",
 5
      c.email AS "Customer Email",
 7
      sr.id AS "Sales Representative ID",
      sr.first_name AS "Sales Representative First Name",
 8
      sr.last_name AS "Sales Representative Last Name",
 9
       sr.email AS "Sales Representative Email",
10
     t.name AS "Team Name"
11
12 FROM customers c
13 JOIN sales_representatives sr ON c.sre_id = sr.id
14  JOIN teams t ON c.tem_id = t.id;
```

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

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.

```
1. SELECT
2. c.ctr_number AS "Customer Number",
3. c.first_name AS "Customer First Name",
4. c.last_name AS "Customer Last Name",
5. c.phone_number AS "Customer Last Name",
6. c.email AS "Customer Email",
7. sr.id AS "sales Representative ID",
8. sr.first_name AS "Sales Representative ID",
9. sr.last_name AS "Sales Representative Last Name",
10. sr.email AS "Sales Representative Email",
11. t.name AS "Team Name"
12. FADOM customers Customers Customer Sales Name",
13. JOIN sales_representatives or OH c.sre_id = sr.id
14. JOIN team to Histomers Customer Customer Sales Representative Email Name Name
```

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

```
Result

The cost of the under shirt on 25TH November 2016 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)

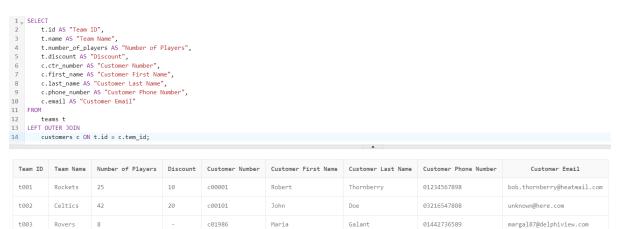
1. Write a query that will display who the supervisor is for each of the sales representatives. The information should be displayed in two columns, the first column will be the first name and last name of the sales representative and the second will be the first name and last name of the supervisor.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

```
1 v SELECT
2     rep.first_name || ' ' || rep.last_name AS "Rep",
3     sup.first_name || ' ' || sup.last_name AS "Supervisor"
4     FROM
5     sales_representatives rep
6     LEFT JOIN
7     sales_representatives sup ON rep.supervisor_id = sup.id;
```

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).



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

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

```
1 v SELECT
 2 c.ctr_number AS "Customer Number",
       c.first_name AS "Customer First Name",
 3
 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",
 7
       sr.first_name AS "Sales Representative First Name",
 8
       sr.last_name AS "Sales Representative Last Name",
 9
      sr.phone_number AS "Sales Representative Phone Number",
sr.email AS "Sales Representative Email"
10
11
12 FROM
     customers c
13
14 CROSS JOIN
15 sales_representatives sr;
```

Customer Number	Customer First Name	Customer Last Name	Customer Phone Number	Customer Email	Sales Representative ID	Sales Representative First Name	Sales Representative Last Name	Sales Representative Phone Number	Sales Representative Email
c00001	Robert	Thornberry	01234567898	bob.thornberry@heatmail.com	sr01	Charles	Raymond	0134598761	chray@obl.com
c00012	Jennifer	Jones	01505214598	Jjones@freemail.com	sr01	Charles	Raymond	0134598761	chray@obl.com
c00101	John	Doe	03216547808	unknown@here.com	sr01	Charles	Raymond	0134598761	chray@obl.com
c00103	Andrew	Murcia	07715246890	MurciaA@globaltech.com	sr01	Charles	Raymond	0134598761	chray@obl.com
c01986	Maria	Galant	01442736589	margal87@delphiview.com	sr01	Charles	Raymond	0134598761	chray@obl.com
c00001	Robert	Thornberry	01234567898	bob.thornberry@heatmail.com	sr02	Victoria	Wright	0134598762	vwright@obl.com
c00012	Jennifer	Jones	01505214598	Jjones@freemail.com	sr02	Victoria	Wright	0134598762	vwright@obl.com
c00101	John	Doe	03216547808	unknown@here.com	sr02	Victoria	Wright	0134598762	vwright@obl.com
c00103	Andrew	Murcia	07715246890	MurciaA@globaltech.com	sr02	Victoria	Wright	0134598762	vwright@obl.com
c01986	Maria	Galant	01442736589	margal87@delphiview.com	sr02	Victoria	Wright	0134598762	vwright@obl.com
c00001	Robert	Thornberry	01234567898	bob.thornberry@heatmail.com	sr03	Barry	Speed	0134598763	bspeed@obl.com
c00012	Jennifer	Jones	01505214598	Jjones@freemail.com	sr03	Barry	Speed	0134598763	bspeed@obl.com
c00101	John	Doe	03216547808	unknown@here.com	sr03	Barry	Speed	0134598763	bspeed@obl.com
c00103	Andrew	Murcia	07715246890	MurciaA@globaltech.com	sr03	Barry	Speed	0134598763	bspeed@obl.com
c01986	Maria	Galant	01442736589	margal87@delphiview.com	sr03	Barry	Speed	0134598763	bspeed@obl.com