

SQL 4

Name : Wong Ding Jiu

Matric. No : A22EC5028

Section : 06

Lecturer : Dr. Izyan Izzati

SQL4 - DML3 Part 1 (Dfo_6_9_1_Project)

Section 6 Lesson 9 Exercise 1 : Joining Tables Using JOIN

Part 1 : Creating Natural Joins

(1) **SELECT ***

FROM sales-representatives NATURAL JOIN sales-rep-addresses;

1	SELECT *
2	FROM sales-representatives NATURAL JOIN sales-rep-addresses;

Results	Explain	Describe	Saved SQL	History						
ID	EMAIL	FIRST_NAME	LAST_NAME	PHONE_NUMBER	COMMISSION_RATE	SUPERVISOR_ID	ADDRESS_LINE_1	ADDRESS_LINE_2	CITY	ZIP_CODE
sr01	chray@obl.com	Charles	Raymond	0134598761	10	sr01	12 Cherry Lane	Denton	Detroit	DT48211
sr02	vwright@obl.com	Victoria	Wright	0134598762	5	sr01	87 Blossom Hill	Uptown	Detroit	DT52314
sr03	bspeed@obl.com	Barry	Speed	0134598763	5	sr01	12 Junction Row	Skinflats	Detroit	DT52564

(2) **SELECT id, first_name, last_name, address_line_1, address_line_2, city, email, phone_number**

FROM sales-representatives NATURAL JOIN sales-rep-addresses;

1	SELECT id, first_name, last_name, address_line_1, address_line_2, city, email, phone_number
2	FROM sales-representatives NATURAL JOIN sales-rep-addresses;

Results	Explain	Describe	Saved SQL	History			
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

(1) **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);**

1	SELECT id, first_name, last_name, address_line_1, address_line_2, city, email, phone_number
2	FROM sales-representatives JOIN sales-rep-addresses
3	USING (id);

Results	Explain	Describe	Saved SQL	History			
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) `SELECT *`

`FROM items JOIN price_history`
`USING (itm_number);`

```
1 SELECT *
2 FROM items JOIN price_history
3 USING (itm_number);
```

Results	Explain	Describe	Saved SQL	History							
ITM_NUMBER	NAME	DESCRIPTION	CATEGORY	COLOR	SIZE	ILT_ID	START_DATE	START_TIME	PRICE	END_DATE	END_TIME
im01101044	gloves	catcher mitt	clothing	brown	m	il010230124	06/17/2017	06/17/2016	4.99	-	-
im01101045	under shirt	top worn under the game top	clothing	white	s	il010230125	11/25/2016	11/25/2016	14.99	01/25/2017	01/25/2017
im01101045	under shirt	top worn under the game top	clothing	white	s	il010230125	01/25/2017	01/25/2017	8.99	01/25/2017	01/25/2017
im01101045	under shirt	top worn under the game top	clothing	white	s	il010230125	01/26/2017	01/26/2017	15.99	-	-
im01101046	socks	team socks with emblem	clothing	range	l	il010230126	02/12/2017	02/12/2017	7.99	-	-
im01101047	game top	team shirt with emblem	clothing	range	m	il010230127	04/25/2017	04/25/2017	24.99	-	-
im01101048	premium bat	high quality baseball bat	equipment	-	-	il010230128	05/31/2017	05/31/2017	149	11/09/2023	11/09/2023
im01101048	premium bat	high quality baseball bat	equipment	-	-	il010230128	11/09/2023	11/09/2023	99.99	-	-

Part 3: Creating Joins with the ON clause

(1) `SELECT c.ctr_number, c.first_name, c.last_name, c.phone_number, c.email,`
`s.id, s.first_name, s.last_name, s.email`
`FROM customers c JOIN salesRepresentatives s`
`ON (c.sre_id = s.id);`

```
1 SELECT c.ctr_number, c.first_name, c.last_name, c.phone_number, c.email, s.id, s.first_name, s.last_name, s.email
2 FROM customers c JOIN salesRepresentatives s
3 ON (c.sre_id=s.id);
```

Results	Explain	Describe	Saved SQL	History				
CTR_NUMBER	FIRST_NAME	LAST_NAME	PHONE_NUMBER	EMAIL	ID	FIRST_NAME	LAST_NAME	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

Part 4: Creating Three-Way Joins with the ON clause

(1) `SELECT c.ctr_number, c.first_name AS "CTR-FIRST_NAME", c.last_name`
`AS "CTR-LAST_NAME", c.phone_number AS "CTR-PHONE-NUMBER",`
`c.email AS "CTR-EMAIL", s.id, s.first_name AS "SALES-FIRST-NAME", c.last_name`
`AS "SALES-LAST-NAME", s.email AS "SALES-EMAIL", t.name AS "TEAM NAME"`
`FROM customers c JOIN salesRepresentatives s`
`ON (c.sre_id = s.id)`
`JOIN teams t`
`ON (c.team_id = t.id);`

```

1 SELECT c.ctr_number , c.first_name AS "CTR_FIRST_NAME", c.last_name AS "CTR_LAST_NAME", c.phone_number AS "CTR_PHONE_NUMBER", c.email AS "CTR_EMAIL", s.id,
2 s.first_name AS "SALES_FIRST_NAME", s.last_name AS "SALES_LAST_NAME", s.email AS "SALES_EMAIL", t.name AS "TEAM NAME"
3 FROM customers c JOIN sales_representatives s
4 ON (c.sre_id=s.id)
5 JOIN teams t
6 ON (c.team_id=t.id)

```

Results	Explain	Describe	Saved SQL	History					
CTR_NUMBER	CTR_FIRST_NAME	CTR_LAST_NAME	CTR_PHONE_NUMBER	CTR_EMAIL	ID	SALES_FIRST_NAME	SALES_LAST_NAME	SALES_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) `SELECT c.ctr_number, c.first_name AS CTR_FIRST_NAME", c.last_name AS "CTR_LAST_NAME", c.phone_number AS "CTR_PHONE_NUMBER", c.email AS "CTR_EMAIL", s.id, s.first_name AS "SALES_FIRST_NAME", c.last_name AS "SALES_LAST_NAME", s.email AS "SALES_EMAIL", t.name AS "TEAM NAME"`
`FROM customers c JOIN sales_representatives s`
`ON (c.sre_id = s.id)`
`JOIN teams t`
`ON (c.team_id = t.id);`
`WHERE c.ctr_number = 'c00001';`

```

1 SELECT c.ctr_number , c.first_name AS "CTR_FIRST_NAME", c.last_name AS "CTR_LAST_NAME", c.phone_number AS "CTR_PHONE_NUMBER", c.email AS "CTR_EMAIL", s.id,
2 s.first_name AS "SALES_FIRST_NAME", s.last_name AS "SALES_LAST_NAME", s.email AS "SALES_EMAIL", t.name AS "TEAM NAME"
3 FROM customers c JOIN sales_representatives s
4 ON (c.sre_id=s.id)
5 JOIN teams t
6 ON (c.team_id=t.id)
7 WHERE c.ctr_number='c00001';

```

Results	Explain	Describe	Saved SQL	History					
CTR_NUMBER	CTR_FIRST_NAME	CTR_LAST_NAME	CTR_PHONE_NUMBER	CTR_EMAIL	ID	SALES_FIRST_NAME	SALES_LAST_NAME	SALES_EMAIL	TEAM NAME
c00001	Robert	Thornberry	01234567898	bob.thornberry@heatmail.com	sr01	Charles	Raymond	chray@obl.com	Rockets

Part 6: Retrieving Records with Non-equi-joins

(1) `SELECT 'The cost of the ' || i.name || ' on this day was ' || p.price AS "Item Cost"`
`FROM items i JOIN price_history p`
`ON (i.item_number = p.item_number)`
`WHERE i.item_number = 'im01101045'`
`AND (TO_DATE ('16-Dec-2016', 'DD-MM-YYYY') BETWEEN p.start_date AND p.end_date);`

```

1 SELECT 'The cost of the ' || i.name || ' on this day was ' || p.price AS "Price Cost"
2 FROM items i JOIN price_history p
3 ON (i.item_number=p.item_number)
4 WHERE i.item_number = 'im01101045'
5 AND (TO_DATE ('16-Dec-2016', 'DD-MM-YYYY') BETWEEN p.start_date AND p.end_date);

```

Results Explain Describe Saved SQL History

Price Cost

The cost of the under shirt on this day was 14.99

SQL 4 - DML 3 Part 2 (DFo-6-9-2-Project)

Section 6 Lesson 9 Exercise 2: Joining Tables Using JOIN

Part 1: Use a Self-Join to Join a Table to itself

(1) `SELECT r.first_name || ' ' || r.last_name AS "Rep", s.first_name
|| ' ' || s.last_name AS "Supervisor"
FROM sales-representatives r JOIN sales-representatives s
ON (r.supervisor_id = s.id)`

```
1 SELECT r.first_name || ' ' || r.last_name AS "Rep", s.first_name || ' ' || s.last_name AS "Supervisor"
2 FROM sales_representatives r JOIN sales_representatives s
3 ON (r.supervisor_id = s.id);
4
```

Results	Explain	Describe	Saved SQL	History
Rep				Supervisor
Charles Raymond				Charles Raymond
Victoria Wright				Charles Raymond
Barry Speed				Charles Raymond

Part 2: Use OUTER joins

(1) `SELECT *`

`FROM teams t RIGHT OUTER JOIN customers c
ON (t.id = c.team_id);`

```
1 SELECT *
2 FROM teams t RIGHT OUTER JOIN customers c
3 ON (t.id = c.team_id);
4
```

Results	Explain	Describe	Saved SQL	History								
ID	NAME	NUMBER_OF_PLAYERS	DISCOUNT	CTR_NUMBER	EMAIL	FIRST_NAME	LAST_NAME	PHONE_NUMBER	CURRENT_BALANCE	SRE_ID	TEM_ID	LOYALTY_CARD_NUMBER
-	-	-	-	c02001	brianrog@hootech.com	Brian	Rogers	01654564898	50	-	-	lc4587
t001	Rockets	25	10	c00001	bob.thornberry@heatmail.com	Robert	Thornberry	01234567898	150	sr01	t001	-
-	-	-	-	c00012	Jjones@freemail.com	Jennifer	Jones	01505214598	0	-	-	lc1015
t002	Celtics	42	20	c00101	unknown@here.com	John	Doe	03216547808	9875	sr01	t002	-
-	-	-	-	c00103	MurciaA@globaltech.com	Andrew	Murcia	07715246890	85	-	-	lc2341
t003	Rovers	8	-	c01986	margal87@delphiview.com	Maria	Galant	01442736589	125.65	sr03	t003	-

Part 3: Generating a Cartesian Product

(1) **SELECT ***
FROM customers
CROSS JOIN sales_representatives ;

Results Explain Describe Saved SQL History															
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	brian@hootech.com	Brian	Rogers	0165-654898	50	-	-	1c4587	srl1	chray@obl.com	Charles	Raymond	0154987651	10	srl1
c00001	bob.thomberry@hotmail.com	Robert	Thomberry	01234567898	150	srl1	1001	-	srl1	chray@obl.com	Charles	Raymond	0154987651	10	srl1
c00012	jones@fremail.com	Jennifer	Jones	0150521498	0	-	-	1c1016	srl1	chray@obl.com	Charles	Raymond	0154987651	10	srl1
c00101	unknown@here.com	John	Doe	03216547808	9875	srl1	1002	-	srl1	chray@obl.com	Charles	Raymond	0154987651	10	srl1
c00103	Murda@globaltech.com	Andrew	Murda	07763446890	85	-	-	1c2341	srl1	chray@obl.com	Charles	Raymond	0154987651	10	srl1
c01986	margalit@delphiview.com	Maria	Galant	01442736589	125.65	srl5	1003	-	srl1	chray@obl.com	Charles	Raymond	0154987651	10	srl1
c02001	brian@hootech.com	Brian	Rogers	0165-654898	50	-	-	1c4587	srl2	vwright@obl.com	Victoria	Wright	0154987652	5	srl1
c00001	bob.thomberry@hotmail.com	Robert	Thomberry	01234567898	150	srl1	1001	-	srl2	vwright@obl.com	Victoria	Wright	0154987652	5	srl1
c00012	jones@fremail.com	Jennifer	Jones	0150521498	0	-	-	1c1016	srl2	vwright@obl.com	Victoria	Wright	0154987652	5	srl1
c00101	unknown@here.com	John	Doe	03216547808	9875	srl1	1002	-	srl2	vwright@obl.com	Victoria	Wright	0154987652	5	srl1
c00103	Murda@globaltech.com	Andrew	Murda	07763446890	85	-	-	1c2341	srl2	vwright@obl.com	Victoria	Wright	0154987652	5	srl1
c01986	margalit@delphiview.com	Maria	Galant	01442736589	125.65	srl5	1003	-	srl2	vwright@obl.com	Victoria	Wright	0154987652	5	srl1
c02001	brian@hootech.com	Brian	Rogers	0165-654898	50	-	-	1c4587	srl3	bspeed@obl.com	Barry	Speed	0154987653	5	srl1
c00001	bob.thomberry@hotmail.com	Robert	Thomberry	01234567898	150	srl1	1001	-	srl3	bspeed@obl.com	Barry	Speed	0154987653	5	srl1
c00012	jones@fremail.com	Jennifer	Jones	0150521498	0	-	-	1c1016	srl3	bspeed@obl.com	Barry	Speed	0154987653	5	srl1
c00101	unknown@here.com	John	Doe	03216547808	9875	srl1	1002	-	srl3	bspeed@obl.com	Barry	Speed	0154987653	5	srl1
c00103	Murda@globaltech.com	Andrew	Murda	07763446890	85	-	-	1c2341	srl3	bspeed@obl.com	Barry	Speed	0154987653	5	srl1
c01986	margalit@delphiview.com	Maria	Galant	01442736589	125.65	srl5	1003	-	srl3	bspeed@obl.com	Barry	Speed	0154987653	5	srl1