

## Lab 4

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### SQL4-DML3 PART 1

#### Part 1: Creating Natural Joins.

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

```
SELECT * FROM sales_representatives NATURAL JOIN sales_rep_addresses;
```

ID	EMAIL	FIRST_NAME	LAST_NAME	PHONE_NUMBER	COMMISSION_RATE	SUPERVISOR_ID	ADDRESS_LINE_1	ADDRESS_LINE_2	CITY	ZIP_CODE
sr03	bspeed@obl.com	Barry	Speed	0134598763	5	sr01	12 Junction Row	Skinflats	Detroit	D152564
sr02	vwright@obl.com	Victoria	Wright	0134598762	5	sr01	87 Blossom Hill	Uptown	Detroit	D152514
sr01	chray@obl.com	Charles	Raymond	0134598761	10	sr01	12 Cherry Lane	Denton	Detroit	D148211

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.

```
SELECT id, first_name, last_name, address_line_1, address_line_2, city, email, phone_number
```

```
FROM sales_representatives NATURAL JOIN sales_rep_addresses;
```

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

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

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

```
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)
```

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

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

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

ITM_NUMBER	NAME	DESCRIPTION	CATEGORY	COLOR	Size	ILT_ID	START_DATE	START_TIME	PRICE	END_DATE	END_TIME
im0101045	under shirt	top worn under the game top	clothing	white	s	#010230125	11/25/2016	11/25/2016	14.99	01/25/2017	01/25/2017
im0101048	premium bat	high quality baseball bat	equipment	-	-	#010230128	05/31/2017	05/31/2017	149	12/15/2023	12/15/2023
im0101048	premium bat	high quality baseball bat	equipment	-	-	#010230128	12/15/2023	12/15/2023	9999	-	-
im0101046	socks	team socks with emblem	clothing	range	l	#010230126	02/12/2017	02/12/2017	799	-	-
im0101047	game top	team shirt with emblem	clothing	range	m	#010230127	04/25/2017	04/25/2017	2499	-	-
im0101044	gloves	catcher mitt	clothing	brown	m	#010230124	06/11/2017	06/11/2016	499	-	-
im0101045	under shirt	top worn under the game top	clothing	white	s	#010230125	01/25/2017	01/25/2017	8.99	01/25/2017	01/25/2017
im0101045	under shirt	top worn under the game top	clothing	white	s	#010230125	01/26/2017	01/26/2017	15.99	-	-

### 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 first 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.

```
SELECT c.ctr_number "Customer Number", c.first_name "Customer First Name", c.last_name  
"Customer Last Name", c.phone_number "Customer Phone Number", c.email "Customer Email", s.id  
"Sales Representative ID", s.first_name "Sales Representative First Name", s.last_name "Sales  
Representative Last Name", s.email "Sales Representative Email"  
  
FROM customers c JOIN sales_representatives s  
  
ON ( s.id = c.sre_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
c00001	Robert	Thornberry	01234567898	bob.thornberry@heatmail.com	sr01	Charles	Raymond	chray@obl.com
c01986	Maria	Galant	01442736589	margal87@delphiview.com	sr03	Barry	Speed	bspeed@obl.com
c00101	John	Doe	03216547808	unknown@here.com	sr01	Charles	Raymond	chray@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.

```
SELECT c.ctr_number "Customer Number", c.first_name "Customer First Name", c.last_name  
"Customer Last Name", c.phone_number "Customer Phone Number", c.email "Customer Email", s.id  
"Sales Representative ID", s.first_name "Sales Representative First Name", s.last_name "Sales  
Representative Last Name", s.email "Sales Representative Email", t.name "Team Name"  
  
FROM customers c JOIN sales_representatives s  
  
ON ( s.id = c.sre_id) 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
c01986	Maria	Galant	01442736589	margal87@delphiview.com	sr03	Barry	Speed	bspeed@obl.com	Rovers
c00101	John	Doe	03216547808	unknown@here.com	sr01	Charles	Raymond	chray@obl.com	Celtics

### 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.

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



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	SEC_ID	TEN_ID	LOYALTY_CARD_NUMBER	ID	EMAIL	FIRST_NAME	LAST_NAME	PHONE_NUMBER	COMMISSION_RATE	SUPERVISOR_ID
00001	bob.ford@ighearnal.com	Robert	Thurberry	0204647898	50	-	5001	-	W03	helen@igold.com	Betty	Speed	0346498763	5	W01
00003	helen@igold@tech.com	Andrew	Harde	0776294890	85	-	-	82349	W03	helen@igold.com	Betty	Speed	0346498763	5	W01
00006	helen@igold@fnew.com	Maria	Gibert	0344779009	125.45	W03	5003	-	W03	helen@igold.com	Betty	Speed	0346498763	5	W01
00001	helen@igold@tech.com	Brian	Regers	0962644898	50	-	-	84687	W03	helen@igold.com	Betty	Speed	0346498763	5	W01
00002	helen@ighearnal.com	Jennifer	Jones	0962644898	0	-	-	84687	W03	helen@igold.com	Betty	Speed	0346498763	5	W01
00001	helen@ighearnal.com	John	Doe	0204647898	1875	W01	5002	-	W03	helen@igold.com	Betty	Speed	0346498763	5	W01
00001	bob.ford@ighearnal.com	Robert	Thurberry	0204647898	50	-	5001	-	W02	helen@igold.com	Victoria	Wright	0346498762	5	W01
00003	helen@igold@tech.com	Andrew	Harde	0776294890	85	-	-	82349	W02	helen@igold.com	Victoria	Wright	0346498762	5	W01
00006	helen@igold@fnew.com	Maria	Gibert	0344779009	125.45	W03	5003	-	W02	helen@igold.com	Victoria	Wright	0346498762	5	W01
00001	helen@igold@tech.com	Brian	Regers	0962644898	50	-	-	84687	W02	helen@igold.com	Victoria	Wright	0346498762	5	W01
00002	helen@ighearnal.com	Jennifer	Jones	0962644898	0	-	-	84687	W02	helen@igold.com	Victoria	Wright	0346498762	5	W01
00001	helen@ighearnal.com	John	Doe	0204647898	1875	W01	5002	-	W02	helen@igold.com	Victoria	Wright	0346498762	5	W01
00001	bob.ford@ighearnal.com	Robert	Thurberry	0204647898	50	-	5001	-	W01	cheryl@igold.com	Charles	Reynard	0346498761	10	W01
00003	helen@igold@tech.com	Andrew	Harde	0776294890	85	-	-	82349	W01	cheryl@igold.com	Charles	Reynard	0346498761	10	W01
00006	helen@igold@fnew.com	Maria	Gibert	0344779009	125.45	W03	5003	-	W01	cheryl@igold.com	Charles	Reynard	0346498761	10	W01
00001	helen@igold@tech.com	Brian	Regers	0962644898	50	-	-	84687	W01	cheryl@igold.com	Charles	Reynard	0346498761	10	W01
00002	helen@ighearnal.com	Jennifer	Jones	0962644898	0	-	-	84687	W01	cheryl@igold.com	Charles	Reynard	0346498761	10	W01
00001	helen@ighearnal.com	John	Doe	0204647898	1875	W01	5002	-	W01	cheryl@igold.com	Charles	Reynard	0346498761	10	W01