UTM UNIVERSITI TEKNOLOGI MALAYSIA

FACULTY OF COMPUTING
UTM Johor Bahru

**SECD 2523**

**SECTION 10**

**LECTURER: ROZILAWATI BINTI DOLLAH @ MD ZAIN**

# PROJECT TITLE: SQL LAB4 (DML3) PART1

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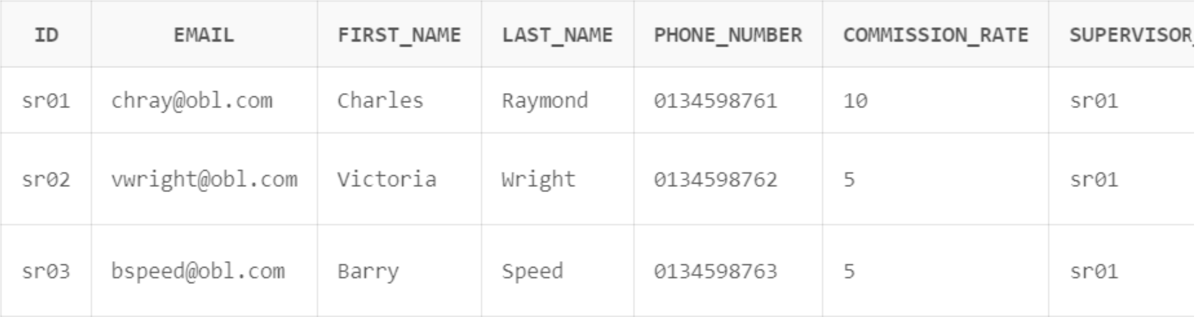
**MATRIC NUMBER: A22EC0116**

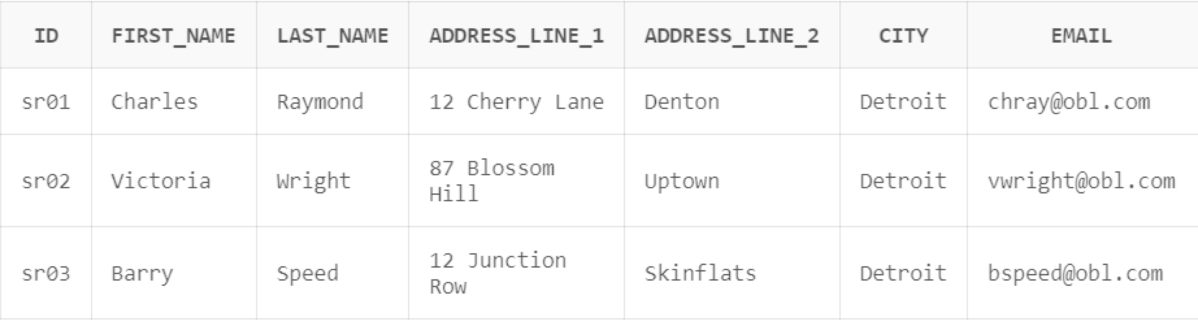
Part 1: Creating Natural Joins.

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_ |
|---|---|---|---|---|---|---|
| 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 |

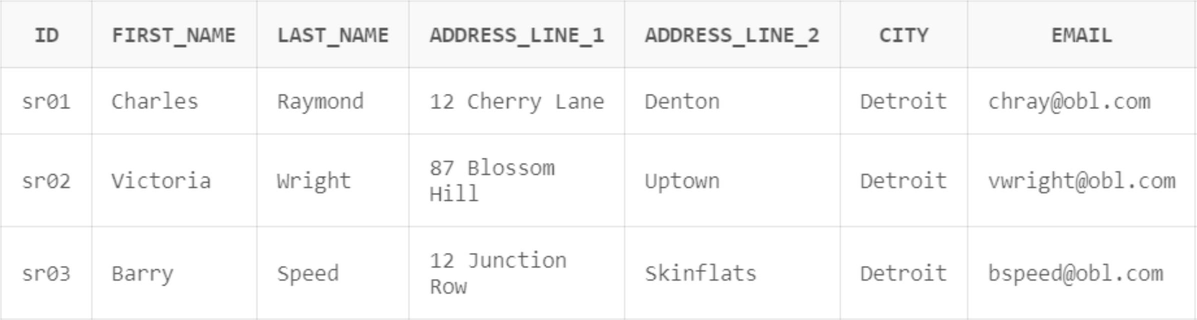
2. Adapt the query from the previous question to only show the id, first name, last name, address line 1, address line 2, city, email and phone_number for the sales representatives.
SELECT id, first_name, last_name, address_line_1, address_line_2, city,email, phone_number FROM sales_representatives NATURAL JOIN sales_rep_addresses;



| ID | FIRST_NAME | LAST_NAME | ADDRESS_LINE_1 | ADDRESS_LINE_2 | CITY | EMAIL |
|---|---|---|---|---|---|---|
| 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 |

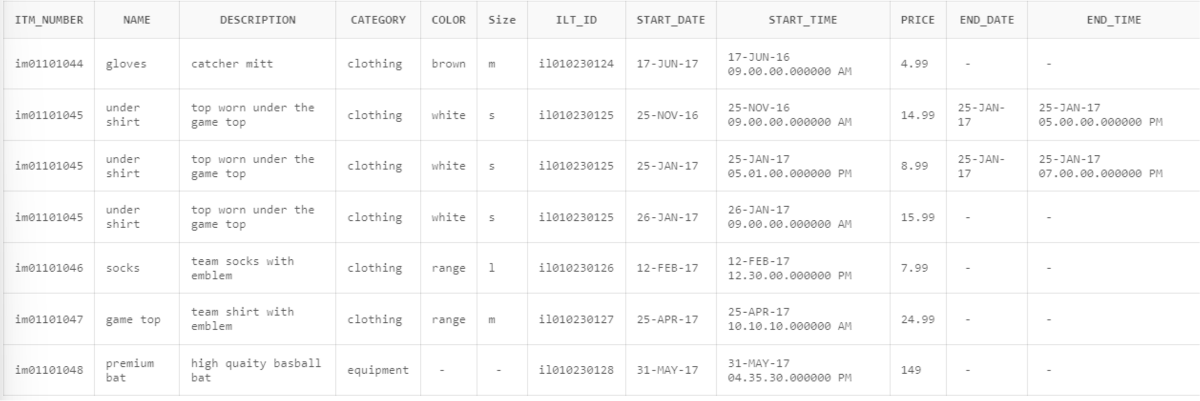
Part 2: Creating Joins with the USING Clause

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

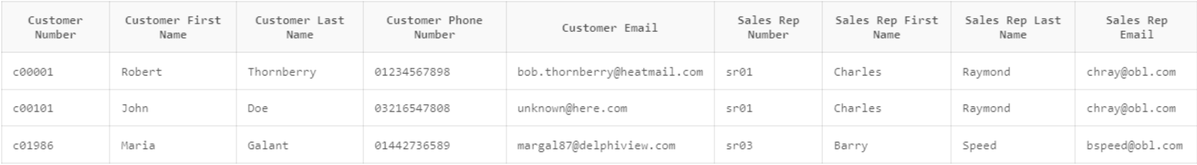
2. Display all of the information about items and their price history by joining the items and price_history tables.
   SELECT* FROM items JOIN price_history USING (itm_number);



| ITM_NUMBER | NAME | DESCRIPTION | CATEGORY | COLOR | Size | ILT_ID | START_DATE | START_TIME | PRICE | END_DATE | END_TIME |
|---|---|---|---|---|---|---|---|---|---|---|---|
| im01101044 | gloves | catcher mitt | clothing | brown | m | il010230124 | 17-JUN-17 | 17-JUN-16 09.00.00.000000 AM | 4.99 | - | - |
| im01101045 | under shirt | top worn under the game top | clothing | white | s | il010230125 | 25-NOV-16 | 25-NOV-16 09.00.00.000000 AM | 14.99 | 25-JAN-17 | 25-JAN-17 05.00.00.000000 PM |
| im01101045 | under shirt | top worn under the game top | clothing | white | s | il010230125 | 25-JAN-17 | 25-JAN-17 05.01.00.000000 PM | 8.99 | 25-JAN-17 | 25-JAN-17 07.00.00.000000 PM |
| im01101045 | under shirt | top worn under the game top | clothing | white | s | il010230125 | 26-JAN-17 | 26-JAN-17 09.00.00.000000 AM | 15.99 | - | - |
| im01101046 | socks | team socks with emblem | clothing | range | l | il010230126 | 12-FEB-17 | 12-FEB-17 12.30.00.000000 PM | 7.99 | - | - |
| im01101047 | game top | team shirt with emblem | clothing | range | m | il010230127 | 25-APR-17 | 25-APR-17 10.10.10.000000 AM | 24.99 | - | - |
| im01101048 | premium bat | high quaity basball bat | equipment | - | - | il010230128 | 31-MAY-17 | 31-MAY-17 04.35.30.000000 PM | 149 | - | - |

Part 3: Creating Joins with the ON Clause

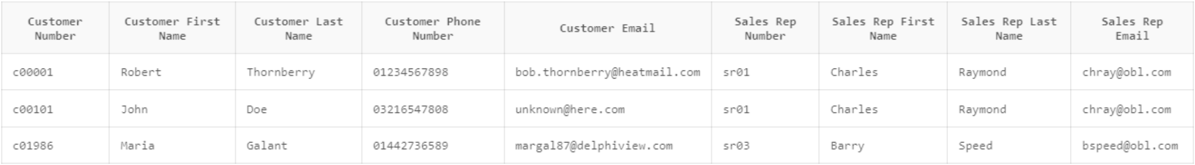
1. Use an ON clause to join the customer and sales representative table so that you display the customer number, customer fist name, customer last name, customer phone number, customer email, sales representative id, sales representative first name, sales representative last name and sales representative email. You will need to use a table alias in your answer as both tables have columns with the same name.
   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", s.id AS "Sales Rep Number", s.first_name AS "Sales Rep First Name", s.last_name AS "Sales Rep Last Name", s.email AS "Sales Rep Email" FROM customers c JOIN sales_representatives s ON c.sre_id = s.id;



| Customer Number | Customer First Name | Customer Last Name | Customer Phone Number | Customer Email | Sales Rep Number | Sales Rep First Name | Sales Rep Last Name | Sales Rep 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. 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 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", s.id AS "Sales Rep Number", s.first_name AS "Sales Rep First Name", s.last_name AS "Sales Rep Last Name", s.email AS "Sales Rep Email" FROM customers c JOIN sales_representatives s ON c.sre_id = s.id JOIN teams t ON c.tem_id = t.id;

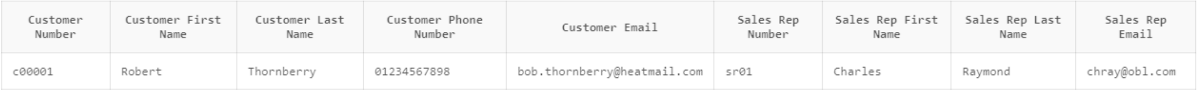


| Customer Number | Customer First Name | Customer Last Name | Customer Phone Number | Customer Email | Sales Rep Number | Sales Rep First Name | Sales Rep Last Name | Sales Rep Email |
|---|---|---|---|---|---|---|---|---|
| c00001 | Robert | Thornberry | 01234567898 | bob.thornberry@heatmail.com | 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 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 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", s.id AS "Sales Rep Number",
s.first_name AS "Sales Rep First Name", s.last_name AS "Sales Rep Last Name",
s.email AS "Sales Rep Email" FROM customers c JOIN sales_representatives s ON
c.sre_id = s.id JOIN teams t ON c.tem_id = t.id WHERE ctr_number = 'c00001';
```

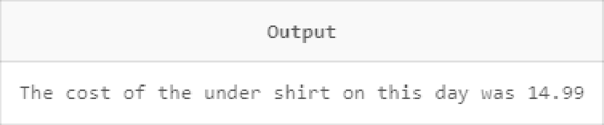


| Customer Number | Customer First Name | Customer Last Name | Customer Phone Number | Customer Email | Sales Rep Number | Sales Rep First Name | Sales Rep Last Name | Sales Rep Email |
|---|---|---|---|---|---|---|---|---|
| c00001 | Robert | Thornberry | 01234567898 | bob.thornberry@heatmail.com | 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 14.9

```
SELECT 'The cost of the ' || i.name || ' on this day was ' || y.price AS "Output"
FROM items i
JOIN price_history y ON i.itm_number = y.itm_number
WHERE i.itm_number = 'im01101045'
AND TO_DATE('12-DEC-2016', 'DD-MON-YYYY') BETWEEN y.start_date
AND y.end_date;
```



| Output |
|---|
| The cost of the under shirt on this day was 14.99 |