

```
!pip install ipython-sql
!pip install mysqlclient
```

 [Show hidden output](#)

```
%load_ext sql
```

```
%sql mysql://badmstudent:badmstudent@badmstudent.cte4bvaqxbgn.us-east-2.rds.amazonaws.com:3306
```

```
%sql show databases
```


 [Show hidden output](#)

```
%%sql
USE sales
```

 [Show hidden output](#)

1. Display the customer name(first name and last name), invoice number(s), and total invoice value(display in 2 decimal places) for each invoice.

```
%%sql
SELECT
    I.INV_NUMBER,
    CUS_FNAME,
    CUS_LNAME,
    ROUND(SUM(LINE_UNITS * LINE_PRICE), 2) AS TOTAL_INV_VALUE
FROM INVOICE AS I
LEFT JOIN CUSTOMER as C
    USING(CUS_CODE)
LEFT JOIN LINE AS L
    USING(INV_NUMBER)
GROUP BY I.INV_NUMBER;
```

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8 rows affected.

INV_NUMBER	CUS_FNAME	CUS_LNAME	TOTAL_INV_VALUE
1001	Myron	Orlando	24.94
1002	Leona	Dunne	9.98
1003	Kathy	Smith	153.85
1004	Leona	Dunne	34.87
1005	Anne	Farriss	70.44
1006	Myron	Orlando	397.83
1007	Amy	O'Brian	34.97
1008	Leona	Dunne	399.15

2. Display invoice numbers that have more than two products listed on them.

```
%%sql
SELECT INV_NUMBER
FROM LINE
WHERE LINE_NUMBER > 2;
```

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4 rows affected.

INV_NUMBER
1003
1006
1008
1006

3. List all the vendors that do not provide any products (V_CODE. Use subqueries)

%%sql

```
SELECT
    V.V_CODE,
    V_NAME,
    P_CODE
FROM VENDOR AS V
LEFT JOIN PRODUCT AS P
    USING(V_CODE)
GROUP BY V.V_CODE
HAVING P_CODE IS NULL;
```

```
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5 rows affected.
  V_CODE  V_NAME    P_CODE
21226    SuperLoo, Inc.  None
22567    Dome Supply    None
24004    Brackman Bros. None
25443    B&K, Inc.      None
25501    Damal Supplies None
```

4. List details of the product that has the lowest price.

%%sql

```
SELECT
    P_DESCRIPT,
    MIN(P_PRICE) AS P_PRICE
FROM PRODUCT
GROUP BY P_DESCRIPT
ORDER BY MIN(P_PRICE)
LIMIT 1;
```

```
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1 rows affected.
  P_DESCRIPT    P_PRICE
Rat-tail file, 1/8-in. fine 4.99
```

%%sql

```
SELECT *
FROM PRODUCT;
```

```
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16 rows affected.
```

P_CODE	P_DESCRIPT	P_INDATE	P_QOH	P_MIN	P_PRICE	P_DISCOUNT	V_CODE
11QER/31	Power painter, 15 psi., 3-nozzle	2013-11-03 00:00:00	8	5	109.99	0.00	25595
13-Q2/P2	7.25-in. pwr. saw blade	2013-12-13 00:00:00	32	15	14.99	0.05	21344
14-Q1/L3	9.00-in. pwr. saw blade	2013-11-13 00:00:00	18	12	17.49	0.00	21344
1546-QQ2	Hrd. cloth, 1/4-in., 2x50	2014-01-15 00:00:00	15	8	39.95	0.00	23119
1558-QW1	Hrd. cloth, 1/2-in., 3x50	2014-01-15 00:00:00	23	5	43.99	0.00	23119
2232/QTY	B&D jigsaw, 12-in. blade	2013-12-30 00:00:00	8	5	109.92	0.05	24288
2232/QWE	B&D jigsaw, 8-in. blade	2013-12-24 00:00:00	6	5	99.87	0.05	24288
2238/QPD	B&D cordless drill, 1/2-in.	2014-01-20 00:00:00	12	5	38.95	0.05	25595
23109-HB	Claw hammer	2014-01-20 00:00:00	23	10	9.95	0.10	21225
23114-AA	Sledge hammer, 12 lb.	2014-01-02 00:00:00	8	5	14.40	0.05	None
54778-2T	Rat-tail file, 1/8-in. fine	2013-12-15 00:00:00	43	20	4.99	0.00	21344
89-WRE-Q	Hicut chain saw, 16 in.	2014-02-07 00:00:00	11	5	256.99	0.05	24288
PVC23DRT	PVC pipe, 3.5-in., 8-ft	2014-02-20 00:00:00	188	75	5.87	0.00	None
SM-18277	1.25-in. metal screw, 25	2014-03-01 00:00:00	172	75	6.99	0.00	21225
SW-23116	2.5-in. wd. screw, 50	2014-02-24 00:00:00	237	100	8.45	0.00	21231
WR3/TT3	Steel matting, 4'x8'x1/6", .5" mesh	2014-01-17 00:00:00	18	5	119.95	0.10	25595

Double-click (or enter) to edit

5. Count the total number of products whose price is lower than the average product price.

%%sql

```
SELECT COUNT(*) AS NO_OF_PROD_LESS_THAN_AVG
FROM PRODUCT
WHERE P_PRICE < (
  SELECT AVG(P_PRICE) FROM PRODUCT
);
```

```
↗ * mysql://badmstudent:***@badmstudent.cte4bvaqxbgn.us-east-2.rds.amazonaws.com:3306
1 rows affected.
NO_OF_PROD_LESS_THAN_AVG
11
```

6. List the number of invoices generated by each customer, along with customer's name.

%%sql

```
SELECT
  C.CUS_CODE,
  CUS_FNAME,
  CUS_LNAME,
  COUNT(INV_NUMBER) AS NO_OF_INVOICES
FROM CUSTOMER AS C
LEFT JOIN INVOICE AS I
  USING(CUS_CODE)
GROUP BY C.CUS_CODE;
```

```
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10 rows affected.
CUS_CODE CUS_FNAME CUS_LNAME NO_OF_INVOICES
10010      Alfred      Ramas      0
10011      Leona       Dunne      3
10012      Kathy       Smith      1
10013      Paul        Olowski    0
10014      Myron       Orlando    2
10015      Amy         O'Brian    1
10016      James       Brown      0
10017      George      Williams   0
10018      Anne        Farriss    1
10019      Olette      Smith      0
```

7. List the total value of the product inventory.

%%sql

```
SELECT SUM(P_PRICE * P_QOH) AS TOTAL_INVENTORY_VALUE
FROM PRODUCT;
```

```
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1 rows affected.
TOTAL_INVENTORY_VALUE
15084.52
```

8. List the vendor information and its total product value.

%%sql

```
SELECT
  V_CODE,
  V_NAME,
  SUM(P_PRICE * P_QOH) AS TOTAL_PRODUCT_VALUE
FROM VENDOR
LEFT JOIN PRODUCT
  USING(V_CODE)
GROUP BY V_CODE;
```

```

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11 rows affected.
  V_CODE  V_NAME      TOTAL_PRODUCT_VALUE
  -----
21225    Bryson, Inc. 1431.13
21226    SuperLoo, Inc. None
21231    D&E Supply  2002.65
21344    Gomez Bros. 1009.07
22567    Dome Supply  None
23119    Randsets Ltd. 1611.02
24004    Brackman Bros. None
24288    ORDVA, Inc. 4305.47
25443    B&K, Inc.   None
25501    Damal Supplies None
25595    Rubicon Systems 3506.42

```

9. Modify the query used in the previous question to list the vendor whose total product value is greater than 2000.

```
%%sql
```

```

SELECT
  V_CODE,
  V_NAME,
  SUM(P_PRICE * P_QOH) AS TOTAL_PRODUCT_VALUE
FROM VENDOR
LEFT JOIN PRODUCT
  USING(V_CODE)
GROUP BY V_CODE
HAVING SUM(P_PRICE * P_QOH) > 2000;

```

```

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3 rows affected.
  V_CODE  V_NAME      TOTAL_PRODUCT_VALUE
  -----
21231    D&E Supply  2002.65
24288    ORDVA, Inc. 4305.47
25595    Rubicon Systems 3506.42

```

10. List all vendors located in 'FL', and the products they supply.

```
%%sql
```

```

SELECT
  V_CODE,
  V_NAME,
  V_STATE,
  P_DESCRIPT
FROM VENDOR
LEFT JOIN PRODUCT
  USING(V_CODE)
GROUP BY V_CODE
HAVING V_STATE = 'FL';

```

```

↗ * mysql://badmstudent:***@badmstudent.cte4bvaqxbgn.us-east-2.rds.amazonaws.com:3306
3 rows affected.
  V_CODE  V_NAME      V_STATE  P_DESCRIPT
  -----
21226    SuperLoo, Inc. FL       None
25443    B&K, Inc.   FL       None
25595    Rubicon Systems FL       Power painter, 15 psi., 3-nozzle

```

11. Generate a listing of all purchases made by the customers.

```
%%sql
```

```


SELECT
  CUS_CODE,
  I.INV_NUMBER,
  INV_DATE,
  P_DESCRIPT,
  LINE_UNITS,

```

```

LINE_PRICE
FROM INVOICE AS I
LEFT JOIN LINE AS L
  USING(INV_NUMBER)
LEFT JOIN PRODUCT AS P
  USING(P_CODE)
ORDER BY
  CUS_CODE,
  INV_NUMBER,
  P_DESCRIPT;

```

 * mysql://badmstudent:***@badmstudent.cte4bvaqxbgn.us-east-2.rds.amazonaws.com:3306
18 rows affected.

CUS_CODE	INV_NUMBER	INV_DATE	P_DESCRIPT	LINE_UNITS	LINE_PRICE
10011	1002	2014-01-16 01:00:00	Rat-tail file, 1/8-in. fine	2	4.99
10011	1004	2014-01-17 00:00:00	Claw hammer	2	9.95
10011	1004	2014-01-17 00:00:00	Rat-tail file, 1/8-in. fine	3	4.99
10011	1008	2014-01-17 02:00:00	Claw hammer	1	9.95
10011	1008	2014-01-17 02:00:00	PVC pipe, 3.5-in., 8-ft	5	5.87
10011	1008	2014-01-17 02:00:00	Steel matting, 4'x8'x1/6", .5" mesh	3	119.95
10012	1003	2014-01-16 01:00:00	7.25-in. pwr. saw blade	5	14.99
10012	1003	2014-01-16 01:00:00	B&D cordless drill, 1/2-in.	1	38.95
10012	1003	2014-01-16 01:00:00	Hrd. cloth, 1/4-in., 2x50	1	39.95
10014	1001	2014-01-16 00:00:00	7.25-in. pwr. saw blade	1	14.99
10014	1001	2014-01-16 00:00:00	Claw hammer	1	9.95
10014	1006	2014-01-17 02:00:00	1.25-in. metal screw, 25	3	6.99
10014	1006	2014-01-17 02:00:00	B&D jigsaw, 12-in. blade	1	109.92
10014	1006	2014-01-17 02:00:00	Claw hammer	1	9.95
10014	1006	2014-01-17 02:00:00	Hicut chain saw, 16 in.	1	256.99
10015	1007	2014-01-17 02:00:00	7.25-in. pwr. saw blade	2	14.99
10015	1007	2014-01-17 02:00:00	Rat-tail file, 1/8-in. fine	1	4.99
10018	1005	2014-01-17 01:00:00	PVC pipe, 3.5-in., 8-ft	12	5.87