

LAB03: View

Submission:

- Submit a lab file named “int205_ **lab03** _xxxxxxxxxxx.docx/.pdf” into the LEB2 system. xxxxxxxxxxxx = your student id

Due Date & Time:

- Lecturer will inform the LAB03 due date and time in lab class.

What is a View?

A view is a logical table based on a table or another view. A view contains no data of its own but is like a window through which data from tables can be viewed or changed. The tables on which a view is based are called **base tables**. The view is stored as a SELECT statement in the data dictionary.

EMPLOYEES table

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY
100	Steven	King	SKING	515.123.4567	17-JUN-87	AD_FRES	2400
101	Neena	Kochhar	NKOCHHAR	515.123.4568	21-SEP-89	AD_VP	1700
102	Lex	De Haan	LDEHAAN	515.123.4569	13-JAN-93	AD_VP	1700
103	Alexander	Hunold	AHUNOLD	590.423.4567	03-JAN-90	IT_PROG	900
104	Bruce	Ernst	BERNST	590.423.4568	21-MAY-91	IT_PROG	600
107	Diana	Lorentz	DLORENTZ	590.423.4567	07-FEB-99	IT_PROG	420
124	Kevin	Mourgos	KMOURGOS	650.123.5234	16-NOV-99	ST_MAN	580
141	Trenna	Rao	TRAI	650.121.3009	17-OCT-95	ST_CLERK	350
142	Curis	Dates	CDATES	650.121.2994	05-JAN-97	ST_CLERK	310
143	Randall	Mates	RMATES	650.121.2074	10-MAR-98	ST_CLERK	290
EMPLOYEE_ID	LAST_NAME		SALARY				
149	Zlotkey		10500		JUL-96	ST_CLERK	250
174	Abel		11000		JAN-00	SA_MAN	1050
176	Taylcr		0600		MAY-96	SA_REP	1100
					MAR-98	SA_REP	860
176	Kimberely	Grant	KGRANT	011.44.1044.429203	24-MAY-99	SA_REP	700
200	Jennifer	Whalen	JWHALEN	515.123.4444	17-SEP-87	AD_ASST	440
201	Michael	Hartstein	MHARTSTE	515.123.5555	17-FEB-96	MK_MAN	1300
202	Pat	Fay	PFAY	603.123.6666	17-AUG-97	MK_REP	600
205	Shelley	Higgins	SHIGGINS	515.123.8080	07-JUN-94	AC_MGR	1200
206	William	Gietz	WGIEZT	515.123.8181	07-JUN-94	AC_ACCOUNT	830

20 rows selected.

Syntax for creating a view

```
CREATE [OR REPLACE] VIEW view_name [(column_list)]
AS select_statement ;
```

Updatable Views:

- A simple view is one that:
 - Derives data from only one table
 - Contains no functions or groups of data
 - Can perform DML operations through the view

Non-updatable Views:

- A complex view is one that:
 - Derives data from many tables
 - Contains functions or groups of data
 - Does not always allow DML operations through the view

The Syntax of CREATE VIEW statement:

Documentation: <https://dev.mysql.com/doc/refman/8.0/en/create-view.html>

Note: The MySQL error code 1064 is a syntax error. This means the reason there's a problem is because MySQL doesn't understand what you're asking it to do.

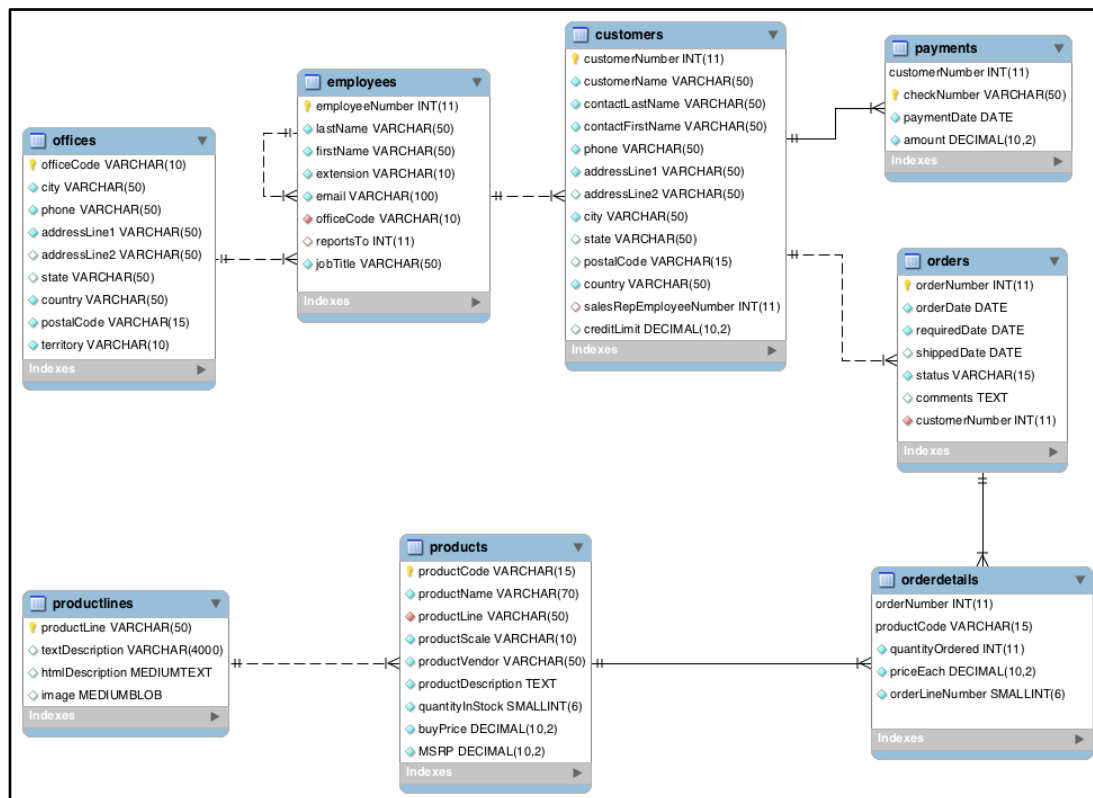
Switch to SQL Editor

- You should specify the classicmodels database before writing SQL statements using the following command:

USE db_name;

The USE statement tells MySQL to use the named database as the default (current) database for subsequent statements. This statement requires some privilege for the database or some object within it.

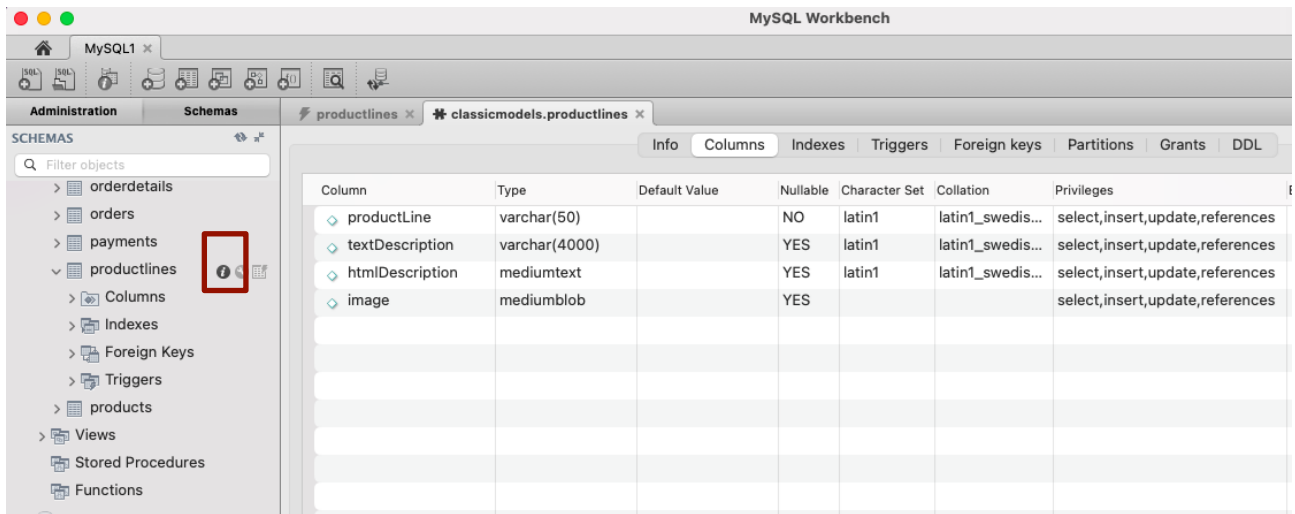
The ER diagram for the classicmodels.



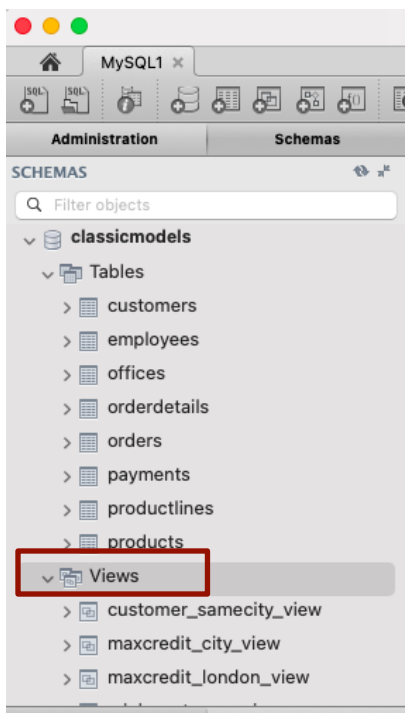
Note: The MSRP is “Manufacturer's suggested retail price” (ราคาขายปลีกแนะนำของผู้ผลิต).

MySQL Workbench:

- You can see details of a table by clicking i button below:



- You can see the existing view by clicking “Views” menu below:



Task 1: Using the “classicmodels” database and write SQL statements to answer the following questions.

use classicmodels;

1. Create a view named "mini_customer_view" to display the customer name of all customers whose names start with the word “Mini”. Please verify by querying data from this view.

-- Write a statement here, the screen of querying data from this view is optional

```
179      -- 64130500053
180      -- 1. Create a view named "mini_customer_view" to display the c
181 •    create or replace view mini_customer_view
182      as select customerName
183      from customers
184      where customerName like 'Mini%';
185
✓ 1 21:14:02 create or replace view mini_customer_view as select customerName from customers whe... 0 row(s) affected
```

2. Create a view named "prod_minstock_view" to display the product name and quantity in stock of the product that has the minimum quantities in stock. Please verify by querying data from this view.

```
186      -- 64130500053
187      -- 2
188 •    create or replace view prod_minstock_view as
189      select productname,quantityInStock
190      from products
191      where quantityInStock = ( select min(quantityInStock) from products);
---
✓ 2 21:19:33 create or replace view prod_minstock_view as select productname,quantityInStock from ... 0 row(s) affected
```

3. Create a view named "totalamount_orders_view" to display the order number, order date and the total amount of sales of all orders and sort the results in descending order by the total amount of sales. Name three columns of the view to orderno, orderdate and total_amount, respectively. Please verify by querying data from this view.

```
193      -- 64130500053
194      -- 3
195 •    create or replace view totalamount_orders_view(orderno,orderdate,total_amount)
196      as select ot.orderNumber,o.orderDate,sum(ot.quantityOrdered*ot.priceEach)
197      from orderdetails ot, orders o
198      where ot.orderNumber = o.orderNumber
199      group by ot.orderNumber ,o.orderDate
200      order by 3 desc ;
201
✓ 3 21:20:49 create or replace view totalamount_orders_view(ordemo,orderdate,total_amount) as sel... 0 row(s) affected
```

4. Create a view named "customer_samecity_view" to display the customer name and city of all customers who live in the same city of their sales rep employee's office city. Name two view columns to cust_name and cust_city, respectively. Please verify by querying data from this view.

```

204      -- 64130500053
205      -- 4
206 •   create or replace view customer_samecity_view(cust_name,cust_city)
207      as select c.customername , c.city
208      from customers c
209      where c.city in (select o.city
210                      from offices o
211                      where c.city = o.city);
212

```

✓ 4 21:22:12 create or replace view customer_samecity_view(cust_name,cust_city) as select c.custo... 0 row(s) affected

5. Create a view named "maxcredit_city_view" to display the city and the maximum credit limit of all customers in each city. Please verify by querying data from this view.

```

213      -- 64130500053
214      -- 5
215 •   create or replace view maxcredit_city_view
216      as select city, max(creditlimit) as max_creditlimit
217      from customers
218      group by city;
219
220

```

✓ 5 21:25:27 create or replace view maxcredit_city_view as select city, max(creditlimit) as max_creditli... 0 row(s) affected

6. Create a view named "maxcredit_london_view" to display the city and the maximum credit limit of all customers who live in London city. You should create this view from the "maxcredit_city_view" view in [Question 5](#). Please verify by querying data from this view.

```

221      -- 64130500053
222      -- 6
223 •   create or replace view maxcredit_london as select city,max_creditlimit
224      from maxcredit_city_view
225      where city like 'london%';
226

```

✓ 6 21:26:53 create or replace view maxcredit_london as select city,max_creditlimit from maxcredit_ci... 0 row(s) affected

7. Create a table named "offices_copy" with copying the structure and data from the "offices" table using the following commands:

```

create table offices_copy
as select * from offices;

```

Create a view named "usa_office_view" to display office code, city and state of the country "USA" from the "offices_copy" table. Please verify by querying data from this view.

```

227      -- 64130500053
228      -- 7
229 •    create table offices_copy
230          as select * from offices;
231
232 •    create or replace view usa_office_view as select officecode,city,state
233      from offices_copy
234      where country like 'USA%';
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9 21:28:31 create table offices_copy as select * from offices 7 row(s) affected Records: 7 Duplicates: 0 Warnings: 0

10 21:28:36 create or replace view usa_office_view as select officecode,city,state from offices_copy... 0 row(s) affected

8. Try to insert a new row through the "usa_office_view" view created in [Question 7](#). What happens about the data insertion into the "offices_copy" table? Please explain.

Hint: You can create a new data by yourself.

NOT NULL column ทั้งหมดจะต้องอยู่ใน VIEW ด้วยเพื่อให้ INSERT function ทำงานถูกต้อง

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240      -- 64130500053
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242 •    insert into usa_office_view (officeCode,city,state) value('4', 'thai', 'TH');
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14 21:30:24 insert into usa_office_view (officeCode,city,state) value('4', 'thai', 'TH') 1 row(s) affected, 5 warning(s): 1423 Field of view 'classicmodels.usa_office_view' u...

9. To resolve the problem found in [Question 8](#), Please modify the "usa_office_view" view to ensure that you can insert a new row through this view (an updatable view). Please show the data insertion of the "offices_copy" table.

Hint: You can create a new data by yourself.

```

245      -- 64130500053
246      -- 9
247 •    create or replace view usa_office_view as select officecode,city,phone,state,address...
248      from offices_copy
249      where country like 'USA%';
250 •    select * from usa_office_view;
251 •    insert into usa_office_view
252      value('4','boston','+663332235','MA','123','USA','12345','MA');
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1 19:54:57 create or replace view usa_office_view as select officecode,city,phone,state,address... 0 row(s) affected

2 19:55:02 insert into usa_office_view value('4','boston','+663332235','MA','123','USA','12345','M... 1 row(s) affected

3 19:55:05 select * from usa_office_view LIMIT 0, 1000 4 row(s) returned

10. Please delete both the structure and data of the "offices_copy" table. What happens to an existing view that references the "offices_copy" table? Please explain.

```
257      -- 64130500053
258      -- 10
259 •    DROP TABLE offices_copy;
260 •    SELECT * FROM usa_office_view;
```

✓	4	19:56:52	DROP TABLE offices_copy	0 row(s) affected
✗	5	19:56:57	SELECT * FROM usa_office_view LIMIT 0, 1000	Error Code: 1356. View 'classicmodels.usa_office_view' references invalid table(s) o...

พอลบตาราง offices_copy ไปแล้วจะไม่สามารถใช้งานตาราง usa_office_view ได้เนื่องจากตาราง usa_office_view ถูกสร้างมาจากตาราง offices_copy