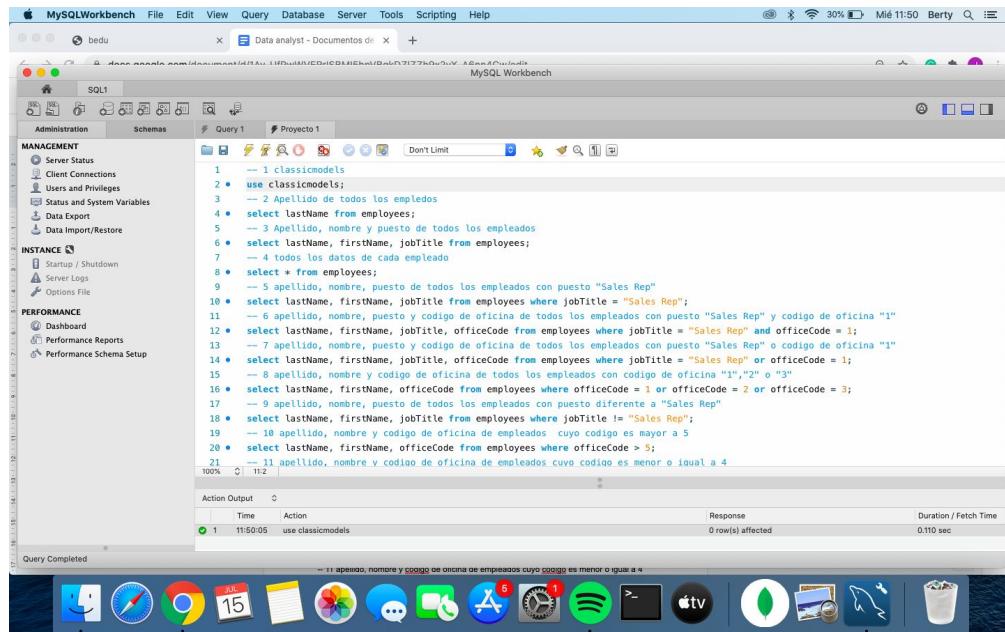


## Sesión 01 Fundamentos SQL

### Proyecto 1

-- 1 classicmodels  
use classicmodels;



The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The title bar reads "MySQLWorkbench". The main window has a "SQL" tab selected. On the left is a sidebar with sections like "MANAGEMENT", "INSTANCE", and "PERFORMANCE". The central area contains the following SQL code:

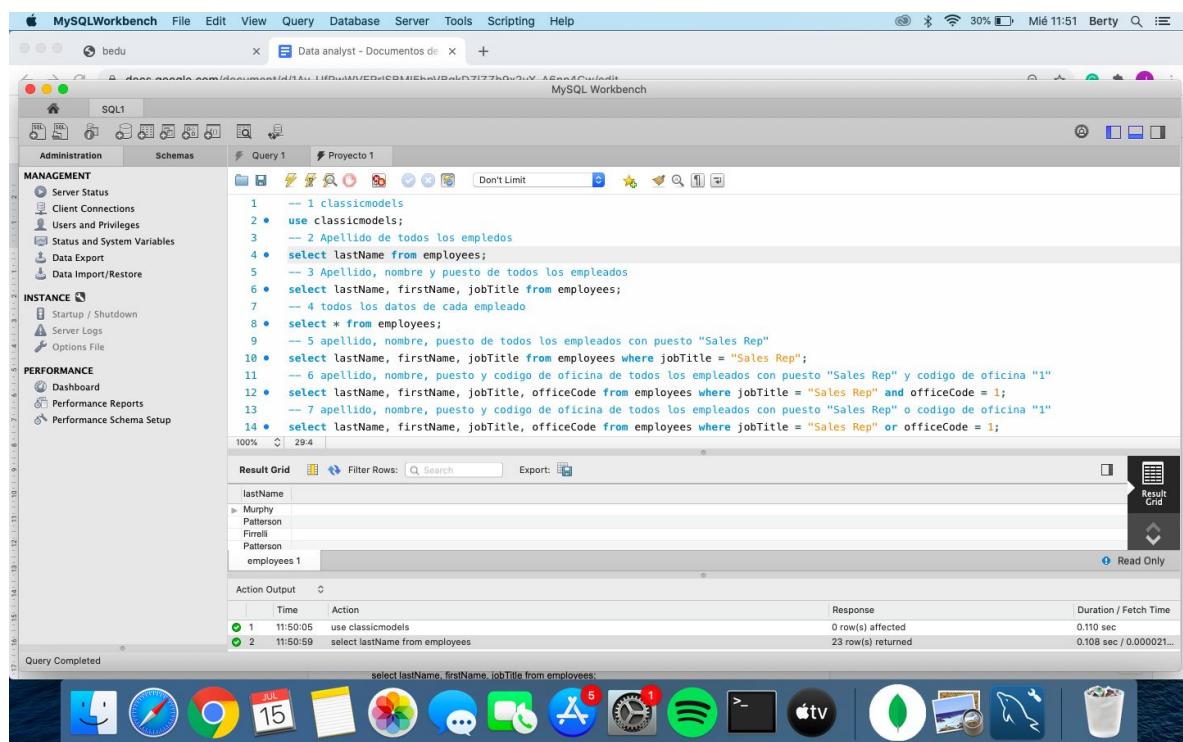
```
1 -- 1 classicmodels
2 • use classicmodels;
3 -- 2 Apellido de todos los empleados
4 • select lastName from employees;
5 -- 3 Apellido, nombre y puesto de todos los empleados
6 • select lastName, firstName, jobTitle from employees;
7 -- 4 todos los datos de cada empleado
8 • select * from employees;
9 -- 5 apellido, nombre, puesto de todos los empleados con puesto "Sales Rep"
10 • select lastName, firstName, jobTitle from employees where jobTitle = "Sales Rep";
11 -- 6 apellido, nombre, puesto y codigo de oficina de todos los empleados con puesto "Sales Rep" y codigo de oficina "1"
12 • select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" and officeCode = 1;
13 -- 7 apellido, nombre, puesto y codigo de oficina de todos los empleados con puesto "Sales Rep" o codigo de oficina "1"
14 • select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" or officeCode = 1;
15 -- 8 apellido, nombre y codigo de oficina de todos los empleados con codigo de oficina "1", "2" o "3"
16 • select lastName, firstName, officeCode from employees where officeCode = 1 or officeCode = 2 or officeCode = 3;
17 -- 9 apellido, nombre, puesto de todos los empleados con puesto diferente a "Sales Rep"
18 • select lastName, firstName, jobTitle from employees where jobTitle != "Sales Rep";
19 -- 10 apellido, nombre y codigo de oficina de empleados cuyo codigo es mayor a 5
20 • select lastName, firstName, officeCode from employees where officeCode > 5;
21 -- 11 apellido, nombre y codigo de oficina de empleados cuyo codigo es menor o igual a 4
```

Below the code, there is a table titled "Action Output" with two rows:

Action	Time	Action	Response	Duration / Fetch Time
1	11:50:05	use classicmodels	0 row(s) affected	0.110 sec

The status bar at the bottom of the window says "Query Completed".

-- 2 Apellido de todos los empleados  
select lastName from employees;



The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The title bar reads "MySQLWorkbench". The main window has a "SQL" tab selected. On the left is a sidebar with sections like "MANAGEMENT", "INSTANCE", and "PERFORMANCE". The central area contains the following SQL code:

```
1 -- 1 classicmodels
2 • use classicmodels;
3 -- 2 Apellido de todos los empleados
4 • select lastName from employees;
5 -- 3 Apellido, nombre y puesto de todos los empleados
6 • select lastName, firstName, jobTitle from employees;
7 -- 4 todos los datos de cada empleado
8 • select * from employees;
9 -- 5 apellido, nombre, puesto de todos los empleados con puesto "Sales Rep"
10 • select lastName, firstName, jobTitle from employees where jobTitle = "Sales Rep";
11 -- 6 apellido, nombre, puesto y codigo de oficina de todos los empleados con puesto "Sales Rep" y codigo de oficina "1"
12 • select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" and officeCode = 1;
13 -- 7 apellido, nombre, puesto y codigo de oficina de todos los empleados con puesto "Sales Rep" o codigo de oficina "1"
14 • select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" or officeCode = 1;
```

Below the code, there is a table titled "Result Grid" with the following data:

lastName
Murphy
Patterson
Firelli
Patterson

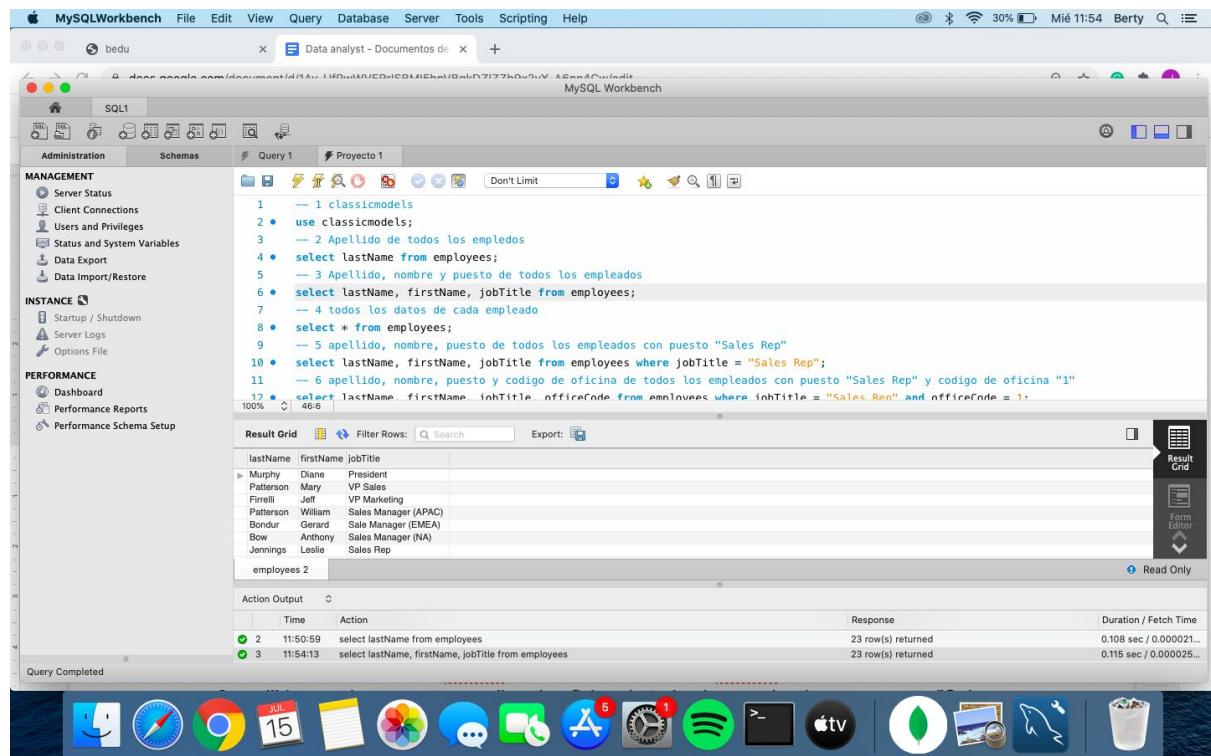
At the bottom of the table, it says "employees 1".

Below the table, there is a table titled "Action Output" with two rows:

Action	Time	Action	Response	Duration / Fetch Time
1	11:50:05	use classicmodels	0 row(s) affected	0.110 sec
2	11:50:59	select lastName from employees;	23 row(s) returned	0.108 sec / 0.000021...

The status bar at the bottom of the window says "Query Completed".

-- 3 Apellido, nombre y puesto de todos los empleados  
 select lastName, firstName, jobTitle from employees;



```

MySQLWorkbench  File  Edit  View  Query  Database  Server  Tools  Scripting  Help
bedu          X  Data analyst - Documentos de  +  Mié 11:54  Berty  S

SQL1
Administration  Schemas  Query 1  Proyecto 1

MANAGEMENT
    Server Status
    Client Connections
    Users and Privileges
    Status and System Variables
    Data Export
    Data Import/Restore

INSTANCE
    Startup / Shutdown
    Server Logs
    Options File

PERFORMANCE
    Dashboard
    Performance Reports
    Performance Schema Setup

1 -- 1 classicmodels
2 • use classicmodels;
3 -- 2 Apellido de todos los empleados
4 • select lastName from employees;
5 -- 3 Apellido, nombre y puesto de todos los empleados
6 • select lastName, firstName, jobTitle from employees;
7 -- 4 todos los datos de cada empleado
8 • select * from employees;
9 -- 5 apellido, nombre, puesto de todos los empleados con puesto "Sales Rep"
10 • select lastName, firstName, jobTitle from employees where jobTitle = "Sales Rep";
11 -- 6 apellido, nombre, puesto y codigo de oficina de todos los empleados con puesto "Sales Rep" y codigo de oficina "1"
12 • select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" and officeCode = 1;

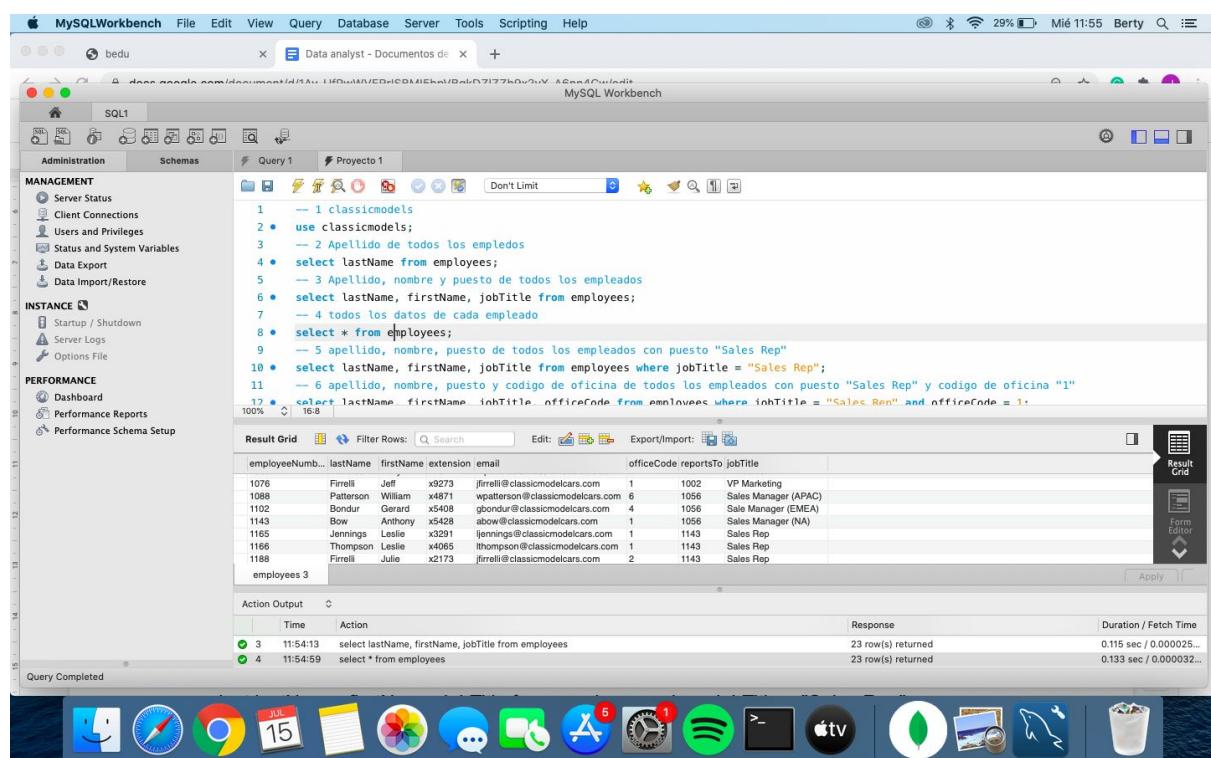
Result Grid  Filter Rows: Q Search  Export:  Result Grid
employees 2  Form Editor  Read Only

Action Output  C
Time Action Response Duration / Fetch Time
2 11:50:59 select lastName from employees 23 row(s) returned 0.108 sec / 0.000021...
3 11:54:13 select lastName, firstName, jobTitle from employees 23 row(s) returned 0.115 sec / 0.000025...

Query Completed

```

-- 4 todos los datos de cada empleado  
 select \* from employees;



```

MySQLWorkbench  File  Edit  View  Query  Database  Server  Tools  Scripting  Help
bedu          X  Data analyst - Documentos de  +  Mié 11:55  Berty  S

SQL1
Administration  Schemas  Query 1  Proyecto 1

MANAGEMENT
    Server Status
    Client Connections
    Users and Privileges
    Status and System Variables
    Data Export
    Data Import/Restore

INSTANCE
    Startup / Shutdown
    Server Logs
    Options File

PERFORMANCE
    Dashboard
    Performance Reports
    Performance Schema Setup

1 -- 1 classicmodels
2 • use classicmodels;
3 -- 2 Apellido de todos los empleados
4 • select lastName from employees;
5 -- 3 Apellido, nombre y puesto de todos los empleados
6 • select lastName, firstName, jobTitle from employees;
7 -- 4 todos los datos de cada empleado
8 • select * from employees;
9 -- 5 apellido, nombre, puesto de todos los empleados con puesto "Sales Rep"
10 • select lastName, firstName, jobTitle from employees where jobTitle = "Sales Rep";
11 -- 6 apellido, nombre, puesto y codigo de oficina de todos los empleados con puesto "Sales Rep" y codigo de oficina "1"
12 • select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" and officeCode = 1;

Result Grid  Filter Rows: Q Search  Edit:  Export/Import:  Result Grid
employees 3  Form Editor  Apply

Action Output  C
Time Action Response Duration / Fetch Time
3 11:54:13 select lastName, firstName, jobTitle from employees 23 row(s) returned 0.115 sec / 0.000025...
4 11:54:59 select * from employees 23 row(s) returned 0.133 sec / 0.000032...

Query Completed

```

```
-- 5 apellido, nombre, puesto de todos los empleados con puesto "Sales Rep"  
select lastName, firstName, jobTitle from employees where jobTitle = "Sales Rep";
```

The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The title bar reads "MySQLWorkbench" and the active tab is "Query 1". The left sidebar has sections for MANAGEMENT (Server Status, Client Connections, Users and Privileges, Status and System Variables, Data Export, Data Import/Restore), INSTANCE (Startup / Shutdown, Server Logs, Options File), and PERFORMANCE (Dashboard, Performance Reports, Performance Schema Setup). The main area contains a SQL editor with the following query:

```
1 -- 1 classicmodels
2 • use classicmodels;
3 -- 2 Apellido de todos los empleados
4 • select lastName from employees;
5 -- 3 Apellido, nombre y puesto de todos los empleados
6 • select lastName, firstName, jobTitle from employees;
7 -- 4 todos los datos de cada empleado
8 • select * from employees;
9 -- 5 apellido, nombre, puesto de todos los empleados con puesto "Sales Rep"
10 • select lastName, firstName, jobTitle from employees where jobTitle = "Sales Rep";
11 -- 6 apellido, nombre, puesto y codigo de oficina de todos los empleados con puesto "Sales Rep" y codigo de oficina "1"
12 • select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" and officeCode = 1;
100% 19:10
```

The Result Grid shows the output of the last SELECT statement:

lastName	firstName	jobTitle
Firelli	Julie	Sales Rep
Patterson	Steve	Sales Rep
Tseng	Foon Yue	Sales Rep
Vinauf	George	Sales Rep
Bondur	Loui	Sales Rep
Hernandez	Gerard	Sales Rep
Castillo	Pamela	Sales Rep

Below the grid, the Action Output table shows the execution details:

Action	Time	Action	Response	Duration / Fetch Time
select * from employees	4 11:54:59		23 row(s) returned	0.133 sec / 0.000032...
select lastName, firstName, jobTitle from employees where jobTitle = "Sales Rep"	5 11:55:50		17 row(s) returned	0.921 sec / 0.000023...

The status bar at the bottom indicates "Query Completed". The system tray shows battery level (29%), signal strength, and the date/time (Mié 11:56).

-- 6 apellido, nombre, puesto y codigo de oficina de todos los empleados con puesto "Sales Rep" y codigo de oficina "1"

```
select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" and officeCode = 1;
```

The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The title bar reads "MySQLWorkbench File Edit View Query Database Server Tools Scripting Help". The main window has tabs for "SQL1" and "Query 1". The left sidebar includes sections for "MANAGEMENT" (Server Status, Client Connections, User and Privileges, Status and System Variables, Data Export, Data Import/Restore), "INSTANCE" (Startup / Shutdown, Server Logs, Options File), and "PERFORMANCE" (Dashboard, Performance Reports, Performance Schema Setup). The central area contains a query editor with the following script:

```
2 • use classicmodels;
3   --- 2 Apellido de todos los empleados
4 • select lastName from employees;
5   --- 3 Apellido, nombre y puesto de todos los empleados
6 • select lastName, firstName, jobTitle from employees;
7   --- 4 todos los datos de cada empleado
8 • select * from employees;
9   --- 5 apellido, nombre, puesto de todos los empleados con puesto "Sales Rep"
10 • select lastName, firstName, jobTitle from employees where jobTitle = "Sales Rep";
11   --- 6 apellido, nombre, puesto y codigo de oficina de todos los empleados con puesto "Sales Rep" y codigo de oficina "1"
12 • select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" and officeCode = 1;
13   --- 7 apellido, nombre, puesto y codigo de oficina de todos los empleados con puesto "Sales Rep" o codigo de oficina "1"
```

The "Result Grid" pane shows the results of the last query, which returned 5 rows of employee data:

lastName	firstName	jobTitle	officeCode
Jennings	Leslie	Sales Rep	1
Thompson	Leslie	Sales Rep	1

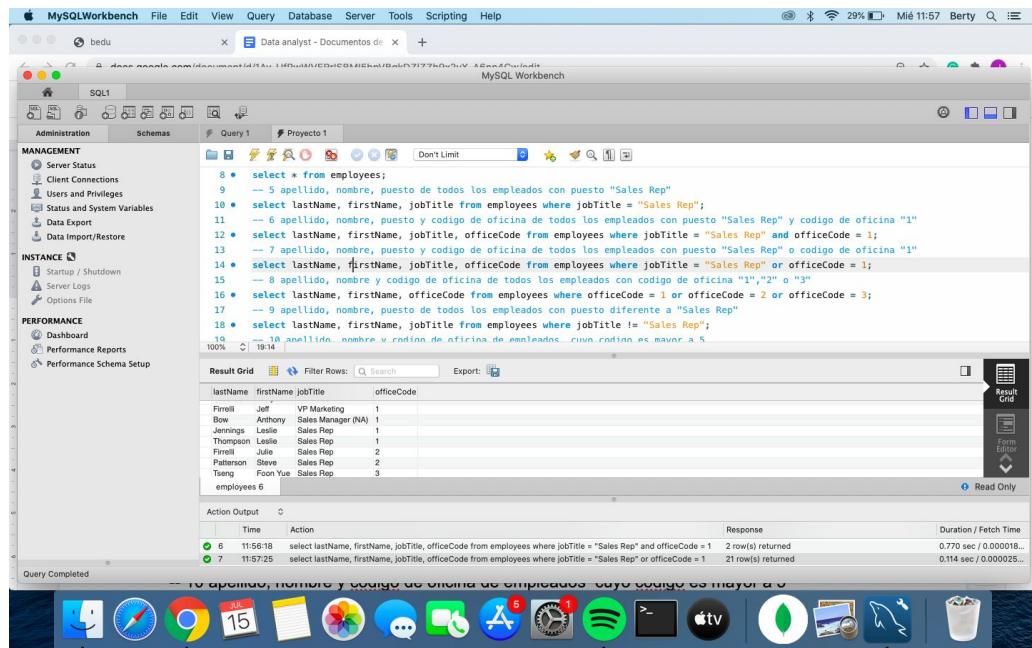
The "Action Output" pane at the bottom shows two recent actions:

Time	Action	Response	Duration / Fetch Time
5 11:55:50	select lastName, firstName, jobTitle from employees where jobTitle = "Sales Rep"	17 row(s) returned	0.921 sec / 0.000023...
6 11:56:18	select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" and officeCode = 1	2 row(s) returned	0.770 sec / 0.000018...

A status bar at the bottom indicates "Query Completed". The system tray shows battery level (29%), signal strength, and the date/time (Mié 11:56).

-- 7 apellido, nombre, puesto y codigo de oficina de todos los empleados con puesto "Sales Rep" o codigo de oficina "1"

```
select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" or officeCode = 1;
```



The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The main window displays a SQL query in the Query Grid:

```
8 • select * from employees;
9 -- 5 apellido, nombre, puesto de todos los empleados con puesto "Sales Rep"
10 • select lastName, firstName, jobTitle from employees where jobTitle = "Sales Rep";
11 -- 6 apellido, nombre, puesto y codigo de oficina de todos los empleados con puesto "Sales Rep" y codigo de oficina "1"
12 • select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" and officeCode = 1;
13 -- 7 apellido, nombre, puesto y codigo de oficina de todos los empleados con puesto "Sales Rep" o codigo de oficina "1"
14 • select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" or officeCode = 1;
15 -- 8 apellido, nombre y codigo de oficina de todos los empleados con codigo de oficina "1", "2" o "3"
16 • select lastName, firstName, officeCode from employees where officeCode = 1 or officeCode = 2 or officeCode = 3;
17 -- 9 apellido, nombre, puesto de todos los empleados con puesto diferente a "Sales Rep"
18 • select lastName, firstName, jobTitle from employees where jobTitle != "Sales Rep";
19 -- 10 apellido, nombre y codigo de oficina de empleados cuyo codigo es mayor a 3
```

The Result Grid shows the following data:

lastName	firstName	jobTitle	officeCode
Firelli	Jeff	VP Marketing	1
Bow	Anthony	Sales Manager (NA)	1
Jennings	Leslie	Sales Rep	1
Thompson	Leslie	Sales Rep	1
Firelli	Julie	Sales Rep	2
Patterson	Steve	Sales Rep	2
Tseng	Foon Yue	Sales Rep	3

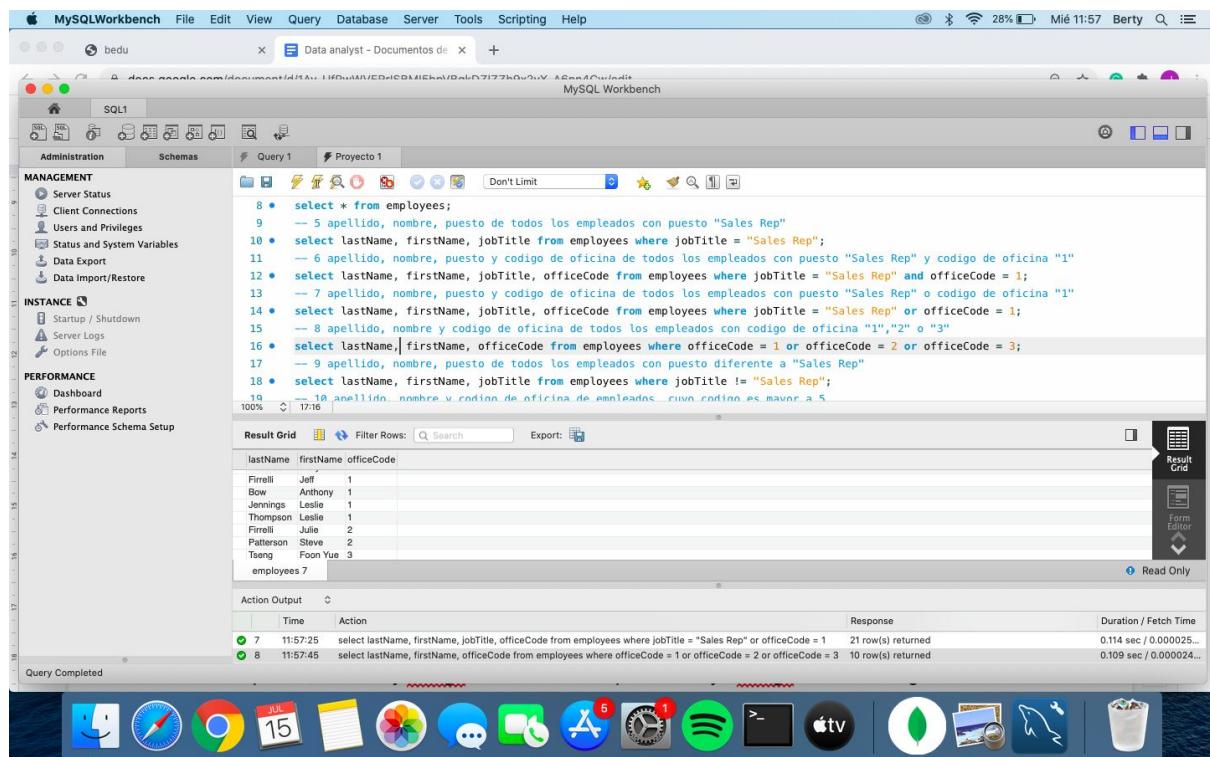
The Action Output pane shows the execution details:

Time	Action	Response	Duration / Fetch Time
6 11:56:18	select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" and officeCode = 1	2 row(s) returned	0.770 sec / 0.000018...
7 11:57:25	select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" or officeCode = 1	21 row(s) returned	0.114 sec / 0.000025...

-- 8 apellido, nombre y codigo de oficina de todos los empleados con codigo de oficina

"1", "2" o "3"

```
select lastName, firstName, officeCode from employees where officeCode = 1 or officeCode = 2 or officeCode = 3;
```



The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The main window displays a SQL query in the Query Grid:

```
8 • select * from employees;
9 -- 5 apellido, nombre, puesto de todos los empleados con puesto "Sales Rep"
10 • select lastName, firstName, jobTitle from employees where jobTitle = "Sales Rep";
11 -- 6 apellido, nombre, puesto y codigo de oficina de todos los empleados con puesto "Sales Rep" y codigo de oficina "1"
12 • select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" and officeCode = 1;
13 -- 7 apellido, nombre, puesto y codigo de oficina de todos los empleados con puesto "Sales Rep" o codigo de oficina "1"
14 • select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" or officeCode = 1;
15 -- 8 apellido, nombre y codigo de oficina de todos los empleados con codigo de oficina "1", "2" o "3"
16 • select lastName, firstName, officeCode from employees where officeCode = 1 or officeCode = 2 or officeCode = 3;
17 -- 9 apellido, nombre, puesto de todos los empleados con puesto diferente a "Sales Rep"
18 • select lastName, firstName, jobTitle from employees where jobTitle != "Sales Rep";
19 -- 10 apellido, nombre y codigo de oficina de empleados cuyo codigo es mayor a 3
```

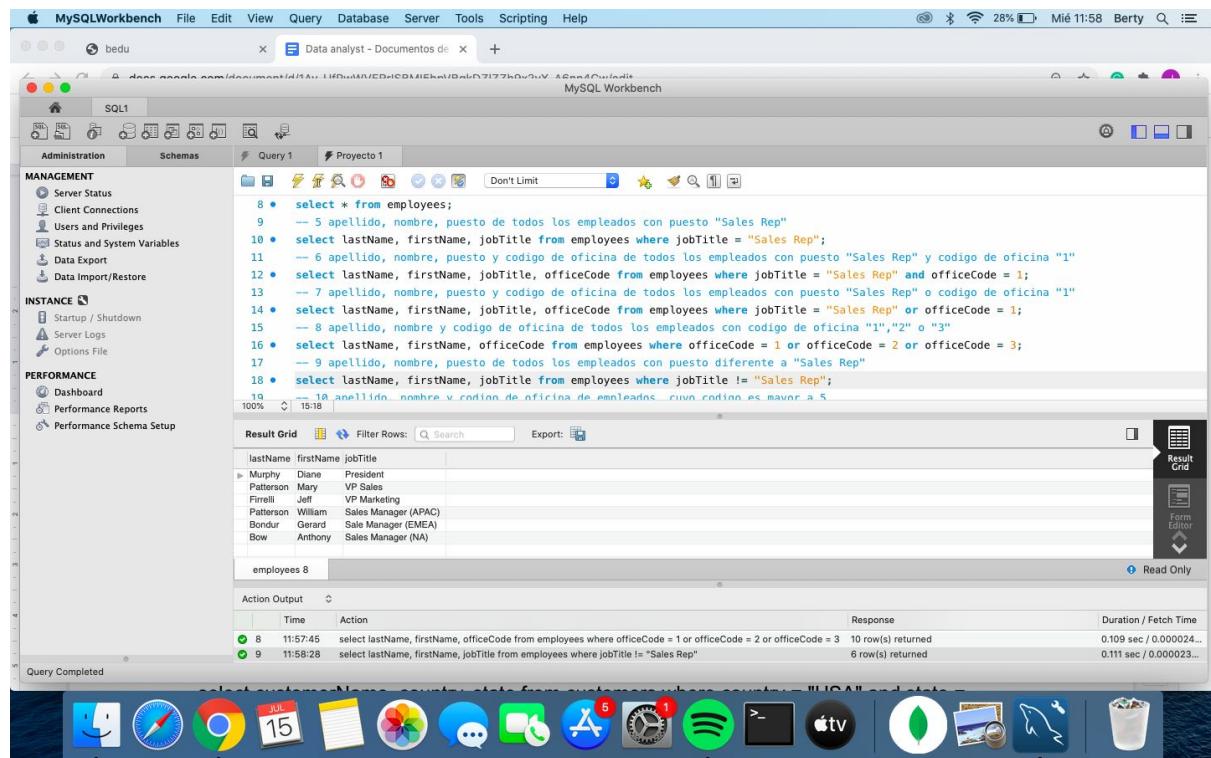
The Result Grid shows the following data:

lastName	firstName	officeCode
Firelli	Jeff	1
Bow	Anthony	1
Jennings	Leslie	1
Thompson	Leslie	1
Firelli	Julie	2
Patterson	Steve	2
Tseng	Foon Yue	3

The Action Output pane shows the execution details:

Time	Action	Response	Duration / Fetch Time
7 11:57:25	select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" or officeCode = 1	21 row(s) returned	0.114 sec / 0.000025...
8 11:57:45	select lastName, firstName, officeCode from employees where officeCode = 1 or officeCode = 2 or officeCode = 3	10 row(s) returned	0.109 sec / 0.000024...

-- 9 apellido, nombre, puesto de todos los empleados con puesto diferente a "Sales Rep"  
 select lastName, firstName, jobTitle from employees where jobTitle != "Sales Rep";



The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The title bar says "MySQLWorkbench". The main window has a left sidebar with "Administration", "Schemas", and "Query 1" tabs. The "Query 1" tab contains the following SQL code and its execution results:

```

8 • select * from employees;
9   -- 5 apellido, nombre, puesto de todos los empleados con puesto "Sales Rep"
10 • select lastName, firstName, jobTitle from employees where jobTitle = "Sales Rep";
11   -- 6 apellido, nombre, puesto y codigo de oficina de todos los empleados con puesto "Sales Rep" y codigo de oficina "1"
12 • select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" and officeCode = 1;
13   -- 7 apellido, nombre, puesto y codigo de oficina de todos los empleados con puesto "Sales Rep" o codigo de oficina "1"
14 • select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales Rep" or officeCode = 1;
15   -- 8 apellido, nombre y codigo de oficina de todos los empleados con codigo de oficina "1", "2" o "3"
16 • select lastName, firstName, officeCode from employees where officeCode = 1 or officeCode = 2 or officeCode = 3;
17   -- 9 apellido, nombre, puesto de todos los empleados con puesto diferente a "Sales Rep"
18 • select lastName, firstName, jobTitle from employees where jobTitle != "Sales Rep";
19   -- 10 apellido, nombre y codigo de oficina de empleados cuyo codigo es mayor a 5
  
```

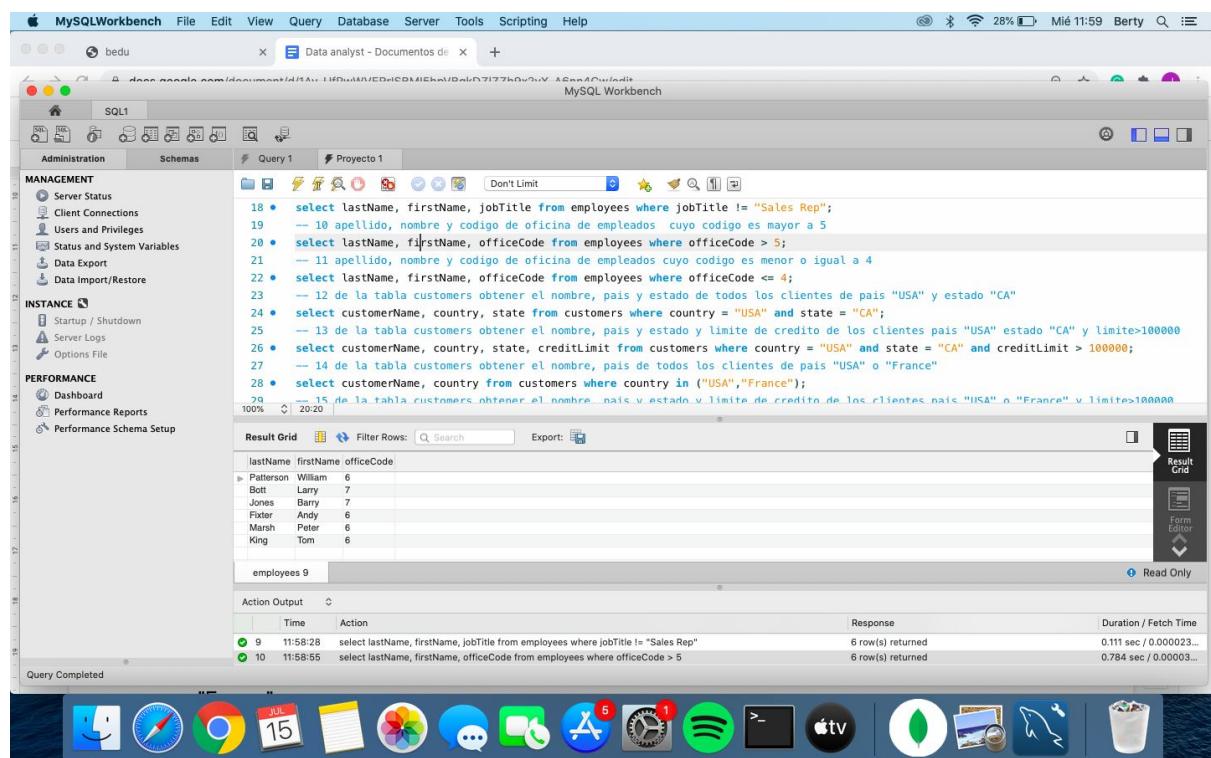
The "Result Grid" pane shows the following data:

lastName	firstName	jobTitle
Murphy	Diana	President
Patterson	Mary	VP Sales
Firelli	Jeff	VP Marketing
Patterson	William	Sales Manager (APAC)
Bondur	Gerard	Sale Manager (EMEA)
Bow	Anthony	Sales Manager (NA)

The "Action Output" pane shows the execution details:

Action	Time	Response	Duration / Fetch Time
select lastName, firstName, officeCode from employees where officeCode = 1 or officeCode = 2 or officeCode = 3;	11:57:45	10 row(s) returned	0.109 sec / 0.000024...
select lastName, firstName, jobTitle from employees where jobTitle != "Sales Rep";	11:58:28	6 row(s) returned	0.111 sec / 0.000023...

-- 10 apellido, nombre y codigo de oficina de empleados cuyo codigo es mayor a 5  
 select lastName, firstName, officeCode from employees where officeCode > 5;



The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The title bar says "MySQLWorkbench". The main window has a left sidebar with "Administration", "Schemas", and "Query 1" tabs. The "Query 1" tab contains the following SQL code and its execution results:

```

18 • select lastName, firstName, jobTitle from employees where jobTitle != "Sales Rep";
19   -- 10 apellido, nombre y codigo de oficina de empleados cuyo codigo es mayor a 5
20 • select lastName, firstName, officeCode from employees where officeCode > 5;
21   -- 11 apellido, nombre y codigo de oficina de empleados cuyo codigo es menor o igual a 4
22 • select lastName, firstName, officeCode from employees where officeCode <= 4;
23   -- 12 de la tabla customers obtener el nombre, pais y estado de todos los clientes de pais "USA" y estado "CA"
24 • select customerName, country, state from customers where country = "USA" and state = "CA";
25   -- 13 de la tabla customers obtener el nombre, pais y estado y limite de credito de los clientes pais "USA" estado "CA" y limite>100000
26 • select customerName, country, state, creditLimit from customers where country = "USA" and state = "CA" and creditLimit > 100000;
27   -- 14 de la tabla customers obtener el nombre, pais de todos los clientes de pais "USA" o "France"
28 • select customerName, country from customers where country in ("USA","France");
29   -- 15 de la tabla customers obtener el nombre, pais y estado y limite de credito de los clientes pais "USA" o "France" y limite>100000
  
```

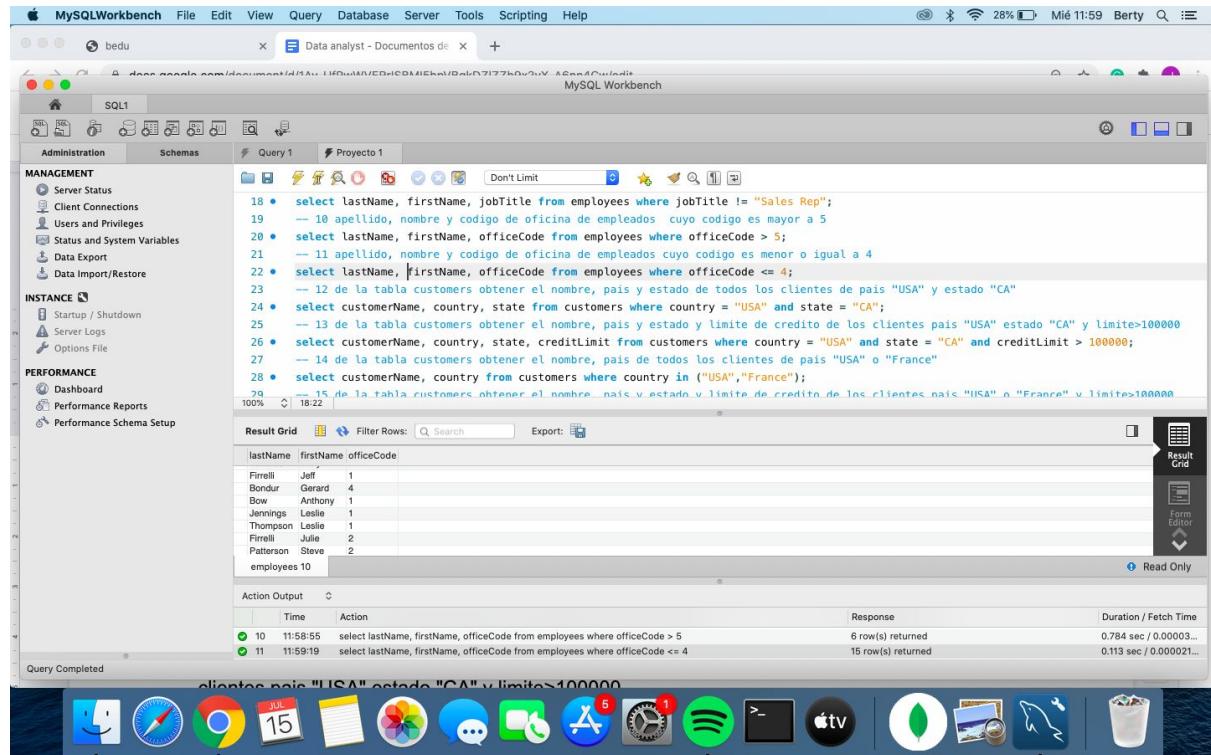
The "Result Grid" pane shows the following data:

lastName	firstName	officeCode
Patterson	William	6
Bott	Larry	7
Jones	Barry	7
Fixter	Andy	6
Marsh	Peter	6
King	Tom	6

The "Action Output" pane shows the execution details:

Action	Time	Response	Duration / Fetch Time
select lastName, firstName, jobTitle from employees where jobTitle != "Sales Rep";	11:58:28	6 row(s) returned	0.111 sec / 0.000023...
select lastName, firstName, officeCode from employees where officeCode > 5;	11:58:55	6 row(s) returned	0.784 sec / 0.00003...

-- 11 apellido, nombre y codigo de oficina de empleados cuyo codigo es menor o igual a 4  
 select lastName, firstName, officeCode from employees where officeCode <= 4;



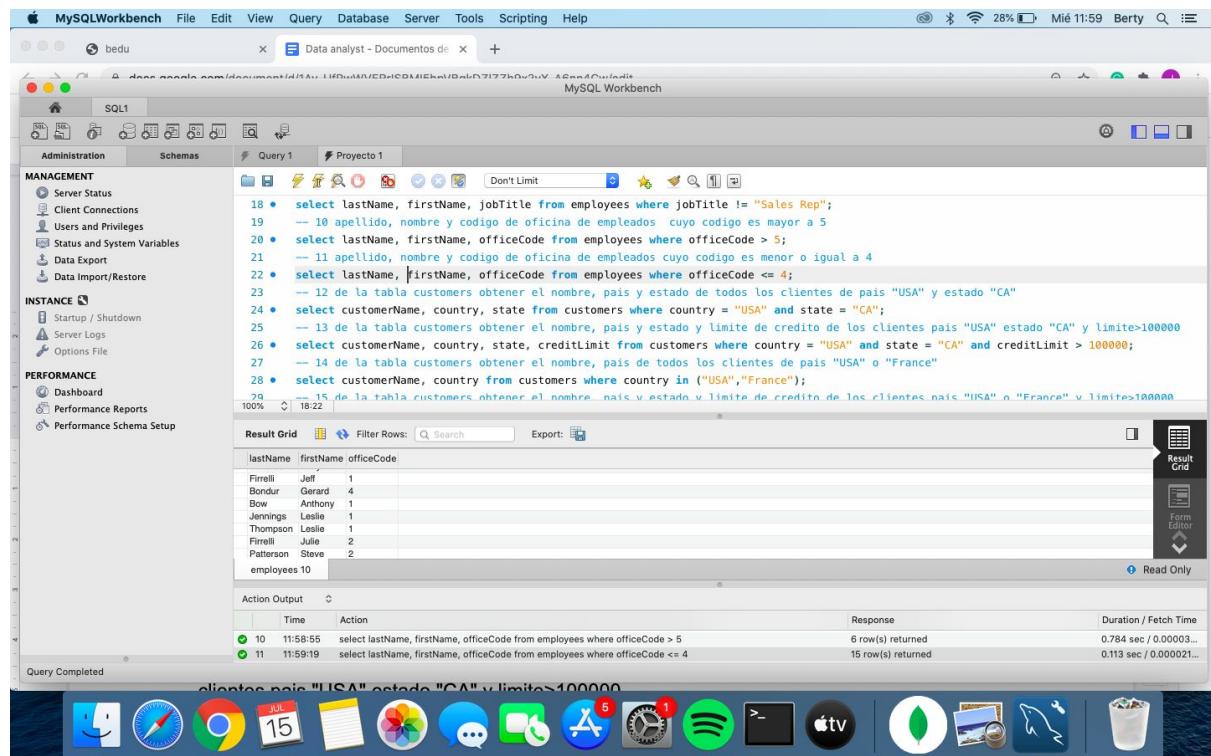
```

MySQLWorkbench File Edit View Query Database Server Tools Scripting Help
bedu Data analyst - Documentos de + MySQL Workbench
SQL1 Administration Schemas Query 1 Proyecto 1
MANAGEMENT INSTANCE PERFORMANCE
ADMINISTRATION SERVER STATUS CLIENT CONNECTIONS USERS AND PRIVILEGES STATUS AND SYSTEM VARIABLES DATA EXPORT DATA IMPORT/RESTORE
INSTANCE SERVER LOGS OPTIONS FILE
PERFORMANCE DASHBOARD PERFORMANCE REPORTS PERFORMANCE SCHEMA SETUP
Result Grid Filter Rows: Q Search Export: Result Grid Form Editor Read Only
18 • select lastName, firstName, jobTitle from employees where jobTitle != "Sales Rep";
19 — 10 apellido, nombre y codigo de oficina de empleados cuyo codigo es mayor a 5
20 • select lastName, firstName, officeCode from employees where officeCode > 5;
21 — 11 apellido, nombre y codigo de oficina de empleados cuyo codigo es menor o igual a 4
22 • select lastName, firstName, officeCode from employees where officeCode <= 4;
23 — 12 de la tabla customers obtener el nombre, pais y estado de todos los clientes de pais "USA" y estado "CA"
24 • select customerName, country, state from customers where country = "USA" and state = "CA";
25 — 13 de la tabla customers obtener el nombre, pais y estado y limite de credito de los clientes pais "USA" estado "CA" y limite>100000
26 • select customerName, country, state, creditLimit from customers where country = "USA" and state = "CA" and creditLimit > 100000;
27 — 14 de la tabla customers obtener el nombre, pais de todos los clientes de pais "USA" o "France"
28 • select customerName, country from customers where country in ("USA", "France");
29 — 15 de la tabla customers obtener el nombre, pais y estado y limite de credito de los clientes pais "USA" o "France" y limite>100000
100% 18-22
Query Completed
Action Output
Time Action Response Duration / Fetch Time
10 11:58:55 select lastName, firstName, officeCode from employees where officeCode > 5 6 row(s) returned 0.784 sec / 0.00003...
11 11:59:19 select lastName, firstName, officeCode from employees where officeCode <= 4 15 row(s) returned 0.113 sec / 0.000021...

```

-- 12 de la tabla customers obtener el nombre, pais y estado de todos los clientes de pais "USA" y estado "CA"

select customerName, country, state from customers where country = "USA" and state = "CA";



```

MySQLWorkbench File Edit View Query Database Server Tools Scripting Help
bedu Data analyst - Documentos de + MySQL Workbench
SQL1 Administration Schemas Query 1 Proyecto 1
MANAGEMENT INSTANCE PERFORMANCE
ADMINISTRATION SERVER STATUS CLIENT CONNECTIONS USERS AND PRIVILEGES STATUS AND SYSTEM VARIABLES DATA EXPORT DATA IMPORT/RESTORE
INSTANCE SERVER LOGS OPTIONS FILE
PERFORMANCE DASHBOARD PERFORMANCE REPORTS PERFORMANCE SCHEMA SETUP
Result Grid Filter Rows: Q Search Export: Result Grid Form Editor Read Only
18 • select lastName, firstName, jobTitle from employees where jobTitle != "Sales Rep";
19 — 10 apellido, nombre y codigo de oficina de empleados cuyo codigo es mayor a 5
20 • select lastName, firstName, officeCode from employees where officeCode > 5;
21 — 11 apellido, nombre y codigo de oficina de empleados cuyo codigo es menor o igual a 4
22 • select lastName, firstName, officeCode from employees where officeCode <= 4;
23 — 12 de la tabla customers obtener el nombre, pais y estado de todos los clientes de pais "USA" y estado "CA"
24 • select customerName, country, state from customers where country = "USA" and state = "CA";
25 — 13 de la tabla customers obtener el nombre, pais y estado y limite de credito de los clientes pais "USA" estado "CA" y limite>100000
26 • select customerName, country, state, creditLimit from customers where country = "USA" and state = "CA" and creditLimit > 100000;
27 — 14 de la tabla customers obtener el nombre, pais de todos los clientes de pais "USA" o "France"
28 • select customerName, country from customers where country in ("USA", "France");
29 — 15 de la tabla customers obtener el nombre, pais y estado y limite de credito de los clientes pais "USA" o "France" y limite>100000
100% 18-22
Query Completed
Action Output
Time Action Response Duration / Fetch Time
10 11:58:55 select lastName, firstName, officeCode from employees where officeCode > 5 6 row(s) returned 0.784 sec / 0.00003...
11 11:59:19 select lastName, firstName, officeCode from employees where officeCode <= 4 15 row(s) returned 0.113 sec / 0.000021...

```

-- 13 de la tabla customers obtener el nombre, pais y estado y limite de credito de los clientes pais "USA" estado "CA" y limite>100000

select customerName, country, state, creditLimit from customers where country = "USA" and state = "CA" and creditLimit > 100000;

```
customerName      country state   creditLimit
-----+-----+-----+-----+
Mini Gifts Distributors Ltd.  USA    CA        210500.00
Collectable Mini Designs Co.  USA    CA        106000.00
Corporate Gift Ideas Co.     USA    CA        105000.00
```

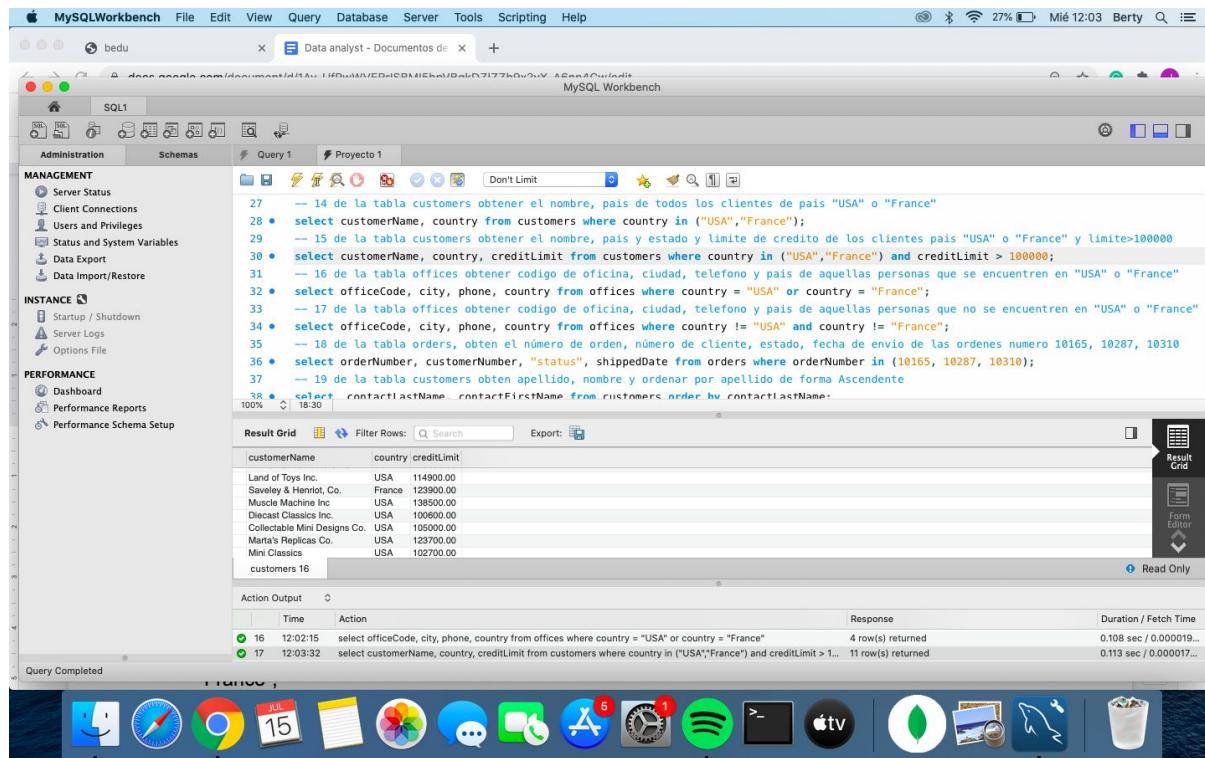
-- 14 de la tabla customers obtener el nombre, pais de todos los clientes de pais "USA" o "France"

select customerName, country from customers where country in ("USA","France");

```
customerName      country
-----+-----+
La Rochelle Gifts  France
Mini Gifts Distributors Ltd.  USA
Mini World Co.     USA
Land of Toys Inc.  USA
Saviley & Henriot Co.  France
Muscle Machine Inc  USA
Diecast Classics Inc.  USA
```

-- 15 de la tabla customers obtener el nombre, pais y estado y limite de credito de los clientes pais "USA" o "France" y limite>100000

select customerName, country, creditLimit from customers where country in ("USA","France") and creditLimit > 100000;



```

MySQLWorkbench  File Edit View Query Database Server Tools Scripting Help
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MySQL Workbench

SQL1
Query 1  Proyecto 1

MANAGEMENT
ADMINISTRATION
INSTANCE
PERFORMANCE

Result Grid Filter Rows: Q Search Export: 
customerName country creditLimit
Land of Toys Inc. USA 114900.00
Saviley & Henrot, Co. France 123900.00
Muscle Machine Inc. USA 138500.00
Discast Classics Inc. USA 109000.00
Collectors Mini Designs Co. USA 109000.00
Marta's Replicas Co. USA 123700.00
Min Classics USA 102700.00
customers 16

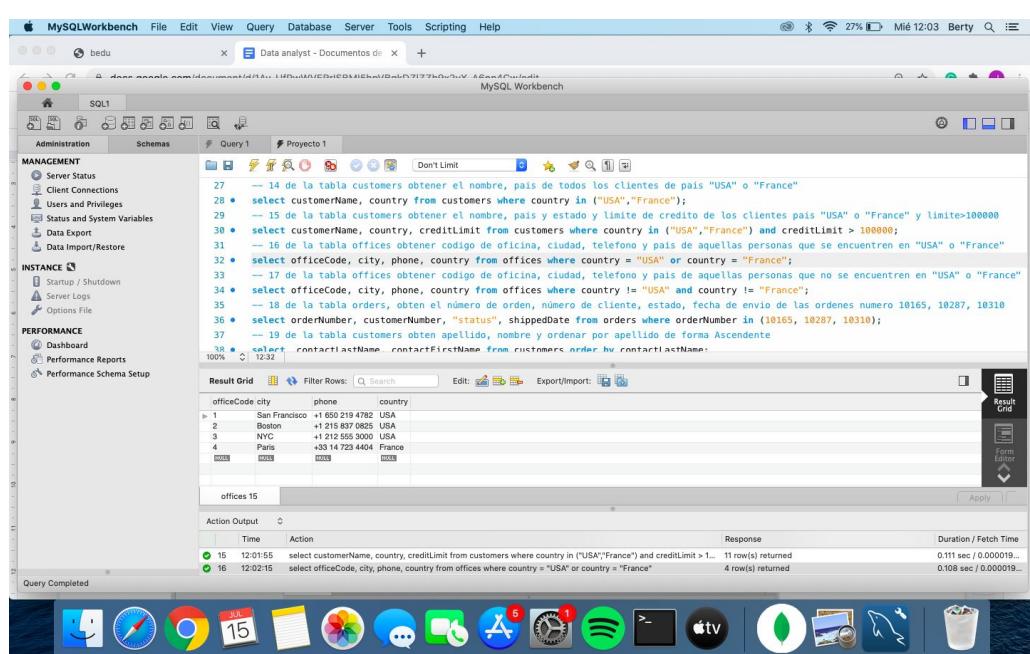
Action Output
Time Action Response Duration / Fetch Time
16 12:02:15 select officeCode, city, phone, country from offices where country = "USA" or country = "France" 4 row(s) returned 0.108 sec / 0.000019...
17 12:03:32 select customerName, country, creditLimit from customers where country in ("USA","France") and creditLimit > 100000 11 row(s) returned 0.113 sec / 0.000017...

Query Completed

```

-- 16 de la tabla offices obtener codigo de oficina, ciudad, telefono y pais de aquellas personas que se encuentren en "USA" o "France"

select officeCode, city, phone, country from offices where country = "USA" or country = "France";



```

MySQLWorkbench  File Edit View Query Database Server Tools Scripting Help
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MySQL Workbench

SQL1
Query 1  Proyecto 1

MANAGEMENT
ADMINISTRATION
INSTANCE
PERFORMANCE

Result Grid Filter Rows: Q Search Edit: Export: 
officeCode city phone country
1 San Francisco +1 650 519 1782 USA
2 Seattle +1 206 553 0000 USA
3 NYC +1 212 555 3000 USA
4 Paris +33 14 723 4404 France
offices 15

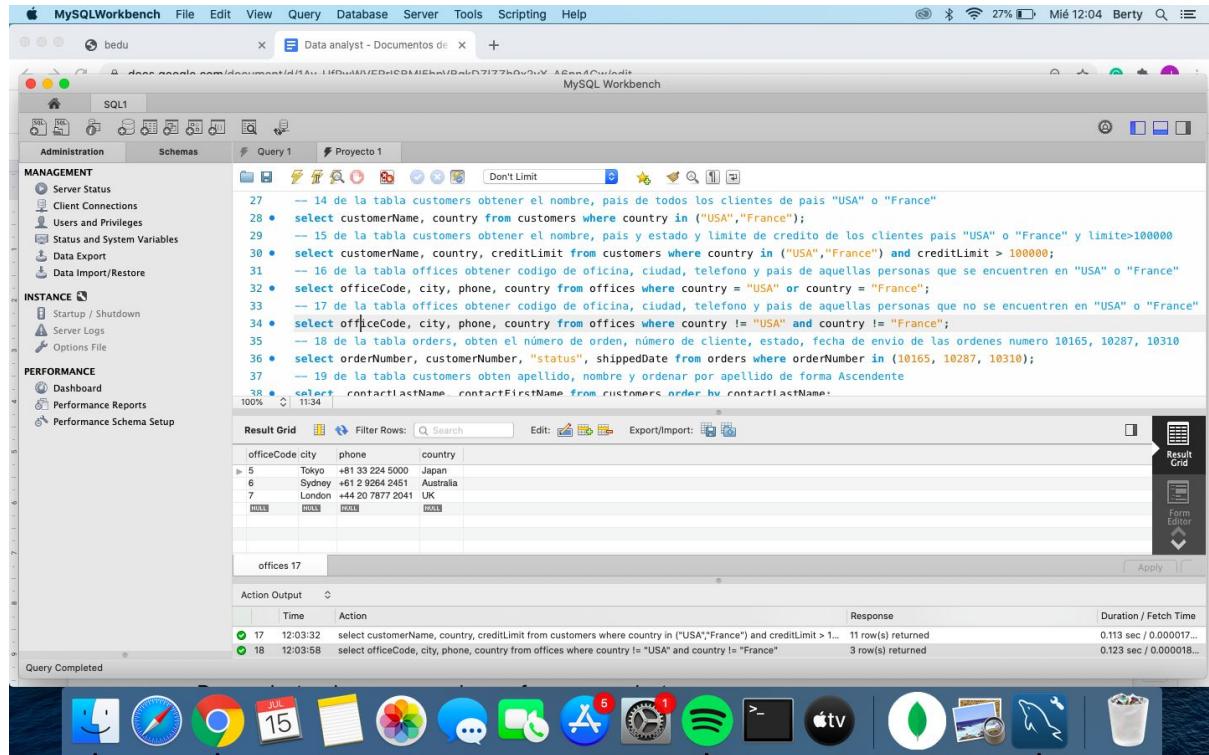
Action Output
Time Action Response Duration / Fetch Time
15 12:01:55 select customerName, country, creditLimit from customers where country in ("USA","France") and creditLimit > 1... 11 row(s) returned 0.111 sec / 0.000019...
16 12:02:15 select officeCode, city, phone, country from offices where country = "USA" or country = "France" 4 row(s) returned 0.108 sec / 0.000019...

Query Completed

```

-- 17 de la tabla offices obtener codigo de oficina, ciudad, telefono y pais de aquellas personas que no se encuentren en "USA" o "France"

select officeCode, city, phone, country from offices where country != "USA" and country != "France";



The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The title bar says 'MySQLWorkbench' and 'Mié 12:04 Berty'. The main window has a 'SQL1' tab selected. On the left, there's a sidebar with 'Administration', 'Schemas', and 'Query 1'. The 'Query 1' tab contains the following SQL code:

```
27 -- 14 de la tabla customers obtener el nombre, pais de todos los clientes de pais "USA" o "France"
28 • select customerName, country from customers where country in ("USA","France");
29 -- 15 de la tabla customers obtener el nombre, pais y estado y limite de credito de los clientes pais "USA" o "France" y limite>100000
30 • select customerName, country, creditLimit from customers where country in ("USA","France") and creditLimit > 100000;
31 -- 16 de la tabla offices obtener codigo de oficina, ciudad, telefono y pais de aquellas personas que se encuentren en "USA" o "France"
32 • select officeCode, city, phone, country from offices where country = "USA" or country = "France";
33 -- 17 de la tabla offices obtener codigo de oficina, ciudad, telefono y pais de aquellas personas que no se encuentren en "USA" o "France"
34 • select officeCode, city, phone, country from offices where country != "USA" and country != "France";
35 -- 18 de la tabla orders, obtén el número de orden, número de cliente, estado, fecha de envío de las órdenes numero 10165, 10287, 10310
36 • select orderNumber, customerNumber, "status", shippedDate from orders where orderNumber in (10165, 10287, 10310);
37 -- 19 de la tabla customers obtener apellido, nombre y ordenar por apellido de forma Ascendente
38 • select contactLastName, contactFirstName from customers order by contactLastName;
```

The results grid shows the following data:

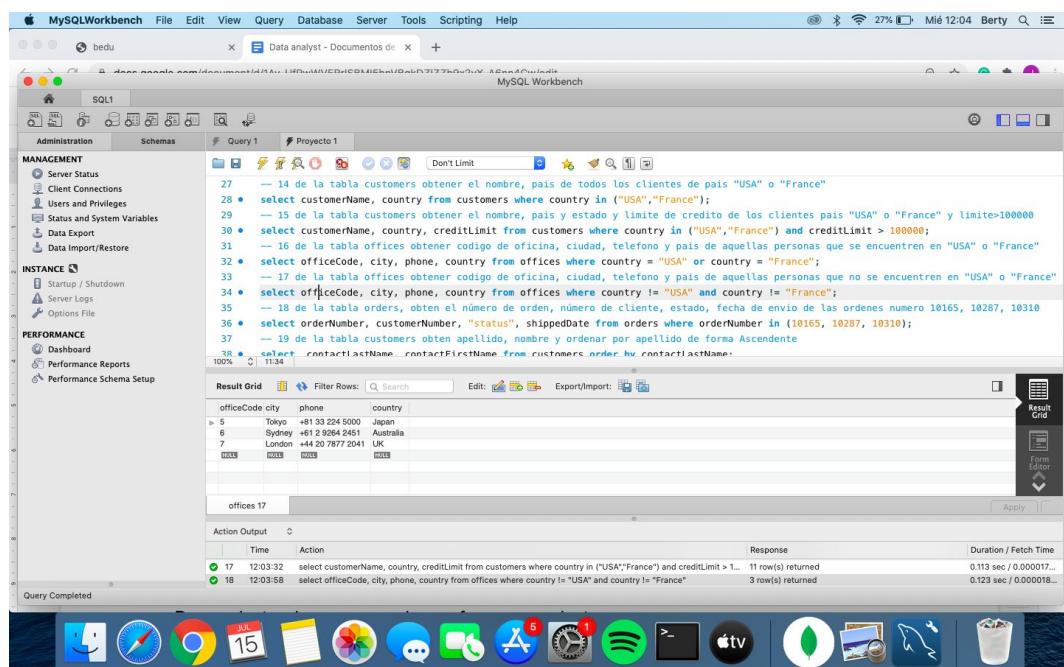
officeCode	city	phone	country
5	Tokyo	+81 33 224 5000	Japan
6	Sydney	+61 2 9264 2451	Australia
7	London	+44 20 7877 2041	UK

The 'Action Output' section shows two rows of activity:

Time	Action	Response	Duration / Fetch Time
12:03:32	select customerName, country, creditLimit from customers where country in ("USA","France") and creditLimit > 100000;	11 row(s) returned	0.113 sec / 0.000017...
12:03:58	select officeCode, city, phone, country from offices where country != "USA" and country != "France";	3 row(s) returned	0.123 sec / 0.000018...

-- 18 de la tabla orders, obtén el número de orden, número de cliente, estado, fecha de envío de las órdenes numero 10165, 10287, 10310

select orderNumber, customerNumber, "status", shippedDate from orders where orderNumber in (10165, 10287, 10310);



The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The title bar says 'MySQLWorkbench' and 'Mié 12:04 Berty'. The main window has a 'SQL1' tab selected. On the left, there's a sidebar with 'Administration', 'Schemas', and 'Query 1'. The 'Query 1' tab contains the following SQL code:

```
27 -- 14 de la tabla customers obtener el nombre, pais de todos los clientes de pais "USA" o "France"
28 • select customerName, country from customers where country in ("USA","France");
29 -- 15 de la tabla customers obtener el nombre, pais y estado y limite de credito de los clientes pais "USA" o "France" y limite>100000
30 • select customerName, country, creditLimit from customers where country in ("USA","France") and creditLimit > 100000;
31 -- 16 de la tabla offices obtener codigo de oficina, ciudad, telefono y pais de aquellas personas que se encuentren en "USA" o "France"
32 • select officeCode, city, phone, country from offices where country = "USA" or country = "France";
33 -- 17 de la tabla offices obtener codigo de oficina, ciudad, telefono y pais de aquellas personas que no se encuentren en "USA" o "France"
34 • select officeCode, city, phone, country from offices where country != "USA" and country != "France";
35 -- 18 de la tabla orders, obtén el número de orden, número de cliente, estado, fecha de envío de las órdenes numero 10165, 10287, 10310
36 • select orderNumber, customerNumber, "status", shippedDate from orders where orderNumber in (10165, 10287, 10310);
37 -- 19 de la tabla customers obtener apellido, nombre y ordenar por apellido de forma Ascendente
38 • select contactLastName, contactFirstName from customers order by contactLastName;
```

The results grid shows the following data:

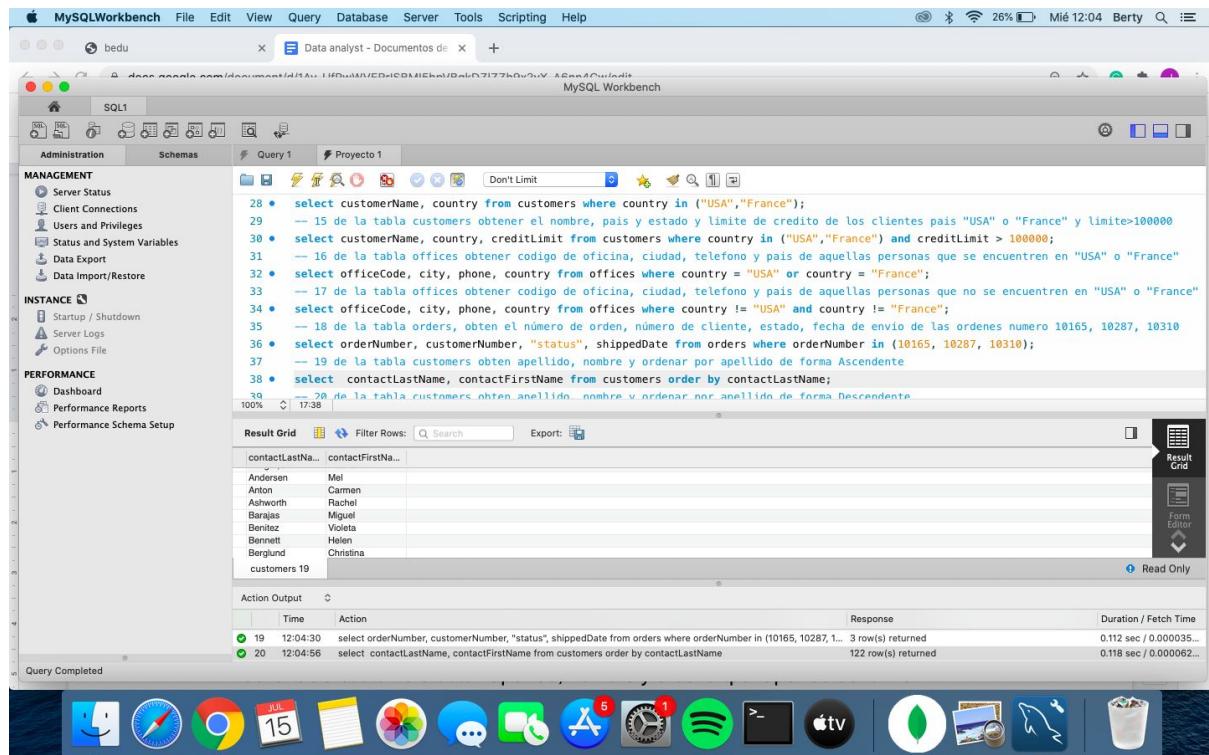
orderNumber	customerNumber	"status"	shippedDate
10165	10287	10310	

The 'Action Output' section shows two rows of activity:

Time	Action	Response	Duration / Fetch Time
12:03:32	select customerName, country, creditLimit from customers where country in ("USA","France") and creditLimit > 100000;	11 row(s) returned	0.113 sec / 0.000017...
12:03:58	select officeCode, city, phone, country from offices where country != "USA" and country != "France";	3 row(s) returned	0.123 sec / 0.000018...

-- 19 de la tabla customers obtén apellido, nombre y ordenar por apellido de forma Ascendente

```
select contactLastName, contactFirstName from customers order by contactLastName;
```



```
28 • select customerName, country from customers where country in ("USA","France");
29   -- 15 de la tabla customers obtener el nombre, país y estado y límite de crédito de los clientes país "USA" o "France" y límite>100000;
30 • select customerName, country, creditLimit from customers where country in ("USA","France") and creditLimit > 100000;
31   -- 16 de la tabla offices obtener código de oficina, ciudad, teléfono y país de aquellas personas que se encuentren en "USA" o "France"
32 • select officeCode, city, phone, country from offices where country = "USA" or country = "France";
33   -- 17 de la tabla offices obtener código de oficina, ciudad, teléfono y país de aquellas personas que no se encuentren en "USA" o "France"
34 • select officeCode, city, phone, country from offices where country != "USA" and country != "France";
35   -- 18 de la tabla orders, obtén el número de orden, número de cliente, estado, fecha de envío de las órdenes numero 10165, 10287, 10310
36 • select orderNumber, customerNumber, "status", shippedDate from orders where orderNumber in (10165, 10287, 10310);
37   -- 19 de la tabla customers obtén apellido, nombre y ordenar por apellido de forma Ascendente
38 • select contactLastName, contactFirstName from customers order by contactLastName;
39   -- 20 de la tabla customers obtén apellido, nombre y ordenar por apellido de forma Descendente
40   -- 21 de la tabla customers obtén apellido, nombre y ordenar por apellido de forma Descendente v. luces por nombre en forma ascendente
100% 17:38
```

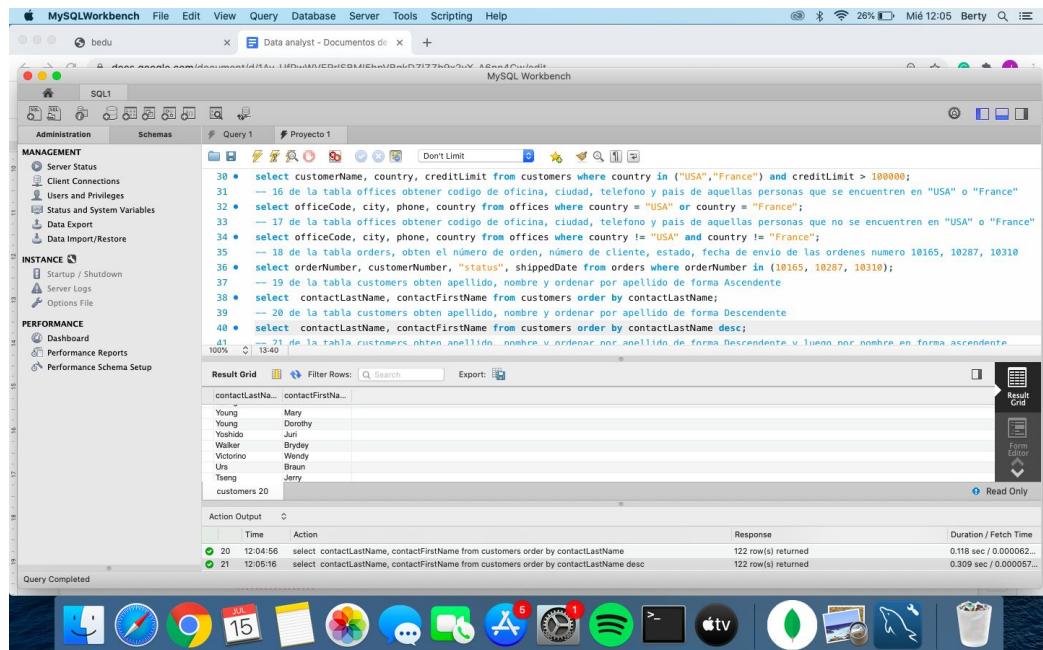
contactLastName	contactFirstName
Andersen	Mel
Anton	Carmen
Ashworth	Rachel
Barajas	Miguel
Bennet	Violeta
Bennett	Helen
Berglund	Christina

Action Output

Time	Action	Response	Duration / Fetch Time
12:04:30	select orderNumber, customerNumber, "status", shippedDate from orders where orderNumber in (10165, 10287, 10310)	3 row(s) returned	0.112 sec / 0.000035...
12:04:56	select contactLastName, contactFirstName from customers order by contactLastName	122 row(s) returned	0.118 sec / 0.000062...

-- 20 de la tabla customers obtén apellido, nombre y ordenar por apellido de forma Descendente

```
select contactLastName, contactFirstName from customers order by contactLastName desc;
```



```
30 • select customerName, country, creditLimit from customers where country in ("USA","France") and creditLimit > 100000;
31   -- 16 de la tabla offices obtener código de oficina, ciudad, teléfono y país de aquellas personas que se encuentren en "USA" o "France"
32 • select officeCode, city, phone, country from offices where country = "USA" or country = "France";
33   -- 17 de la tabla offices obtener código de oficina, ciudad, teléfono y país de aquellas personas que no se encuentren en "USA" o "France"
34 • select officeCode, city, phone, country from offices where country != "USA" and country != "France";
35   -- 18 de la tabla orders, obtén el número de orden, número de cliente, estado, fecha de envío de las órdenes numero 10165, 10287, 10310
36 • select orderNumber, customerNumber, "status", shippedDate from orders where orderNumber in (10165, 10287, 10310);
37   -- 19 de la tabla customers obtén apellido, nombre y ordenar por apellido de forma Ascendente
38 • select contactLastName, contactFirstName from customers order by contactLastName;
39   -- 20 de la tabla customers obtén apellido, nombre y ordenar por apellido de forma Descendente
40 • select contactLastName, contactFirstName from customers order by contactLastName desc;
41   -- 21 de la tabla customers obtén apellido, nombre y ordenar por apellido de forma Descendente v. luces por nombre en forma ascendente
100% 13:40
```

contactLastName	contactFirstName
Young	Mary
Young	Dorothy
Yoshida	Juri
Walker	Brydey
Wentzler	Wendy
Uro	Brian
Tseng	Jerry

Action Output

Time	Action	Response	Duration / Fetch Time
12:04:56	select contactLastName, contactFirstName from customers order by contactLastName	122 row(s) returned	0.118 sec / 0.000062...
12:05:16	select contactLastName, contactFirstName from customers order by contactLastName desc	122 row(s) returned	0.309 sec / 0.000057...

-- 21 de la tabla customers obtén apellido, nombre y ordenar por apellido de forma Descendente y luego por nombre en forma ascendente

```
select contactLastName, contactFirstName from customers order by contactLastName desc;
select contactLastName, contactFirstName from customers order by contactFirstName asc;
```

The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The main window displays three SQL statements:

```

1 -- 21 de la tabla customers obtén apellido, nombre y ordenar por apellido de forma Descendente y luego por nombre en forma ascendente
2 • everything, if there is no selection FirstName from customers order by contactLastName desc;
3 • select contactLastName, contactFirstName from customers order by contactFirstName asc;

```

The Result Grid shows the following data:

contactLastNa...	contactFirstNa...
Young	Mary
Young	Dorothy
Yoshido	Juri
Walker	Bryony
Victorino	Wendy
Urs	Braun

The Action Output table shows two recent actions:

Action	Time	Response	Duration / Fetch Time
select contactLastName, contactFirstName from customers order by contactLastName desc	26 12:07:05	122 row(s) returned	0.111 sec / 0.000058...
select contactLastName, contactFirstName from customers order by contactFirstName asc	27 12:07:06	122 row(s) returned	0.113 sec / 0.000032...

The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The main window displays three SQL statements:

```

1 -- 21 de la tabla customers obtén apellido, nombre y ordenar por apellido de forma Descendente y luego por nombre en forma ascendente
2 • select contactLastName, contactFirstName from customers order by contactLastName desc;
3 • select contactLastName, contactFirstName from customers order by contactFirstName asc;

```

The Result Grid shows the following data:

contactLastNa...	contactFirstNa...
Camino	Alejandra
Fauer	Alexander
Semenov	Alexander
Nelson	Allen
Brown	Ann
O'Hara	Anna

The Action Output table shows two recent actions:

Action	Time	Response	Duration / Fetch Time
select contactLastName, contactFirstName from customers order by contactLastName desc	28 12:07:10	122 row(s) returned	0.111 sec / 0.000058...
select contactLastName, contactFirstName from customers order by contactFirstName asc	29 12:07:10	122 row(s) returned	0.113 sec / 0.000032...

-- 22 limite mayor 5

```
select customerNumber, customerName, creditLimit from customers where creditLimit >0  
order by creditLimit desc limit 5;
```

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```
35 -- 18 de la tabla orders, obten el número de orden, número de cliente, estado, fecha de envío de las órdenes numero 10165, 10287, 10310;  
36 • select orderNumber, customerNumber, "status", shippedDate from orders where orderNumber in (10165, 10287, 10310);  
37 -- 19 de la tabla customers obtén apellido, nombre y ordenar por apellido de forma Ascendente  
38 • select contactLastName, contactFirstName from customers order by contactLastName;  
39 -- 20 de la tabla customers obtén apellido, nombre y ordenar por apellido de forma Descendente  
40 • select contactLastName, contactFirstName from customers order by contactLastName desc;  
41 -- 21 de la tabla customers obtén apellido, nombre y ordenar por apellido de forma Descendente y luego por nombre en forma ascendente  
42 • select contactLastName, contactFirstName from customers order by contactLastName desc;  
43 • select contactLastName, contactFirstName from customers order by contactFirstName asc;  
44 -- 22 límite mayor 5  
45 • select customerNumber, customerName, creditLimit from customers where creditLimit >0 order by creditLimit desc limit 5;  
46 -- 23 límite menor 5
```

The Result Grid shows the following data:

customerNumber	customerName	creditLimit
141	Euro+ Shopping Channel	227600.00
124	Mini Gifts Distributors Ltd.	210500.00
298	Vida Sport, Ltd	141300.00
151	Muscle Machine Inc	138500.00
187	AV Stores, Co.	136800.00

The Action Output pane shows two queries:

Action	Time	Response	Duration / Fetch Time
29 12:07:10 select contactLastName, contactFirstName from customers order by contactFirstName asc		122 row(s) returned	0.119 sec / 0.000052...
30 12:08:52 select customerNumber, customerName, creditLimit from customers where creditLimit >0 order by creditLimit de...		5 row(s) returned	0.110 sec / 0.000018...

-- 23 límite menor 5

```
select customerNumber, customerName, creditLimit from customers where creditLimit >0  
order by creditLimit asc limit 5;
```

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```
35 -- 18 de la tabla orders, obten el número de orden, número de cliente, estado, fecha de envío de las órdenes numero 10165, 10287, 10310;  
36 • select orderNumber, customerNumber, "status", shippedDate from orders where orderNumber in (10165, 10287, 10310);  
37 -- 19 de la tabla customers obtén apellido, nombre y ordenar por apellido de forma Ascendente  
38 • select contactLastName, contactFirstName from customers order by contactLastName;  
39 -- 20 de la tabla customers obtén apellido, nombre y ordenar por apellido de forma Descendente  
40 • select contactLastName, contactFirstName from customers order by contactLastName desc;  
41 -- 21 de la tabla customers obtén apellido, nombre y ordenar por apellido de forma Descendente y luego por nombre en forma ascendente  
42 • select contactLastName, contactFirstName from customers order by contactLastName desc;  
43 • select contactLastName, contactFirstName from customers order by contactFirstName asc;  
44 -- 22 límite mayor 5  
45 • select customerNumber, customerName, creditLimit from customers where creditLimit >0 order by creditLimit desc limit 5;  
46 -- 23 límite menor 5
```

The Result Grid shows the following data:

customerNumber	customerName	creditLimit
141	Euro+ Shopping Channel	227600.00
124	Mini Gifts Distributors Ltd.	210500.00
298	Vida Sport, Ltd	141300.00
151	Muscle Machine Inc	138500.00
187	AV Stores, Co.	136800.00

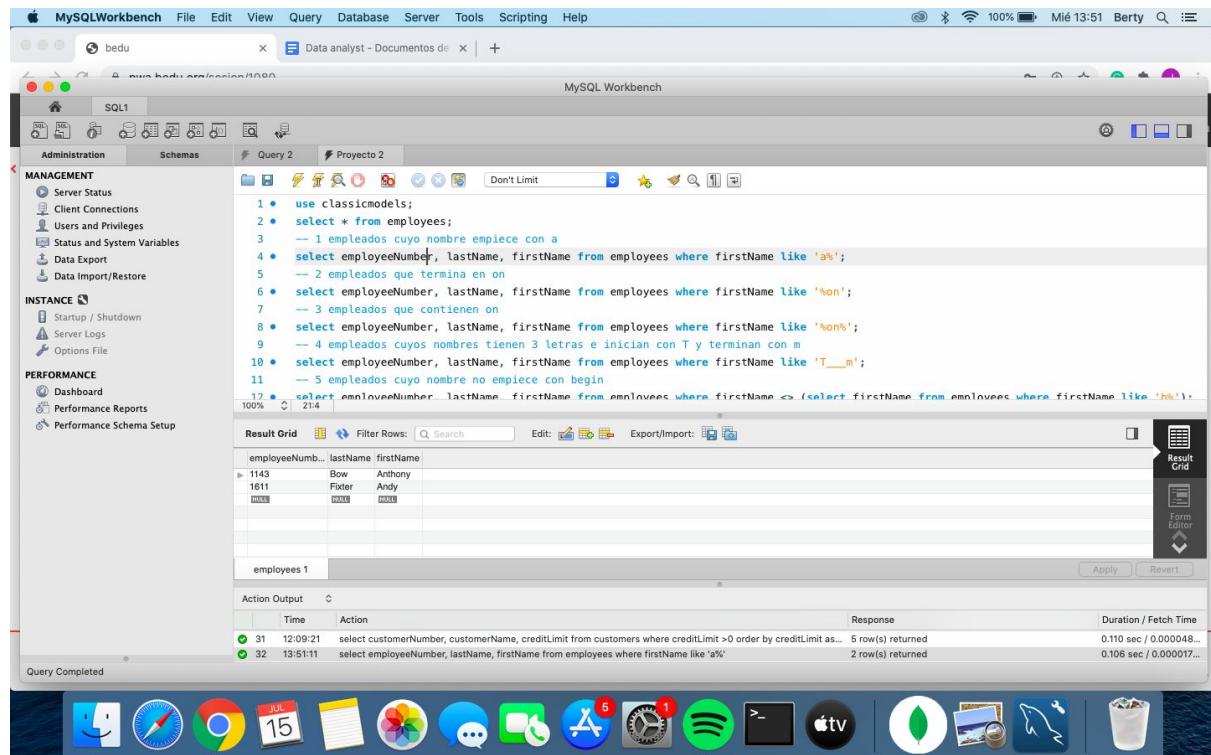
The Action Output pane shows two queries:

Action	Time	Response	Duration / Fetch Time
29 12:07:10 select contactLastName, contactFirstName from customers order by contactFirstName asc		122 row(s) returned	0.119 sec / 0.000052...
30 12:08:52 select customerNumber, customerName, creditLimit from customers where creditLimit >0 order by creditLimit de...		5 row(s) returned	0.110 sec / 0.000018...

## Sesión 02 Agrupaciones y subconsultas

### Proyecto 2

-- 1 empleados cuyo nombre empieza con a  
select employeeNumber, lastName, firstName from employees where firstName like 'a%';



The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The left sidebar contains navigation links for Administration, Schemas, Query 2, and Proyecto 2. The main area displays a SQL editor with the following code:

```
1 • use classicmodels;
2 • select * from employees;
3 — 1 empleados cuyo nombre empieza con a
4 • select employeeNumber, lastName, firstName from employees where firstName like 'a%';
5 — 2 empleados que terminan en on
6 • select employeeNumber, lastName, firstName from employees where firstName like '%on';
7 — 3 empleados que contienen on
8 • select employeeNumber, lastName, firstName from employees where firstName like '%on%';
9 — 4 empleados cuyos nombres tienen 3 letras e inician con T y terminan con m
10 • select employeeNumber, lastName, firstName from employees where firstName like 'T___m';
11 — 5 empleados cuyo nombre no empieza con begin
12 • select employeeNumber, lastName, firstName from employees where firstName >= (select firstName from employees where firstName like 'b%');
100% 21:4
```

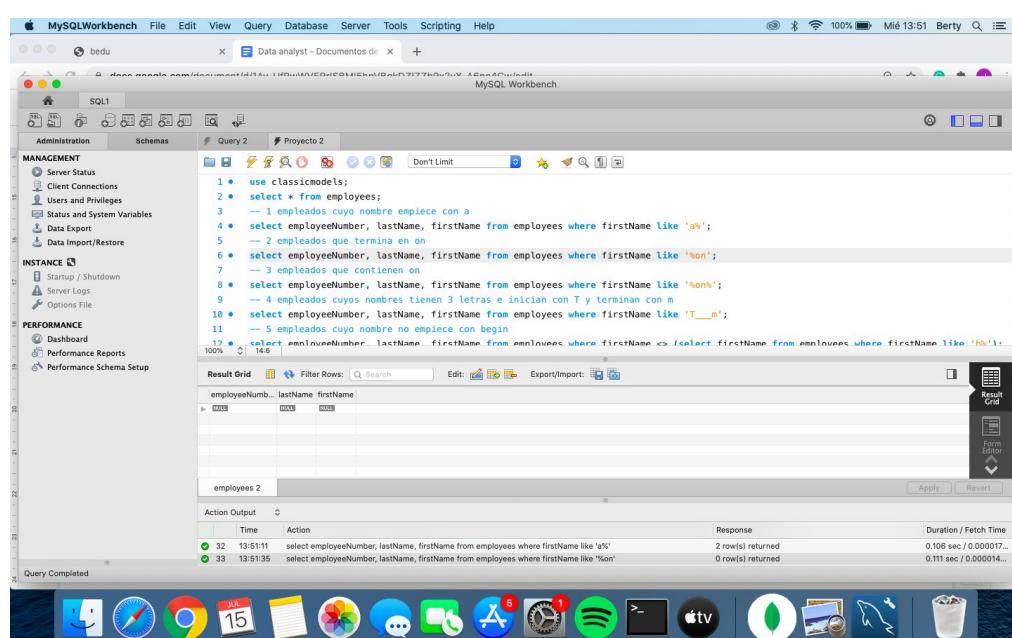
The Result Grid shows the following data:

employeeNumber	lastName	firstName
1143	Bow	Anthony
1611	Fixter	Andy

The Action Output table shows two recent actions:

Action	Time	Response	Duration / Fetch Time
select customerNumber, customerName, creditLimit from customers where creditLimit > 0 order by creditLimit asc...	12:09:21	5 row(s) returned	0.110 sec / 0.000048...
select employeeNumber, lastName, firstName from employees where firstName like 'a%'	13:51:11	2 row(s) returned	0.106 sec / 0.000017...

-- 2 empleados que termina en on  
select employeeNumber, lastName, firstName from employees where firstName like '%on';



The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The left sidebar contains navigation links for Administration, Schemas, Query 2, and Proyecto 2. The main area displays a SQL editor with the following code:

```
1 • use classicmodels;
2 • select * from employees;
3 — 1 empleados cuyo nombre empieza con a
4 • select employeeNumber, lastName, firstName from employees where firstName like 'a%';
5 — 2 empleados que termina en on
6 • select employeeNumber, lastName, firstName from employees where firstName like '%on';
7 — 3 empleados que contienen on
8 • select employeeNumber, lastName, firstName from employees where firstName like '%on%';
9 — 4 empleados cuyos nombres tienen 3 letras e inician con T y terminan con m
10 • select employeeNumber, lastName, firstName from employees where firstName like 'T___m';
11 — 5 empleados cuyo nombre no empieza con begin
12 • select employeeNumber, lastName, firstName from employees where firstName >= (select firstName from employees where firstName like 'b%');
100% 19:6
```

The Result Grid shows the following data:

employeeNumber	lastName	firstName
1143	Bow	Anthony
1611	Fixter	Andy

The Action Output table shows two recent actions:

Action	Time	Response	Duration / Fetch Time
select employeeNumber, lastName, firstName from employees where firstName like 'a%'	13:51:11	2 row(s) returned	0.106 sec / 0.000017...
select employeeNumber, lastName, firstName from employees where firstName like '%on%'	13:51:35	0 row(s) returned	0.111 sec / 0.000014...

-- 3 empleados que contienen on

select employeeNumber, lastName, firstName from employees where firstName like '%on%';

The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The main window displays a SQL editor with the following code:

```
1 • use经典models;
2 • select * from employees;
3 -- 1 empleados cuyo nombre empieza con a
4 • select employeeNumber, lastName, firstName from employees where firstName like 'a%';
5 -- 2 empleados que terminan en on
6 • select employeeNumber, lastName, firstName from employees where firstName like '%on';
7 -- 3 empleados que contienen on
8 • select employeeNumber, lastName, firstName from employees where firstName like '%on%';
9 -- 4 empleados cuyos nombres tienen 3 letras e inician con T y terminan con m
10 • select employeeNumber, lastName, firstName from employees where firstName like 'T__m';
11 -- 5 empleados cuyo nombre no empieza con begin
12 • select employeeNumber, lastName, firstName from employees where firstName > (select firstName from employees where firstName like 'Na%').
```

The Result Grid shows the following data:

employeeNumber	lastName	firstName

The Action Output pane shows two log entries:

Action	Time	Response	Duration / Fetch Time
32	13:51:11	select employeeNumber, lastName, firstName from employees where firstName like 'a%'	2 row(s) returned 0.106 sec / 0.000017...
33	13:51:35	select employeeNumber, lastName, firstName from employees where firstName like '%on%'	0 row(s) returned 0.111 sec / 0.000014...

-- 4 empleados cuyos nombres tienen 3 letras e inician con T y terminan con m

select employeeNumber, lastName, firstName from employees where firstName like 'T\_m';

The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The main window displays a SQL editor with the following code:

```
1 • use经典models;
2 • select * from employees;
3 -- 1 empleados cuyo nombre empieza con a
4 • select employeeNumber, lastName, firstName from employees where firstName like 'a%';
5 -- 2 empleados que terminan en on
6 • select employeeNumber, lastName, firstName from employees where firstName like '%on';
7 -- 3 empleados que contienen on
8 • select employeeNumber, lastName, firstName from employees where firstName like '%on%';
9 -- 4 empleados cuyos nombres tienen 3 letras e inician con T y terminan con m
10 • select employeeNumber, lastName, firstName from employees where firstName like 'T__m';
11 -- 5 empleados cuyo nombre no empieza con begin
12 • select employeeNumber, lastName, firstName from employees where firstName > (select firstName from employees where firstName like 'Na%').
```

The Result Grid shows the following data:

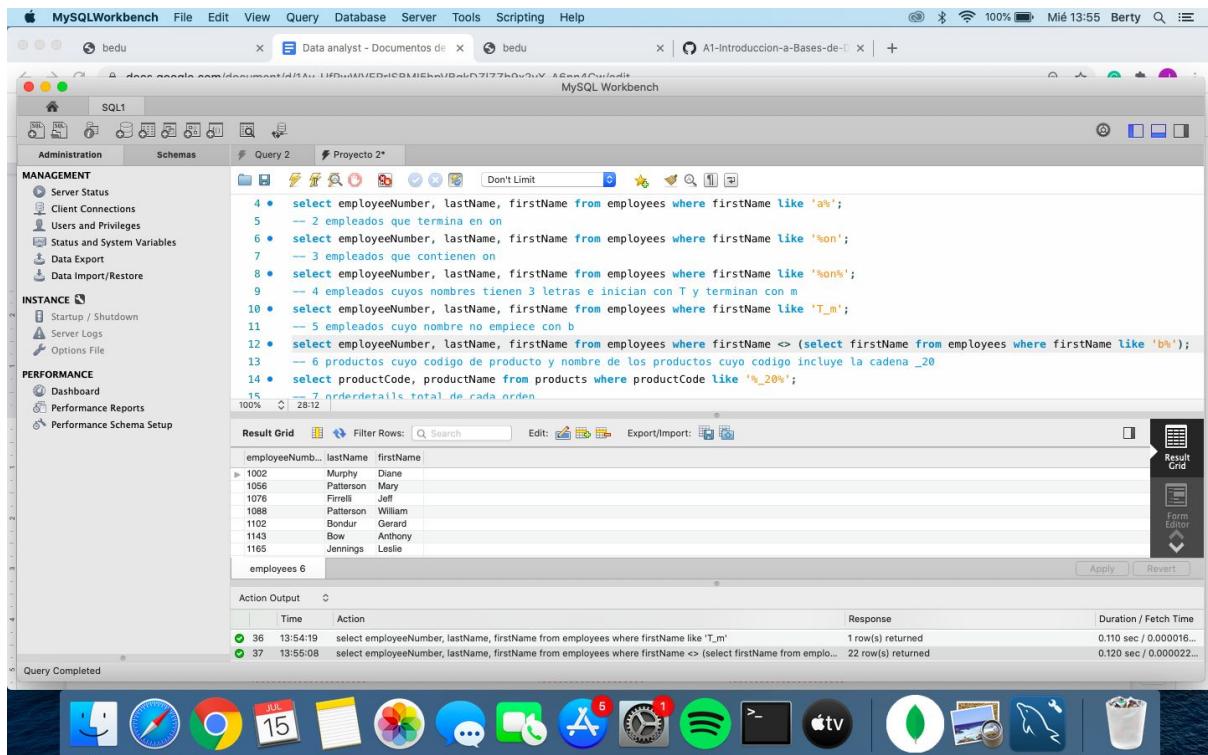
employeeNumber	lastName	firstName
1619	King	Tom

The Action Output pane shows two log entries:

Action	Time	Response	Duration / Fetch Time
35	13:52:59	select employeeNumber, lastName, firstName from employees where firstName like 'T__m'	0 row(s) returned 0.110 sec / 0.000016...
36	13:54:19	select employeeNumber, lastName, firstName from employees where firstName like 'T_m'	1 row(s) returned 0.110 sec / 0.000016...

-- 5 empleados cuyo nombre no empiece con b

```
select employeeNumber, lastName, firstName from employees where firstName <> (select firstName from employees where firstName like 'b%');
```



The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The SQL editor contains the following query:

```
4 • select employeeNumber, lastName, firstName from employees where firstName like 'a%';
5   -- 2 empleados que termina en on
6 • select employeeNumber, lastName, firstName from employees where firstName like '%on';
7   -- 3 empleados que contienen on
8 • select employeeNumber, lastName, firstName from employees where firstName like '%on%';
9   -- 4 empleados cuyos nombres tienen 3 letras e inician con T y terminan con m
10 • select employeeNumber, lastName, firstName from employees where firstName like 'T_m';
11   -- 5 empleados cuyo nombre no empieza con b
12 • select employeeNumber, lastName, firstName from employees where firstName <> (select firstName from employees where firstName like 'b%');
13   -- 6 productos cuyo codigo de producto y nombre de los productos cuyo codigo incluye la cadena _20
14 • select productCode, productName from products where productCode like '%_20%';
15   -- 7 ordenes totales de cada orden
```

The Result Grid shows the following data:

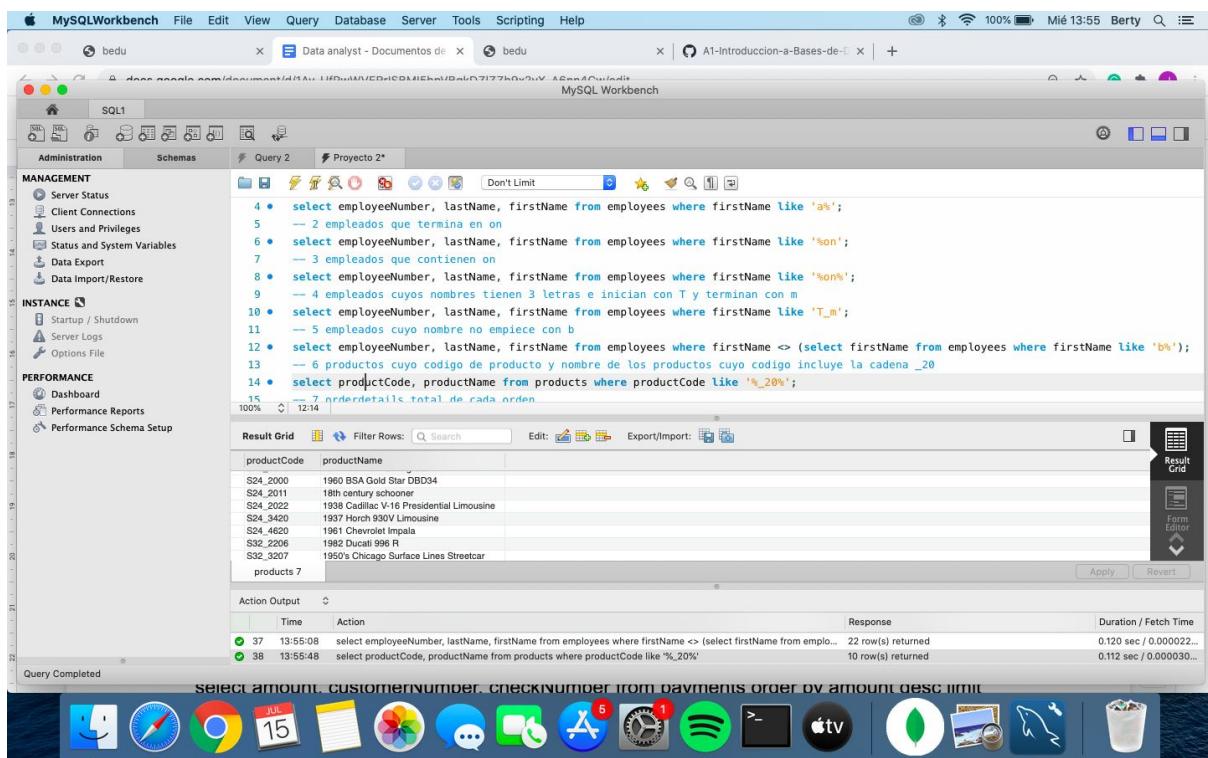
employeeNumber	lastName	firstName
1002	Murphy	Diane
1056	Patterson	Mary
1076	Firelli	Jeff
1089	Patterson	William
1102	Bondur	Gerard
1143	Bow	Anthony
1165	Jennings	Leslie

Action Output shows two log entries:

Time	Action	Response	Duration / Fetch Time
13:54:19	select employeeNumber, lastName, firstName from employees where firstName like 'T_m'	1 row(s) returned	0.110 sec / 0.000016...
13:55:08	select employeeNumber, lastName, firstName from employees where firstName <> (select firstName from employees where firstName like 'b%')	22 row(s) returned	0.120 sec / 0.000022...

-- 6 productos cuyo codigo de producto y nombre de los productos cuyo codigo incluye la cadena \_20

```
select productCode, productName from products where productCode like '%_20%';
```



The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The SQL editor contains the following query:

```
4 • select employeeNumber, lastName, firstName from employees where firstName like 'a%';
5   -- 2 empleados que termina en on
6 • select employeeNumber, lastName, firstName from employees where firstName like '%on';
7   -- 3 empleados que contienen on
8 • select employeeNumber, lastName, firstName from employees where firstName like '%on%';
9   -- 4 empleados cuyos nombres tienen 3 letras e inician con T y terminan con m
10 • select employeeNumber, lastName, firstName from employees where firstName like 'T_m';
11   -- 5 empleados cuyo nombre no empieza con b
12 • select employeeNumber, lastName, firstName from employees where firstName <> (select firstName from employees where firstName like 'b%');
13   -- 6 productos cuyo codigo de producto y nombre de los productos cuyo codigo incluye la cadena _20
14 • select productCode, productName from products where productCode like '%_20%';
15   -- 7 ordenes totales de cada orden
```

The Result Grid shows the following data:

productCode	productName
S24_2000	1960 BSA Gold Star DBD34
S24_2011	18th century schooner
S24_2022	1938 Cadillac V-16 Presidential Limousine
S24_3420	1937 Horch 930V Limousine
S24_4620	1961 Chevrolet Impala
S32_2206	1982 Ducati 996 R
S32_3207	1950's Chicago Surface Lines Streetcar

Action Output shows two log entries:

Time	Action	Response	Duration / Fetch Time
13:55:08	select employeeNumber, lastName, firstName from employees where firstName <> (select firstName from employees where firstName like 'b%')	22 row(s) returned	0.120 sec / 0.000022...
13:55:48	select productCode, productName from products where productCode like '%_20%'	10 row(s) returned	0.112 sec / 0.000030...

-- 7 orderdetails total de cada orden

```
select orderNumber, count(*) total from orderdetails group by orderNumber order by total desc;
```

The screenshot shows the MySQL Workbench interface. The left sidebar has sections for MANAGEMENT, INSTANCE, and PERFORMANCE. The main area contains a SQL editor with the following code:

```
10 • select employeeNumber, lastName, firstName from employees where firstName like 'T_m';
11   -- 5 empleados cuya nombre no empieza con b
12 • select employeeNumber, lastName, firstName from employees where firstName <> (select firstName from employees where firstName like 'bs');
13   -- 6 productos cuya código de producto y nombre de los productos cuyo código incluye la cadena _20
14 • select productCode, productName from products where productCode like '%_20%';
15   -- 7 orderdetails total de cada orden
16 • select orderNumber, count(*) total from orderdetails group by orderNumber order by total desc;
17   -- 8 select orders total de números de año
18 • select (select count(orderNumber) from orders as a where orderDate like '2003%'),
19   (select count(orderNumber) from orders as b where orderDate like '2004%'),
20   (select count(orderNumber) from orders as c where orderDate like '2005%')
21   from orders ac
100% 42:16
```

The Result Grid shows the output:

orderNumber	total
10165	18
10168	18
10222	18
10275	18
10316	18
10332	18
10360	18

The Action Output table shows the execution details:

Action	Time	Response	Duration / Fetch Time
38 13:56:48 select productCode, productName from products where productCode like '%_20%'		10 row(s) returned	0.112 sec / 0.000030...
39 13:56:15 select orderNumber, count(*) total from orderdetails group by orderNumber order by total desc		326 row(s) returned	0.148 sec / 0.00012...

-- 8 select orders total de numeros de año

```
select (select count(orderNumber) from orders as a where orderDate like '2003%'),
```

```
(select count(orderNumber) from orders as b where orderDate like '2004%'),
```

```
(select count(orderNumber) from orders as c where orderDate like '2005%')
```

```
from orders as e
```

```
group by "status";
```

The screenshot shows the MySQL Workbench interface. The left sidebar has sections for SCHEMAS, TABLES, and STORED PROCEDURES. The main area contains a SQL editor with the following code:

```
14 • select productCode, productName from products where productCode like '%_20%';
15   -- 7 orderdetails total de cada orden
16 • select orderNumber, count(*) total from orderdetails group by orderNumber order by total desc;
17   -- 8 select orders total de números de año
18 • select (select count(orderNumber) from orders as a where orderDate like '2003%'),
19   (select count(orderNumber) from orders as b where orderDate like '2004%'),
20   (select count(orderNumber) from orders as c where orderDate like '2005%')
21   from orders as e
22   group by "status";
23   -- 9 select empleados con oficina en USA oficinas 1, 2 y 3
24 • select lastName, firstName, officeCode from employees as a where officeCode in (select officeCode from offices where country
25   -- 10 Obten el número del cliente, número de cheque y cantidad del cliente que ha realizado el pago más alto.
26 • select amount, customerNumber, checkNumber from payments order by amount desc limit 1;
27   -- 11 Obten el número del cliente, número de cheque y cantidad de aquellos clientes cuyo pago es más alto que el promedio.
28 • select customerNumber, checkNumber, amount from payments where amount > (select avg(amount) from payments) order by amount de
130% 24:18
```

The Form Editor shows the results of the sub-selects:

Result	1	2	3
(select count(orderNumber) from orders as a where orderDate like '2003%'):	111		
(select count(orderNumber) from orders as b where orderDate like '2004%'):	161		
(select count(orderNumber) from orders as c where orderDate like '2005%'):	64		

The Result Grid shows the final output:

customerNumber	checkNumber	amount
1000000000000000000	1000000000000000000	1000000000000000000

The Action Output table shows the execution details:

Action	Time	Response	Duration / Fetch Time
39 13:57:15 select orderNumber, count(*) total from orderdetails group by orderNumber order by total desc		326 row(s) returned	0.146 sec / 0.00012...
40 13:57:53 select (select count(orderNumber) from orders as a where orderDate like '2003%'), (select count(orderNumber) from orders as b whe...		1 row(s) returned	0.116 sec / 0.000023...

-- 9 select empleados con oficina en USA oficinas 1, 2 y 3

```
select lastName, firstName, officeCode from employees as a where officeCode in (select officeCode from offices where country = "USA");
```

Result Grid

lastName	firstName	officeCode
Murphy	Diane	1
Patterson	Mary	1
Farrell	Jill	1
Boss	Anthony	1
Jennings	Leslie	1
Thompson	Leslie	1
Firelli	Julie	2
Patterson	Steve	2
Tseng	Foon Yue	3
Vanauf	George	3

Action Output

Time	Action	Response	Duration / Fetch Time
40 13:57:53	select (select count(orderNumber) from orders as a where orderDate like '2003%'), (select count(orderNumber) from orders as b where orderDate like '2004%'), (select count(orderNumber) from orders as c where orderDate like '2005%')	1 row(s) returned	0.116 sec / 0.000023...
41 14:00:48	select lastName, firstName, officeCode from employees as a where officeCode in (select officeCode from offices where country = "US...")	10 row(s) returned	0.112 sec / 0.000020...

-- 10 Obten el número de cliente, número de cheque y cantidad del cliente que ha realizado el pago más alto.

```
select amount, customerNumber, checkNumber from payments order by amount desc limit 1;
```

Result Grid

amount	customerNumber	checkNumber
120166.58	141	JE105477

Action Output

Time	Action	Response	Duration / Fetch Time
41 14:00:48	select lastName, firstName, officeCode from employees as a where officeCode in (select officeCode from offices where country = "US...")	10 row(s) returned	0.112 sec / 0.000020...
42 14:01:10	select amount, customerNumber, checkNumber from payments order by amount desc limit 1	1 row(s) returned	0.118 sec / 0.000018...

-- 11 Obten el número de cliente, número de cheque y cantidad de aquellos clientes cuyo pago es más alto que el promedio.

```
select customerNumber, checkNumber, amount from payments where amount > (select avg(amount) from payments) order by amount desc;
```

Administration Schemas Query 2 Projeto 2\*

SCHEMAS

Q Filter objects

AEJ ALM AR AVH BMR CF classicmodels Tables Views Stored Proced... Functions DAJ EV JO MMS RC RL Ro SA SC SCZ SH sys tienda WH YC YCM

SQL1

Don't Limit

17 -- 8 select orders total de numeros de año  
18 • select (select count(orderNumber) from orders as a where orderDate like '2003%'),  
19 (select count(orderNumber) from orders as b where orderDate like '2004%'),  
20 (select count(orderNumber) from orders as c where orderDate like '2005%')  
21 from orders as e  
22 group by "status";  
23 -- 9 select empleados con oficina en USA oficinas 1, 2 y 3  
24 • select lastName, firstName, officeCode from employees as a where officeCode in (select officeCode from offices where country  
25 -- 10 Obten el número de cliente, número de cheque y cantidad del cliente que ha realizado el pago más alto.  
26 • select amount, customerNumber, checkNumber from payments order by amount desc limit 1;  
27 -- 11 Obten el número de cliente, número de cheque y cantidad de aquellos clientes cuyo pago es más alto que el promedio.  
28 • select customerNumber, checkNumber, amount from payments where amount > (select avg(amount) from payments) order by amount desc;  
29 -- 12 Obten el nombre de aquellos clientes que no han hecho ninguna orden.  
30 • select customerName, Total from (select a.customerName, (select count(\*) from orders as b where a.customerNumber=b.customerNumber  
31 from customers as a) as Total  
130% C 14:28

Result Grid Filter Row Search Edit Export/Import

customerNumber	checkNumber	amount
141	JF105477	120166.58
141	ID10962	116308.40
124	KI131716	111654.40
148	KM172879	105743.00
124	AE15433	101244.59
321	DJ15149	85599.12
124	BG255406	85410.87
167	GN22884	85024.46
124	ET43496	83598.04
114	MAT6555	8221.22
239	NQ865547	80375.24
323	AL493079	75020.13
***	IM44768	45001.96

payments 12

Action Output

Time	Action	Response	Duration / Fetch Time
42 14:01:10	select amount, customerNumber, checkNumber from payments order by amount desc limit 1	1 row(s) returned	0.118 sec / 0.000018...
43 14:02:22	select customerNumber, checkNumber, amount from payments where amount > (select avg(amount) from payments) order by amount...	134 row(s) returned	0.129 sec / 0.000060...

Query Generated

-- 12 Obtén el nombre de aquellos clientes que no han hecho ninguna orden

```
select customerName, Total from (select a.customerName, (select count(*) from orders as b  
where a.customerNumber=b.customerNumber) Total  
from customers a) as z where Total = '0';
```

The screenshot shows the Oracle SQL Developer interface. The top navigation bar includes tabs for Administration, Schemas, and SQL1. Below the navigation bar is a toolbar with various icons. The left sidebar lists database schemas: AEJ, ALM, AR, AVH, BMR, CF, and classicmodels. The classicmodels schema is expanded to show Tables, Views, Stored Proced., Functions, DAJ, EV, JO, MMS, RC, RL, Ro, SA, SC, SCZ, SH, sys, tienda, WH, YC, and YCM. The main workspace contains a query editor with the following code:

```
17 -- 8 select orders total de numeros de año
18 • select (select count(orderNumber) from orders as a where orderDate like '2003%'),
19 (select count(orderNumber) from orders as b where orderDate like '2004%'),
20 (select count(orderNumber) from orders as c where orderDate like '2005%')
21 from orders as e
22 group by "status";
23 -- 9 select empleados con oficina en USA oficinas 1, 2 y 3
24 • select lastName, firstName, officeCode from employees as a where officeCode in (select officeCode from offices where country
25 -- 10 Obten el número de cliente, número de cheque y cantidad del cliente que ha realizado el pago más alto.
26 • select amount, customerNumber, checkNumber from payments order by amount desc limit 1;
27 -- 11 Obten el número de cliente, número de cheque y cantidad de aquellos clientes cuyo pago es más alto que el promedio.
28 • select customerNumber, checkNumber, amount from payments where amount > (select avg(amount) from payments) order by amount de
29 -- 12 Obten el nombre de aquellos clientes que no han hecho ninguna orden.
30 • select customerName, Total from (select a.customerName, (select count(*) from orders as b where a.customerNumber=b.customerNu
31 from customers a) as ? where Total = '0'.
130% 14:30
```

The Result Grid tab displays the results of the last query, which is empty. The Action Output tab shows two recent actions:

Action	Time	Response	Duration / Fetch Time
43	14:02:22	select customerNumber, checkNumber, amount from payments where amount > (select avg(amount) from payments) order by amount...	0.129 sec / 0.00006...
44	14:02:56	select customerName, Total from (select a.customerName, (select count(*) from orders as b where a.customerNumber=b.customerNu...	0.114 sec / 0.00023...

-- 13 Obten el máximo, mínimo y promedio del número de productos en las órdenes de venta

```
select orderNumber, max(quantityOrdered), min(quantityOrdered), avg(quantityOrdered)
from orderdetails group by orderNumber;
```

The screenshot shows the MySQL Workbench interface with the SQL tab selected. The query window contains the following code:

```
23 — 9 select empleados con oficina en USA oficinas 1, 2 y 3
24 • select lastName, firstName, officeCode from employees as a where officeCode in (select officeCode from offices where country
25 — 10 Obten el número de cliente, número de cheque y cantidad del cliente que ha realizado el pago más alto.
26 • select amount, customerNumber, checkNumber from payments order by amount desc limit 1;
27 — 11 Obten el número de cliente, número de cheque y cantidad de aquellos clientes cuyo pago es más alto que el promedio.
28 • select customerNumber, checkNumber, amount from payments where amount > (select avg(amount) from payments) order by amount de
29 — 12 Obten el nombre de aquellos clientes que no han hecho ninguna orden.
30 • select customerName, Total from (select a.customerName, (select count(*) from orders as b where a.customerNumber=b.customerNu
31 from customers a) as z where Total = '0';
32 — 13 Obten el máximo, mínimo y promedio del número de productos en las órdenes de venta
33 • select orderNumber, max(quantityOrdered), min(quantityOrdered), avg(quantityOrdered) from orderdetails group by orderNumber;
34 — 14 Dentro de la tabla orders, obtén el número de órdenes que hay por cada estado.
35 • select status, count(*) from orders group by status;
36 — 14a órdenes por cada estado(ubicación)
37 • select (select state from customers a where a.customerNumber=b.customerNumber).state count(orderNumber).total
```

The result grid shows the following data:

orderNumber	max(quantityOrder...)	min(quantityOrder...)	avg(quantityOrder...)
10102	41	39	40.0000
10103	46	22	33.8125
10104	49	23	34.0769
10105	50	22	36.3333
10106	50	26	37.5000
10107	39	20	28.6250
10108	45	26	35.0625
10109	47	26	35.3333
10110	48	20	35.6250
10111	48	26	36.1667
10112	29	23	26.0000
10113	50	21	35.7500

The action output shows two log entries:

Time	Action	Response	Duration / Fetch Time
14:02:56	select customerName, Total from (select a.customerName, (select count(*) from orders as b where a.customerNumber=b.customerNu...	24 row(s) returned	0.114 sec / 0.000023...
14:03:33	select orderNumber, max(quantityOrdered), min(quantityOrdered), avg(quantityOrdered) from orderdetails group by orderNumber	326 row(s) returned	0.128 sec / 0.00014 s...

-- 14 Dentro de la tabla orders, obtén el número de órdenes que hay por cada estado.

```
select status, count(*) from orders group by status;
```

The screenshot shows the MySQL Workbench interface with the SQL tab selected. The query window contains the following code:

```
27 — 11 Obten el número de cliente, número de cheque y cantidad de aquellos clientes cuyo pago es más alto que el promedio.
28 • select customerNumber, checkNumber, amount from payments where amount > (select avg(amount) from payments) order by amount
29 — 12 Obten el nombre de aquellos clientes que no han hecho ninguna orden.
30 • select customerName, Total from (select a.customerName, (select count(*) from orders as b where a.customerNumber=b.customerNu
31 from customers a) as z where Total = '0';
32 — 13 Obten el máximo, mínimo y promedio del número de productos en las órdenes de venta
33 • select orderNumber, max(quantityOrdered), min(quantityOrdered), avg(quantityOrdered) from orderdetails group by orderNumber;
34 — 14 Dentro de la tabla orders, obtén el número de órdenes que hay por cada estado.
35 • select status, count(*) from orders group by status;
36 — 14a órdenes por cada estado(ubicación)
37 • select (select state from customers a where a.customerNumber=b.customerNumber).state count(orderNumber).total
```

The result grid shows the following data:

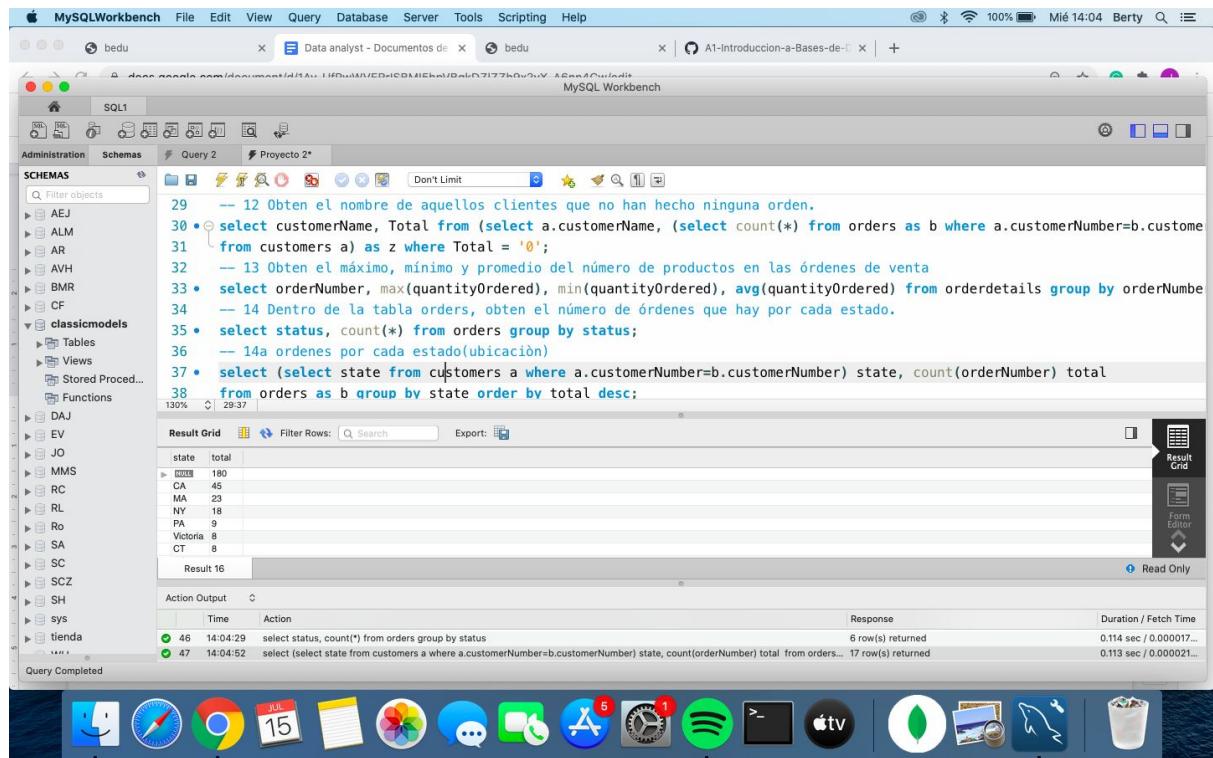
status	count(*)
Shipped	303
Resolved	4
Canceled	6
On Hold	4
Disputed	3
In Process	6

The action output shows two log entries:

Time	Action	Response	Duration / Fetch Time
14:03:33	select orderNumber, max(quantityOrdered), min(quantityOrdered), avg(quantityOrdered) from orderdetails group by orderNumber	326 row(s) returned	0.128 sec / 0.00014 s...
14:04:29	select status, count(*) from orders group by status	6 row(s) returned	0.114 sec / 0.000017...

-- 14a ordenes por cada estado(ubicaciòn)

```
select (select state from customers a where a.customerNumber=b.customerNumber) state,
count(orderNumber) total
from orders as b group by state order by total desc;
```



The screenshot shows the MySQL Workbench interface with the following details:

- SQL Editor:** Contains the SQL query provided above.
- Result Grid:** Displays the results of the query, showing the state and total count of orders for each state. The data is as follows:

state	total
HI	180
KS	65
MA	23
NY	18
PA	9
Victoria	8
CT	8

- Action Output:** Shows the history of actions taken, including the execution of the query.
- System Tray:** Shows various application icons at the bottom of the screen.

## Sesión 03 Agrupaciones y consultas

### Proyecto 3

-- 1.- Obten el código de producto, nombre de producto y descripción de todos los productos.

```
select a.productCode, a.productName, a.productDescription, b.productline, b.textDescription  
from productlines b  
right join products a  
on a.productLine=b.productLine  
group by a.productCode;
```

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following code:

```
use classicmodels;  
-- 1.- Obten el código de producto, nombre de producto y descripción de todos los productos.  
select a.productCode, a.productName, a.productDescription, b.productline, b.textDescription  
from productlines b  
right join products a  
on a.productLine=b.productLine  
group by a.productCode;  
-- 2.- Obten el número de orden, estado y costo total de cada orden.  
select b.orderNumber, status, round(sum(priceEach), 1) from orders b  
right join orderdetails a  
on b.orderNumber = a.orderNumber  
group by b.orderNumber;
```

The results grid displays the following data:

productCode	productName	productDescription	productline	textDescription
S10_2016	1996 Moto Guzzi 1100i	Official Moto Guzzi logos and insignias, saddle...	Motorcycles	Our motorcycles are state of the art replicas of classic as well as co...
S10_4698	2003 Harley-Davidson Eagle Drag Bike	Model features, official Harley Davidson logos a...	Motorcycles	Our motorcycles are state of the art replicas of classic as well as co...
S10_4757	1972 Alfa Romeo GTA	Features include: Turnable front wheels; steerin...	Classic Cars	Attention car enthusiasts: Make your wildest car ownership dreams...
S10_4902	1962 Lancia Delta 16V	Features include: Turnable front wheels; steerin...	Classic Cars	Attention car enthusiasts: Make your wildest car ownership dreams...
S12_1099	1968 Ford Mustang	Hood, doors and trunk all open to reveal highly...	Classic Cars	Attention car enthusiasts: Make your wildest car ownership dreams...
S12_1108	2001 Ferrari Enzo	Turnable front wheels; steering function; details...	Classic Cars	Attention car enthusiasts: Make your wildest car ownership dreams...
S12_1666	1958 Setra Bus	Model features 30 windows, skylights & glare re...	Trucks and Buses	The Truck and Bus models are realistic replicas of buses and spec...

The Action Output section shows two log entries:

Action	Time	Response	Duration / Fetch Time
use classicmodels	48 14:07:14	0 row(s) affected	0.109 sec
select a.productCode, a.productName, a.productDescription, b.productline, b.textDescription from productlines b right join produ...	49 14:07:20	110 row(s) returned	0.246 sec / 0.129 sec

-- 2.- Obten el número de orden, estado y costo total de cada orden.

```
select b.orderNumber, status, round(sum(priceEach), 1) from orders b
right join orderdetails a
on b.orderNumber = a.orderNumber
group by orderNumber;
describe products;
```

The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The title bar indicates the application is running at 98% battery life, with the date Mié 14:42 and user Berty. The main window displays two tabs: 'Query 1' and 'Query 2'. The 'Query 1' tab contains the provided SQL code. The 'Query 2' tab shows the results of the second query:

orderNumber	status	round(sum(priceEach), 1)
10100	Shipped	301.8
10101	Shipped	352.0
10102	Shipped	138.7
10103	Shipped	1520.4
10104	Shipped	1251.9
10105	Shipped	1479.7
10106	Shipped	1427.3

The 'Action Output' section at the bottom shows two log entries:

- 49 14:07:20 select a.productCode, a.productName, a.productDescription, b.productline, b.textDescription from productlines b right join produ... 110 row(s) returned 0.246 sec / 0.129 sec
- 50 14:09:03 select b.orderNumber, status, round(sum(priceEach), 1) from orders b right join orderdetails a on b.orderNumber = a.orderNumber... 326 row(s) returned 0.118 sec / 0.00014 s...

The Mac OS X dock is visible at the bottom, showing various application icons.

-- 3.- Obten el número de orden, fecha de orden, línea de orden, nombre del producto, cantidad ordenada y precio de cada pieza que muestre los detalles de cada orden.

```
select a.orderNumber, a.orderDate, b.orderLineNumber, c.productName, b.quantityOrdered, b.priceEach from orders as a  
right join orderdetails as b  
on a.orderNumber=b.orderNumber  
right join products as c  
on c.productCode=b.productCode  
order by a.orderNumber;
```

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree with several databases listed. The main area contains the SQL editor with the following code:

```
10 right join orderdetails a  
11 on b.orderNumber = a.orderNumber  
12 group by orderNumber;  
13 • describe products;  
14 -- 3.- Obten el número de orden, fecha de orden, línea de orden, nombre del producto, cantidad ordenada y precio de cada pieza que muestre los detalles  
15 • select a.orderNumber, a.orderDate, b.orderLineNumber, c.productName, b.quantityOrdered, b.priceEach from orders as a  
16 right join orderdetails as b  
17 on a.orderNumber=b.orderNumber  
18 right join products as c  
19 on c.productCode=b.productCode  
20 order by a.orderNumber;  
21 -- 4.- Obten el número de orden, nombre del producto, el precio sugerido de fábrica (msrp) y precio de cada pieza.
```

The 'Result Grid' tab is selected, showing the query results:

orderNumber	orderDate	orderLineNumber	productName	quantityOrdered	priceEach
10100	2003-01-06	2	1911 Ford Town Car	50	55.09
10100	2003-01-06	4	1932 Alfa Romeo 8C2300 Spider Sport	22	75.46
10100	2003-01-06	1	1936 Mercedes-Benz 500K Roadster	49	35.29
10101	2003-01-09	4	1932 Model A Ford J-Coupe	25	108.06
10101	2003-01-09	1	1928 Mercedes-Benz SSK	26	167.06
10101	2003-01-09	3	1939 Chevrolet Deluxe Coupe	45	32.53
10101	2003-01-09	2	1938 Cadillac V-16 Presidential Limousine	46	44.35

The 'Action Output' section at the bottom shows the execution log:

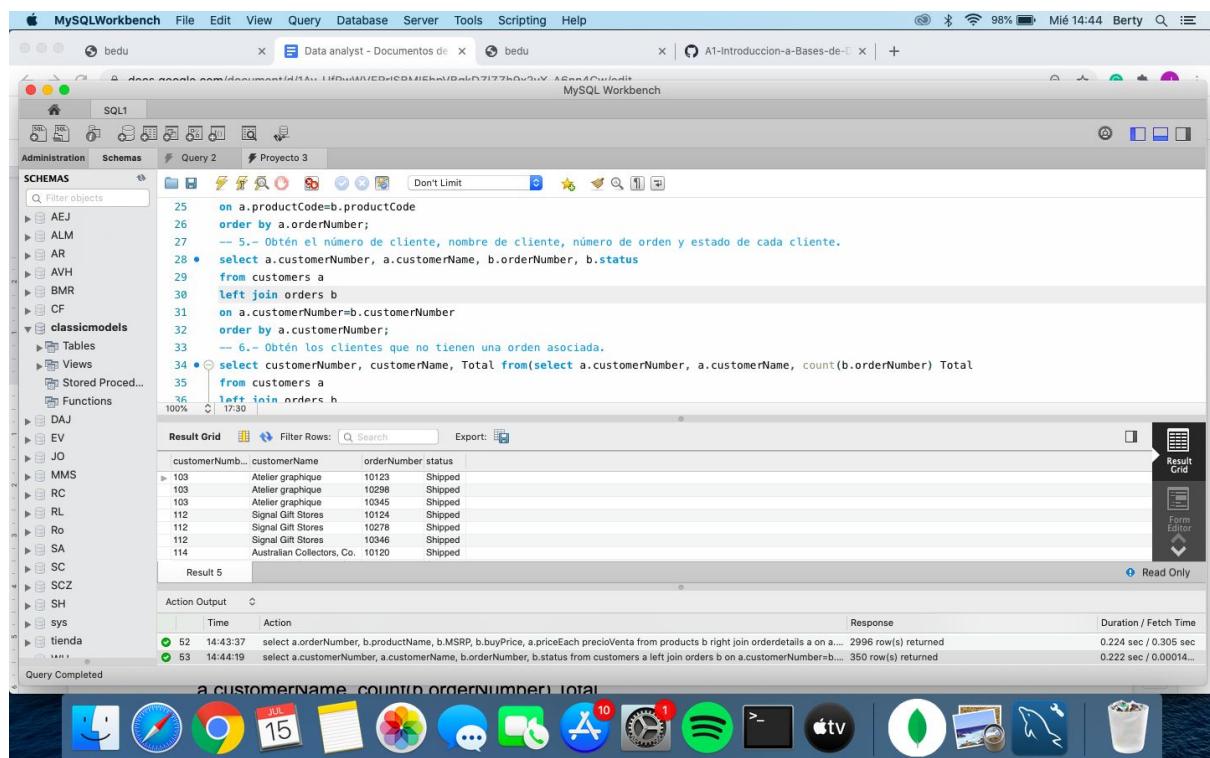
Action	Time	Response	Duration / Fetch Time
select b.orderNumber, status, round(sum(priceEach), 1) from orders b right join orderdetails a on b.orderNumber = a.orderNumber group by orderNumber;	14:09:03	326 row(s) returned	0.118 sec / 0.00014 sec
select a.orderNumber, a.orderDate, b.orderLineNumber, c.productName, b.quantityOrdered, b.priceEach from orders as a right join orderdetails as b on a.orderNumber=b.orderNumber right join products as c on c.productCode=b.productCode order by a.orderNumber;	14:43:04	2997 row(s) returned	0.252 sec / 0.261 sec

-- 4.- Obtén el número de orden, nombre del producto, el precio sugerido de fábrica (msrp) y precio de cada pieza.

```
select a.orderNumber, b.productName, b.MSRP, b.buyPrice, a.priceEach precioVenta  
from products b  
right join orderdetails a  
on a.productCode=b.productCode  
order by a.orderNumber;
```

-- 5.- Obtén el número de cliente, nombre de cliente, número de orden y estado de cada cliente.

```
select a.customerNumber, a.customerName, b.orderNumber, b.status  
from customers a  
left join orders b  
on a.customerNumber=b.customerNumber  
order by a.customerNumber;
```



```
25  on a.productCode=b.productCode  
26  order by a.orderNumber;  
27  -- 5.- Obtén el número de cliente, nombre de cliente, número de orden y estado de cada cliente.  
28 • select a.customerNumber, a.customerName, b.orderNumber, b.status  
29  from customers a  
30  left join orders b  
31  on a.customerNumber=b.customerNumber  
32  order by a.customerNumber;  
33  -- 6.- Obtén los clientes que no tienen una orden asociada.  
34 • select customerNumber, customerName, Total from(select a.customerNumber, a.customerName, count(b.orderNumber) Total  
35  from customers a  
36  left join orders b  
100% | 17:30
```

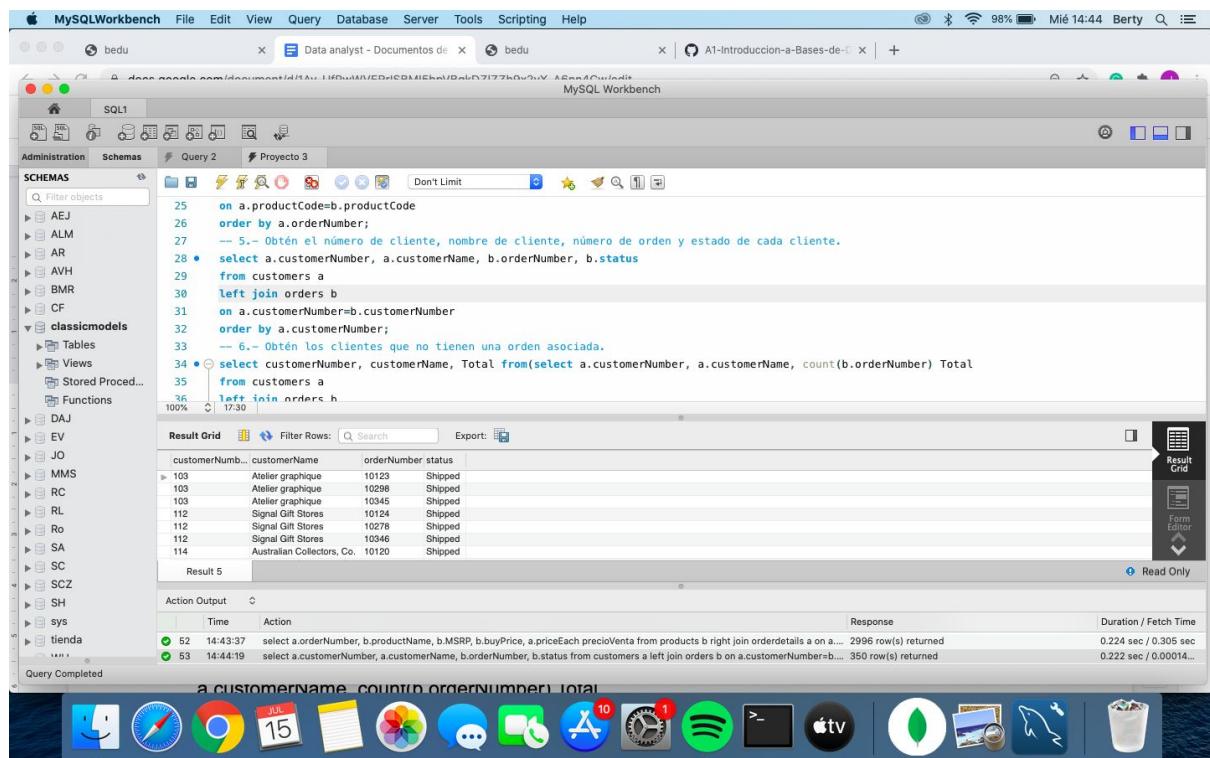
customerNumber	customerName	orderNumber	status
103	Atelier graphique	10123	Shipped
103	Atelier graphique	10298	Shipped
103	Atelier graphique	10345	Shipped
112	Signal Gift Stores	10124	Shipped
112	Signal Gift Stores	10278	Shipped
112	Signal Gift Stores	10346	Shipped
114	Australian Collectors, Co.	10120	Shipped

Action Output

Time	Action	Response	Duration / Fetch Time
52 14:43:37	select a.orderNumber, b.productName, b.MSRP, b.buyPrice, a.priceEach precioVenta from products b right join orderdetails a on a.orderNumber = b.orderNumber left join customers c on c.customerNumber = a.customerNumber	2996 row(s) returned	0.224 sec / 0.305 sec
53 14:44:19	select a.customerNumber, a.customerName, b.orderNumber, b.status from customers a left join orders b on a.customerNumber=b.customerNumber	350 row(s) returned	0.222 sec / 0.00014...

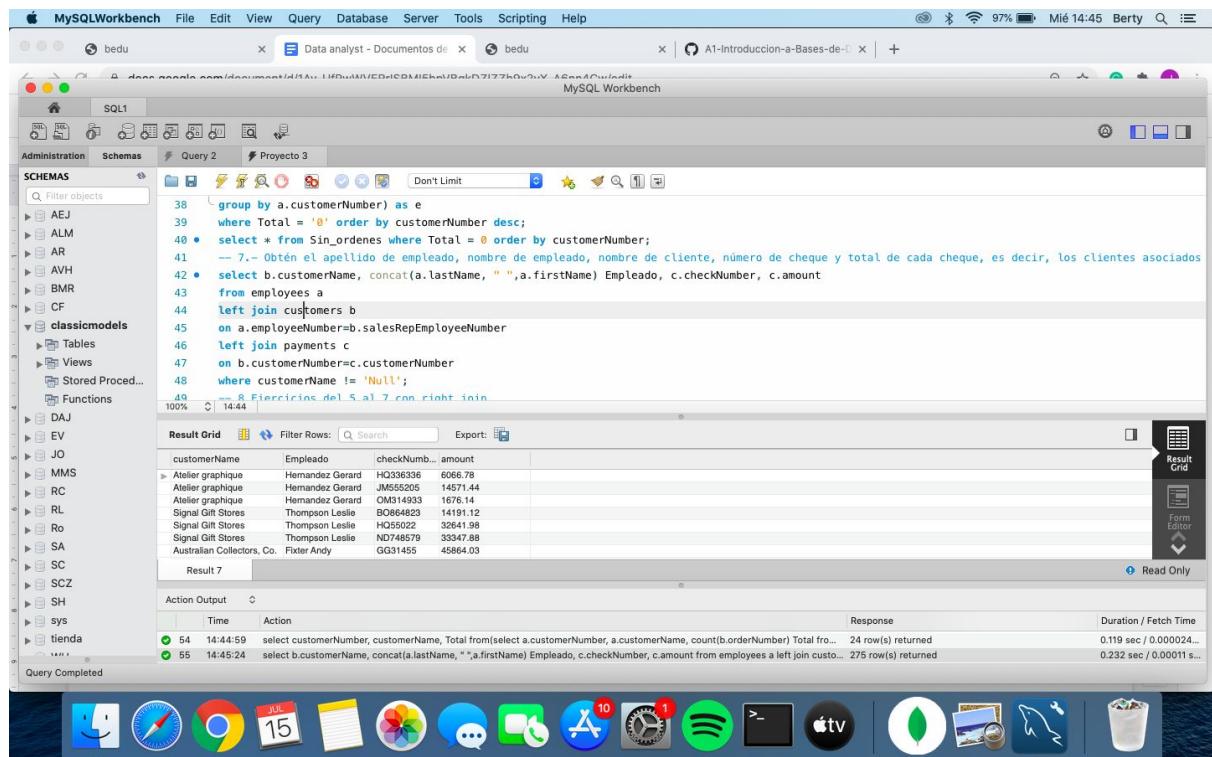
-- 6.- Obtén los clientes que no tienen una orden asociada.

```
select customerNumber, customerName, Total from(select a.customerNumber,
a.customerName, count(b.orderNumber) Total
from customers a
left join orders b
on a.customerNumber=b.customerNumber
group by a.customerNumber) as e
where Total = '0' order by customerNumber desc;
select * from Sin_ordenes where Total = 0 order by customerNumber;
```



-- 7.- Obtén el apellido de empleado, nombre de empleado, nombre de cliente, número de cheque y total de cada cheque, es decir, los clientes asociados a cada empleado.

```
select b.customerName, concat(a.lastName, " ",a.firstName) Empleado, c.checkNumber,
c.amount
from employees a
left join customers b
on a.employeeNumber=b.salesRepEmployeeNumber
left join payments c
on b.customerNumber=c.customerNumber
where customerName != 'Null';
```



The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The title bar indicates it's running on a 'bedu' machine at 14:45. The main window displays a SQL editor with the following query:

```
38   group by a.customerNumber) as e
39   where Total = '0' order by customerNumber desc;
40 •  select * from ordenes where Total = 0 order by customerNumber;
41   -- 7.- Obtén el apellido de empleado, nombre de empleado, nombre de cliente, número de cheque y total de cada cheque, es decir, los clientes asociados
42 •  select b.customerName, concat(a.lastName, " ",a.firstName) Empleado, c.checkNumber, c.amount
43   from employees a
44   left join customers b
45   on a.employeeNumber=b.salesRepEmployeeNumber
46   left join payments c
47   on b.customerNumber=c.customerNumber
48   where customerName != 'Null';
49   -- 8. Fíjate en el 5 al 7 con right join
100% | 14:44
```

The results grid shows the following data:

customerName	Empleado	checkNum...	amount
Atelier graphique	Hernandez Gerard	HQ336336	6066.78
Atelier graphique	Hernandez Gerard	JM55205	14571.44
Atelier graphique	Hernandez Gerard	ND748579	1273.43
Signal Gift Stores	Thompson Leslie	BO86498	14161.12
Signal Gift Stores	Thompson Leslie	HO56022	32641.98
Signal Gift Stores	Thompson Leslie	ND748579	33347.88
Australian Collectors, Co.	Fixter Andy	GG31455	45864.03

Below the results, the 'Action Output' section shows two log entries:

Action	Time	Response	Duration / Fetch Time
select customerNumber, customerName, Total from(select a.customerNumber, a.customerName, count(b.orderNumber) Total fro...	14:44:59	24 row(s) returned	0.119 sec / 0.000024...
select b.customerName, concat(a.lastName, " ",a.firstName) Empleado, c.checkNumber, c.amount from employees a left join custo...	14:45:24	275 row(s) returned	0.232 sec / 0.00011 s...

-- 8 Ejercicios del 5 al 7 con right join

-- 5a

```
select a.customerNumber, a.customerName, b.orderNumber, b.status  
from orders b
```

```
right join customers a  
on a.customerNumber=b.customerNumber  
order by a.customerNumber;
```

The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The title bar indicates the application is running at 97% battery life, with the date Mié 14:46 and user Betty. The main window has three tabs: SQL1, Query 2, and Projeto 3. The SQL1 tab contains the following code:

```
49 -- 8 Ejercicios del 5 al 7 con right join  
50 -- 5a  
51 • select a.customerNumber, a.customerName, b.orderNumber, b.status  
52 from orders b  
53 right join customers a  
54 on a.customerNumber=b.customerNumber  
55 order by a.customerNumber;  
56 -- 6a  
57 • Ⓜ select customerNumber, customerName, Total from(select a.customerNumber, a.customerName, count(b.orderNumber) Total  
58 from orders b  
59 right join customers a  
60 on a.customerNumber=b.customerNumber  
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```

-- 6a

```
select customerNumber, customerName, Total from(select a.customerNumber,
a.customerName, count(b.orderNumber) Total
from orders b
right join customers a
on a.customerNumber=b.customerNumber
group by a.customerNumber) as e
where Total = '0' order by customerNumber desc;
```

The screenshot shows the MySQL Workbench application running on a Mac OS X system. The main window displays a SQL editor with the following code:

```
49 -- 8 Ejercicios del 5 al 7 con right join
50 --
51 • select a.customerNumber, a.customerName, b.orderNumber, b.status
52   from orders b
53   right join customers a
54     on a.customerNumber=b.customerNumber
55   order by a.customerNumber;
56 --
57 • select customerNumber, customerName, Total from(select a.customerNumber, a.customerName, count(b.orderNumber) Total
58   from orders b
59   right join customers a
60     on a.customerNumber=b.customerNumber
61   where Total = '0' order by customerNumber desc;
```

The results grid shows the following data:

customerNumber	customerName	orderNumber	status
103	Atelier graphique	10345	Shipped
112	Signal Gift Stores	10124	Shipped
112	Signal Gift Stores	10278	Shipped
112	Signal Gift Stores	10346	Shipped
114	Australian Collectors, Co.	10120	Shipped
114	Australian Collectors, Co.	10125	Shipped
114	Australian Collectors, Co.	10223	Shipped

The bottom of the window shows the history of queries:

Action	Time	Response	Duration / Fetch Time
55	14:45:24	select b.customerName, concat(a.lastName, " ",a.firstName) Empleado, c.checkNumber, c.amount from employees a left join custo... 275 row(s) returned	0.232 sec / 0.0001 s...
56	14:46:20	select a.customerNumber, a.customerName, b.orderNumber, b.status from orders b right join customers a on a.customerNumber... 350 row(s) returned	0.278 sec / 0.0001 s...

-- 7a

```
select b.customerName, concat(a.lastName, " ",a.firstName) Empleado, c.checkNumber,
c.amount
from employees a
right join customers b
on a.employeeNumber=b.salesRepEmployeeNumber
right join payments c
on b.customerNumber=c.customerNumber;
```

The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The title bar indicates the application is running at 97% battery life, with the date Mié 14:47. The main window displays a SQL editor with a multi-line query and its execution results.

**SQL Editor Content:**

```
60   on a.customerNumber=b.customerNumber
61   group by a.customerNumber) as e
62   where Total = 0' order by customerNumber desc;
63   -- 7a
64 •  select b.customerName, concat(a.lastName, " ",a.firstName) Empleado, c.checkNumber,
65   from employees a
66   right join customers b
67   on a.employeeNumber=b.salesRepEmployeeNumber
68   right join payments c
69   on b.customerNumber=c.customerNumber;
70   -- 9 crear vistas para 3 consultas más complejas
71 •  create view ordenes as (select customerNumber, customerName, Total from(select a.customerNumber, a.customerName, count(b.orderNumber) Total fro...
100% 17/66
```

**Result Grid:**

customerName	Empleado	checkNum... amount
Atelier graphique	Hernandez Gerard	OM314933 1676.14
Signal Gift Stores	Thompson Leslie	BO864823 14191.12
Signal Gift Stores	Thompson Leslie	HO55022 32641.98
Signal Gift Stores	Thompson Leslie	ND748579 33347.88
Australian Collectors, Co.	Fixter Andy	GG31455 45864.03
Australian Collectors, Co.	Fixter Andy	MA765515 82261.22
Australian Collectors, Co.	Fixter Andy	NP603840 7565.08

**Action Output:**

Time	Action	Response	Duration / Fetch Time
57 14:47:10	select customerNumber, customerName, Total from(select a.customerNumber, a.customerName, count(b.orderNumber) Total fro...	24 row(s) returned	0.133 sec / 0.000026...
58 14:47:40	select b.customerName, concat(a.lastName, " ",a.firstName) Empleado, c.checkNumber, c.amount from employees a right join cus...	273 row(s) returned	0.234 sec / 0.00012...

-- 9 crear vistas para 3 consultas más complejas

1:

```
create view 0_ordenes as (select customerNumber, customerName, Total from(select
a.customerNumber, a.customerName, count(b.orderNumber) Total
from customers a
left join orders b
on a.customerNumber=b.customerNumber
group by a.customerNumber) as e
where Total = '0' order by customerNumber desc);
```

```
select * from 0_ordenes;
```

The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The title bar indicates it's running on 'bedu' at 96% battery, with the date Mié 14:49. The main window has a tab titled 'SQL1'. The left sidebar shows the 'SCHEMAS' tree with several databases like AEJ, ALM, AR, AVH, BMR, CF, and classicmodels. The 'classicmodels' database is selected, showing its tables (Tables) and views (Views). A view named '0\_ordenes' is selected. The central area contains the SQL code for creating the view:

```
69    on b.customerNumber=c.customerNumber;
70    -- 9 crear vistas para 3 consultas más complejas
71  •  create view 0_ordenes as (select customerNumber, customerName, Total from(select
72      a.customerNumber, a.customerName, count(b.orderNumber) Total
73      from customers a
74      left join orders b
75      on a.customerNumber=b.customerNumber
76      group by a.customerNumber) as e
77      where Total = '0' order by customerNumber desc);
78
79
80  •  create view Empleado_Cliente as (select b.customerName, concat(a.lastName, " ", a.firstName) Empleado, c.checkNumber, c.amount
100% 21:78
```

The 'Result Grid' below the code shows the results of the query:

customerNumber	customerName	Total
477	Mt Vergünen & Co.	0
465	Anton Designs, Ltd.	0
459	Wrburg Exchange	0
443	Feuer Online Stores, Inc	0
469	Stuttgart Collectable Exchange	0
576	Precious Collectables	0
369	Uaboa Souvenirs, Inc	0

Below the result grid, the 'Action Output' section shows two log entries:

Action	Time	Response	Duration / Fetch Time
select b.customerName, concat(a.lastName, " ", a.firstName) Empleado, c.checkNumber, c.amount from employees a right join cus...	58 14:47:40	273 row(s) returned	0.234 sec / 0.00012...
select * from 0_ordenes	59 14:48:49	24 row(s) returned	0.111 sec / 0.000072...

2.-

```
create view Empleado_Cliente as (select b.customerName, concat(a.lastName, " "
,a.firstName) Empleado, c.checkNumber, c.amount
from employees a
left join customers b
on a.employeeNumber=b.salesRepEmployeeNumber
left join payments c
on b.customerNumber=c.customerNumber
where customerName != 'Null');
```

```
select * from Empleado_Cliente;
```

The screenshot shows the MySQL Workbench interface. In the top navigation bar, the title is 'bedu' and the tab is 'Data analyst - Documentos de...'. The bottom status bar shows the date as 'Mié 14:49' and battery level as '96%'. The main window has three tabs: 'SQL1', 'Query 2', and 'Proyecto 3'. The 'SQL1' tab contains the following SQL code:

```
78 •    select * from 0_ordeness;
79
80 •  create view Empleado_Cliente as (select b.customerName, concat(a.lastName, " ",a.firstName) Empleado, c.checkNumber, c.amount
81   from employees a
82   left join customers b
83   on a.employeeNumber=b.salesRepEmployeeNumber
84   left join payments c
85   on b.customerNumber=c.customerNumber
86   where customerName != 'Null');
87
88 •  select * from Empleado_Cliente;
89
```

The 'Result Grid' pane shows the results of the last query:

customerName	Empleado	checkNumbe...	amount
Atelier graphique	Hernandez Gerard	OM314933	1676.14
Signal Gift Stores	Thompson Leslie	PD0864823	1419.52
Signal Gift Stores	Thompson Leslie	PD0864823	320.91-158
Signal Gift Stores	Thompson Leslie	ND748579	33347.68
Australian Collectors, Co.	Fixter Andy	GG31455	45861.03
Australian Collectors, Co.	Fixter Andy	MA765515	82261.22
Australian Collectors, Co.	Fixter Andy	NP603840	7565.09

The 'Action Output' pane at the bottom shows the execution details:

Action	Time	Response	Duration / Fetch Time
select * from 0_ordeness	59 14:49:49	24 row(s) returned	0.111 sec / 0.000072...
select * from Empleado_Cliente	60 14:49:52	275 row(s) returned	0.242 sec / 0.0001 s...

3.-

```
create view Detalle_ordenes as (select a.orderNumber, a.orderDate, b.orderLineNumber,
c.productName, b.quantityOrdered, b.priceEach from orders as a
right join orderdetails as b
on a.orderNumber=b.orderNumber
right join products as c
on c.productCode=b.productCode
order by a.orderNumber);
```

```
select * from Detalle_ordenes;
```

The screenshot shows the MySQL Workbench interface on a Mac OS X desktop. The title bar indicates the application is running at 96% battery life, and the date is Mié 14:51. The main window displays the SQL editor with the following code:

```
88 •    select * from Empleado_Cliente;
89
90 •  create view Detalle_ordenes as (select a.orderNumber, a.orderDate, b.orderLineNumber,
91   right join orderdetails as b
92   on a.orderNumber=b.orderNumber
93   right join products as c
94   on c.productCode=b.productCode
95   order by a.orderNumber);
96
97 •  select * from Detalle_ordenes;
98 OR
100% C | 18:97
```

The SQL editor has two tabs: "Query 1" and "Query 2". The "Query 1" tab contains the code above. The "Result Grid" tab shows the output of the query:

orderNumber	orderDate	orderLineNumber	productName	quantityOrdered	priceEach
10100	2003-01-06	3	1985 Toyota Supra	30	136.00
10100	2003-01-06	2	1917 Grand Touring Sedan	25	35.20
10100	2003-01-06	4	1932 Alfa Romeo 8C2300 Spider Sport	22	75.48
10100	2003-01-06	1	1936 Mercedes-Benz 500k Roadster	49	35.29
10101	2003-01-09	4	1932 Model A Ford J-Coupe	25	108.06
10101	2003-01-09	1	1928 Mercedes-Benz SSK	26	167.06

The "Action Output" section shows the execution history:

Action	Time	Response	Duration / Fetch Time
select * from Empleado_Cliente	60 14:49:52	275 row(s) returned	0.242 sec / 0.00011 s...
select * from Detalle_ordenes	61 14:51:00	2997 row(s) returned	0.233 sec / 0.354 sec

## Sesión 04: Fundamentos de MongoDB

### Proyecto 4

1.- Obtén los datos de contacto de cada compañía.

```
{  
  filter: {  
    project: {  
      email_address: 1,  
      phone_number: 1  
    }  
  }  
}
```

The screenshot shows the MongoDB Compass interface. On the left, the sidebar displays the database structure under 'Local'. The 'sample\_training' database is selected, and its 'companies' collection is highlighted. The main pane shows the results of a query on the 'companies' collection. The query is defined in the 'PROJECT' stage of the pipeline:

```
{  
  email_address: 1,  
  phone_number: 1  
}
```

The results grid displays four documents, each containing the '\_id' field and either the 'email\_address' or 'phone\_number' field (both are empty). The interface also shows other stages in the pipeline: 'FILTER', 'SORT', 'COLLATION', 'MAXTIMEMS 500', 'SKIP 0', and 'LIMIT 0'. The results are paginated from 1 to 20 of 9500 documents. To the right, there are three panels for 'Past Queries', 'RECENT', and 'FAVORITES', each containing a snippet of code for 'Proyecto 4-4', 'Proyecto 4-3', and 'Proyecto 4-1' respectively.

## 2.- Obtén la fuente de cada tweet.

```
{  
  filter: {  
    project: {  
      source: 1  
    }  
  }  
}
```

The screenshot shows the MongoDB Compass application interface. On the left, there's a sidebar titled 'Local' showing '10 DBs' and '25 COLLECTIONS'. Under 'sample\_training', there are several collections listed: sample\_analytics, sample\_geospatial, sample\_mfix, sample\_supplies, sample\_training, companies, grades, inspections, posts, routes, stories, trips, and tweets. The 'tweets' collection is currently selected. In the main area, the title bar says 'MongoDB Compass - ec2-35-166-232-75.us-west-2.compute.amazonaws.com:27017/sample\_training.tweets'. Below the title, it shows 'DOCUMENTS 24.8k' and 'INDEXES 1'. A 'FILTER' section is present, and the results table displays 20 documents from 24832 total. The first few documents shown have '\_id' fields starting with ObjectId('5c8eccb0caa187d17ca623f') and 'source' values like 'web', 'TweetDeck', 'Twitter for Bla...', 'Echofon', and 'Power Twitter'. To the right of the main area, there's a 'PROJECT' panel with the query code: { source: 1 }. The bottom of the screen shows the Mac OS X dock with various application icons.

3.- Obtén el nombre de todas las compañías fundadas en octubre.

```
{  
  filter: {  
    founded_month: 10  
  }  
}
```

The screenshot shows the MongoDB Compass application running on a Mac OS X desktop. The main window displays the 'sample\_training.companies' collection with 9.5k documents. A filter is applied: {founded\_month: 10}. The right side of the interface shows three project definitions:

- Proyecto 4-4**: FILTER { founded\_year: 2008 }
- Proyecto 4-3**: FILTER { founded\_month: 10 }
- Proyecto 4-1**: PROJECT { email\_address: 1, phone\_number: 1 }

The bottom of the screen shows the Mac OS X dock with various application icons.

4.- Obtén el nombre de todas las compañías fundadas en 2008.

```
{  
  filter: {  
    founded_year: 2008  
  }  
}
```

The screenshot shows the MongoDB Compass interface. In the top navigation bar, the collection 'sample\_training.companies' is selected. The main pane displays a list of documents with the following details:

- Total documents: 9.5k
- Total size: 34.8MB
- Avg. size: 3.7KB
- Indexes: 1
- Total size: 100.0KB
- Avg. size: 100.0KB

The 'Documents' tab is active, showing a table with columns: \_id, name, permalink, crunchbase\_url, homepage\_url, blog\_url, blog\_feed\_url, twitter\_username, category\_code, number\_of\_employees, founded\_year, founded\_month, founded\_day, deadpooled\_year, deadpooled\_month, deadpooled\_day, deadpooled\_url, tag\_list, alias\_list, email\_address, phone\_number, description, created\_at, updated\_at, and overview. A specific document is expanded to show its full content:

```
_id: ObjectId("52cdef7c4bab8bd675298218")  
name: "WunderHQ Trn"  
permalink: "openX"  
crunchbase_url: "http://www.crunchbase.com/company/openX"  
homepage_url: "http://www.openx.com"  
blog_url: "http://www.openx.com/blog"  
blog_feed_url: ""  
twitter_username: "OpenX"  
category_code: "advertising"  
number_of_employees: 305  
founded_year: 2008  
founded_month: 5  
founded_day: 1  
deadpooled_year: null  
deadpooled_month: null  
deadpooled_day: null  
deadpooled_url: null  
tag_list: "ad-server, ad-serving, ad-exchange, yield-optimization, content-valut..."  
alias_list: ""  
email_address: "hello@openx.com"  
phone_number: "626-466-1141"  
description: "OpenX"  
created_at: "Wed Jun 13 18:23:43 UTC 2007"  
updated_at: "Wed Dec 11 08:44:01 UTC 2013"  
overview: "<p>OpenX is a global leader in digital and mobile advertising technolo..."
```

Below the table, there is a 'SHOW 17 MORE FIELDS' button. On the right side of the interface, there are several project panels labeled 'Proyecto 4-4', 'Proyecto 4-3', and 'Proyecto 4-1', each containing a 'FILTER' section with the same query: {\_id: ObjectId("52cdef7c4bab8bd675298218")}. The bottom of the screen shows the Mac OS X dock with various application icons.

5.- Obtén todos los *post* del autor machine.

```
{  
  filter: {  
    author: 'machine'  
  }  
}
```

The screenshot shows the MongoDB Compass interface. In the top navigation bar, the collection 'sample\_training.posts' is selected. The main pane displays the results of a query with the filter '{author: 'machine'}'. Three documents are listed:

```
_id: ObjectId("50ab0f8bbc1bfe2536dc3f9")  
body: "Amendment I  
<p>Congress shall make no law respecting an establishment ..."  
permalink: "http://tiny.cc/meyarw"  
author: "machine"  
title: "Bill of Rights"  
tags: Array  
comments: Array  
date: 2012-11-20T05:05:15.231+00:00  
  
_id: ObjectId("50ab0f8bbc1bfe2536dc3fa")  
body: "We the People of the United States, in Order to form a more perfect Union..."  
permalink: "http://tiny.cc/meyarw"  
author: "machine"  
title: "US Constitution"  
tags: Array  
comments: Array  
date: 2012-11-20T05:05:15.232+00:00  
  
_id: ObjectId("50ab0f8bbc1bfe2536dc3fb")  
body: "Four score and seven years ago our fathers brought forth on this conti..."  
permalink: "http://tiny.cc/meyarw"  
author: "machine"  
title: "Gettysburg Address"  
tags: Array  
comments: Array  
date: 2012-11-20T05:05:15.234+00:00
```

The bottom of the screen shows the macOS dock with various application icons.

6.- Obtén todos los tweets provenientes de la web.

```
{  
  filter: {  
    source: 'web'  
  }  
}
```

The screenshot shows the MongoDB Compass interface. On the left, the sidebar lists databases and collections, with 'sample\_training.tweets' selected. The main pane displays a list of documents from the 'sample\_training.tweets' collection. A search bar at the top contains the query: '{source: "web"}'. The results show two documents, both of which have 'source: "web"'. The bottom right corner of the screen shows the macOS dock with various application icons.

```
_id: ObjectId("5cdec0ca187d17ca623ff")  
text: "eu preciso de terminar de fazer a minha tabela, está muito foda ***"  
in_reply_to_status_id: null  
retweet_count: null  
contributors: null  
created_at: "Thu Sep 02 18:11:23 +0000 2010"  
geo: null  
source: "web"  
coordinates: null  
in_reply_to_screen_name: null  
truncated: false  
> entities: Object  
retweeted: false  
place: null  
> user: Object  
favorited: false  
in_reply_to_user_id: null  
id: 22819396900
```

```
_id: ObjectId("5cdec0ca187d17ca623ff")  
text: "First week of school is over :P"  
in_reply_to_status_id: null  
retweet_count: null  
contributors: null  
created_at: "Thu Sep 02 18:11:25 +0000 2010"  
geo: null  
source: "web"  
coordinates: null  
in_reply_to_screen_name: null  
truncated: false
```

7.- Obtén todas las compañías fundadas en octubre del 2008

```
{  
  filter: {  
    $and: [  
      {  
        founded_month: 10  
      },  
      {  
        founded_year: 2008  
      }  
    ]  
  }  
}
```

The screenshot shows the MongoDB Compass interface with the following details:

- Left Sidebar:** Shows the local host (ec2-35-166-232-75.us-west-2.compute.amazonaws.com) and the sample\_training database.
- Central Area:** The "sample\_training.companies" collection is selected. It displays 9.5k documents with a total size of 34.8MB and an average size of 3.7KB. There is 1 index with a total size of 100.0KB and an average size of 100.0KB.
- Filter Bar:** A filter is applied: `[$and: [{ founded_month: 10}, { founded_year: 2008}]]`.
- Results View:** The results show one document for "tunesBag". The document details are:

```
_id:ObjectId("52cdef7c4bab8bd6752985ca")
name:"tunesBag"
permalink:"tunesbag"
crunchbase_url:"http://www.crunchbase.com/company/tunesbag"
homepage_url:"http://www.tunesBag.com"
blog_url:"http://tunesBag.blogspot.com/"
blog_feed_url:"http://blog.tunesbag.com/feeds/posts/default?alt=rss"
twitter_username:
category:"Social Music Video"
number_of_employees:null
founded_year:2008
founded_month:10
founded_day:1
deadpooled_year:null
deadpooled_month:null
deadpooled_day:null
deadpooled_url:null
tags:"music, cloud, locker, mp3, music-streaming, streaming"
alias_list:
email_address:"office@tunesBag.com"
phone_number:"+43 600 215 27 96"
description:"Social Music Player"
created_at:"Thu Mar 20 15:45:40 UTC 2008"
updated_at:"Thu Jan 19 00:37:48 UTC 2012"
overview:<p><sup><b></b></sup>Austria based tunesBag is a music player with social features on th...</p>
```
- Right Side:** Four project cards are visible:
  - Proyecto 4-8:** Filter for companies with more than 50 employees.
  - Proyecto 4-7:** Filter for companies founded in October 2008.
  - Proyecto 4-4:** Filter for companies founded in 2008.
  - Proyecto 4-3:** Filter for companies founded in 2008.

8.- Obtén todas las compañías con más de 50 empleados.

```
{  
  filter: {  
    number_of_employees: {  
      $gt: 50  
    }  
  }  
}
```

The screenshot shows the MongoDB Compass interface. On the left, the sidebar lists databases and collections, with 'sample\_training' selected. The main area displays the 'sample\_training.companies' collection, which contains 9.5k documents. A search bar at the top right shows the query: {number\_of\_employees: {\$gt: 50}}. Below the search bar, there are tabs for 'Documents', 'Aggregations', 'Schema', 'Explain Plan', and 'Indexes'. The 'Documents' tab is active, showing the results of the query. One document is expanded to show its fields, including \_id, name, permalink, created\_url, homepage\_url, blog\_url, blog\_feed\_url, twitter\_username, category\_code, number\_of\_employees, founded\_year, founded\_month, founded\_day, deadpooled\_year, deadpooled\_month, deadpooled\_day, deadpooled\_url, tag\_list, alias\_list, email\_address, phone\_number, description, created\_at, updated\_at, and overview. The 'Overview' field contains the text: "Facebook is the world's largest social network, with over 1 billion users." At the bottom of the interface, there is a dock with various application icons.

9.- Obtén las historias con número de comentarios entre 10 y 30.

```
{  
  filter: {  
    $or: [  
      {  
        comments: {  
          $gte: 10  
        }  
      },  
      {  
        comments: {  
          $lte: 30  
        }  
      }  
    ]  
  }  
}
```

The screenshot shows the MongoDB Compass interface with the following details:

- Left Sidebar:** Shows the "Local" database with 10 DBs and 25 collections. The "sample\_training" collection is selected.
- Top Bar:** Shows the title "MongoDB Compass - ec2-35-166-232-75.us-west-2.compute.amazonaws.com:27017/sample\_training.stories".
- Document List:** Displays 9842 documents. Two specific documents are expanded:
  - Document 1:** ID: 4ba267dc238d3ba3ca000001. Title: "Jedi believer who refused to remove hood gets an apology!". Comments: 153.
  - Document 2:** ID: 4ba267dc238d3ba3ca000003. Title: "Man Assaulted Female Police Officer With His Penis". Comments: 93.
- Query Editor:** Shows the query used to find the documents.

```
{  
  $or: [  
    {  
      comments: {  
        $gte: 10  
      }  
    },  
    {  
      comments: {  
        $lte: 30  
      }  
    }  
  ]  
}
```
- Bottom Bar:** Shows various application icons.

10.- Obtén la empresa con el menor número de empleados.

```
{  
  filter: {  
    $and: [  
      {  
        number_of_employees: {  
          $ne: null  
        }  
      },  
      {  
        number_of_employees: {  
          $ne: 0  
        }  
      }  
    ]  
  },  
  sort: {  
    number_of_employees: 1  
  },  
  limit: 1  
}
```

The screenshot shows the MongoDB Compass interface with the following details:

- Projecto 4-11:** A query builder window with the following parameters:
  - FILTER:** `{} $and: [{ number_of_employees: { $ne: null } }, { number_of_employees: { $ne: 0 } }]`
  - SORT:** `{ number_of_employees: 1 }`
  - LIMIT:** `1`
- Results:** One document is displayed:

```
_id: ObjectId("52cdef7c4bab8bd675297e68")
name: "FeVote"
permalink: "fevote"
crunchbase_url: "http://www.crunchbase.com/company/fevote"
homepage_url: "http://www.fevote.com"
blog_url: "http://blog.fevote.com/"
blog_feed: "http://blog.fevote.com/feed/"
twitter_username: null
category_code: "web"
number_of_employees: 1
founded_year: 2007
founded_month: 1
founded_day: 1
deadpooled_year: null
deadpooled_month: null
deadpooled_day: null
deadpooled_url: null
tag_list: null
alias_list: null
email_address: ""
phone_number: ""
description: null
created_at: "Fri Sep 21 20:21:41 UTC 2007"
updated_at: "Sun Aug 10 13:12:45 UTC 2008"
overview: "<p>FeVote provides suggestion boards for companies and various subject...</p>"
```
- Projecto 4-10:** Another query builder window with the same filter and sort criteria as Projecto 4-11, but with a different limit of 5 documents.
- Left Panel:** Shows the database structure with collections: Local, sample\_training, and sample\_training.companies.
- Bottom:** macOS Dock with various application icons.

## 11.- Obtén la empresa con el mayor número de empleados.

```
{  
  filter: {  
    $and: [  
      {  
        number_of_employees: {  
          $ne: null  
        }  
      },  
      {  
        number_of_employees: {  
          $ne: 0  
        }  
      }  
    ]  
  },  
  sort: {  
    number_of_employees: -1  
  },  
  limit: 1  
}
```

The screenshot shows the MongoDB Compass interface. On the left, the sidebar lists databases and collections, with 'sample\_training' selected. The main pane displays the 'companies' collection, showing 9.5k documents. A query builder is open, showing the following aggregation pipeline:

```
{  
  $and: [  
    {  
      number_of_employees: {  
        $ne: null  
      }  
    },  
    {  
      number_of_employees: {  
        $ne: 0  
      }  
    }  
  ],  
  sort: {  
    number_of_employees: -1  
  },  
  limit: 1  
}
```

The results pane shows a single document for IBM:

```
_id: ObjectId("52cdef7c4bab8bd67529856a")  
name: "IBM"  
permalink: "ibm"  
crunchbase_url: "http://www.crunchbase.com/company/ibm"  
homepage_url: "http://www.ibm.com"  
blog_url: ""  
blog_feed_url: ""  
twitter_username: "IBM"  
category_code: "software"  
number_of_employees: 380000  
founded_year: 1898  
founded_month: null  
founded_day: null  
deadpooled_year: null  
deadpooled_month: null  
deadpooled_day: null  
deadpooled_url: ""  
tag_list: ""  
alias_list: ""  
email_address: "ews@us.ibm.com"  
phone_number: "914-499-1900"  
description: ""  
created_at: "Fri Mar 14 22:55:52 UTC 2008"  
updated_at: "Sat Jan 04 02:56:24 UTC 2014"  
overview: "<p>IBM, acronym for International Business Machines, is a multinationa..."
```

## 12.- Obtén la historia más comentada.

```
{  
  sort: {  
    comments: -1  
  },  
  limit: 1  
}
```

The screenshot shows the MongoDB Compass interface. On the left, the sidebar lists databases and collections, with 'sample\_training' selected. The main pane displays the 'sample\_training.stories' collection. A search bar at the top right contains the query: 'comments: -1'. Below it, the 'FIND' button is highlighted. The results pane shows one document: '\_id: ObjectId("4ba27ea0238d3ba3ca002251")', with the title 'Republican Brown wins Massachusetts Senate seat!' and a 'comments' field value of 1864. To the right, a 'Past Queries' panel shows two previous queries: 'Proyecto 4-12' and 'Proyecto 4-9'. The 'Proyecto 4-9' query is displayed in code:

```
FILTER  
{  
  $and: [  
    {  
      comments: {  
        $gt: 10  
      }  
    },  
    {  
      comments: {  
        $lt: 30  
      }  
    }  
  ]  
}
```

### 13.- Obtén la historia menos comentada.

```
{  
  filter: {  
    comments: {  
      $gt: 0  
    }  
  },  
  sort: {  
    comments: 1  
  },  
  limit: 1  
}
```

The screenshot shows the MongoDB Compass interface. On the left, the sidebar lists databases and collections, with 'sample\_training' selected. In the main pane, the 'Documents' tab is active, displaying a single document from the 'sample\_training.stories' collection. The document details the discovery of the world's smallest eel-loach fish, with its ID, URL, title, and other metadata. Above the document, the query parameters are visible: a filter for 'comments > 0', a sort by 'comments' in ascending order, and a limit of 1. To the right, three previous queries are shown in a sidebar: 'Proyecto 4-13' (filtering by comments > 0), 'Proyecto 4-12' (sorting by comments in descending order), and 'Proyecto 4-9' (filtering by a specific \$and condition). The top status bar shows the date and time as 'Lun 21:59'.

## Sesión 05: Consultas en MongoDB

### Proyecto 5

El proyecto consiste en obtener todas las publicaciones que tengan 50 o más comentarios, que la valoración sea mayor o igual a 80, que cuenten con conexión a Internet vía cable y estén ubicadas en Brazil.

```
[$match: {  
    number_of_reviews: {$gt: 50}  
}, {$match: {  
    "address.country": "Brazil"  
}, {$match: {  
    'review_scores.review_scores_rating': {$gte: 80}  
}, {$match: {  
    amenities: {$in: [/Ethernet/i]}  
}, {$group: {  
    _id: null,  
    total: {  
        $sum: 1  
    }  
}}]
```

The screenshot shows the MongoDB Aggregations interface with the following details:

- Left Sidebar:** Shows the Local database with 10 DBs and 25 Collections. The `sample_airbnb.listingsAndReviews` collection is selected.
- Top Bar:** Displays the collection name, document count (5.6k), total size (90.0MB), average size (16.6KB), and index count (4).
- Aggregation Pipeline:**
  - Stage 1:** `$match` stage with the query: `'review_scores.review_scores_rating': {$gte: 80}`. It shows a sample of 6 documents with fields like `name`, `summary`, `space`, and `description`.
  - Stage 2:** `$group` stage with the query: `amenities: {$in: [/Ethernet/i]}`. It shows a sample of 1 document with fields `_id`, `listing_url`, `name`, `summary`, `space`, and `description`.
- Output:** The final output shows a single document with `_id: null` and `total: 6`.

## Sesión 06: Agregaciones

### Proyecto 6

El proyecto consiste en obtener, por país, el número de películas que hay de cada género:

```
[$unwind: {  
    path: "$genres",  
    includeArrayIndex: 'string'  
}, {$unwind: {  
    path: "$countries",  
    includeArrayIndex: 'string'  
}, {$group: {  
    _id: {"genres": "$genres", "countries": "$countries"},  
    Total: {$sum: 1}  
}, {$sort: {  
    Total: -1  
}, {$addFields: {  
    Pais: "$_id.countries",  
    Genero: "$_id.genres",  
}, {$project: {  
    _id: 0,  
    Pais: 1,  
    Genero: 1,  
    Total: 1  
}}]
```

The screenshot shows the MongoDB Compass interface with the following details:

- Project:** sample\_mflix.Proyecto 6 (view on: sample\_mflix.movies)
- Documents Tab:** Shows the results of the aggregation query.
- Results:**
  - Total: 6066 País: "USA" Genero: "Drama"
  - Total: 3843 País: "USA" Genero: "Comedy"
  - Total: 2262 País: "France" Genero: "Drama"
  - Total: 1920 País: "USA" Genero: "Romance"
  - Total: 1777 País: "UK" Genero: "Drama"
- Toolbar:** Includes buttons for Find, Reset, and Options.
- Bottom Bar:** Shows various Mac OS X application icons.

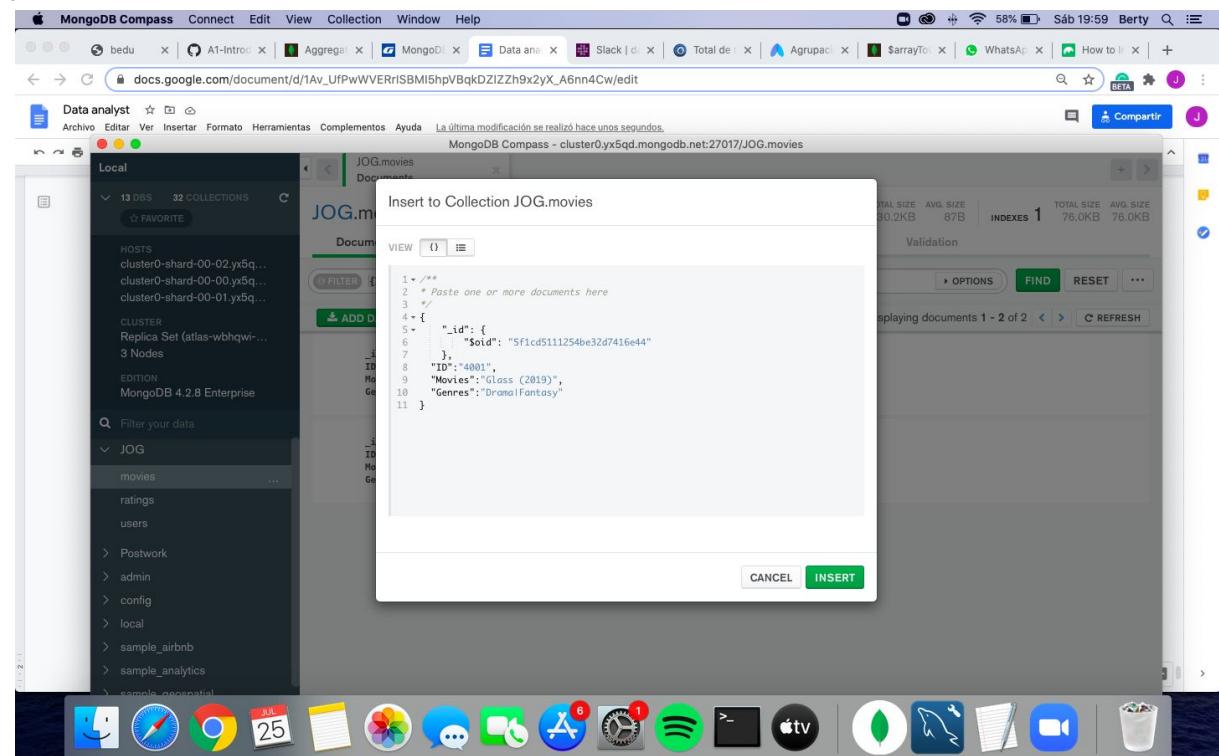
## Sesión 07 Configuración de Bases de Datos Locales

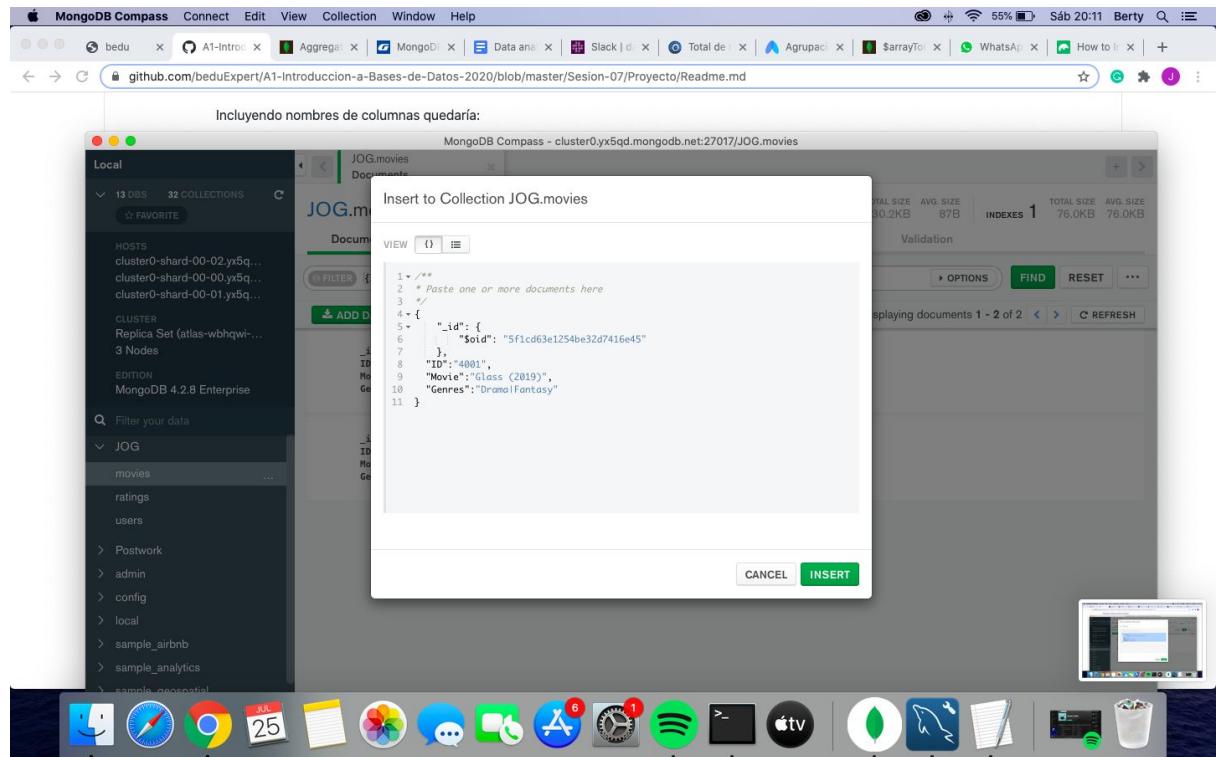
### Proyecto 7

1.- Agregar los siguientes registros en formato CSV a la Colección movies

```
4000,Avengers: Endgame (2019),Fantasy|Sci-Fi  
4001,Glass (2019),Drama|Fantasy
```

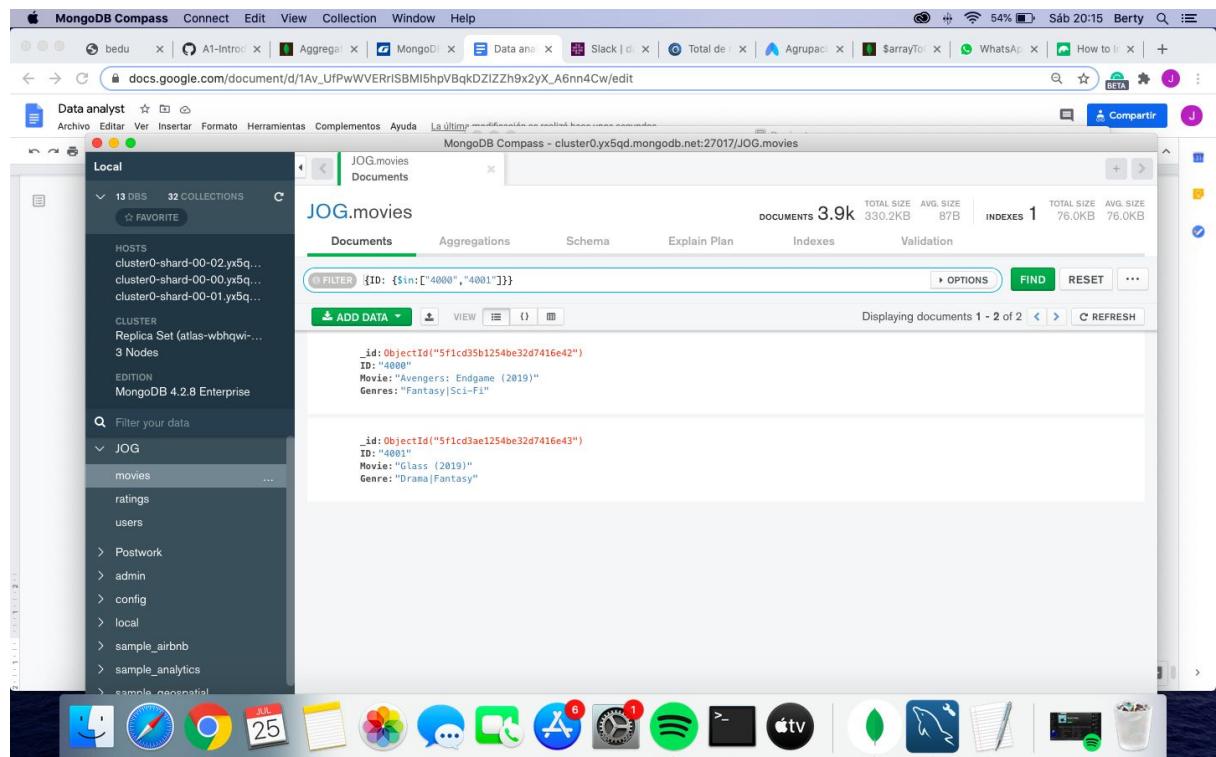
```
{  
    "_id": {  
        "$oid": "5f1cd63e1254be32d7416e45"  
    },  
    "ID":"4000",  
    "Movie":"Avengers: Endgame (2019)",  
    "Genres":"Fantasy|Sci-Fi"  
}  
  
{  
    "_id": {  
        "$oid": "5f1cd63e1254be32d7416e46"  
    },  
    "ID":"4001",  
    "Movie":"Glass (2019)",  
    "Genres":"Drama|Fantasy"  
}
```





## Filtro para ambos documentos:

{ID: {\$in:["4000","4001"]}}



2.- Modificar el documento con `id=4001` en la Colección `movies` para que contenga la siguiente información:

```
{  
  id:"4001",  
  titulo:"Glass (2019)",  
  genres:"Drama|Fantasy",  
  valoraciones: [  
    {  
      userid: "1563",  
      movieid: "4001",  
      rating: "4"  
    },  
    {  
      userid: "434",  
      movieid: "4001",  
      rating: "5"  
    }  
  ]  
}
```

The screenshot shows the MongoDB Compass interface on a Mac OS X desktop. The left sidebar lists databases and collections, with 'JOG' selected. The main pane displays the 'movies' collection under the 'JOG.movies' database. A specific document with `_id: "4001"` is selected, showing its detailed structure. The document includes fields for `Movie` ("Glass (2019)") and `Genres` ("Drama|Fantasy"). The `Valoraciones` field is an array containing two objects, each representing a rating from users. The desktop dock at the bottom shows various application icons.

Field	Value
<code>_id</code>	<code>ObjectId("5f1cd35b1254be32d7416e42")</code>
<code>ID</code>	<code>"4001"</code>
<code>Movie</code>	<code>"Glass (2019)"</code>
<code>Genres</code>	<code>"Fantasy Sci-Fi"</code>
<code>Valoraciones</code>	<code>[{"userid": "1563", "movieid": "4001", "rating": "4"}, {"userid": "434", "movieid": "4001", "rating": "5"}]</code>

## Sesión 08 Query competition

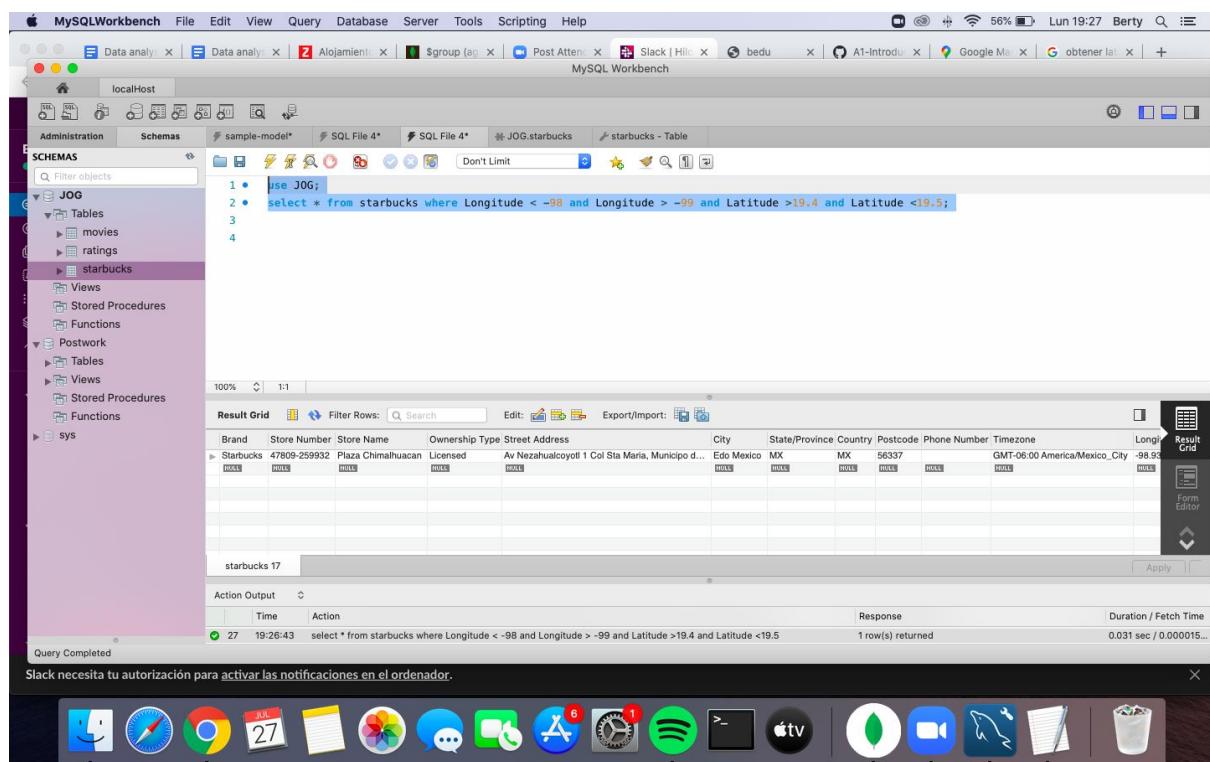
### Proyecto 8

#### Reto 1:

Descarga la fuente de datos de los locales de Starbucks “directory.csv”. Analiza y limpia los datos. Elige MySQL o MongoDB y crea una base de datos para el conjunto de datos del reto. Carga los datos en la base de datos que elegiste y revisa que éstos se muestren correctamente.

Usando la latitud y longitud de tu posición actual, encuentra el Starbucks más cercano a tu posición. Para conocer tu posición actual puedes usar Google Maps para, sólo debes copiar los datos de la URL.

```
use JOG;  
select * from starbucks where Longitude < -98 and Longitude > -99 and Latitude >19.4 and  
Latitude <19.5;
```



The screenshot shows the MySQL Workbench interface. In the top navigation bar, the schema is set to 'JOG'. The SQL editor contains the following query:

```
use JOG;  
select * from starbucks where Longitude < -98 and Longitude > -99 and Latitude >19.4 and  
Latitude <19.5;
```

The results grid displays a single row of data for a Starbucks store in Chimalhuacan, Mexico:

Brand	Store Number	Store Name	Ownership Type	Street Address	City	State/Province	Country	Postcode	Phone Number	Timezone	Longitude	Latitude
Starbucks	47809-259932	Plaza Chimalhuacan	Licensed	Av Nezahualcoyotl 1 Col Sta Maria, Municipio d...	Huixquilucan	Edo Mexico	MX	56337	GMT-06:00	America/Mexico_City	-98.93	19.5

The status bar at the bottom indicates "Query Completed".

## Reto 2

Descarga la fuente de datos de los locales del reto “Pandemic (H1N1) 2009.csv”. Analiza y limpia los datos. Elige MySQL o MongoDB y crea una base de datos para el conjunto de datos del reto. Carga los datos en la base de datos que elegiste y revisa que éstos se muestren correctamente. Responde a las siguientes preguntas usando consultas:

¿Cuál fue el país con mayor número de muertes?

```
[$sort: {  
  Cases: -1  
}, {$match: {  
  Country: {  
    $ne: 'Grand Total'  
},  
  Deaths: {  
    $ne: NaN  
}  
}, {$group: {  
  _id: '$Country',  
  Total: {  
    $sum: '$Deaths'  
}  
}, {$sort: {  
  Total: -1  
}, {$limit: 1}]
```

The screenshot shows the MongoDB Aggregations interface. On the left, the 'Local' database is selected, displaying 13 databases and 45 collections. A sidebar on the left lists databases like JOG, COVID-19, and H1N1. The main area shows an aggregation pipeline named 'JOG.H1N1'. The pipeline consists of several stages:

- Stage 1: An empty stage.
- Stage 2: A `$sort` stage with the expression `1: { Total: -1 }`.
- Stage 3: An empty stage.
- Stage 4: An empty stage.
- Stage 5: An empty stage.
- Stage 6: An empty stage.

Below the stages, there are two sections showing the output:

- Output after `$sort` stage (Sample of 20 documents):**
  - `_id: "Mexico"` `Total: 2271`
  - `_id: "United States of America"` `Total: 1150`
- Output after `$limit` stage (Sample of 1 document):**
  - `_id: "Mexico"` `Total: 2271`

At the bottom, there is a button labeled 'ADD STAGE'.

¿Cuál fue el país con menor número de muertes?

```
[$sort: {  
  Cases: -1  
}, {$match: {  
  Country: {  
    $ne: 'Grand Total'  
},  
  Deaths: {  
    $ne: NaN  
}  
}, {$group: {  
  _id: '$Country',  
  Total: {  
    $sum: '$Deaths'  
}  
}, {$sort: {  
  Total: 1  
}, {$match: {  
  Total: {$gt: 0}  
}, {$limit: 1}]
```

The screenshot shows the MongoDB Aggregations interface with the following details:

- Left Sidebar:** Shows the "Local" database with 13 DBs and 45 collections. The "JOG.H1N1" collection is selected.
- Top Bar:** Title "JOG.H1N1", tabs: "Documents", "Aggregations" (selected), "Schema", "Explain Plan", "Indexes", "Validation". Status: DOCUMENTS 1.8k, TOTAL SIZE 158.7KB, AVG. SIZE 89B; INDEXES 1, TOTAL SIZE 32.0KB, AVG. SIZE 32.0KB.
- Aggregation Pipeline:**
  - Stage 1: `1 {  
 2 Total: 1  
 3 }`
  - Output after `$match` stage (Sample of 20 documents):
    - `_id: "Antigua and Barbuda"  
Total: 0`
    - `_id: "Germany"  
Total: 0`
  - Stage 2: `1 /**  
2 * query: The query in MQL.  
3 */  
4 {  
 5 Total: {$gt: 0}  
 6 }`
  - Output after `$limit` stage (Sample of 1 document):
    - `_id: "Paraguay"  
Total: 1`
    - `_id: "Costa Rica"  
Total: 2`
  - Final Stage: `1 1`

¿Cuál fue el país con el mayor número de casos?

```
[$sort: {
  Cases: -1
}, {$match: {
  Country: {
    $ne: 'Grand Total'
  },
  Deaths: {
    $ne: NaN
  }
}}, {$group: {
  _id: '$Country',
  Total: {
    $sum: '$Cases'
  }
}}, {$sort: {
  Total: -1
}}, {$match: {
  Total: {$gt: 0}
}}, {$limit: 1}]
```

The screenshot shows the MongoDB Compass interface with the following details:

- Left Sidebar:** Shows the database structure with "Local" selected, displaying 13 DBs and 45 collections. The "JOG" database is expanded, showing collections like COVID-19, H1N1, Starbucks, movies, ratings, users, and others.
- Top Bar:** The title is "JOG.H1N1 Aggregations". The top right shows statistics: DOCUMENTS 1.8k, TOTAL SIZE 158.7KB, AVG. SIZE 89B; INDEXES 1, TOTAL SIZE 32.0KB, AVG. SIZE 32.0KB.
- Main Area:** The "Aggregations" tab is active. It displays the aggregation pipeline stages:
  - \$match:** Shows a query editor with the following MQL code:

```
1 /**
2  * query: The query in MQL.
3 */
4 {
5   Total: {$gt: 0}
6 }
```
  - Output after \$match stage:** Shows a sample of 20 documents. Two examples are visible:

```
_id:"United States of America"
Total: 340804
```

```
_id:"Mexico"
Total: 142567
```
  - \$limit:** Shows the output after the limit stage, which is a sample of 1 document.

```
_id:"United States of America"
Total: 340804
```
- Bottom Buttons:** ADD STAGE button.

¿Cuál fue el país con el menor número de casos?

```
[$sort: {  
  Cases: -1  
}, {$match: {  
  Country: {  
    $ne: 'Grand Total'  
},  
  Deaths: {  
    $ne: NaN  
}  
}, {$group: {  
  _id: '$Country',  
  Total: {  
    $sum: '$Cases'  
}  
}, {$sort: {  
  Total: 1  
}, {$match: {  
  Total: {$gt: 0}  
}, {$limit: 1}]
```

The screenshot shows the MongoDB Aggregations interface with the following details:

- Left Sidebar:** Shows the database structure with "Local" selected, displaying 13 DBs and 45 collections.
- Top Bar:** Shows the database name "JOG.H1N1" and the stage name "Aggregations".
- Header:** Shows the total number of documents (1.8k), total size (158.7KB), average size (89B), and index count (1), total size (32.0KB), and average size (32.0KB).
- Stages:**
  - Stage 1:** An empty stage labeled "1 + { }".
  - Stage 2:** A \$match stage with the query:

```
1+/**/  
2+  * query: The query in MQL.  
3+ */  
4+ {  
5+   Total: {$gt: 0}  
6+ }
```
  - Stage 3:** An output stage showing two documents:
    - `_id: "France, Martinique, FOC"` with `Total: 1`
    - `_id: "Saint Martin, FOC"` with `Total: 1`
  - Stage 4:** An output stage after the \$match stage, showing the same two documents.
  - Stage 5:** An output stage after the \$limit stage, showing the document from Stage 3.

¿Cuál fue el número de muertes promedio?

```
[$sort: {
  Cases: -1
}, {$match: {
  Country: {
    $ne: 'Grand Total'
  },
  Deaths: {
    $ne: NaN
  }
}}, {$group: {
  _id: '$Country',
  Total: {
    $sum: '$Deaths'
  }
}}, {$match: {
  Total: {$gt: 0}
}}, {$group: {
  _id: 'Promedio',
  Promedio: {$avg: '$Total'}
}]]
```

The screenshot shows the MongoDB Aggregations interface with the following details:

- Local** database selected.
- JOG.H1N1** collection selected.
- Aggregations** tab selected.
- Documents** tab selected.
- Aggregation Pipeline:**
  - Stage 1: `$_id: '$Country'`, `Total: { $sum: '$Deaths' }`
  - Stage 2: `$_id: "France"`, `Total: 0`
  - Stage 3: `$_id: "Mar"`, `Total: 0`
- Output after \$match stage:** (Sample of 20 documents)
  - `$_id: "Brazil"`, `Total: 3`
  - `$_id: "Colombia"`, `Total: 19`
- Output after \$group stage:** (Sample of 1 document)
  - `$_id: "Promedio"`,  
`Promedio: 194.52380952380952`

¿Cuál fue el número de casos promedio?

```
[$sort: {  
  Cases: -1  
}, {$match: {  
  Country: {  
    $ne: 'Grand Total'  
},  
  Deaths: {  
    $ne: NaN  
}  
}, {$group: {  
  _id: '$Country',  
  Total: {  
    $sum: '$Cases'  
}  
}, {$match: {  
  Total: {$gt: 0}  
}, {$group: {  
  _id: 'Promedio',  
  Promedio: {$avg: '$Total'}  
}}]
```

The screenshot shows the MongoDB Aggregations interface with the following details:

- Left Sidebar:** Shows the Local database with 13 DBs and 45 collections. The JOG.H1N1 collection is selected.
- Top Bar:** JOG.H1N1 Aggregations
- Summary:** DOCUMENTS 1.8k TOTAL SIZE 158.7KB AVG. SIZE 89B INDEXES 1 TOTAL SIZE 32.0KB AVG. SIZE 32.0KB
- Stages:**
  - \$match:** query: { Total: { \$gt: 0 } }
  - \$group:** \_id: 'Promedio', Promedio: { \$avg: '\$Total' }
- Outputs:**
  - Output after \$match stage:** Sample of 20 documents. Shows two results:
    - `_id: "French Polynesia, FOC"` `Total: 15`
    - `_id: "Guadalupe, FOC"` `Total: 2`
  - Output after \$group stage:** Sample of 1 document. Shows one result:
    - `_id: "Promedio"` `Promedio: 5783.358108108108`

## Top 5 de países con más muertes

```
[$sort: {
  Cases: -1
}, {$match: {
  Country: {
    $ne: 'Grand Total'
  },
  Deaths: {
    $ne: NaN
  }
}}, {$group: {
  _id: '$Country',
  Total: {
    $sum: '$Deaths'
  }
}}, {$sort: {
  Total: -1
}}, {$match: {
  Total: {$gt: 0}
}}, {$limit: 5}]
```

The screenshot shows the MongoDB Aggregations interface with the following details:

- Left Sidebar:** Shows the database structure with "Local" selected, displaying 13 DBs and 45 collections.
- Top Bar:** Shows the database name "JOG.H1N1" and the collection name "Aggregations". It also displays statistics: DOCUMENTS 1.8k, TOTAL SIZE 156.7KB, AVG. SIZE 89B; INDEXES 1, TOTAL SIZE 32.0KB, AVG. SIZE 32.0KB.
- Header:** Shows tabs for "Documents", "Aggregations" (selected), "Schema", "Explain Plan", "Indexes", and "Validation".
- Aggregation Pipeline:**
  - Stage 1:** \$match (Output after \$match stage (Sample of 20 documents))

```
1 /**
2 * query: The query in MQL.
3 */
4 {
5   Total: {$gt: 0}
6 }
```
  - Stage 2:** \$limit (Output after \$limit stage (Sample of 5 documents))

```
1 5
2
3
4
5
```

<code>_id: "Mexico"</code> Total: 2271	<code>_id: "United States of America"</code> Total: 1150	<code>_id: "Canada"</code> Total: 194	<code>_id: "Argentina"</code> Total: 175
---	---	--	---
- Buttons:** ADD STAGE, SAMPLE MODE, AUTO PREVIEW.

## Top 5 de países con menos muertes

```
[$sort: {
  Cases: -1
}, {$match: {
  Country: {
    $ne: 'Grand Total'
  },
  Deaths: {
    $ne: NaN
  }
}}, {$group: {
  _id: '$Country',
  Total: {
    $sum: '$Deaths'
  }
}}, {$sort: {
  Total: 1
}}, {$match: {
  Total: {$gt: 0}
}}, {$limit: 5}]
```

The screenshot shows the MongoDB Compass interface with the following details:

- Left Sidebar (Local):** Shows 13 DBs and 45 collections. The **JOG.H1N1** database is selected.
- Top Bar:** JOG.H1N1 Aggregations
- Header:** DOCUMENTS 1.8k TOTAL SIZE 168.7KB AVG. SIZE 89B | INDEXES 1 TOTAL SIZE 32.0KB AVG. SIZE 32.0KB
- Toolbar:** Documents, Aggregations (selected), Schema, Explain Plan, Indexes, Validation, SAMPLE MODE, AUTO PREVIEW
- Aggregation Pipeline:**
  - \$match:** A stage with the query: 

```
1 /**
2  * query: The query in MQL.
3 */
4 + {
5   Total: {$gt: 0}
6 }
```
  - Output after \$match stage:** (Sample of 20 documents)
    - ```
_id: "Paraguay"
Total: 1
```
    - ```
_id: "Costa Rica"
Total: 2
```
  - \$limit:** A stage with the value: 5
  - Output after \$limit stage:** (Sample of 5 documents)
    - ```
1 5
```
    - ```
_id: "Paraguay"
total: 1
```
    - ```
_id: "Costa Rica"
Total: 2
```

## Reto 3

Descarga la fuente de datos de los locales del reto “2019-nCoV-cases-JHU.csv”. Analiza y limpia los datos. Elige MySQL o MongoDB y crea una base de datos para el conjunto de datos del reto. Carga los datos en la base de datos que elegiste y revisa que éstos se muestren correctamente. Responde a las siguientes preguntas usando consultas:

¿Cuál es país con mayor número de casos?

```
[$group: {  
  _id: '$Region',  
  maxCasesPerCountry: {  
    $sum: '$Confirmed'  
  }  
}, {$sort: {  
  maxCasesPerCountry: -1  
}}, {$limit: 1}]
```

The screenshot shows the MongoDB Aggregations interface for the database 'JOG.COVID-19'. The left sidebar lists databases and collections, with 'COVID-19' selected. The main area displays an aggregation pipeline with three stages:

- \$group**: Groups documents by region (\_id: '\$Region') and calculates the sum of confirmed cases (maxCasesPerCountry: { \$sum: '\$Confirmed' }).
- \$sort**: Sorts the grouped documents by maxCasesPerCountry in descending order (-1).
- \$limit**: Limits the result to 1 document.

The output after the \$sort stage shows two documents: Mainland China with 2369152 cases and South Korea with 25723 cases. The final output after the \$limit stage shows only the document for Mainland China.

| Document | Output after \$sort stage                               | Output after \$limit stage                              |
|----------|---------------------------------------------------------|---------------------------------------------------------|
| 1        | 1: {_id: "Mainland China", maxCasesPerCountry: 2369152} | 1: {_id: "Mainland China", maxCasesPerCountry: 2369152} |
| 2        | 2: {_id: "South Korea", maxCasesPerCountry: 25723}      |                                                         |

¿Cuál es el país con mayor número de muertes?

```
[$group: {  
  _id: '$Region',  
  maxDeathsPerCountry: {  
    $sum: '$Deaths'  
  }  
}, {$sort: {  
  maxDeathsPerCountry: -1  
}}, {$limit: 1}]
```

The screenshot shows the MongoDB Aggregations interface. On the left, the sidebar lists databases and collections, with 'JOG' and 'COVID-19' selected. The main area displays an aggregation pipeline:

```
1. {  
  _id: '$Region',  
  maxDeathsPerCountry: {  
    $sum: '$Deaths'  
  }  
}  
2. {  
  maxDeathsPerCountry: -1  
}  
3. 1
```

The results are shown in three stages:

- Output after \$group stage (Sample of 20 documents):**
  - `_id: "Nepal"` `maxDeathsPerCountry: 0`
  - `_id: "Algeria"` `maxDeathsPerCountry: 0`
  - `_id: "Mainland China"` `maxDeathsPerCountry: 65325`
  - `_id: "Iran"` `maxDeathsPerCountry: 368`
- Output after \$sort stage (Sample of 20 documents):**
  - `_id: "Mainland China"` `maxDeathsPerCountry: 65325`
  - `_id: "Iran"` `maxDeathsPerCountry: 368`
- Output after \$limit stage (Sample of 1 document):**
  - `_id: "Mainland China"` `maxDeathsPerCountry: 65325`

Usando las coordenadas, encuentra el epicentro del virus.

```
[{$match: {  
    Lat: {  
        $ne: "  
    },  
    Long: {  
        $ne: "  
    }  
}}, {$group: {  
    _id: null,  
    size: {  
        $sum: 1  
    },  
    sumLat: {  
        $sum: '$Lat'  
    },  
    sumLong: {  
        $sum: '$Long'  
    },  
    avgLat: {  
        $avg: '$Lat'  
    },  
    avgLong: {  
        $avg: '$Long'  
    }  
}}, {$project: {  
    checkAvgLat: {  
        $divide: [  
            '$sumLat',  
            '$size'  
        ]  
    },  
    checkAvgLong: {  
        $divide: [  
            '$sumLong',  
            '$size'  
        ]  
    }  
}}]
```

The screenshot shows the MongoDB Aggregations interface with a pipeline defined in the 'JOG.COVID-19' collection. The pipeline consists of three stages: a \$group stage, a \$project stage, and a final output stage.

**\$group Stage:** This stage groups documents by a null key. It calculates the total size (3), the sum of longitudes (sumLong), and the sum of latitudes (sumLat). The output document is:

```
_id: null  
size: 3  
sumLat: 132931.9493  
sumLong: -43931.8979  
avgLat: 2.48804198492249  
avgLong: -2.631917158632406
```

**\$project Stage:** This stage projects the calculated values. It includes the size, sumLat, sumLong, and the calculated average values (checkAvgLat and checkAvgLong). The output document is:

```
_id: null  
size: 3  
checkAvgLat: 2.488041984932249  
checkAvgLong: -2.631917158632406
```

Usando el epicentro, encuentra las 5 regiones más cercanas a dicho epicentro.

```
[{$group: {  
    _id: "$Region",  
    Lat: {$avg: "$Lat"},  
    Long: {$avg: "$Long"}  
}}, {$match: {  
    $and: [  
        {Lat: {$lt: 2}},  
        {Long: {$lt: 2}},  
        {Lat: {$gt: -1}},  
        {Long: {$gt: -1}},  
    ]  
}}]
```

The screenshot shows the MongoDB Aggregations interface for the 'JOG.COVID-19' database. The left sidebar lists databases and collections, with 'COVID-19' selected. The main area displays an aggregation pipeline with two stages: '\$group' and '\$match'. The '\$group' stage groups documents by region and calculates average latitude and longitude. The '\$match' stage filters documents where the region's latitude is less than 2 and longitude is less than 2, and also includes regions with latitudes greater than -1 and longitudes greater than -1. The output after the '\$group' stage shows five sample documents, each representing a region with its ID, name, last update, confirmed cases, deaths, and recovered cases. The output after the '\$match' stage shows five sample documents, each representing a region that meets the specified spatial criteria.

```
1. /**
2.  * _id: The id of the group.
3.  * fieldN: The first field name.
4. */
5. {
6.     _id: "$Region",
7.     Lat: {$avg: "$Lat"},  
    Long: {$avg: "$Long"}  
}
```

```
Region: "Mainland China"  
Last Update: 2020-03-03T17:43:02.000+00:00  
Confirmed: 67217  
Deaths: 2835  
Recovered: 36208  
l => 3k 075c
```

```
Region: "South Korea"  
Last Update: 2020-03-03T15:43:02.000+00:00  
Confirmed: 5186  
Deaths: 28  
Recovered: 30  
l => 3k 075c
```

```
_id: "United Arab Emirates"  
Lat: 1.41164705882353  
Long: 3.176470588235294
```

```
_id: "Bahrain"  
Lat: 8.67583333333333  
Long: 16.849999999999998
```

```
1. /**
2.  * query: The query in MQL.
3. */
4. {
5.     $and: [
6.         {Lat: {$lt: 2}},
7.         {Long: {$lt: 2}},
8.         {Lat: {$gt: -1}},
9.         {Long: {$gt: -1}},
10.    ]
11. }
12. }
```

```
_id: "Azerbaijan"  
Lat: 0  
Long: 0
```

```
_id: "North Ireland"  
Lat: 0  
Long: 0
```