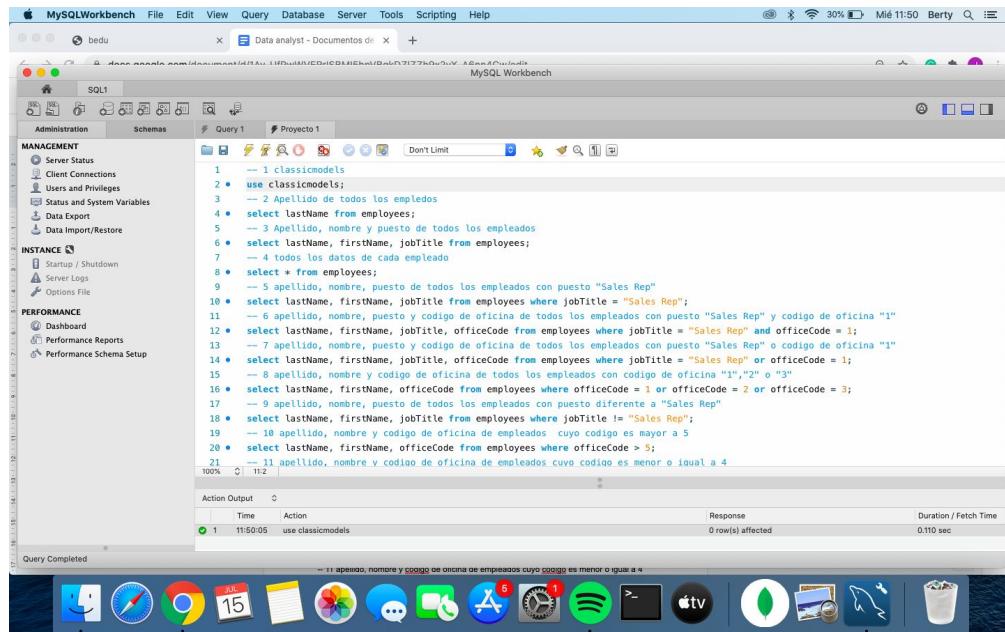


## Sesión 01 Fundamentos SQL

### 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:

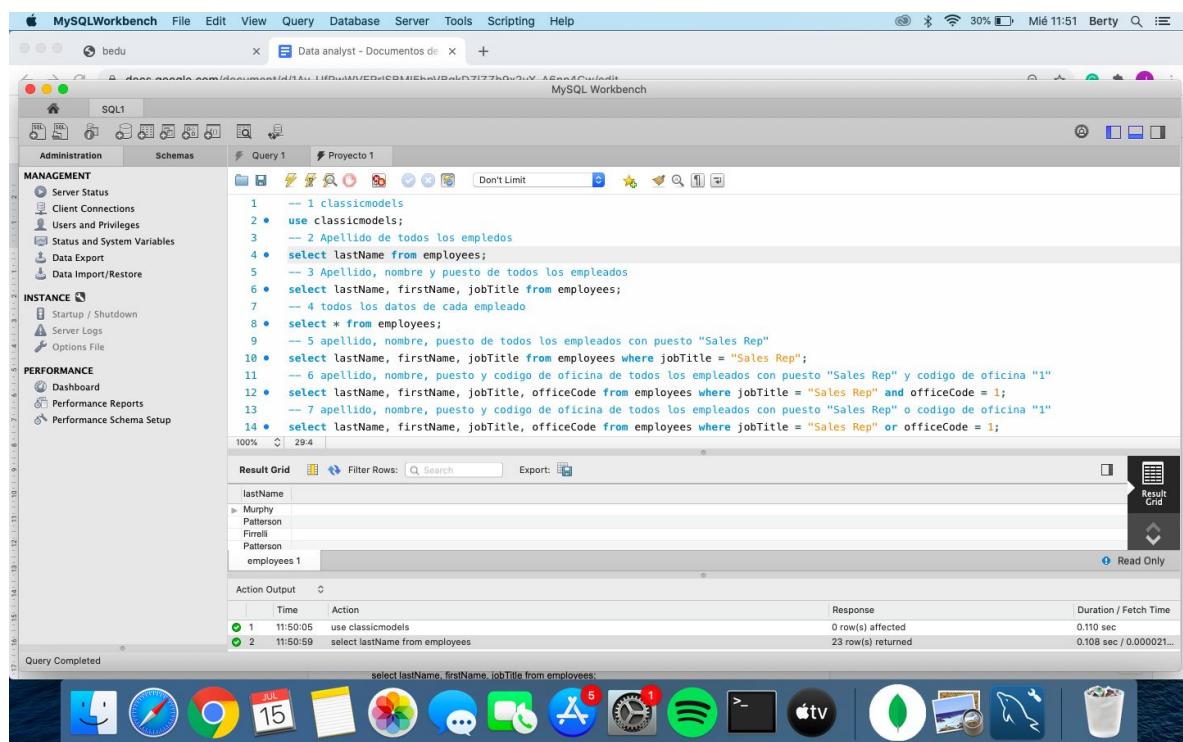
```
1 -- 1 classicmodels
2 • use classicmodels;
3 -- 2 Apellido de todos los empleados
4 • select lastName from employees;
5 -- 3 Apellido, nombre y puesto de todos los empleados
6 • select lastName, firstName, jobTitle from employees;
7 -- 4 todos los datos de cada empleado
8 • select * from employees;
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

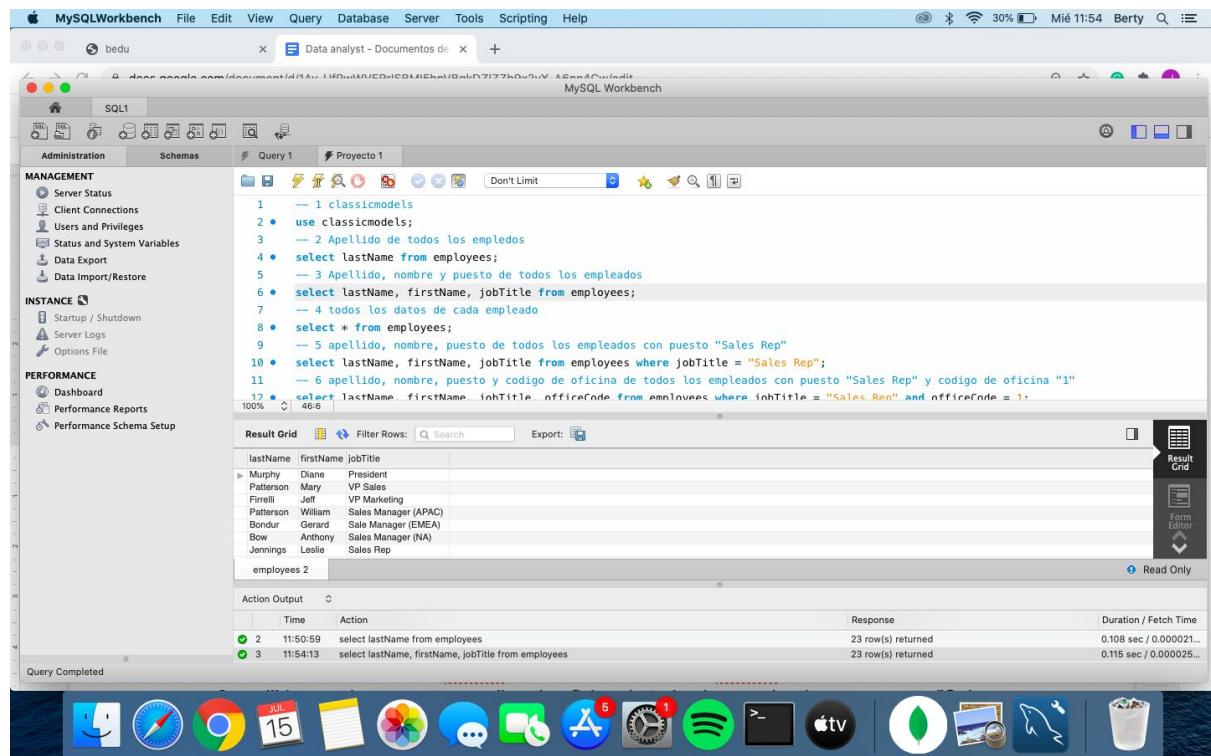
At the bottom of the table, it says "employees 1".

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  MySQL Workbench

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;

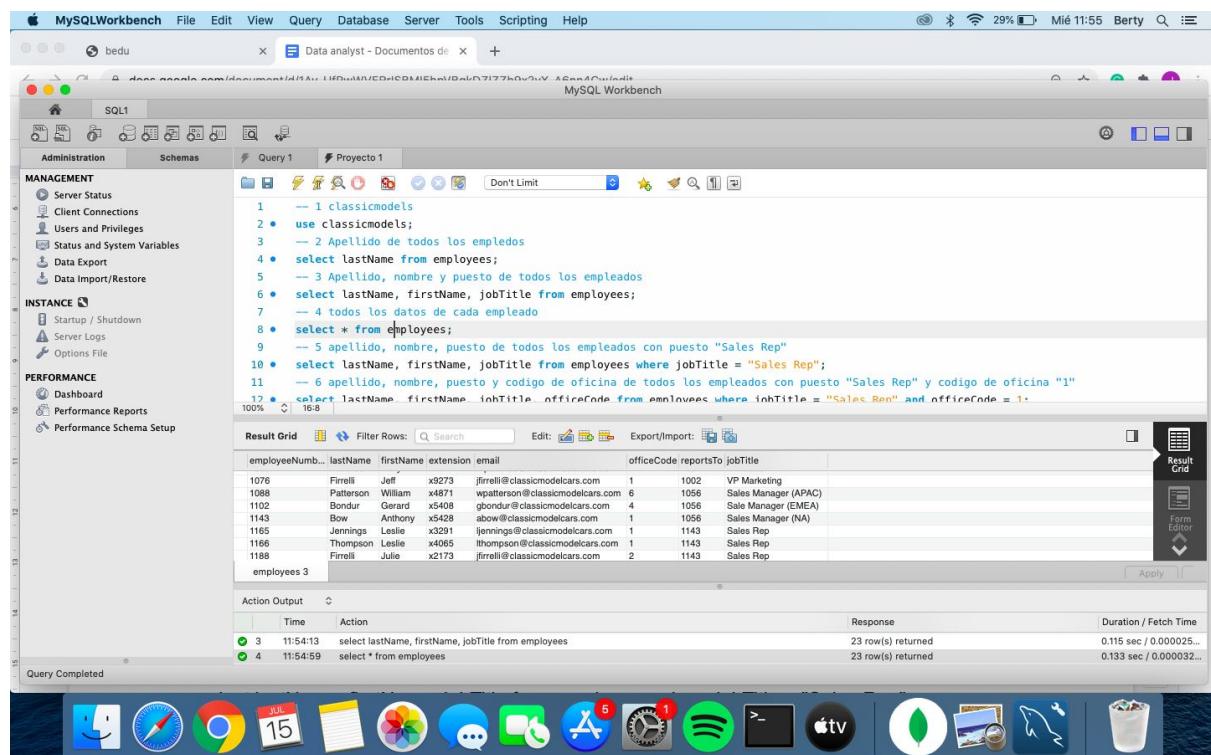
Result Grid  Filter Rows: Q Search  Export:  Result Grid
employees 2
Read Only

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  MySQL Workbench

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

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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;

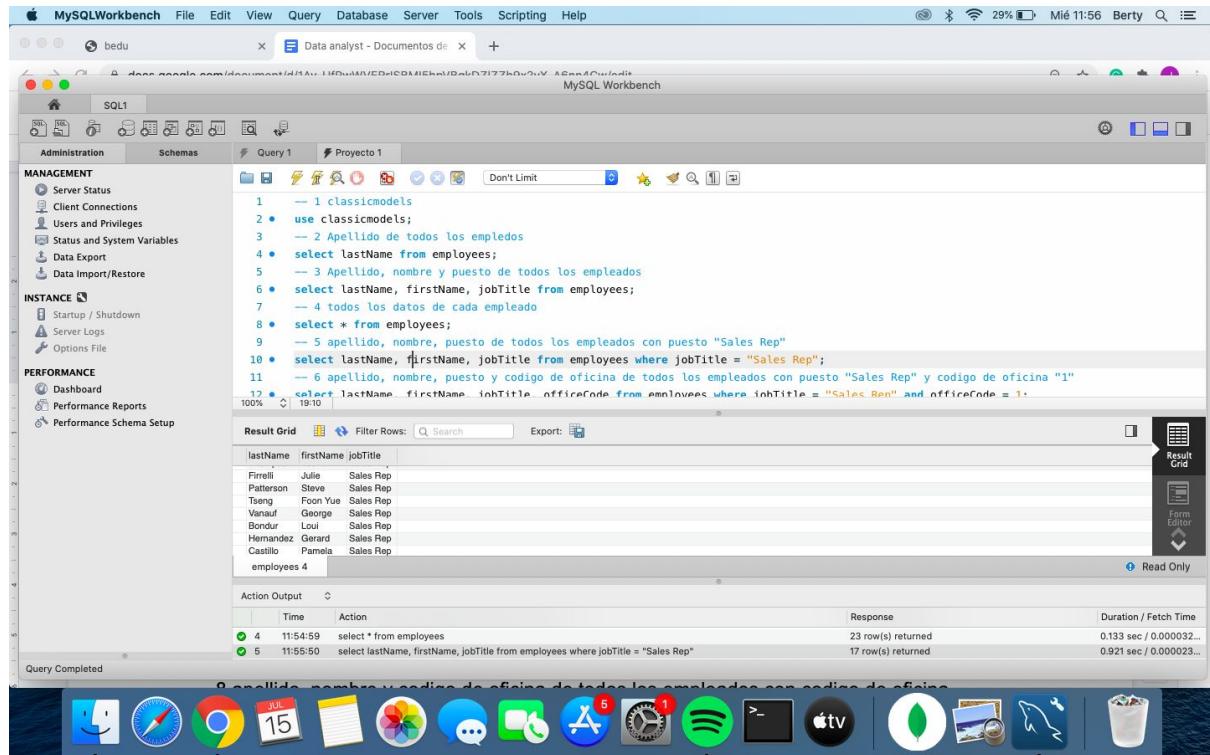
Result Grid  Filter Rows: Q Search  Edit:  Export/Import:  Result Grid
employees 3
Apply

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";



```

MySQLWorkbench  File  Edit  View  Query  Database  Server  Tools  Scripting  Help
bedu          Data analyst - Documentos de +  Mié 11:56  Berty  Search  System Control

SQL1
Administration  Schemas  Query 1  Proyecto 1

MANAGEMENT
    Server Status
    Client Connections
    Users and Privileges
    Status and System Variables
    Data Export
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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: 
lastName  firstName  jobTitle
Firelli  Julie  Sales Rep
Patterson  Steve  Sales Rep
Tseng  Foon Yue  Sales Rep
Vauaaf  George  Sales Rep
Bondur  Loui  Sales Rep
Hernandez  Gerard  Sales Rep
Castillo  Pamela  Sales Rep
employees 4

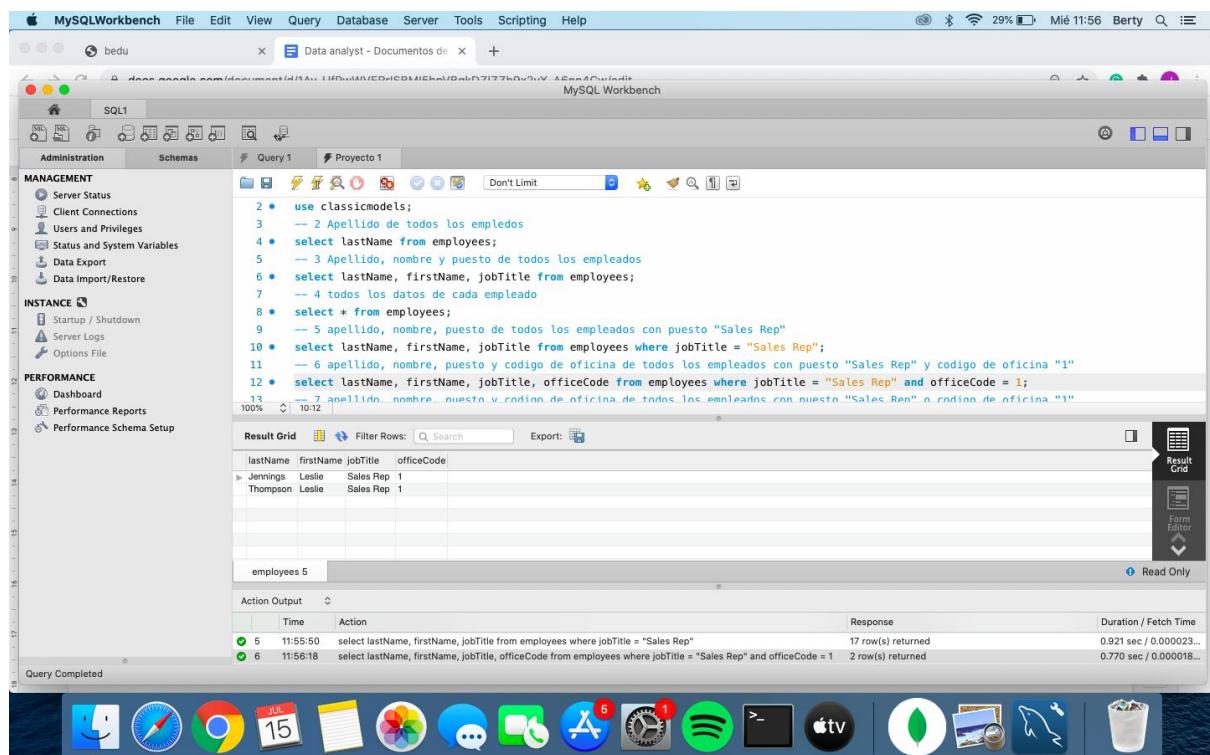
Action Output  C
Time  Action  Response  Duration / Fetch Time
4  11:54:59  select * from employees  23 row(s) returned  0.133 sec / 0.000032...
5  11:55:50  select lastName, firstName, jobTitle from employees where jobTitle = "Sales Rep"  17 row(s) returned  0.921 sec / 0.000023...

Query Completed

```

-- 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;



```

MySQLWorkbench  File  Edit  View  Query  Database  Server  Tools  Scripting  Help
bedu          Data analyst - Documentos de +  Mié 11:56  Berty  Search  System Control

SQL1
Administration  Schemas  Query 1  Proyecto 1

MANAGEMENT
    Server Status
    Client Connections
    Users and Privileges
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2 • use classicmodels;
3  -- 2 Apellido de todos los empleados
4 • select lastName from employees;
5  -- 3Apellido, 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" y codigo de oficina "1"

Result Grid  Filter Rows: Q Search  Export: 
lastName  firstName  jobTitle  officeCode
Jennings  Leslie  Sales Rep  1
Thompson  Leslie  Sales Rep  1
employees 5

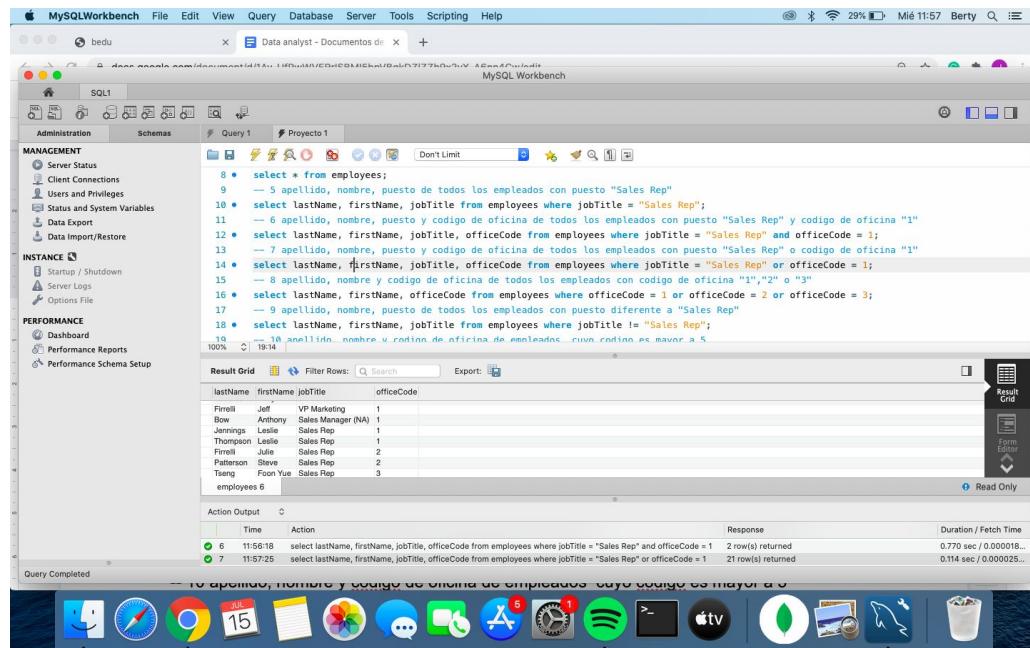
Action Output  C
Time  Action  Response  Duration / Fetch Time
5  11:55:50  select lastName, firstName, jobTitle from employees where jobTitle = "Sales Rep"  17 row(s) returned  0.921 sec / 0.000023...
6  11:56:18  select lastName, firstName, jobTitle, officeCode from employees where jobTitle = "Sales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

Query Completed

```

-- 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;
```



```
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
```

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

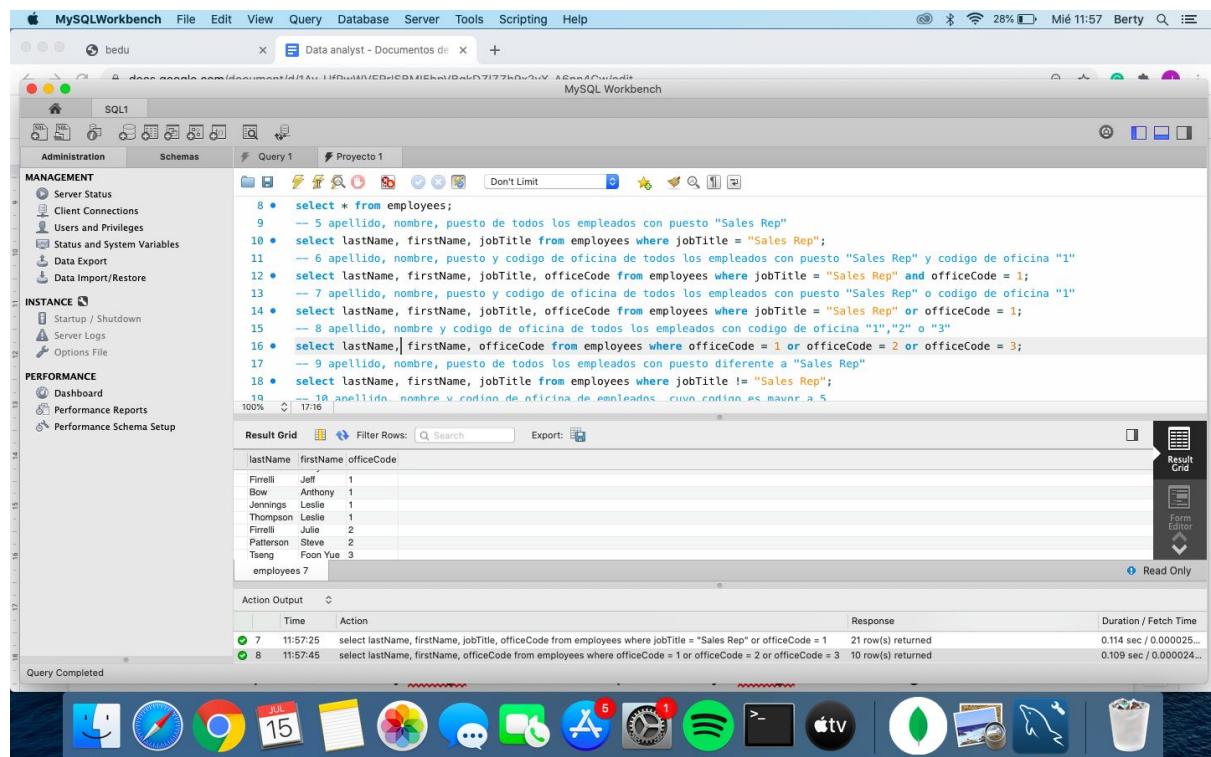
Action Output

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;
```



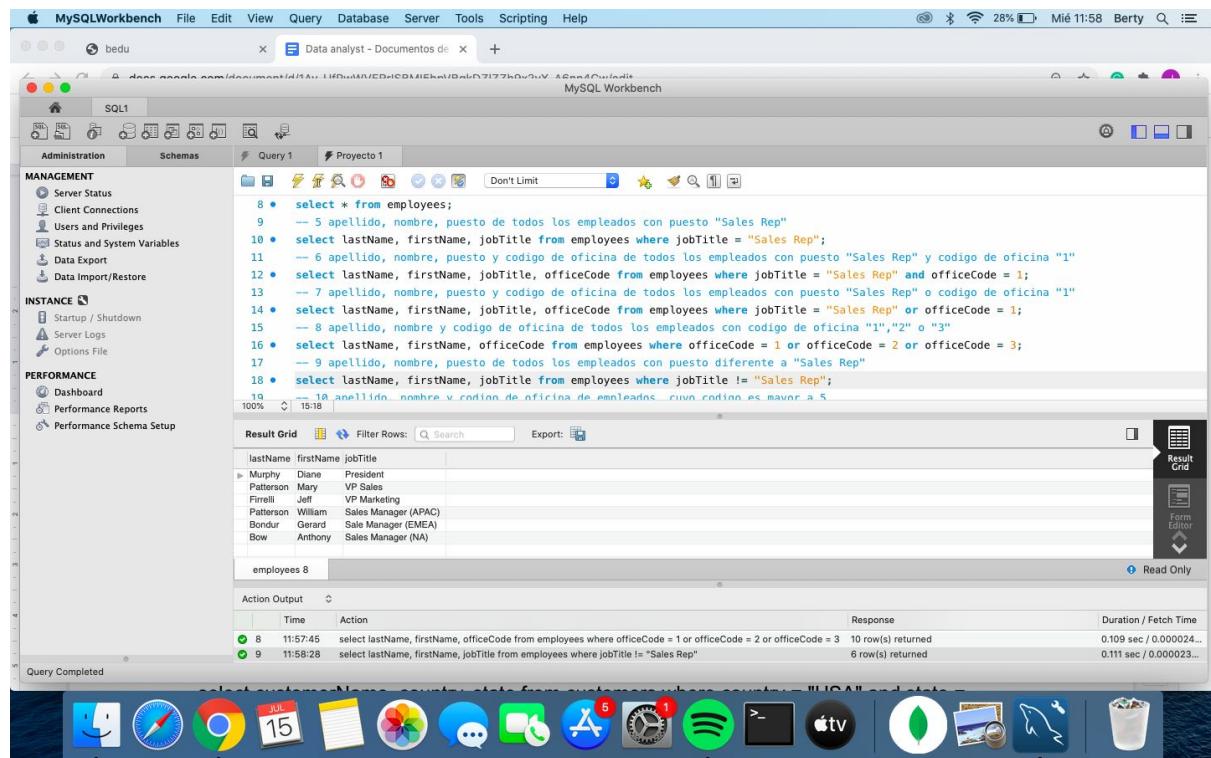
```
8 • select * from employees;
9 -- 5 apellido, nombre, puesto de todos los empleados con puesto "Sales Rep"
10 • select lastName, firstName, jobTitle from employees where jobTitle = "Sales Rep";
11 -- 6 apellido, nombre, puesto y codigo de oficina de todos los empleados con puesto "Sales Rep" y codigo 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
```

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

Action Output

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 reads "MySQLWorkbench" and "bedu". The main window has a "SQL1" tab selected. The left sidebar shows "Administration", "Schemas", and "Query 1" (which contains the executed SQL code). The right pane displays the results of the query in a "Result Grid". The results table has columns "lastName", "firstName", and "jobTitle". The data shows several employees with various job titles like President, VP Sales, VP Marketing, Sales Manager (APAC), Sales Manager (EMEA), and Sales Manager (NA). Below the result grid is a "Query Output" section showing the execution log with two rows: one for each query (9 and 10) with their respective times, responses, and duration/fetch times.

```

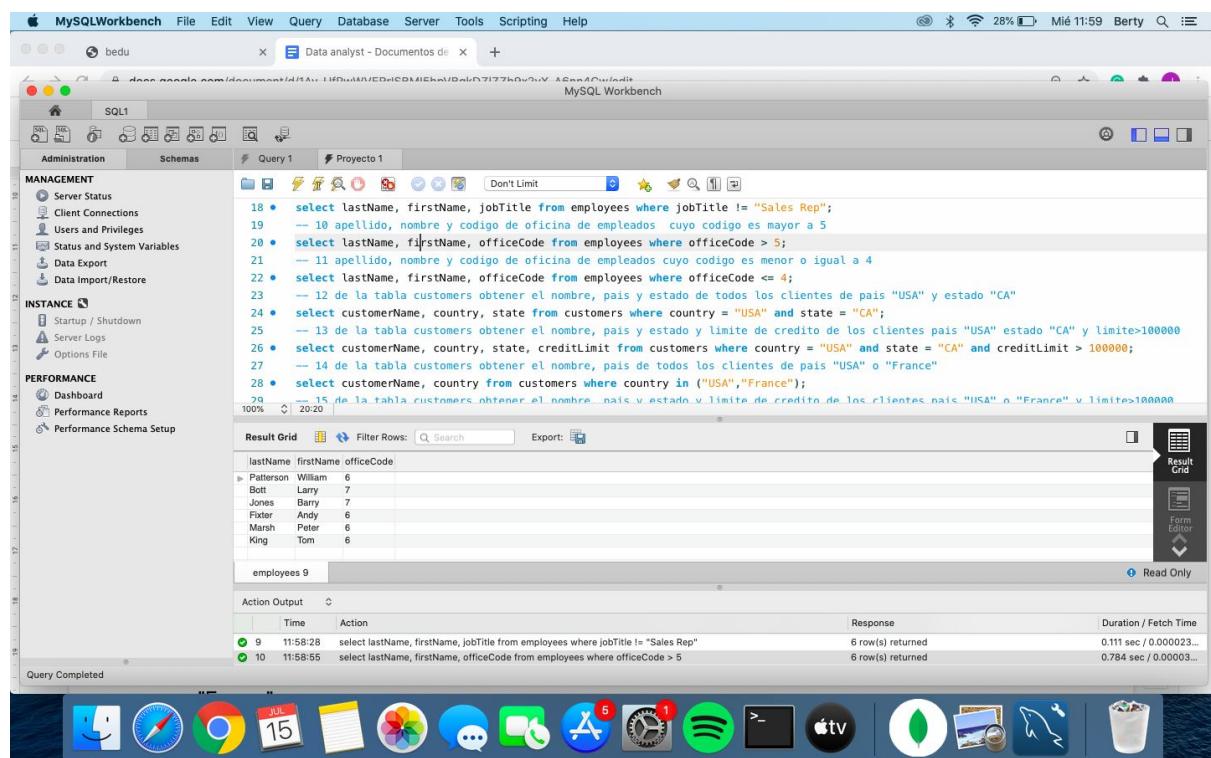
8 • select * from employees;
9 -- 5 apellido, nombre, puesto de todos los empleados con puesto "Sales Rep"
10 • select lastName, firstName, jobTitle from employees where jobTitle = "Sales Rep";
11 -- 6 apellido, nombre, puesto y codigo de oficina de todos los empleados con puesto "Sales Rep" y codigo 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
    
```

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)

Action Output:

Time	Action	Response	Duration / Fetch Time
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 11:58:28	select lastName, firstName, jobTitle from employees where jobTitle != "Sales Rep"	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;



This screenshot is similar to the previous one but shows a different set of queries being run. The "Query 1" tab now contains the following SQL code:

```

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
    
```

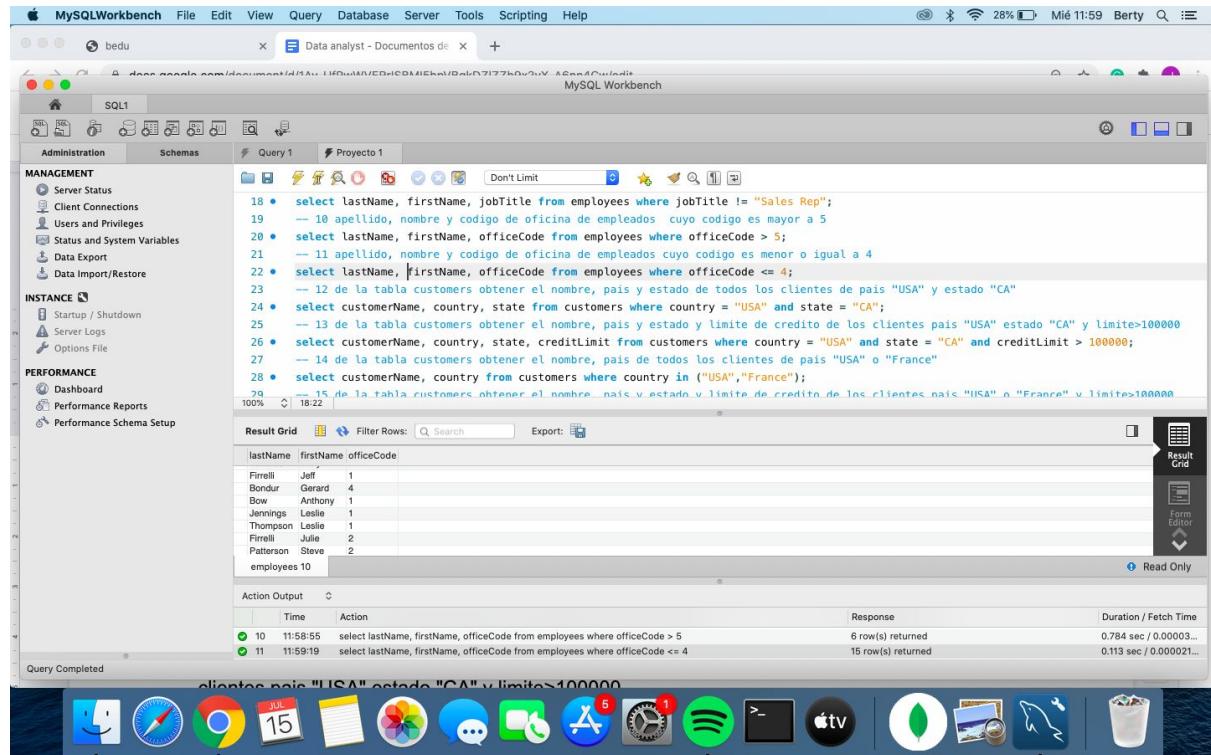
The results grid shows a table with columns "lastName", "firstName", and "officeCode". The data includes employees with office codes 6, 7, 6, 6, and 6 respectively. The "Query Output" section at the bottom shows the execution log for these two queries.

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

Action Output:

Time	Action	Response	Duration / Fetch Time
9 11:58:28	select lastName, firstName, jobTitle from employees where jobTitle != "Sales Rep"	6 row(s) returned	0.111 sec / 0.000023...
10 11:58:55	select lastName, firstName, officeCode from employees where officeCode > 5	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 +  Mié 11:59  Berty  S  MySQL Workbench

SQL1
Administration  Schemas  Query 1  Proyecto 1

MANAGEMENT
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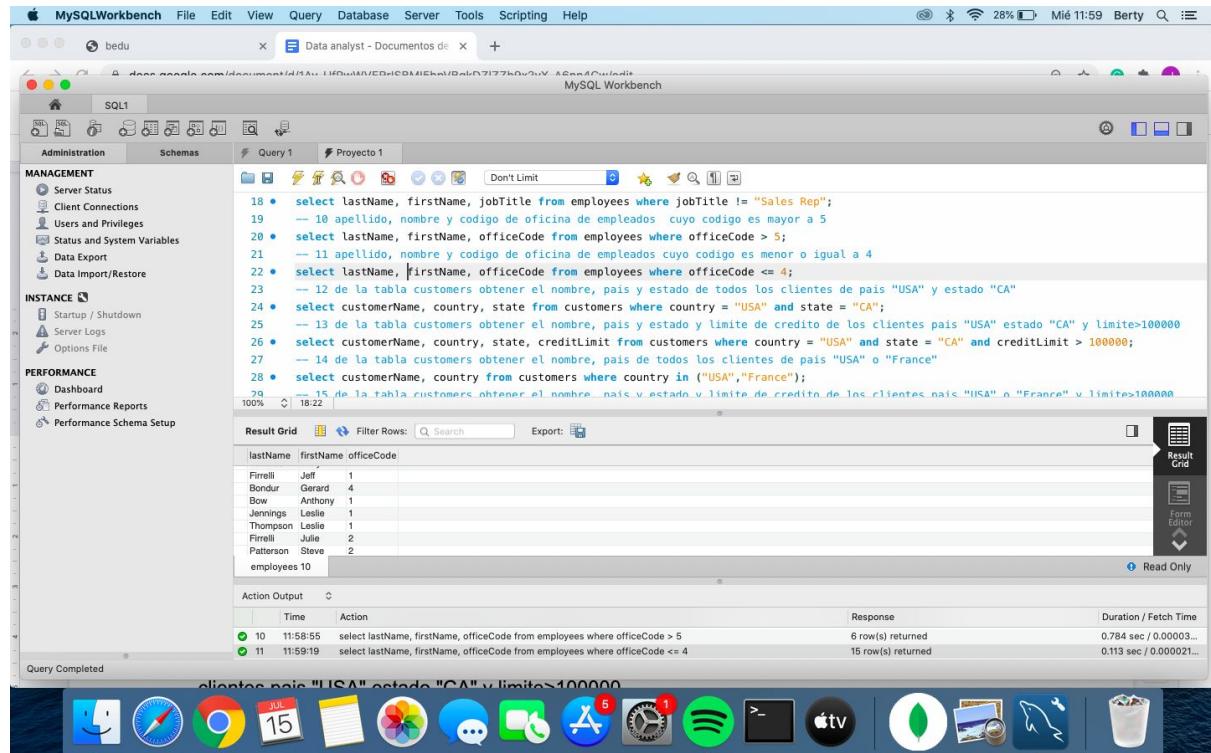
Result Grid  Filter Rows: Q Search  Export: 
lastName  firstName  officeCode
Firelli  Jeff  1
Boudur  Gerard  4
Bow  Anthony  1
Jennings  Leslie  1
Thompson  Leslie  1
Firelli  Julie  2
Patterson  Steve  2
employees 10

Action Output  C
Time  Action  Response  Duration / Fetch Time
10  11:58:55  select lastName, firstName, officeCode from employees where officeCode <= 4  15 row(s) returned  0.113 sec / 0.000021...
11  11:59:19  select lastName, firstName, officeCode from employees where officeCode <= 4  6 row(s) returned  0.784 sec / 0.00003...
Query Completed

```

-- 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 +  Mié 11:59  Berty  S  MySQL Workbench

SQL1
Administration  Schemas  Query 1  Proyecto 1

MANAGEMENT
    Server Status
    Client Connections
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PERFORMANCE
    Dashboard
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    Performance Schema Setup

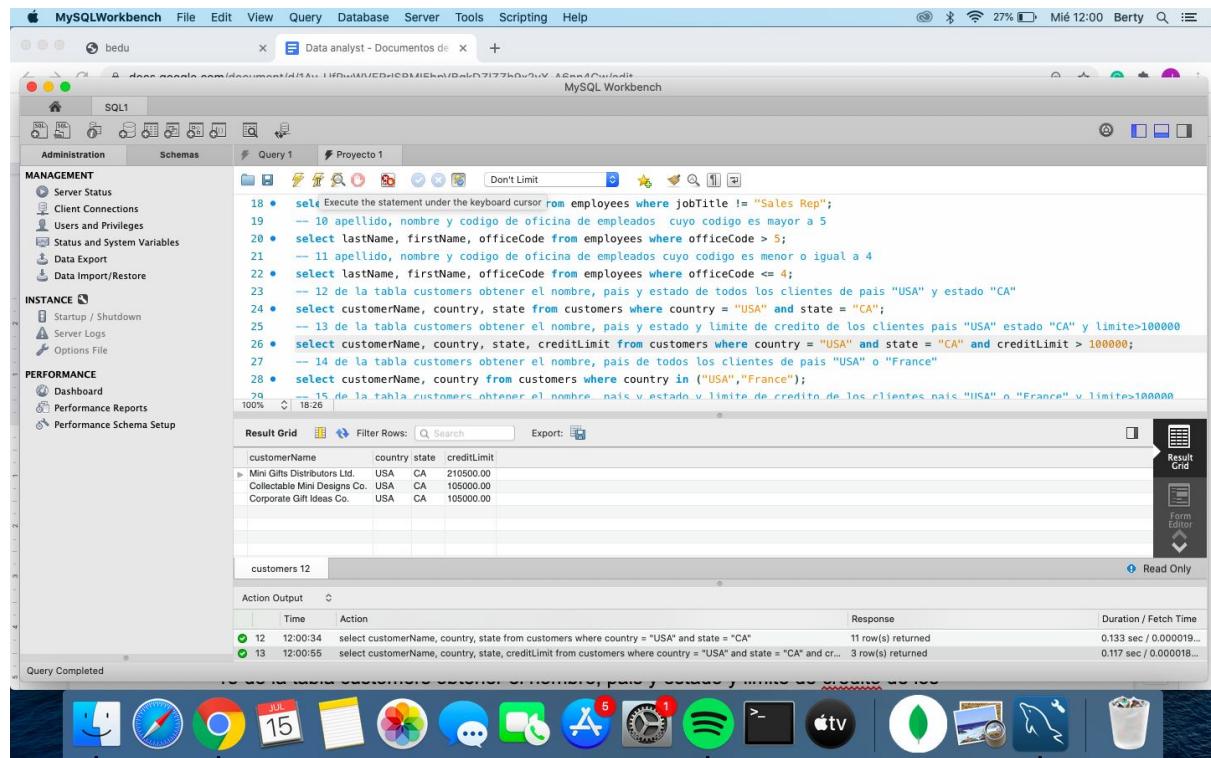
Result Grid  Filter Rows: Q Search  Export: 
lastName  firstName  officeCode
Firelli  Jeff  1
Boudur  Gerard  4
Bow  Anthony  1
Jennings  Leslie  1
Thompson  Leslie  1
Firelli  Julie  2
Patterson  Steve  2
employees 10

Action Output  C
Time  Action  Response  Duration / Fetch Time
10  11:58:55  select lastName, firstName, officeCode from employees where officeCode <= 4  15 row(s) returned  0.784 sec / 0.00003...
11  11:59:19  select lastName, firstName, officeCode from employees where officeCode <= 4  6 row(s) returned  0.113 sec / 0.000021...
Query Completed

```

-- 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

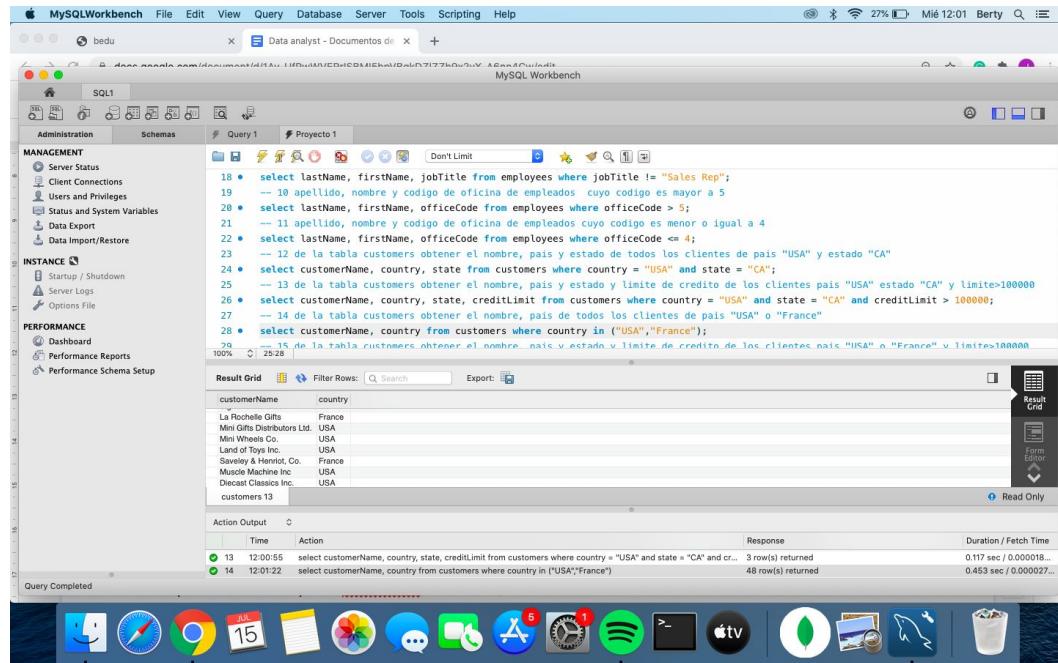
select customerName, country, state, creditLimit from customers where country = "USA" and state = "CA" and creditLimit > 100000;



```
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"

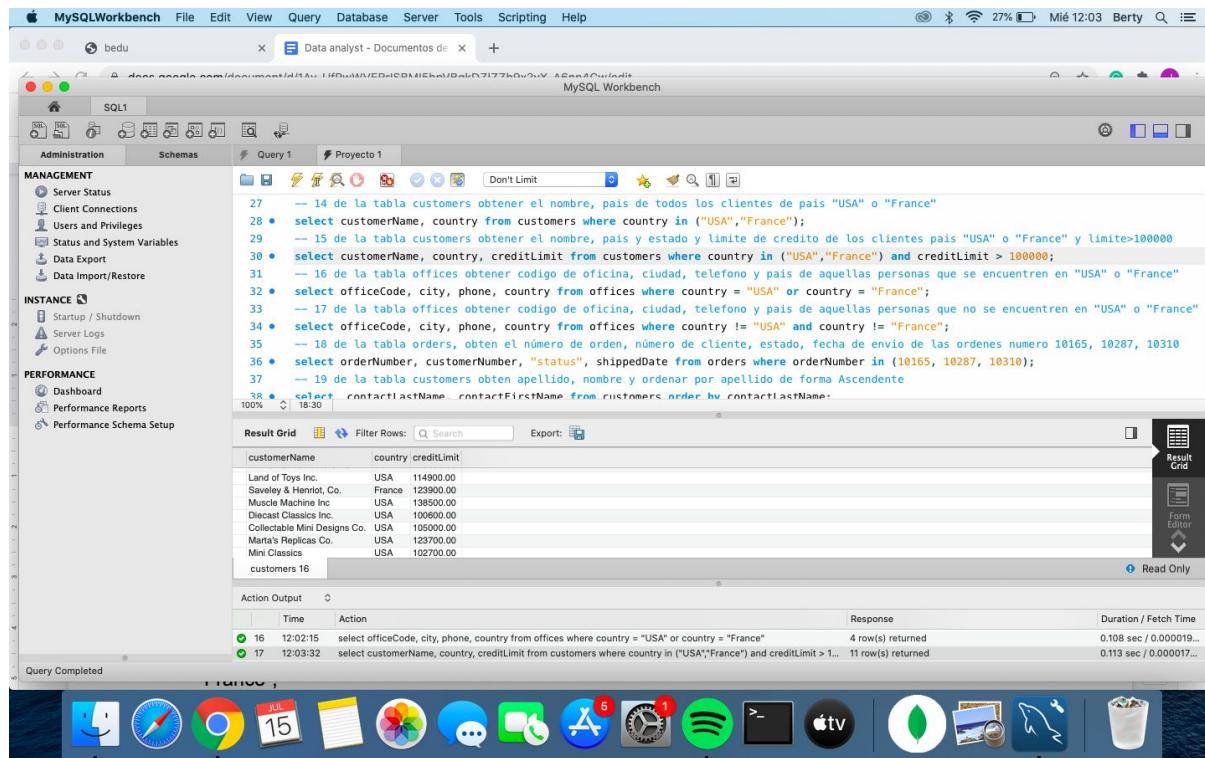
select customerName, country from customers where country in ("USA","France");



```
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

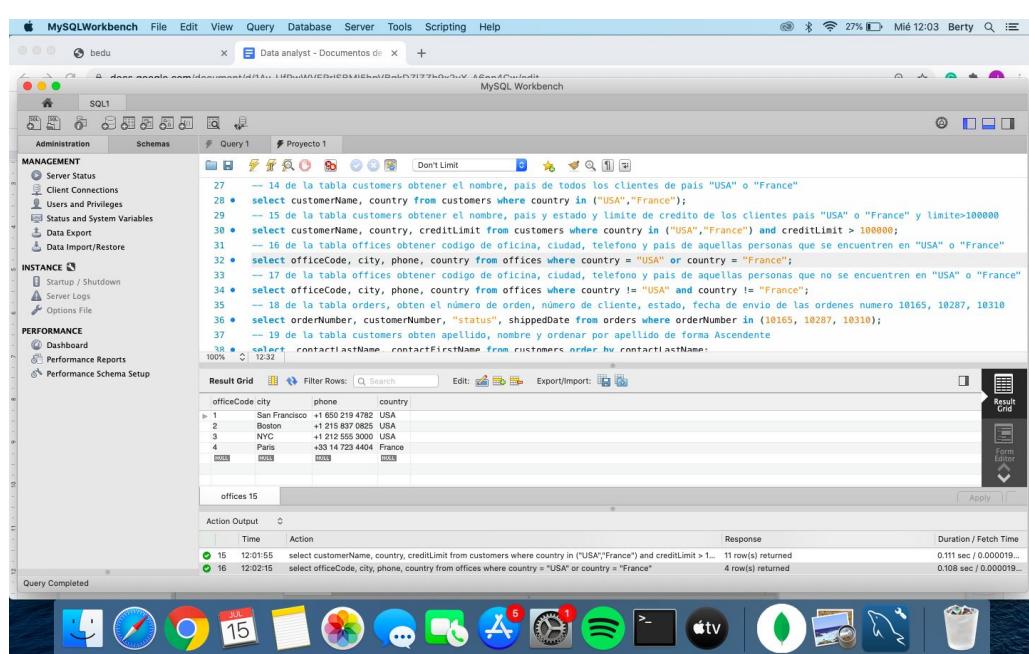
Action Output
Time Action Response Duration / Fetch Time
16 12:02:15 select officeCode, city, phone, country from offices where country = "USA" or country = "France" 4 row(s) returned 0.108 sec / 0.000019...
17 12:03:32 select customerName, country, creditLimit from customers where country in ("USA","France") 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
bedu          Data analyst - Documentos de + 
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

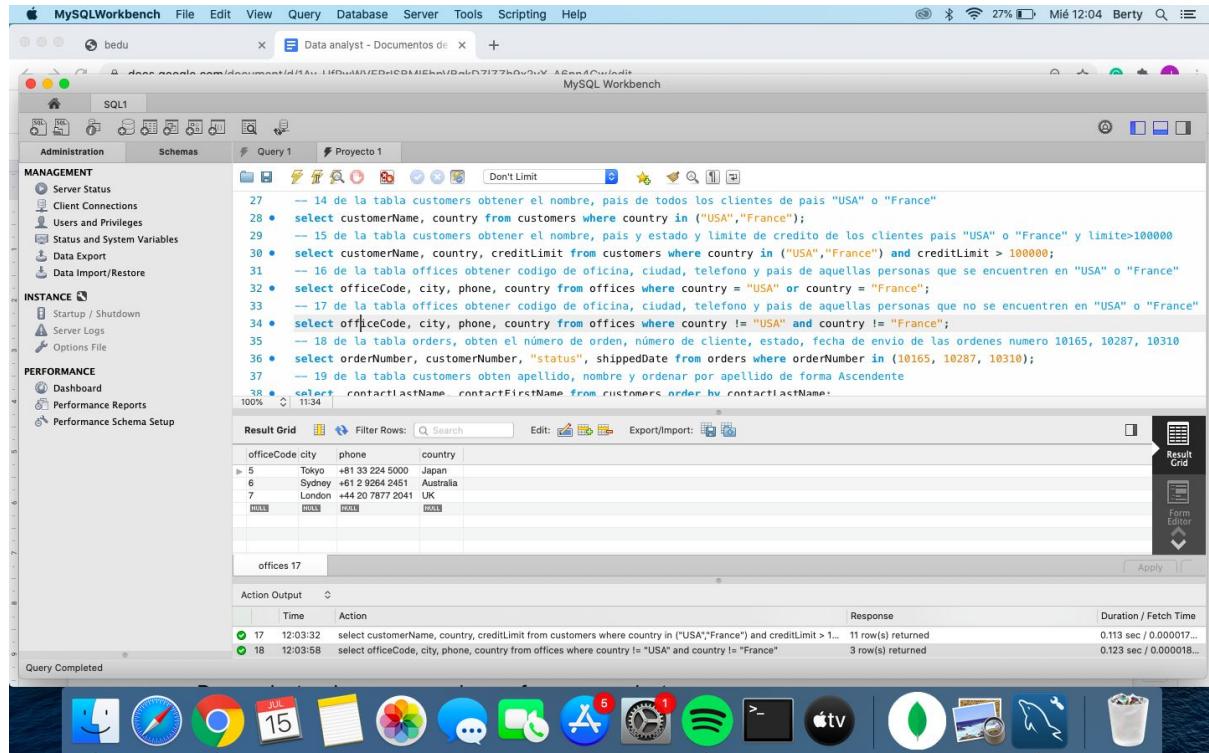
Action Output
Time Action Response Duration / Fetch Time
15 12:01:55 select customerName, country, creditLimit from customers where country in ("USA","France") and creditLimit > 1... 11 row(s) returned 0.111 sec / 0.000019...
16 12:02:15 select officeCode, city, phone, country from offices where country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

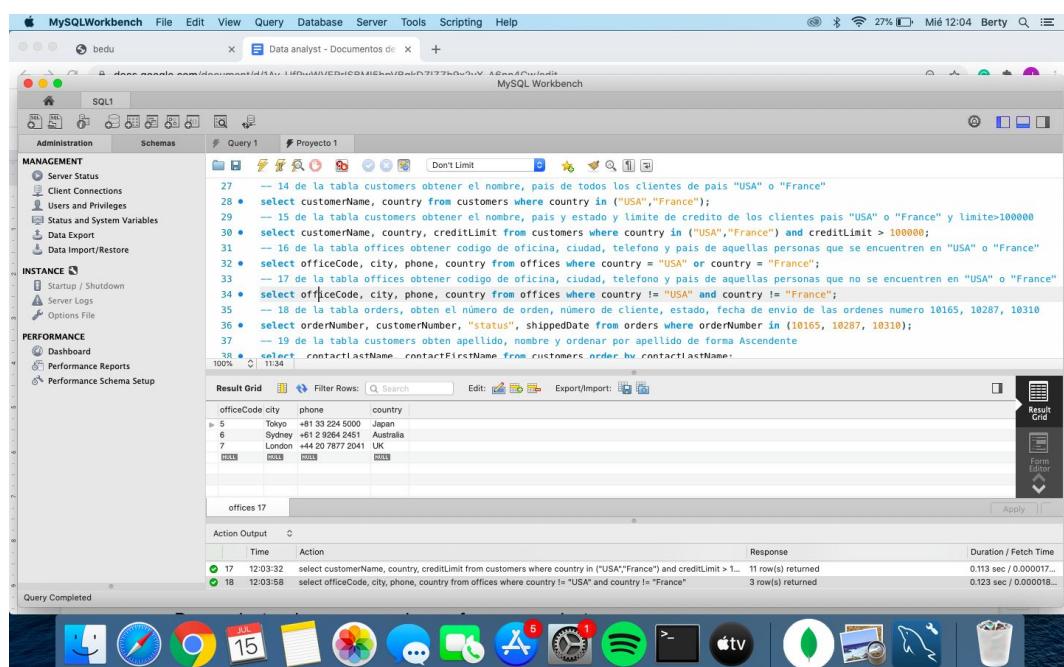
The results grid shows the following data:

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 status bar at the bottom indicates 'Query Completed'.

-- 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'. 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;
```

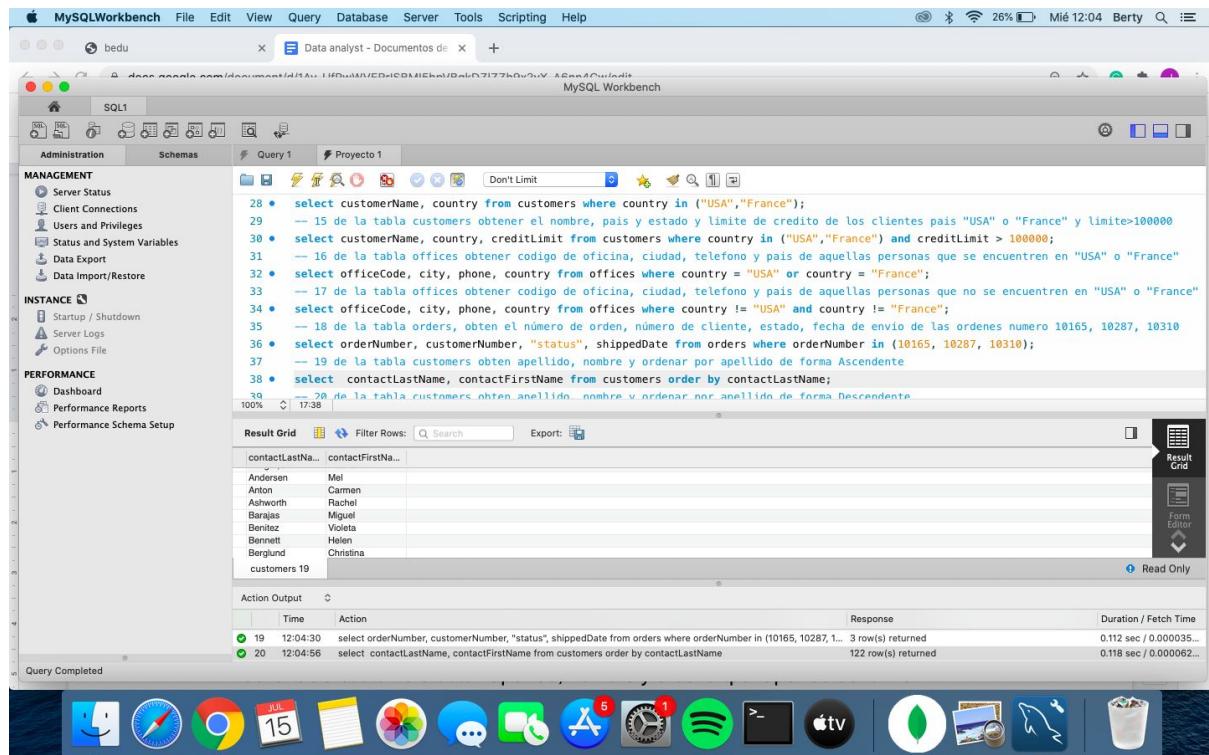
The results grid shows the following data:

orderNumber	customerNumber	status	shippedDate
10165	100017	In Progress	2003-10-03 00:00:00
10287	100018	In Progress	2003-10-03 00:00:00
10310	100019	In Progress	2003-10-03 00:00:00

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

-- 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
```

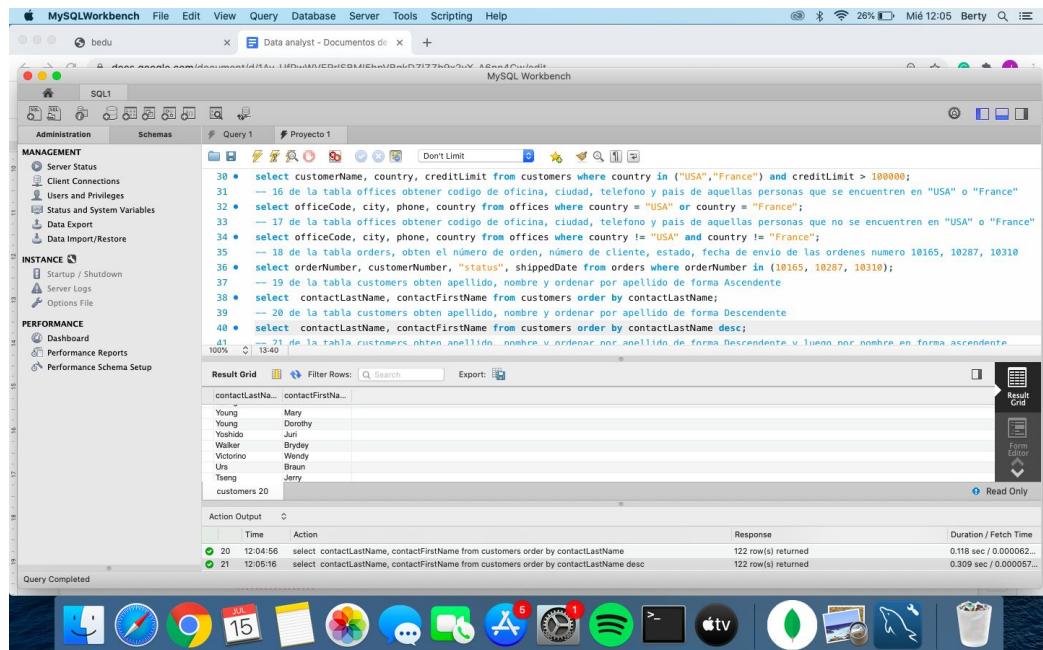
contactLastName	contactFirstName
Andersen	Mel
Anton	Carmen
Ashworth	Rachel
Barajas	Miguel
Bennet	Violeta
Bennett	Helen
Berglund	Christina

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 the execution details:

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

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

Time	Action	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

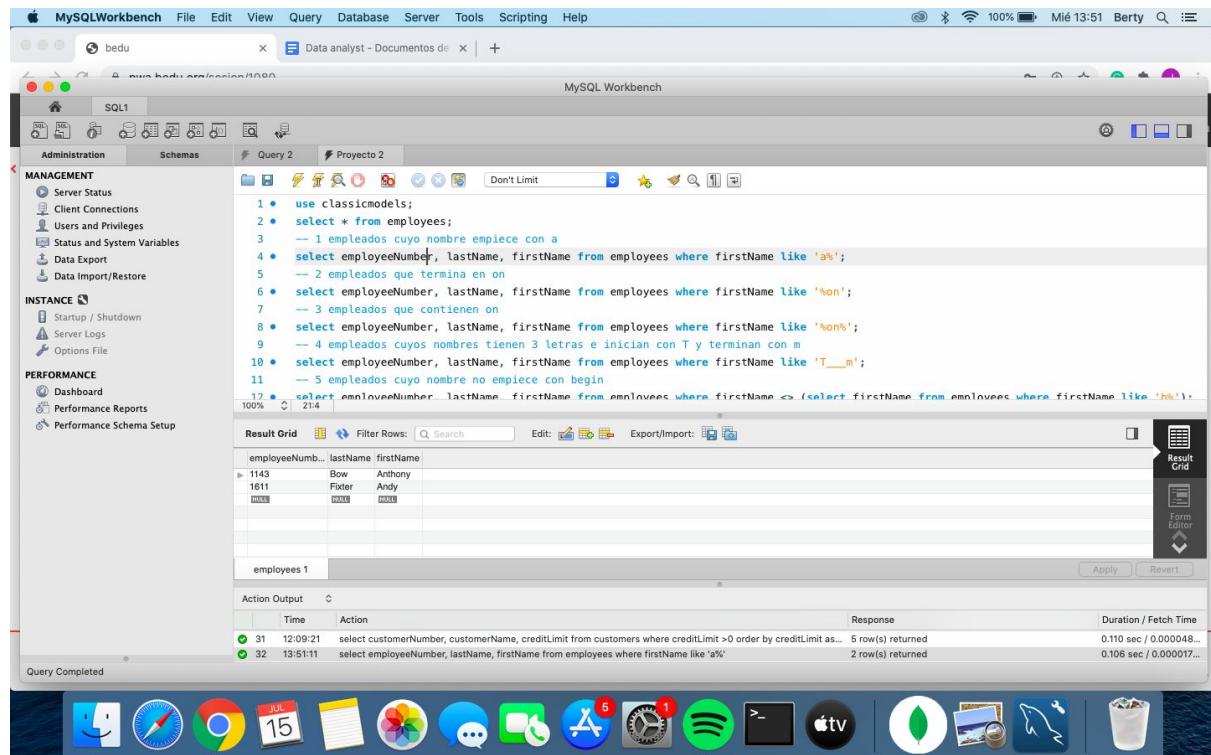
The Action Output pane shows two queries:

Time	Action	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 main window displays a SQL editor with the following query:

```
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
```

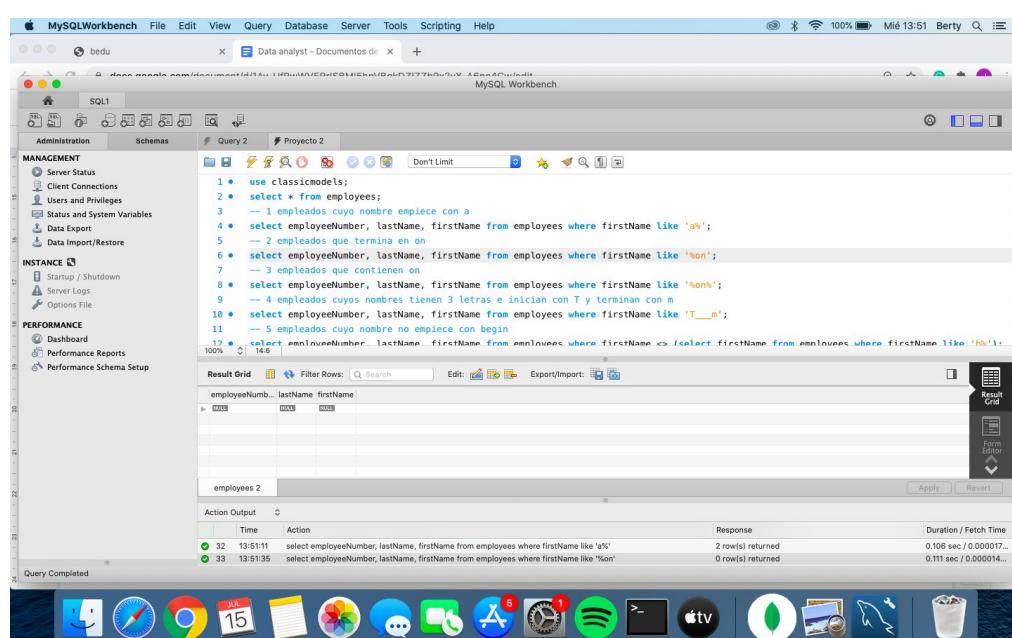
The results grid shows two rows of data:

employeeNumber	lastName	firstName
1143	Bow	Anthony
1611	Fixter	Andy

Below the results grid, the Action Output pane shows two log entries:

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 main window displays a SQL editor with the following query:

```
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% 10:48
```

The results grid shows one row of data:

employeeNumber	lastName	firstName
1611	Fixter	Andy

Below the results grid, the Action Output pane shows two log entries:

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:

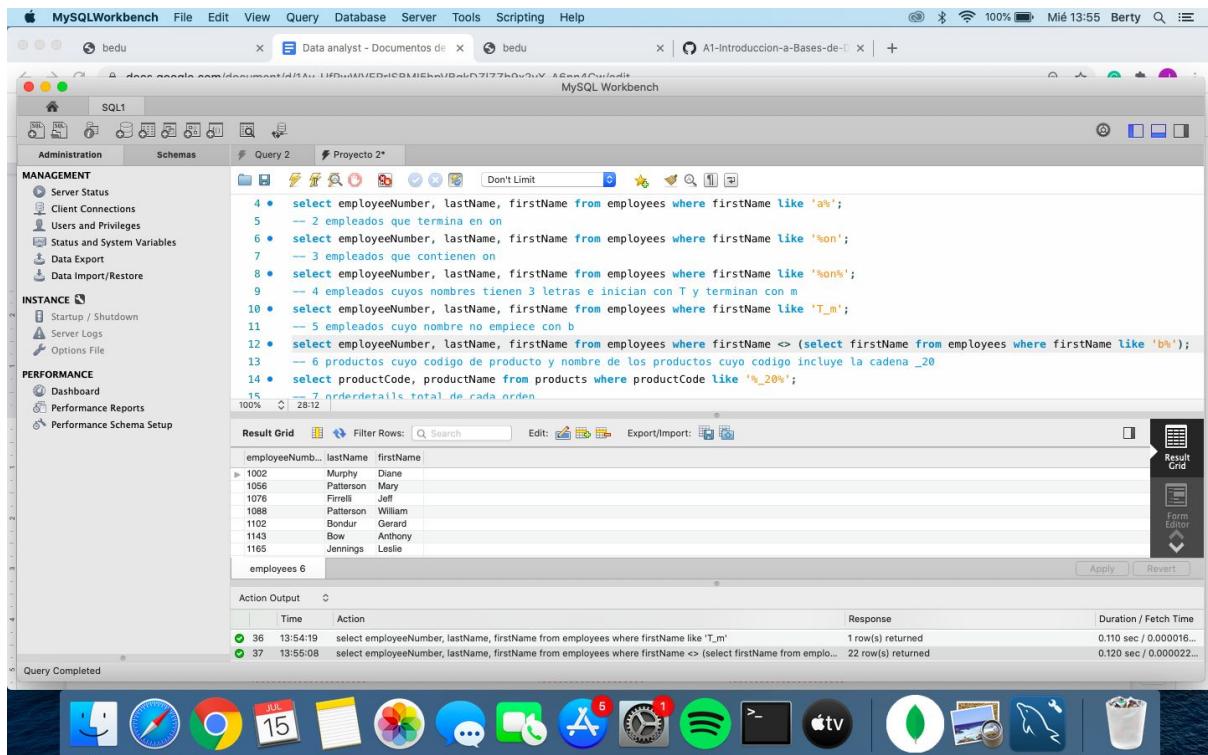
employeeNumber	lastName	firstName
1619	King	Tom

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:

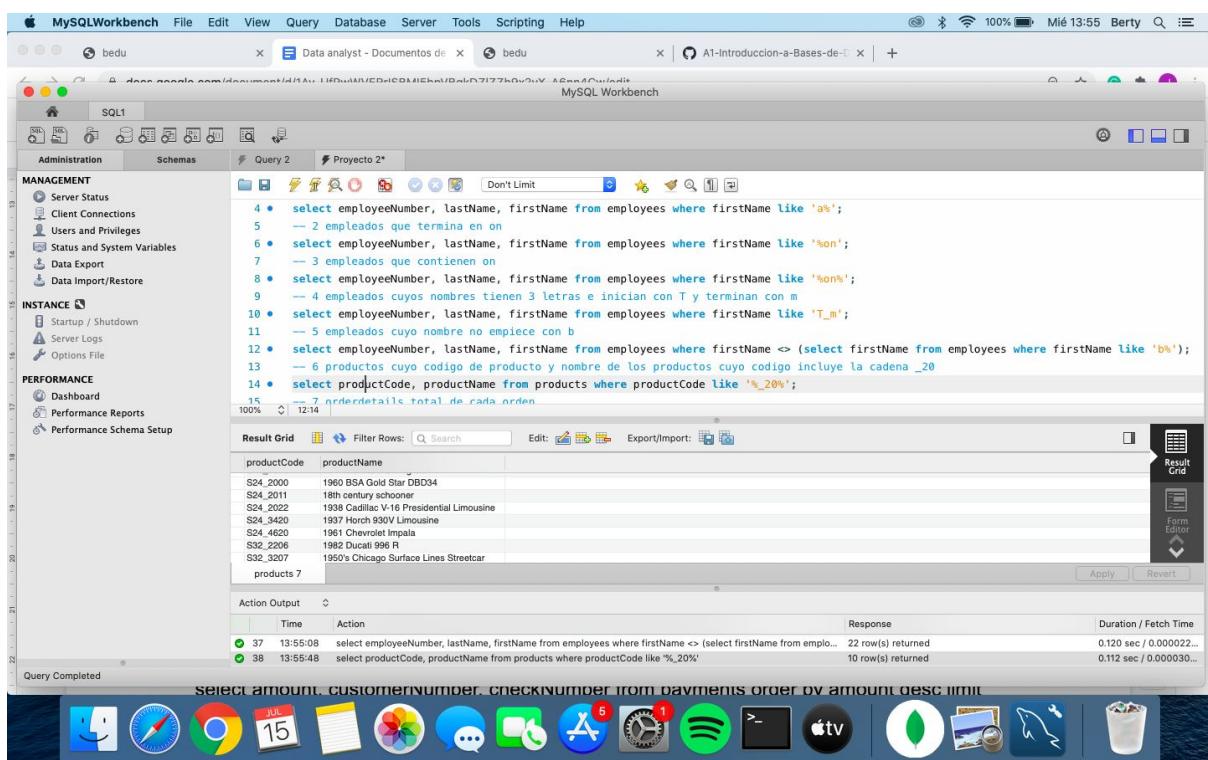
employeeNumber	lastName	firstName
1002	Murphy	Diane
1056	Patterson	Mary
1076	Firelli	Jeff
1089	Patterson	William
1102	Bondur	Gerard
1143	Bow	Anthony
1165	Jennings	Leslie

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 on a Mac OS X desktop. The title bar includes the application name, file menu, and various system status icons. The main window has a sidebar on the left with sections for MANAGEMENT (Server Status, Client Connections, Users and Privileges, Status and System Variables, Data Export, Data Import/Restore) and INSTANCE (Startup / Shutdown, Server Logs, Options File). The central area contains a query editor with tabs for Query 2 and Proyecto 2\*. The Query 2 tab displays a multi-line SQL script with comments explaining the queries. The Result Grid below shows the output of the last query, which retrieves order numbers and their total counts. The bottom section shows the Action Output log with two entries corresponding to the queries in the editor. A dock at the bottom contains icons for various Mac applications like Mail, Safari, and Finder.

```
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 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 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
```

orderNumber	total
10165	18
10168	18
10222	18
10275	18
10316	18
10332	18
10361	18

Action Output

Time	Action	Response	Duration / Fetch Time
38 13:55:48	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	0.146 sec / 0.00012 s...

-- 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";

SQL1

Administration Schemas

SCHEMAS

- Filter objects
- AJEJ
- ALM
- AR
- AVH
- BMR
- CF
- classicmodels
- Tables
- Views
- Stored Proced...
- Functions
- DAJ
- EV
- JO
- MMS
- RC
- RL
- Ro
- SA
- SC
- SC2
- SH
- sys
- Tienda
- WH
- YC
- YCM

Query 2 | Projeto 2\*

Don't Limit

```
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 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 Obtén el número de cliente, numero 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 Obtén 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 d
130% 24/18
```

Form Editor Navigate: 1/1

(select count(orderNumber) from orders as a where orderDate like '2003%'): 111

(select count(orderNumber) from orders as b where orderDate like '2004%'): 151

(select count(orderNumber) from orders as c where orderDate like '2005%'): 64

Result 9

Action Output	Time	Action	Response	Duration / Fetch Time
39	13:56:15	select orderNumber, count(*) total from orderdetails group by orderNumber order by total desc	326 row(s) returned	0.146 sec / 0.00012 s...
40	13:57:53	select (select count(orderNumber) from orders as a where orderDate like '2003%'), (select count(orderNumber) from orders as b wh...	1 row(s) returned	0.116 sec / 0.000032 s...

Query Completed

-- 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");
```

The screenshot shows the SQL Developer interface with the SQL tab selected. The code area contains several numbered comments and queries. Query 41 is highlighted in blue. The result grid shows 10 rows of employee data with columns: lastName, firstName, and officeCode. The action output table shows two entries: a successful query 40 and a successful query 41.

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;
```

The screenshot shows the SQL Developer interface with the SQL tab selected. The code area contains numbered comments and queries. Query 42 is highlighted in blue. The result grid shows 1 row of payment data with columns: amount, customerNumber, and checkNumber. The action output table shows two entries: a successful query 41 and a successful query 42.

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

Result Grid Form Editor Field Types

Apply

-- 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 SSMS interface with the following details:

- Toolbar:** Standard SSMS toolbar with icons for file operations, database management, and search.
- Object Explorer (Left):** Shows the database structure under "Administration Schemas". The "classicmodels" schema is expanded, showing tables like "Employees", "Customers", and "Payments".
- Query Window (Top):** Title bar says "Query 2" and "Proyecto 2\*". Includes a search bar and various tool buttons.
- Query Text (Main Area):** A complex multi-table SELECT statement. It includes sub-selects for counts of orders from 2003 to 2005, joins between "orders" and "payments", and a WHERE clause filtering by customer number. The code spans multiple lines and ends with a WHERE clause for customers who have not placed any orders.
- Result Grid (Bottom):** Shows the results of the query as a table. The columns are "customerName" and "Total". The data includes rows for companies like "Havel & Zyszek Co", "American Sourcers Inc", and "Porto Maravilha Co".
- Status Bar:** Shows "130%" and "14:30".
- Right Sidebar:** Contains buttons for "Result Grid", "Form Editor", and "Field Types".
- Bottom Status Bar:** Shows "Read Only".

-- 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:

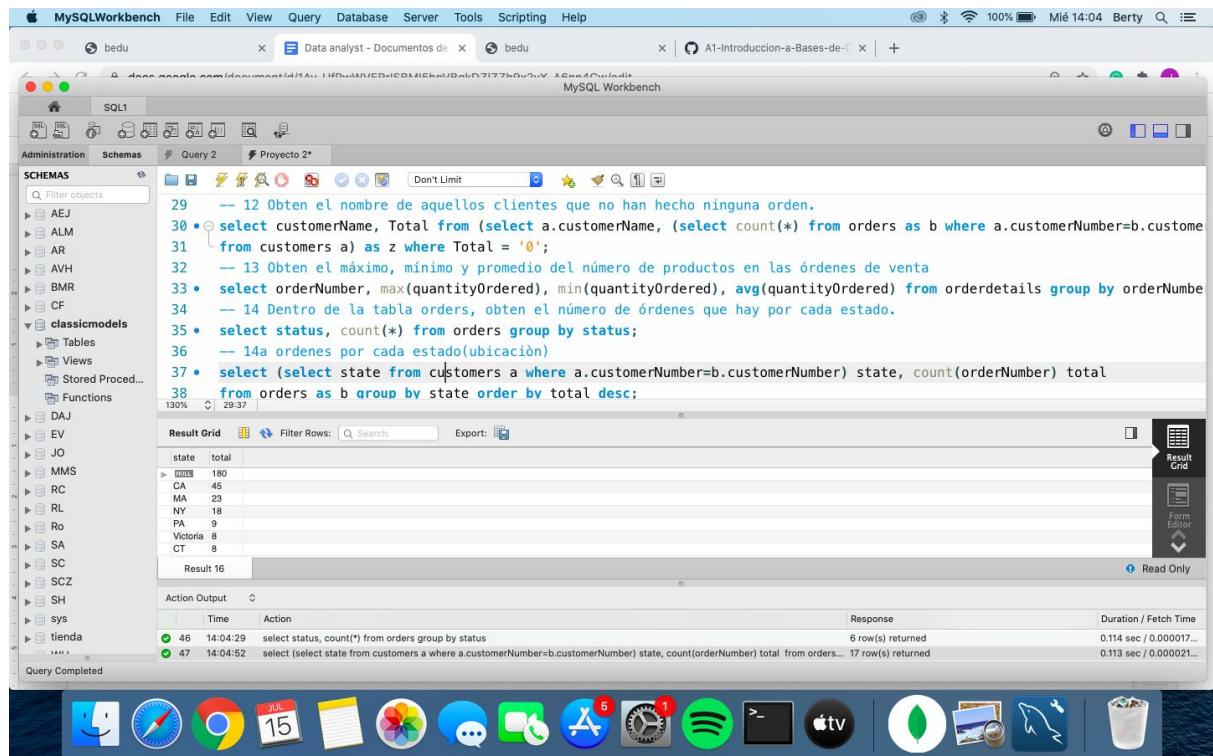
status	count(*)
Shipped	303
Resolved	4
Canceled	6
On Hold	4
Disputed	3
In Process	6

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 on a Mac OS X desktop. The main window displays a SQL editor with the following query:

```
29 -- 12 Obtener 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) as Total from customers a) as z where Total = '0';
31 -- 13 Obtener el máximo, mínimo y promedio del número de productos en las órdenes de venta
32 • select orderNumber, max(quantityOrdered), min(quantityOrdered), avg(quantityOrdered) from orderdetails group by orderNumber
33 -- 14 Dentro de la tabla orders, obtener el número de órdenes que hay por cada estado.
34 • select status, count(*) from orders group by status;
35 -- 15 14a ordenes por cada estado(ubicación)
36 • select (select state from customers a where a.customerNumber=b.customerNumber) state, count(orderNumber) total
37 • select (select state from customers a where a.customerNumber=b.customerNumber) state, count(orderNumber) total
38 from orders as b group by state order by total desc;
```

The results grid shows the following data:

state	total
FL	180
CA	65
MA	23
NY	18
PA	9
Victoria	8
CT	8

The bottom pane shows the Action Output and Response details:

Action	Time	Response	Duration / Fetch Time
select status, count(*) from orders group by status	14:04:29	6 row(s) returned	0.114 sec / 0.000017...
select (select state from customers a where a.customerNumber=b.customerNumber) state, count(orderNumber) total from orders...	14:04:52	17 row(s) returned	0.113 sec / 0.000021...

## 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;
```

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 functions; 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 status bar at the bottom indicates "GROUP BY ORDERNUMBER".

-- 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 on a Mac OS X desktop. The title bar indicates the application is running at 98% battery life, with the date Mié 14:43 and user Berty. The main window has a tab labeled 'SQL1' and contains the following SQL 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' pane displays 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' pane 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;
```

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 14:43 and user Berty. The main window has three tabs: SQL1, Query 2, and Projeto 3. The SQL1 tab contains the following SQL code:

```
18 right join products as c  
19 on c.productCode=b.productCode  
20 order by a.orderNumber;  
21 -- 4.- Obtén el número de orden, nombre del producto, el precio sugerido de fábrica (msrp) y precio de cada pieza.  
22 • select a.orderNumber, b.productName, b.MSRP, b.buyPrice, a.priceEach precioVenta  
23 from products b  
24 right join orderdetails a  
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
```

The code is numbered 18 to 29. The result grid shows the output of the query:

orderNumber	productName	MSRP	buyPrice	precioVenta
10100	1932 Alfa Romeo 8C2800 Spider Sport	92.03	43.26	75.46
10100	1936 Mercedes-Benz 500K Roadster	41.03	21.75	35.29
10101	1932 Model A Ford J-Coupe	127.13	58.48	108.06
10101	1928 Mercedes-Benz SSK	168.75	72.56	167.06
10101	1939 Chevrolet Deluxe Coupe	33.19	22.57	32.53
10101	1938 Cadillac V-16 Presidential Limousine	44.80	20.61	44.35
10102	1937 Lincoln Berline	102.74	60.62	95.55

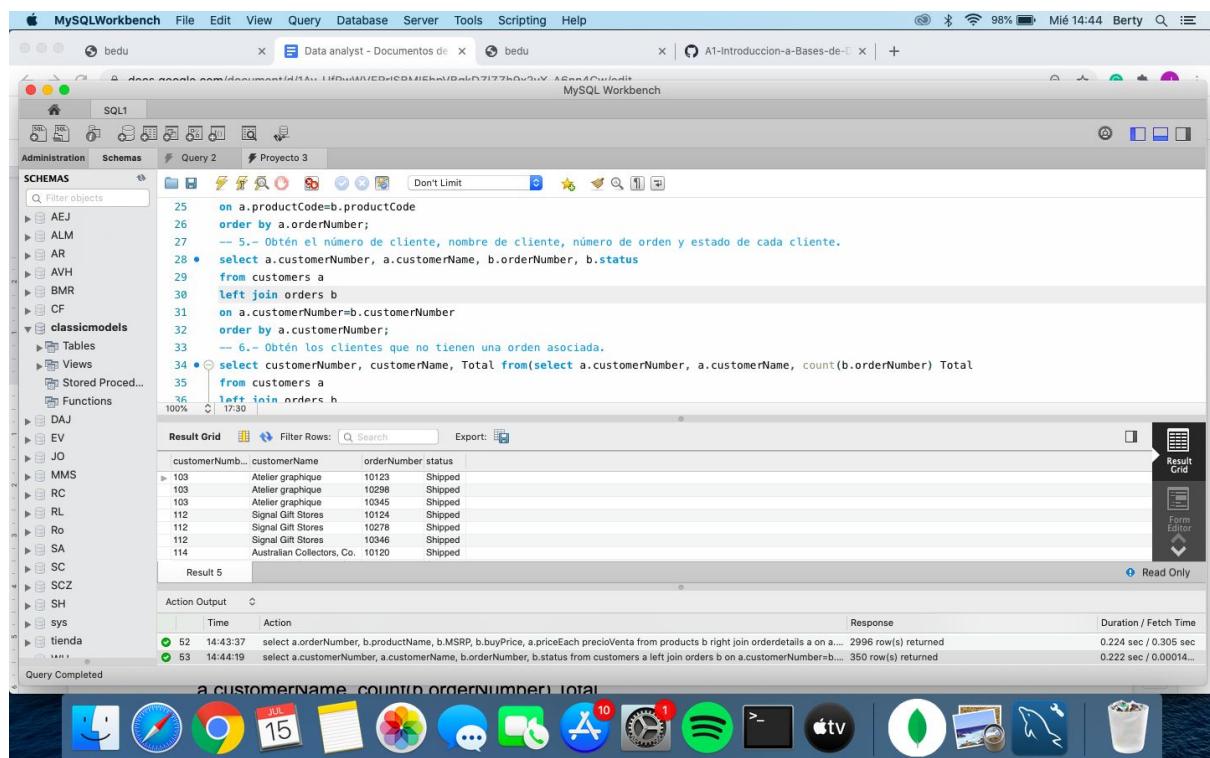
The results are labeled "Result 4". Below the result grid, the "Action Output" section shows two log entries:

Time	Action	Response	Duration / Fetch Time
51 14:43:04	select a.orderNumber, a.orderDate, b.orderLineNumber, c.productName, b.quantityOrdered, b.priceEach from orders as a right join orderdetails b on a.orderNumber = b.orderNumber left join products c on b.productCode = c.productCode	2997 row(s) returned	0.252 sec / 0.261 sec
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 a.customerNumber = c.customerNumber	2996 row(s) returned	0.224 sec / 0.305 sec

The status bar at the bottom shows "Query Completed" and the word "cliente". The Mac OS X dock is visible at the bottom with various application icons.

-- 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
```

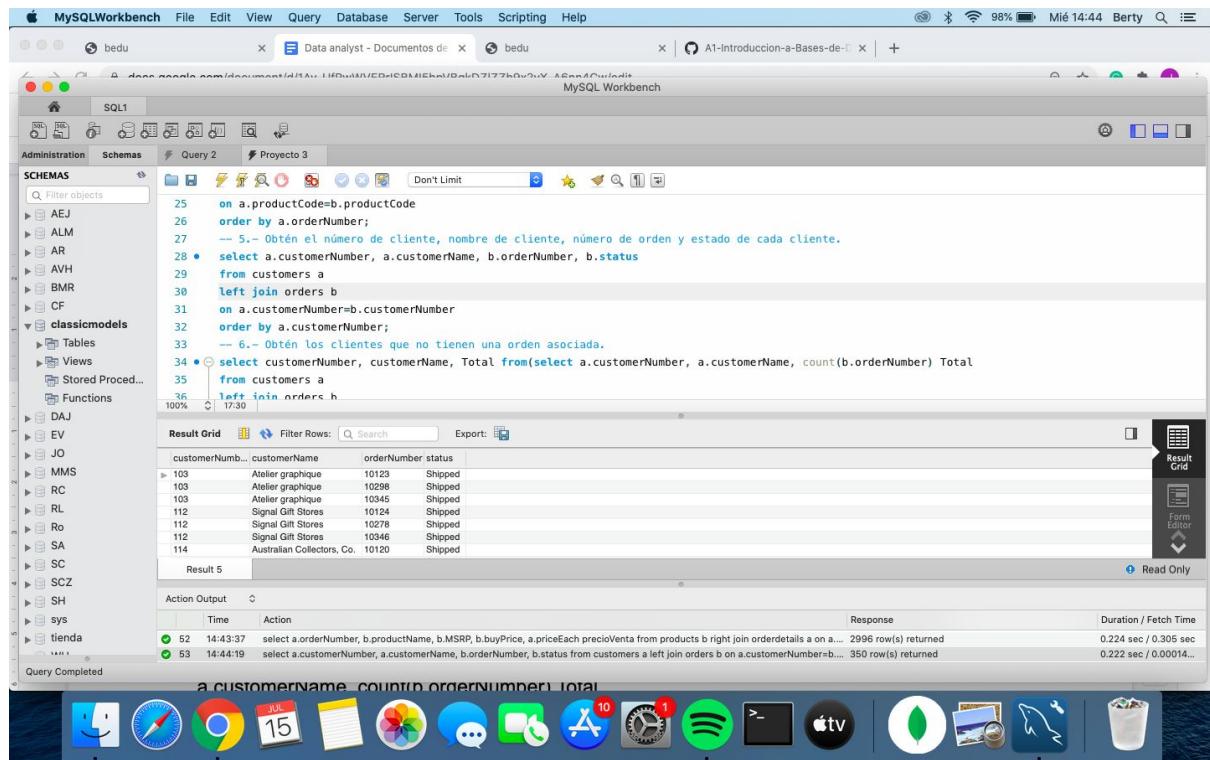
customerNumber	customerName	orderNumber	status
103	Atelier graphique	10123	Shipped
103	Atelier graphique	10298	Shipped
103	Atelier graphique	10345	Shipped
112	Signal Gift Stores	10124	Shipped
112	Signal Gift Stores	10278	Shipped
112	Signal Gift Stores	10346	Shipped
114	Australian Collectors, Co.	10120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

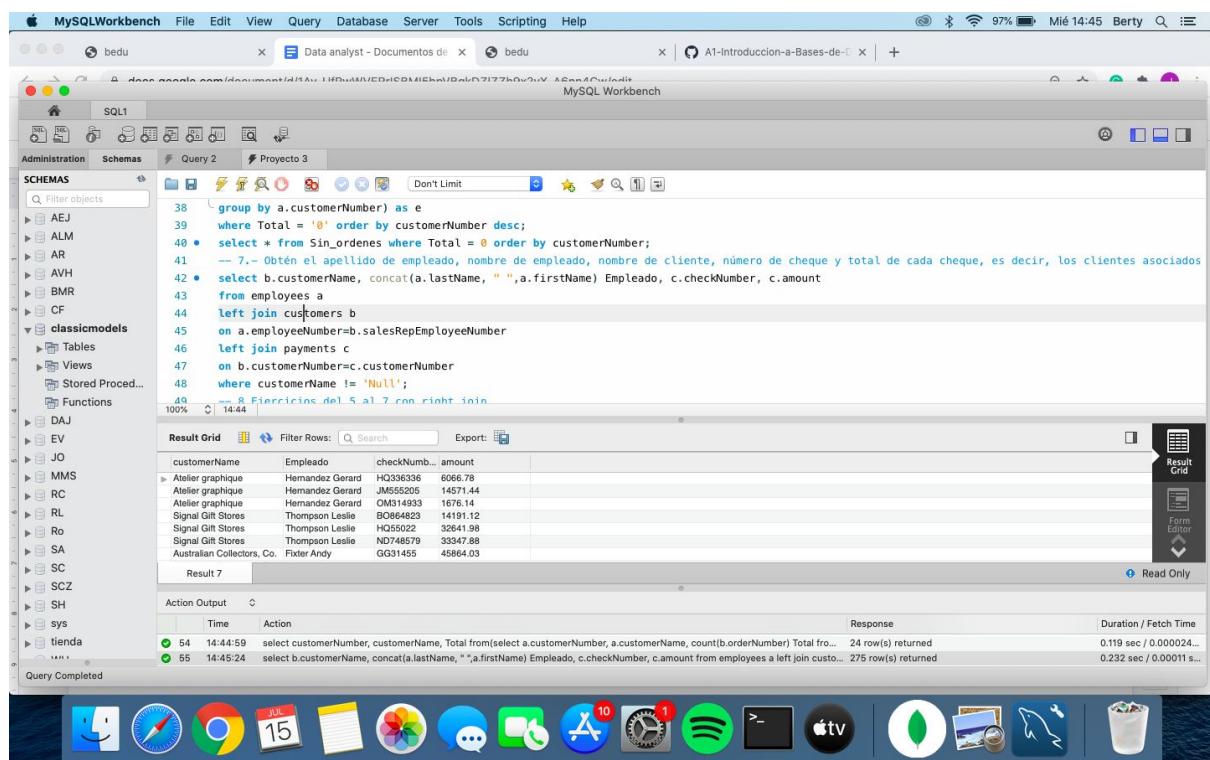
-- 6.- Obtén los clientes que no tienen una orden asociada.

```
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 has three tabs: 'SQL1', 'Query 2', and 'Proyecto 3'. The 'SQL1' tab contains the SQL query from the previous text. The 'Result Grid' tab displays the query results in a table:

customerName	Empleado	checkNum...	amount
Atelier graphique	Hernandez Gerard	HQ336336	6066.78
Atelier graphique	Hernandez Gerard	JM55205	14571.44
Atelier graphique	Hernandez Gerard	JM55205	14571.44
Signal Gift Stores	Thompson Leslie	BD864953	14161.12
Signal Gift Stores	Thompson Leslie	HD56022	32641.98
Signal Gift Stores	Thompson Leslie	ND748579	33347.88
Australian Collectors, Co.	Fixter Andy	GG31455	45864.03

The bottom status bar shows the duration of the query execution: 0.19 sec / 0.000024... and 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
```

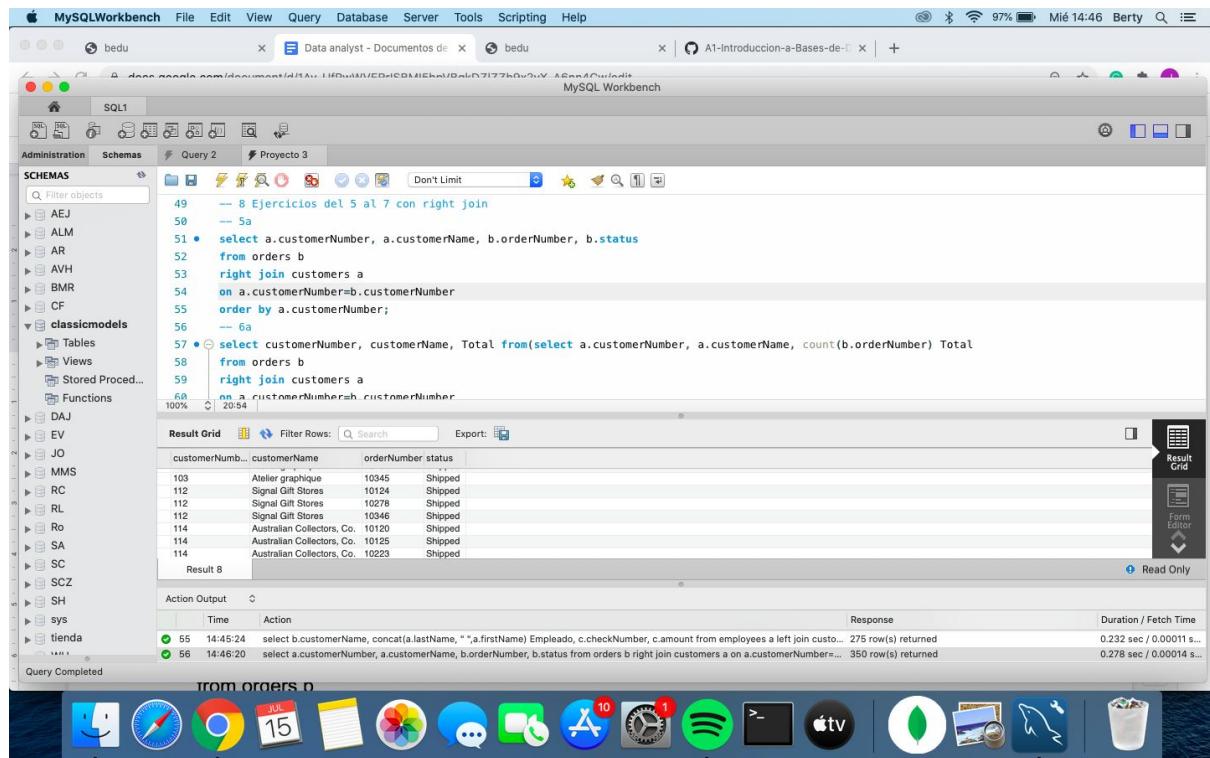
```
right join customers a  
on a.customerNumber=b.customerNumber  
order by a.customerNumber;
```

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, and the date is Mié 14:46. 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;
```



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

Result Grid

Action Output

Time Action 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=b.cust... 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 tabs for 'SQL1', 'Query 2', and 'Proyecto 3'. 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' and 'Views' sections. A 'Views' section contains a single entry for '0\_ordenes'. The central area is the 'SQL Editor' containing the following code:

```
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  •  select * from 0_ordenes;
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 editor shows the results of the 'select \* from 0\_ordenes' query:

customerNumber	customerName	Total
477	Mt Vergünen & Co.	0
465	Anton Designs, Ltd.	0
459	Wrburg Exchange	0
443	Fouer Online Stores, Inc	0
409	Stuttgart Collectable Exchange	0
376	Precious Collectables	0
369	Uaboa Souveniers, Inc	0

Below the result grid, the 'Action Output' pane 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	PD684623	1419.52
Signal Gift Stores	Thompson Leslie	PD684623	3204.95
Signal Gift Stores	Thompson Leslie	ND748579	3347.68
Australian Collectors, Co.	Fixter Andy	GG31455	4586.03
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 a 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 2" and "Proyecto 3". 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	1997 Grand Touring Sedan	25	35.20
10100	2003-01-06	4	1992 Alfa Romeo 8C2000 Spider Sport	22	75.48
10100	2003-01-06	1	1996 Mercedes-Benz 500k Roadster	49	35.29
10101	2003-01-09	4	1992 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 details:

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

The status bar at the bottom indicates "Query Completed". The Mac OS X dock is visible at the bottom, showing various application icons.

## Sesión 04: Fundamentos de MongoDB

### Proyecto 4

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

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

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. The sidebar contains three saved queries:

- Proyecto 4-4**: `{ founded_year: 2008 }`
- Proyecto 4-3**: `{ founded_month: 10 }`
- Proyecto 4-1**: `{ project: { email_address: 1, phone_number: 1 } }`

The bottom of the screen shows the Dock with various application icons.

## 2.- Obtén la fuente de cada tweet.

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

The screenshot shows the MongoDB Compass interface. On the left, the sidebar lists databases and collections, including 'sample\_training.tweets'. The main pane displays the results of a query on the 'sample\_training.tweets' collection. The query is defined in the 'FILTER' section:

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

The results show several documents, each representing a tweet. The first few results are:

- `_id: ObjectId("5c8eccb0caa187d17ca623f5")`  
`source: "web"`
- `_id: ObjectId("5c8eccb0caa187d17ca623f7")`  
`source: "<a href='http://www.tweetdeck.com' rel='nofollow'>TweetDeck</a>"`
- `_id: ObjectId("5c8eccb0caa187d17ca623fa")`  
`source: "<a href='http://blackberry.com/twitter' rel='nofollow'>Twitter for Bla..."`
- `_id: ObjectId("5c8eccb0caa187d17ca623fc")`  
`source: "<a href='http://www.echofon.com/' rel='nofollow'>Echofon</a>"`
- `_id: ObjectId("5c8eccb0caa187d17ca623fe")`  
`source: "<a href='http://83degrees.com/to/powertwitter' rel='nofollow'>Power Tw..."`

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, created\_at, updated\_at, and overview. A filter bar at the top of the table area specifies 'founded\_year: 2008'. The results table shows two documents, both of which are for 'OpenX'. The first document's details are expanded:

```
_id: ObjectId("52cdef7c4bab8bd675297da8")  
name: "OpenX"  
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-valua..."  
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. To the right of the table, there are three project cards labeled 'Proyecto 4-4', 'Proyecto 4-3', and 'Proyecto 4-1', each containing a snippet of code for filtering documents based on their year or month of creation.

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 Mac OS X 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 Mac OS X 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:** One document is shown in the list:

```
_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></sup>Austria based tunesBag is a music player with social features on th...</p>
```
- Right Panel:** Four projects are listed with their respective filters:
  - Projeto 4-8: `{ number_of_employees: { $gt: 50 } }`
  - Projeto 4-7: `{ $and: [ { founded_month: 10 }, { founded_year: 2008 } ] }`
  - Projeto 4-4: `{ founded_year: 2008 }`
  - Projeto 4-3: `{ }`

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

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

The screenshot shows the MongoDB Compass interface. On the left, the sidebar lists databases and collections, with 'sample\_training' and 'companies' selected. The main pane displays the 'sample\_training.companies' collection, which contains 9.5k documents. A filter bar at the top is set to '{number\_of\_employees: {\$gt: 50}}'. Below the filter, a table lists several company documents, including Facebook and Twitter. The table includes columns for '\_id', name, and other fields like 'category\_code' and 'tag\_list'. To the right, there are four project panels labeled 'Proyecto 4-8', 'Proyecto 4-7', 'Proyecto 4-4', and 'Proyecto 4-3', each showing a different MongoDB query. The bottom of the screen shows the Mac OS X dock with various application icons.

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

```
{  
  $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\_stories" collection is selected.
- Top Bar:** Shows the title "sample\_training\_stories", the total size of 9.8k documents (9.6MB), and 2 indexes (176.0KB).
- Document View:** Displays two documents from the collection. The first document has 153 comments and a href to a Jedi believer's profile. The second document has 93 comments and a href to a news article about a man assaulting a female police officer.
- Query Filter:** Shows the query used to filter the results:

```
{  
  $or: [  
    {  
      comments: {  
        $gte: 10  
      }  
    },  
    {  
      comments: {  
        $lte: 30  
      }  
    }  
  ]  
}
```
- Bottom Bar:** Shows various Mac OS X application icons including Slack, Finder, Safari, Calendar, Mail, and others.

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

```
{  
  $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:

- Collection:** sample\_training.companies
- Documents:** 9.5k (TOTAL SIZE: 34.8MB, AVG. SIZE: 3.7KB)
- Indexes:** 1 (TOTAL SIZE: 100.0KB, AVG. SIZE: 100.0KB)
- Query:**
  - Filter:** `{}$and: [{ number_of_employees: { $ne: null }}, { number_of_employees: { $ne: 0 }}]`
  - Sort:** `{number_of_employees: 1}`
  - Options:** MAXTIMEMS 500, SKIP 0, LIMIT 1
- Result:** One document is displayed:

```
_id: ObjectId("52cdef7c4bab8bd675297e60")
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_url: "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>"
```
- Side Panel:** Shows a list of collections: admin, config, local, sample\_airbnb, sample\_analytics, sample\_geospatial, sample\_mflix, sample\_supplies, sample\_training (selected), companies, grades, inspections, posts, routes, stories, trips.
- Bottom Bar:** Includes icons for Finder, Safari, Google Chrome, Calendar, Notes, Photos, Messages, FaceTime, App Store, Settings, TV, and Mail.

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

```
{  
  $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' and 'companies' selected. The main pane displays the 'sample\_training.companies' collection, showing a single document for IBM:

```
_id: ObjectId("52cdef7c4bab8bd67529856a")
name: "IBM"
permalink: "ibm"
crunchbase_url: "http://www.crunchbase.com/company/ibm"
home_page_url: "http://www.ibm.com"
blog_url: ""
blog_feed_url: ""
twitter_username: "IBM"
category_code: "software"
number_of_employees: 388000
founded_year: 1896
founded_month: null
founded_day: null
deadlocked_year: null
deadlocked_month: null
deadlocked_day: null
deadlocked_url: ""
tag_list: ""
alias_list: ""
email_addresses: "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: "Up>IBM, acronym for International Business Machines, is a multinationa..."
```

The query results pane shows the following results:

```
Mon Jul 13 2020 22:04:58 GMT-0500 (C...  
FILTER  
{  
  $and: [  
    {  
      number_of_employees: {  
        $ne: null  
      }  
    },  
    {  
      number_of_employees: {  
        $ne: 0  
      }  
    }  
  ]  
}  
SORT  
{  
  number_of_employees: -1  
}  
LIMIT  
1
```

Mon Jul 13 2020 22:04:21 GMT-0500 (C...  
FILTER  
{  
 \$and: [  
 {  
 number\_of\_employees: {  
 \$ne: null  
 }  
 },  
 {  
 number\_of\_employees: {  
 \$ne: 0  
 }  
 }  
 ]  
}

## 12.- Obtén la historia más comentada.

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

The screenshot shows the MongoDB Compass interface on a Mac OS X desktop. The left sidebar lists databases and collections, with 'sample\_training' selected. The main pane displays the 'sample\_training.stories' collection, which contains 9.8k documents. A query builder is open, showing a SORT clause: {comments: -1} and a LIMIT clause: 1. To the right, a 'Past Queries' panel shows two previous queries: 'Proyecto 4-12' and 'Proyecto 4-9'. The 'Proyecto 4-12' query is identical to the one in the screenshot. The 'Proyecto 4-9' query uses a '\$and' filter with two conditions: comments: \$gt: 10 and comments: \$lte: 30. Below the queries, a JSON document is shown, representing a single story from the collection. The document includes fields like '\_id', 'url', 'title', 'comments', 'submit\_date', 'topic', 'promote\_date', 'id', 'media', 'digest', 'description', 'link', 'user', and 'status'. The status is listed as 'popular'. The bottom of the screen shows the Mac OS X dock with various application icons.

### 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. The main pane displays the 'sample\_training.stories' collection. The 'Documents' tab is active, showing one document. The document details are as follows:

```
_id: ObjectId("4ba277c0238d3ba3ca001819")
url: "http://digg.com/general_sciences/Smallest_eel_loach_Fish_Discovered"
title: "Smallest eel-loach Fish Discovered"
comments: 2
thumbnail: Object
container: Object
submit_date: 1265651817
topic: Object
promote_date: 1265703003
id: "19106141"
media: "news"
digg: Object
description: "The world's smallest species of eel-loach fish has been discovered by ..."
link: "http://www.physorg.com/news184855478.html"
user: Object
status: "popular"
shorturl: Array
```

At the top of the interface, the query is displayed:

```
{  
  comments: {  
    $gt: 0  
  }  
}  
SORT  
{  
  comments: 1  
}  
LIMIT  
1
```

## 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 Compass interface with the following details:

- Left Sidebar:** Shows the Local connection, 10 DBs, and 25 Collections. The `sample_airbnb` database is selected, and the `listingsAndReviews` collection is currently being edited.
- Top Bar:** The title bar says `sample_airbnb.listingsA...` and the tab is set to `Aggregations`.
- Aggregation Pipeline:** The pipeline consists of five stages:
  - `$match: { "review_scores.review_scores_rating": {$gte: 80} }`
  - `$match: { "address.country": "Brazil" }`
  - `$match: { "amenities: {$in: [/Ethernet/i]} }`
  - `$group: { _id: null, total: { $sum: 1 } }`
- Output:** The output shows the results of the `$match` stage (6 documents) and the `$group` stage (1 document). Each document includes fields like `_id`, `listing_url`, `name`, `summary`, `space`, and `description`. The `total` field is shown as 6.
- Toolbars and Buttons:** Includes buttons for `SAMPLE MODE`, `AUTO PREVIEW`, and `EXPLAIN PLAN`.

## 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)
- Aggregation Pipeline:**
  - Documents
  - Aggregations
  - Schema
  - Explain Plan
  - Indexes
  - Validation
- Options:** Read Only
- Find:** FIND, RESET, ...
- MAXITEMS:** 5000
- SKIP:** 0
- LIMIT:** 0
- Results:** Displays 20 documents out of 1712.
  - 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"
- Left Panel (Local):** Shows the sample\_mflix database with collections: ArrayElement, Proyecto 6, comments, movies, sessions, theaters, users, sample\_airbnb, sample\_analytics, sample\_geospatial.

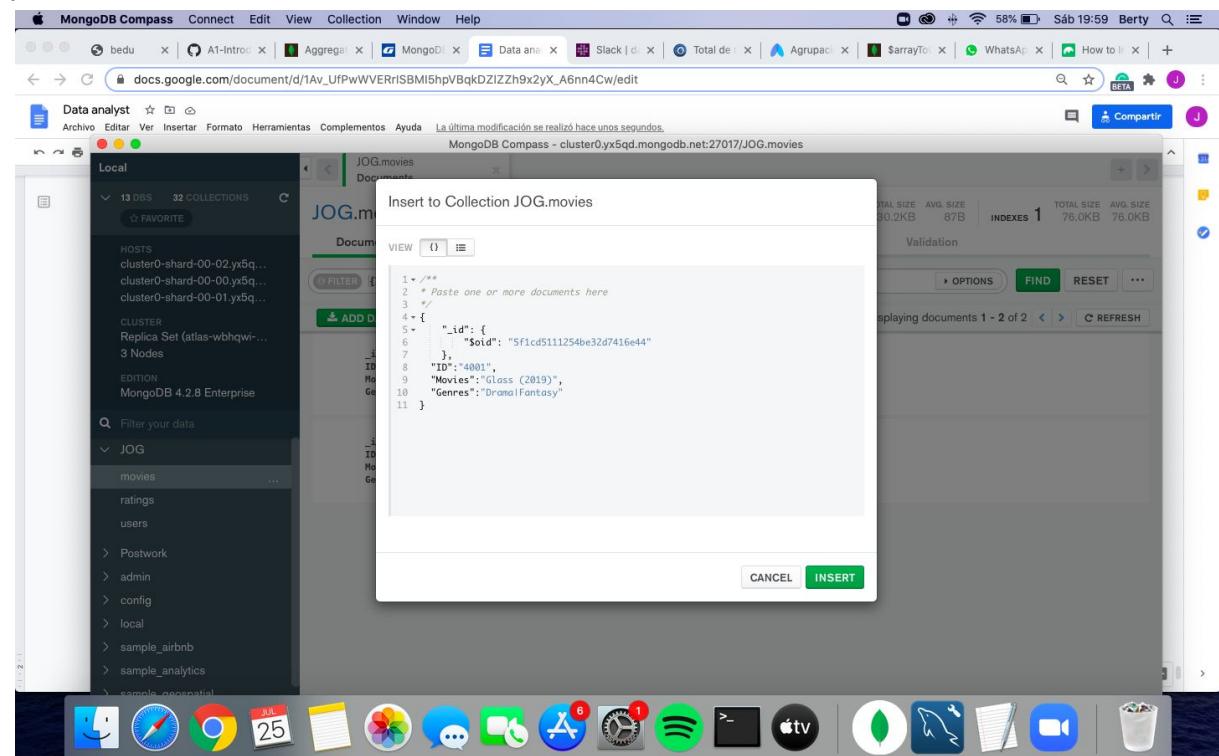
## Sesión 07 Configuración de Bases de Datos Locales

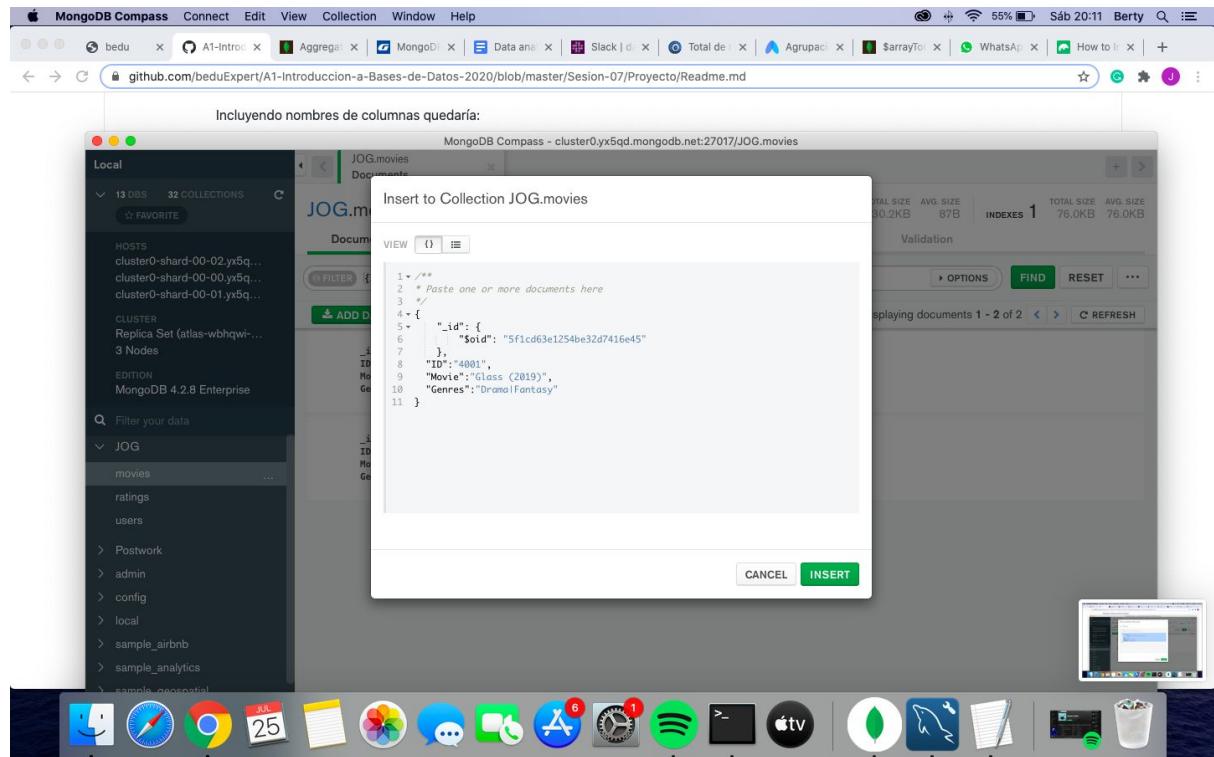
### Proyecto 7

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

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

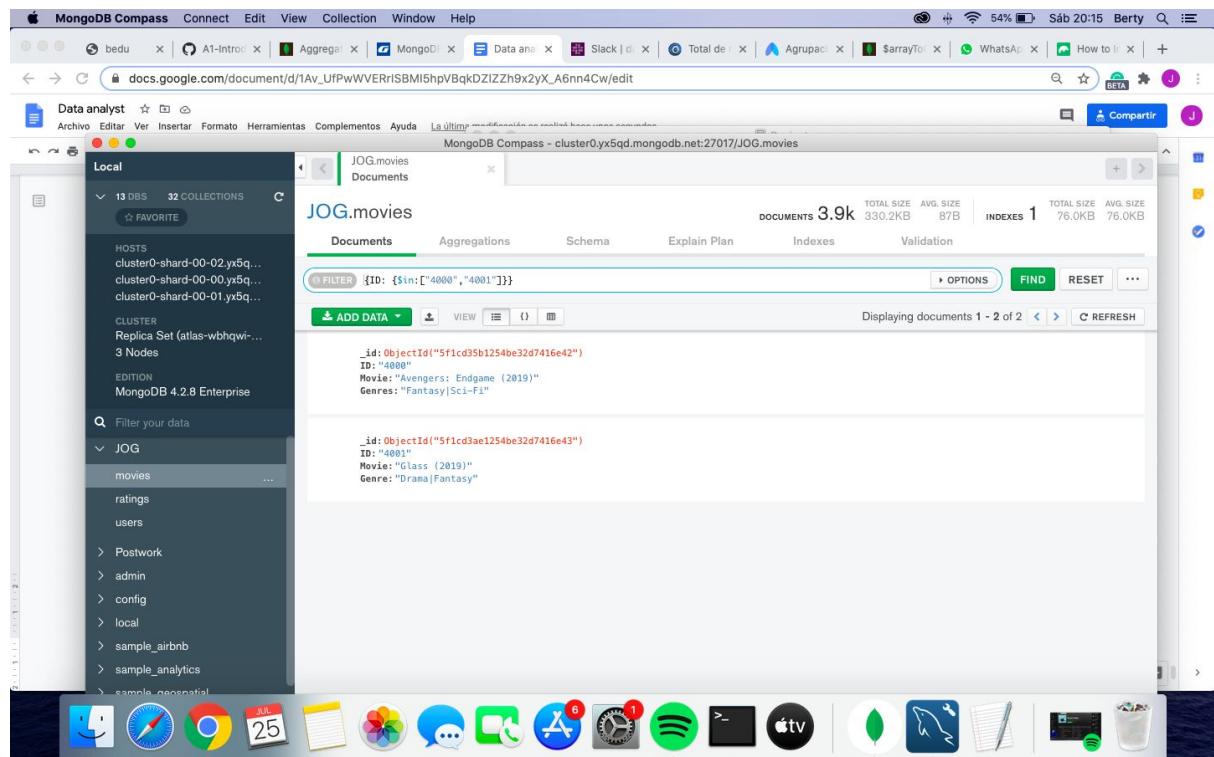
```
{  
    "_id": {  
        "$oid": "5f1cd63e1254be32d7416e45"  
    },  
    "ID":"4000",  
    "Movie":"Avengers: Endgame (2019)",  
    "Genres":"Fantasy|Sci-Fi"  
}  
{  
    "_id": {  
        "$oid": "5f1cd63e1254be32d7416e46"  
    },  
    "ID":"4001",  
    "Movie":"Glass (2019)",  
    "Genres":"Drama|Fantasy"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





## 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 `ID`, `Movie`, `Genres`, and `Valoraciones`. The `Valoraciones` field is an array containing two objects, each representing a rating from a user ('1563' and '434') for the movie 'Glass (2019)'.

Field	Value
<code>_id</code>	<code>ObjectId("5f1cd35b1254be32d7416e42")</code>
<code>ID</code>	<code>"4001"</code>
<code>Movie</code>	<code>"Avengers: Endgame (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>

## Post Work

16.- Obtén los datos de contacto de cada compañía de proveedores

```
{  
  project: {  
    CompanyName: 1,  
    Phone: 1,  
    Fax: 1  
  }  
}
```

The screenshot shows the MongoDB Compass application running on a Mac OS X desktop. The left sidebar lists databases (Local, JOG, JOG\_Postwork) and collections (Supplier). The main pane shows the 'Documents' tab for the 'JOG\_Postwork.Supplier' collection, which contains 29 documents. The results table displays the following data:

_id	CompanyName	Phone	Fax
5f1f5de719f51f02bc58754d	Exotic Liquids	(171) 555-2222	NULL
5f1f5de719f51f02bc58754e	New Orleans Cajun Delights	(100) 555-4822	NULL
5f1f5de719f51f02bc58754f	Grandma Kelly's Homestead	(313) 555-5735	(313) 555-3349
5f1f5de719f51f02bc587550	Tokyo Traders	(03) 3555-5011	NULL

The right sidebar shows a history of past queries, each with a timestamp and the query text:

- Mon Jul 27 2020 18:07:11 GMT-0500 (CET)  
PROJECT  
{  
 CompanyName: 1,  
 Phone: 1,  
 Fax: 1  
}
- Mon Jul 27 2020 18:06:42 GMT-0500 (CET)  
PROJECT  
{  
 CompanyName: 1,  
 City: 1  
}
- Mon Jul 27 2020 18:06:35 GMT-0500 (CET)  
PROJECT  
{  
 CompanyName: 1  
}
- Mon Jul 27 2020 18:04:44 GMT-0500 (CET)  
PROJECT  
{  
 Country: 1  
}

## 17.- Filtra a los proveedores del reino unido

```
{  
  filter: {  
    Country: 'UK'  
  }  
}
```

The screenshot shows the MongoDB Compass interface on a Mac OS X desktop. The left sidebar lists databases (Local, JOG, JOG\_Postwork) and collections (Supplier). The main pane displays the 'JOG\_Postwork.Supplier' collection with 29 documents. A filter bar at the top is set to '{Country: 'UK'}'. The results show two documents:

```
_id:ObjectId("5f1f5de719f51f02bc58754d")
Id:1
CompanyName:"Exotic Liquids"
ContactName:"Charlotte Cooper"
City:"London"
Country:"UK"
Phone:"(171) 555-2222"
Fax:"NULL"

_id:ObjectId("5f1f5de719f51f02bc587554")
Id:8
CompanyName:"Specialty Biscuits Ltd."
ContactName:"Peter Wilson"
City:"Manchester"
Country:"UK"
Phone:"(161) 555-4448"
Fax:"NULL"
```

The status bar at the bottom shows the date as July 27, 2020, and the time as 18:08:35 GMT-0500.

## 18.- Muestra a los clientes solo de México o Alemania

```
{
  filter: {
    $or: [
      {
        Country: 'Germany'
      },
      {
        Country: 'Mexico'
      }
    ]
  }
}
```

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

- Left Sidebar:** Shows the Local connection, 13 databases, and 38 collections. The "Customer" collection under the "JOG\_Postwork" database is selected.
- Top Bar:** Title "JOG\_Postwork.Customer Documents". Status bar shows DOCUMENTS 91, TOTAL SIZE 12.2KB, AVG. SIZE 137B, INDEXES 1, TOTAL SIZE 4.0KB, AVG. SIZE 4.0KB.
- Main Area:**
  - Documents Tab:** Filtered by `[$or: [{Country: 'Germany'}, {Country: 'Mexico'}]]`. Results show three documents:
    - `_id: ObjectId("5f1f5ef519f51f02bc58756a")`
    - `_id: ObjectId("5f1f5ef519f51f02bc58756b")`
    - `_id: ObjectId("5f1f5ef519f51f02bc58756c")`
  - Aggregations, Schema, Explain Plan, Indexes, Validation:** Tabs available.
- Right Panel:** Past Queries section with three entries:
  - Mon Jul 27 2020 18:17:18 GMT-0500 (CET)
 

```
FILTER
{
  $or: [
    {
      Country: 'Germany'
    },
    {
      Country: 'Mexico'
    }
  ]
}
```
  - Mon Jul 27 2020 18:14:29 GMT-0500 (CET)
 

```
FILTER
{
  $or: [
    {
      Country: [
        'Germany'
      ]
    },
    Country: [
      'Mexico'
    ]
  ]
}
```
  - Mon Jul 27 2020 18:14:22 GMT-0500 (CET)
 

```
FILTER
{
  $and: [
    {
      Country: [
        'Germany'
      ]
    },
    Country: [
      'Mexico'
    ]
  ]
}
```
  - Mon Jul 27 2020 18:14:14 GMT-0500 (CET) (partially visible)

## 19.- Ubicar todas las ordenes con precio de unidad mayor a 30

```
{  
  filter: {  
    UnitPrice: {  
      $gt: 30  
    }  
  }  
}
```

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

- Left Sidebar:** Shows the local database with 13 DBs and 38 collections. The "JOG\_Postwork.Order" collection is selected.
- Top Bar:** Displays the database name "JOG\_Postwork.Order", document count "DOCUMENTS 2.2k", total size "191.5KB", and index count "INDEXES 1".
- Filter Bar:** Set to "FILTER {UnitPrice: {\$gt: 30}}". Other options include "OPTIONS", "PROJECT", "SORT", "MAXITEMS 5000", "SKIP 0", and "LIMIT 0".
- Results Table:** Displays 622 documents. The first few results are:

_id	UnitPrice	Quantity
5f1f61a219f51f02bc587905	34.8	5
5f1f61a219f51f02bc587907	42.4	40
5f1f61a219f51f02bc587909	42.4	35
5f1f61a219f51f02bc58790e	64.8	40
5f1f61a219f51f02bc58791a		

**Right Panel:** Shows the query history with the last query: "Mon Jul 27 2020 18:22:45 GMT-0500 (C...)" and the filter: "FILTER { UnitPrice: { \$gt: 30 } }".

20.- ¿Cuál es el producto más caro de la lista?

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

The screenshot shows the MongoDB Compass interface on a Mac OS X desktop. The main window displays the 'JOG\_Postwork.Product' collection with 78 documents. A search query is applied, sorting by UnitPrice in descending order (-1) and limiting the result to 1 document. The selected document is highlighted in red and shows the following fields:

```
_id: ObjectId("5f1f624b19f51f02bc588193")  
Id: 38  
ProductName: "Côte de Blaye"  
SupplierId: 18  
UnitPrice: 263.5  
Package: "12 - 75 cl bottles"  
IsDiscontinued: false
```

The MongoDB Compass interface includes a sidebar for navigating between databases and collections, and a bottom dock with various Mac OS X application icons.

21.- ¿Muestra por agregaciòn todos los productos descontinuados?

```
[{$match: {  
    IsDiscontinued: false  
}}]
```

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

- Left Sidebar:** Shows the "Local" database with 13 DBs and 38 collections. The "Product" collection is selected.
- Top Bar:** Shows the title "MongoDB Compass - cluster0.yx5qd.mongodb.net:27017/JOG\_Postwork.Product".
- Main Area:** The "Aggregations" tab is active, displaying an aggregation pipeline:
  - Input:** "78 Documents in the Collection".
  - Stage:** A \$match stage with the query:

```
1 <-- /*  
2 * query: The query in MQL.  
3 */  
4 * {  
5   IsDiscontinued: false  
6 }
```
  - Output:** "Output after \$match stage (Sample of 20 documents)" showing two documents:
    - Document 1:

```
_id: ObjectId("5f1f624b19f51f02bc58816e")  
Id: 1  
ProductName: "Chai"  
SupplierId: 1  
UnitPrice: 18  
Package: "10 boxes x 20 bags"  
IsDiscontinued: false
```
    - Document 2:

```
_id: ObjectId("5f1f624b19f51f02bc58816e")  
Id: 2  
ProductName: "Chang"  
SupplierId: 1  
UnitPrice: 19  
Package: "24 - 12 oz bottle"  
IsDiscontinued: false
```
- Bottom:** A Mac OS X dock with various application icons.

## 22.- ¿Cuantos productos tiene surte cada proveedor?

```
[{$match: {  
    IsDiscontinued: false  
}}, {$group: {  
    _id: "$SupplierId",  
    Total: {  
        $sum:1  
    }  
}}]
```

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

- Hosts:** cluster0-shard-00-02.y5q... (selected), cluster0-shard-00-00.y5q..., cluster0-shard-00-01.y5q...
- Cluster:** Replica Set (atlas-wbhqw-...)
- Edition:** MongoDB 4.2.8 Enterprise
- Database:** JOG\_Postwork
- Collection:** Product
- Aggregations Tab:** Selected.
- Stages:**
  - \$match:** A stage with the query: `IsDiscontinued: false`. It shows two sample documents:
    - `_id: ObjectId("5f1f624b19f51f02bc58816e")`
    - `_id: ObjectId("5f1f624b19f51f02bc58816f")`
  - \$group:** A stage with the group key `SupplierId` and a sum accumulator stage `$sum:1`. It shows two groups:
    - `_id: 1` with `Total: 3`
    - `_id: 2` with `Total: 3`
- Output:** Shows the results of the aggregation stages.

23.- Agrega como un array todos los productos suministrados no descontinuados por cada proveedor y el promedio de los precios de los productos de mayor a menor.

```
[{$match: {
  IsDiscontinued: false
}}, {$group: {
  _id: "$SupplierId",
  Total: {
    $sum:1
  },
  Productos: {$push:"$ProductName"},
  Precioneto: {$avg: "$UnitPrice"}
}}, {$sort: {
  Total: -1
}}]
```

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

- Hosts:** cluster0-shard-00-02.yx5q... (selected), cluster0-shard-00-00.yx5q..., cluster0-shard-00-01.yx5q...
- Cluster:** Replica Set (atlas-wbhqw-... 3 Nodes)
- Edition:** MongoDB 4.2.8 Enterprise
- Collection:** JOG\_Postwork.Product
- Aggregations:** A pipeline is being built with two stages:
  - \$group:** Groups documents by SupplierId. The output shows two documents:
    - SupplierId: 18, Total: 2, Productos: ["ProductA", "ProductB"], Precioneto: 140.75
    - SupplierId: 20, Total: 2, Productos: ["ProductC", "ProductD"], Precioneto: 32.725
  - \$sort:** Sorts by Total in descending order. The output shows two documents:
    - SupplierId: 7, Total: 4, Productos: ["ProductE", "ProductF", "ProductG", "ProductH"], Precioneto: 34.7125
    - SupplierId: 8, Total: 4, Productos: ["ProductI", "ProductJ", "ProductK", "ProductL"], Precioneto: 28.175

24.- Crea una vista de esta tabla y arroja al proveedor con más productos y el precio promedio más alto

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

- Project:** JOG\_Postwork.Product
- Documents:** A list of documents representing groups of products by supplier.
- Aggregation Pipeline:**

```
{ $group: { _id: "$Supplier", Total: { $sum: 1 }, Products: { $push: { _id: "$_id", UnitPrice: "$UnitPrice" } } } }
```
- Sort:** `{Total:-1, UnitPrice:-1}`
- Results:** Four documents are displayed:
  - `_id: 32`, Total: 5, Products: Array, UnitPrice: 44.67
  - `_id: 7`, Total: 5, Products: Array, UnitPrice: 35.57
  - `_id: 8`, Total: 4, Products: Array, UnitPrice: 28.175
  - `_id: 2`, Total: 4, Products: Array, UnitPrice: 20.35

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

- Project:** JOG\_Postwork.Product
- Documents:** A list of documents representing groups of products by supplier.
- Aggregation Pipeline:**

```
{ $group: { _id: "$Supplier", Total: { $sum: 1 }, Products: { $push: { _id: "$_id", UnitPrice: "$UnitPrice" } } } }
```
- Sort:** `{Total:-1, UnitPrice:-1}`
- Limit:** 1
- Results:** One document is displayed:
  - `_id: 32`, Total: 5, Products: Array, UnitPrice: 44.67

25.- De la vista generada crea un documento por cada producto existente.

```
[{$unwind: {  
    path: "$Products",  
    includeArrayIndex: 'string',  
}}]
```

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

- Left Sidebar:** Shows the "Local" database with 13 DBs and 38 collections. The "JOG\_Postwork" database is selected.
- Top Bar:** Shows the connection information "MongoDB Compass - cluster0.yx5qd.mongodb.net:27017" and the date/time "Lun 18:52".
- Aggregation Pipeline:** The "Aggregations" tab is selected. A single stage is defined:

```
1 /**  
2  * path: Path to the array field.  
3  * includeArrayIndex: Optional name for index.  
4  * preserveNullAndEmptyArrays: Optional  
5  *   toggle to unwind null and empty values.  
6  */  
7 {  
8   path: "$Products",  
9   includeArrayIndex: 'string',  
10 }
```
- Preview Area:** Shows the output of the aggregation pipeline. It displays 29 documents in the collection. Two examples are shown:
  - Document 24: \_id: 24, Total: 3, Products: Array, UnitPrice: 30.933333333333334
  - Document 12: \_id: 12, Total: 5, Products: Array, UnitPrice: 44.678000000000006
- Output Area:** Shows the "Output after \$unwind stage" (Sample of 20 documents). It displays 20 documents, each containing a single product item. Two examples are shown:
  - Document 7: \_id: 7, Total: 5, Products: "Pavlova", UnitPrice: 35.57, string: 0
  - Document 5: \_id: 5, Products: "Alice Mutton", UnitPrice: 35.57, string: 1