**SESION 1**
**PROYECTO**

1. Dentro del mismo servidor de bases de datos, conéctate al esquema classicmodels.

```
show databases;
use classicmodels;
```

2. Dentro de la tabla employees, obtén el apellido de todos los empleados.

```
show databases;
use classicmodels;
show tables;
describe employees;
select lastName from employees;
```

| lastName |
|---|
| Murphy |
| Patterson |
| Firrelli |
| Patterson |
| Bondur |
| Bow |
| Jennings |
| Thompson |
| Firrelli |

3. Dentro de la tabla employees, obtén el apellido, nombre y puesto de todos los empleados.

```
select lastName, firstName, jobTitle from employees;
```

| lastName | firstName | jobTitle |
|---|---|---|
| Murphy | Diane | President |
| Patterson | Mary | VP Sales |
| Firrelli | Jeff | VP Marketing |
| Patterson | William | Sales Manager (APAC) |
| Bondur | Gerard | Sale Manager (EMEA) |
| Bow | Anthony | Sales Manager (NA) |
| Jennings | Leslie | Sales Rep |
| Thompson | Leslie | Sales Rep |
| Firrelli | Julie | Sales Rep |

4. Dentro de la tabla employees, obtén todos los datos de cada empleado.

```
7 •  select * from employees;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

| employeeNumber | lastName | firstName | extension | email | officeCode | reportsTo | jobTitle |
|---|---|---|---|---|---|---|---|
| 1002 | Murphy | Diane | x5800 | dmurphy@classicmodelcars.com | 1 | NULL | President |
| 1056 | Patterson | Mary | x4611 | mpatterso@classicmodelcars.com | 1 | 1002 | VP Sales |
| 1076 | Firrelli | Jeff | x9273 | jfirrelli@classicmodelcars.com | 1 | 1002 | VP Marketin |
| 1088 | Patterson | William | x4871 | wpatterson@classicmodelcars.com | 6 | 1056 | Sales Manag |
| 1102 | Bondur | Gerard | x5408 | gbondur@classicmodelcars.com | 4 | 1056 | Sale Manag |
| 1143 | Bow | Anthony | x5428 | abow@classicmodelcars.com | 1 | 1056 | Sales Manag |
| 1165 | Jennings | Leslie | x3291 | ljennings@classicmodelcars.com | 1 | 1143 | Sales Rep |
| 1166 | Thompson | Leslie | x4065 | lthompson@classicmodelcars.com | 1 | 1143 | Sales Rep |

5. Dentro de la tabla employees, obtén el apellido, nombre y puesto de todos los empleados que tengan el puesto Sales Rep.

```
8 •  select lastName, firstName, jobTitle from employees where jobTitle = 'Sales Rep';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| lastName | firstName | jobTitle |
|---|---|---|
| Jennings | Leslie | Sales Rep |
| Thompson | Leslie | Sales Rep |
| Firrelli | Julie | Sales Rep |
| Patterson | Steve | Sales Rep |
| Tseng | Foon Yue | Sales Rep |
| Vanauf | George | Sales Rep |
| Bondur | Loui | Sales Rep |
| Hernandez | Gerard | Sales Rep |
| Castillo | Pamela | Sales Rep |

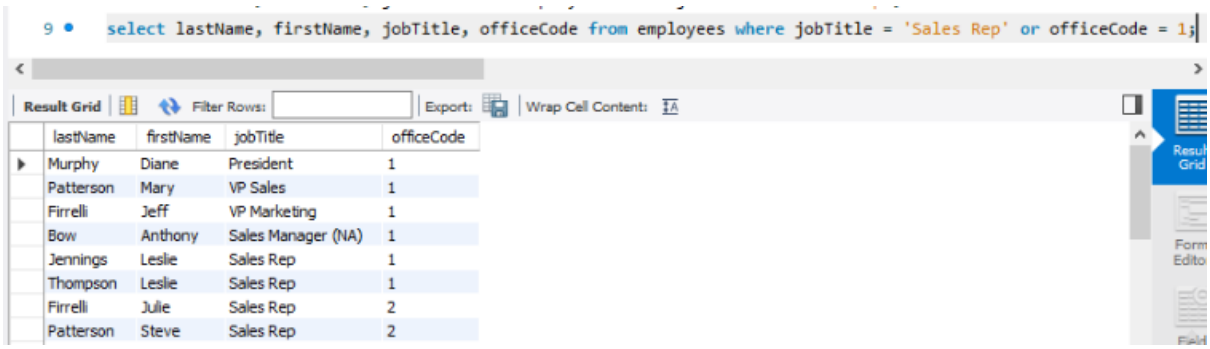
6. Dentro de la tabla employees, obtén el apellido, nombre, puesto y código de oficina de todos los empleados que tengan el puesto Sales Rep y código de oficina 1.

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

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

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

7. Dentro de la tabla employees, obtén el apellido, nombre, puesto y código de oficina de todos los empleados que tengan el puesto Sales Rep o código de oficina 1.

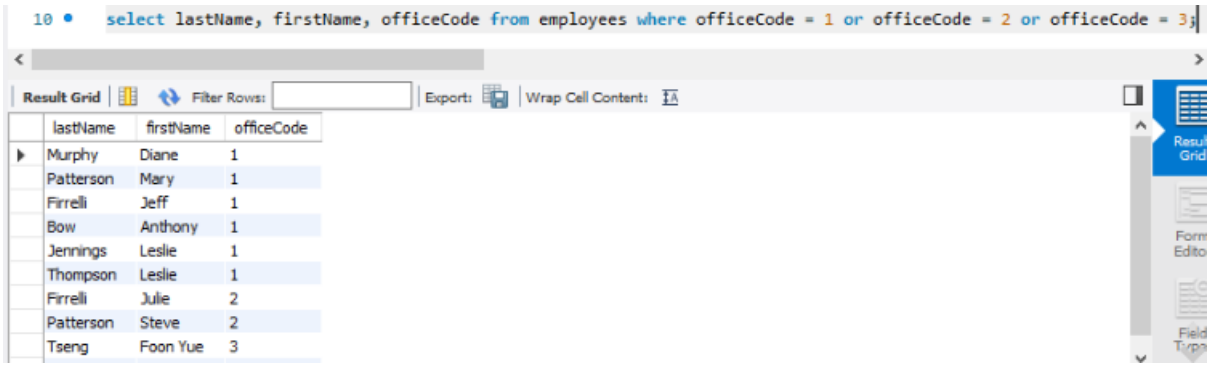


```
9 • select lastName, firstName, jobTitle, officeCode from employees where jobTitle = 'Sales Rep' or officeCode = 1;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| lastName | firstName | jobTitle | officeCode |
|---|---|---|---|
| Murphy | Diane | President | 1 |
| Patterson | Mary | VP Sales | 1 |
| Firrelli | Jeff | VP Marketing | 1 |
| Bow | Anthony | Sales Manager (NA) | 1 |
| Jennings | Leslie | Sales Rep | 1 |
| Thompson | Leslie | Sales Rep | 1 |
| Firrelli | Julie | Sales Rep | 2 |
| Patterson | Steve | Sales Rep | 2 |

8. Dentro de la tabla employees, obtén el apellido, nombre y código de oficina de todos los empleados que tenga código de oficina 1, 2 o 3.

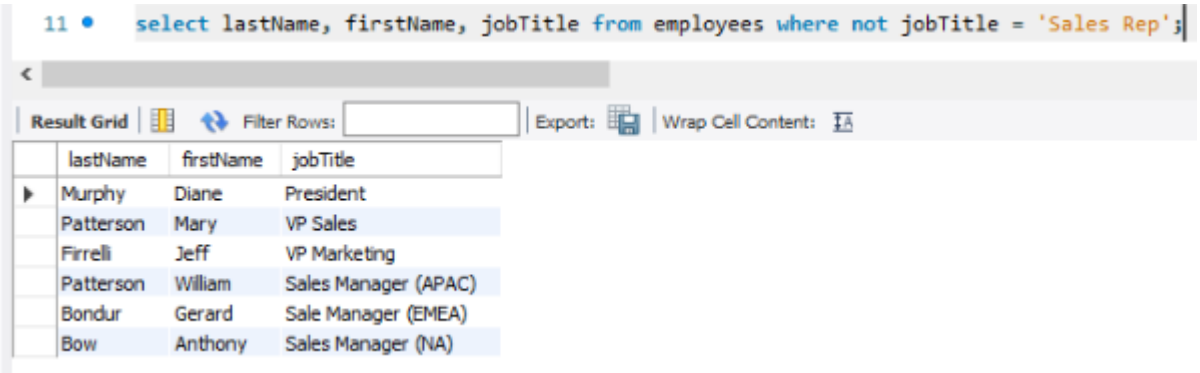


```
10 • select lastName, firstName, officeCode from employees where officeCode = 1 or officeCode = 2 or officeCode = 3;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| lastName | firstName | officeCode |
|---|---|---|
| Murphy | Diane | 1 |
| Patterson | Mary | 1 |
| Firrelli | Jeff | 1 |
| Bow | Anthony | 1 |
| Jennings | Leslie | 1 |
| Thompson | Leslie | 1 |
| Firrelli | Julie | 2 |
| Patterson | Steve | 2 |
| Tseng | Foon Yue | 3 |

9. Dentro de la tabla employees, obten el apellido, nombre y puesto de todos los empleados que tengan un puesto distinto a Sales Rep.



```
11 • select lastName, firstName, jobTitle from employees where not jobTitle = 'Sales Rep';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| lastName | firstName | jobTitle |
|---|---|---|
| Murphy | Diane | President |
| Patterson | Mary | VP Sales |
| Firrelli | Jeff | VP Marketing |
| Patterson | William | Sales Manager (APAC) |
| Bondur | Gerard | Sale Manager (EMEA) |
| Bow | Anthony | Sales Manager (NA) |

10. Dentro de la tabla employees, obtén el apellido, nombre y código de oficina de todos los empleados cuyo código de oficina sea mayor a 5.

```
12 •  select lastName, firstName, officeCode from employees where officeCode > 5;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

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

11. Dentro de la tabla employees, obtén el apellido, nombre y código de oficina de todos los empleados cuyo cdigo de oficina sea menor o igual 4.

```
12 •  select lastName, firstName, officeCode from employees where officeCode <= 4;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| lastName | firstName | officeCode |
|---|---|---|
| Murphy | Diane | 1 |
| Patterson | Mary | 1 |
| Firrelli | Jeff | 1 |
| Bondur | Gerard | 4 |
| Bow | Anthony | 1 |
| Jennings | Leslie | 1 |
| Thompson | Leslie | 1 |
| Firrelli | Julie | 2 |
| Patterson | Steve | 2 |

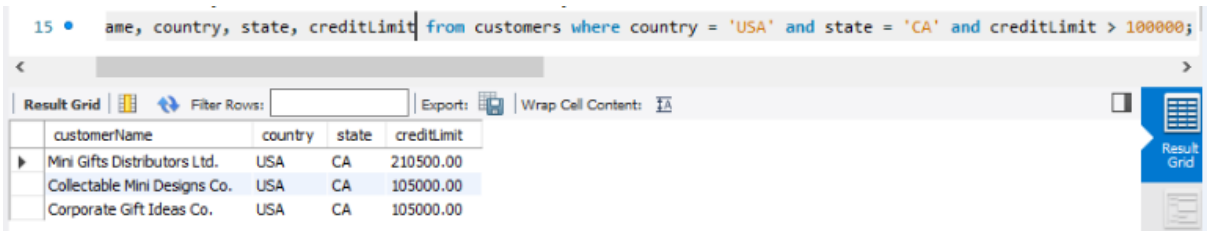
12. Dentro de la tabla customers, obtén el nombre, país y estado de todos los clientes cuyo país sea USA y cuyo estado sea CA.

```
14 •  select customerName, country, state from customers where country = 'USA' and state = 'CA';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| customerName | country | state |
|---|---|---|
| Mini Gifts Distributors Ltd. | USA | CA |
| Mini Wheels Co. | USA | CA |
| Technics Stores Inc. | USA | CA |
| Toys4GrownUps.com | USA | CA |
| Boards & Toys Co. | USA | CA |
| Collectable Mini Designs Co. | USA | CA |
| Corporate Gift Ideas Co. | USA | CA |
| Men 'R' US Retailers, Ltd. | USA | CA |
| The Sharp Gifts Warehouse | USA | CA |

13. Dentro de la tabla customers, obtén el nombre, país, estado y límite de crédito de todos los clientes cuyo país sea, USA, cuyo estado sea CA y cuyo límite de crédito sea mayor a 100000.

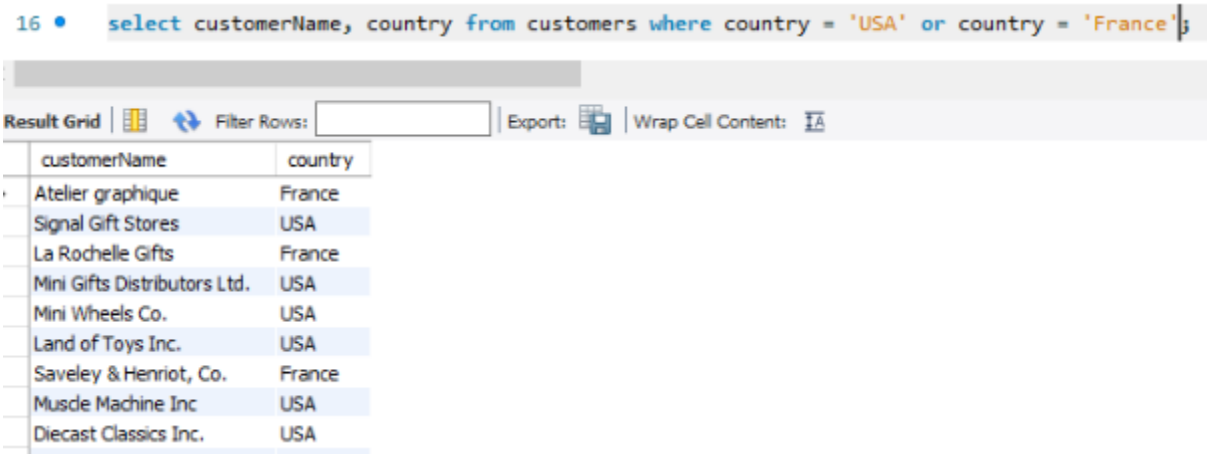


```
15 •  ame, country, state, creditLimit from customers where country = 'USA' and state = 'CA' and creditLimit > 100000;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

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

14. Dentro de la tabla customers, obtén el nombre y país de todos los clientes cuyo país sea USA o France.

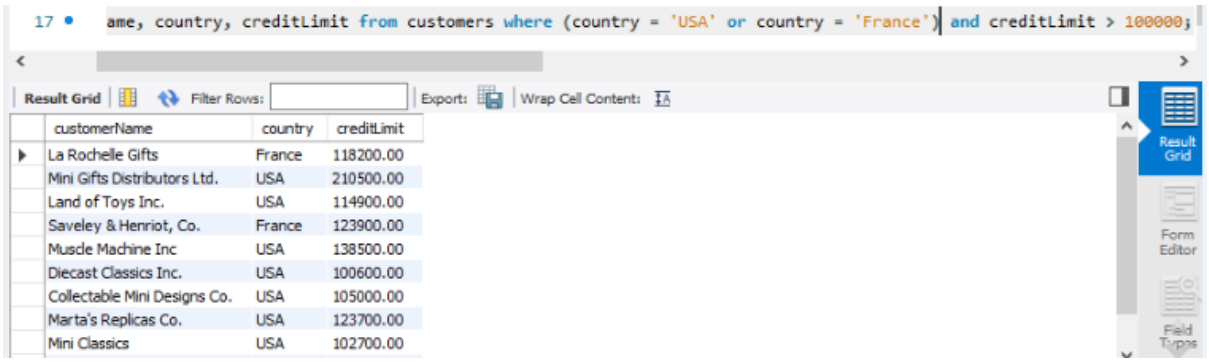


```
16 •  select customerName, country from customers where country = 'USA' or country = 'France';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| customerName | country |
|---|---|
| Atelier graphique | France |
| Signal Gift Stores | USA |
| La Rochelle Gifts | France |
| Mini Gifts Distributors Ltd. | USA |
| Mini Wheels Co. | USA |
| Land of Toys Inc. | USA |
| Saveley & Henriot, Co. | France |
| Musde Machine Inc | USA |
| Diecast Classics Inc. | USA |

15. Dentro de la tabla customers, obtén el nombre, pas y límite de crédito de todos los clientes cuyo país sea USA o France y cuyo límite de crédito sea mayor a 100000. Para este ejercicio ten cuidado con los paréntesis.



```
17 •  ame, country, creditLimit from customers where (country = 'USA' or country = 'France') and creditLimit > 100000;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| customerName | country | creditLimit |
|---|---|---|
| La Rochelle Gifts | France | 118200.00 |
| Mini Gifts Distributors Ltd. | USA | 210500.00 |
| Land of Toys Inc. | USA | 114900.00 |
| Saveley & Henriot, Co. | France | 123900.00 |
| Musde Machine Inc | USA | 138500.00 |
| Diecast Classics Inc. | USA | 100600.00 |
| Collectable Mini Designs Co. | USA | 105000.00 |
| Marta's Replicas Co. | USA | 123700.00 |
| Mini Classics | USA | 102700.00 |

16. Dentro de la tabla offices, obtén el código de la oficina, ciudad, teléfono y país de aquellas oficinas que se encuentren en USA o France.

```
19 •  select officeCode, city, phone, country from offices where country = 'USA' or country = 'France';
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

| officeCode | city | phone | country |
|---|---|---|---|
| 1 | San Francisco | +1 650 219 4782 | USA |
| 2 | Boston | +1 215 837 0825 | USA |
| 3 | NYC | +1 212 555 3000 | USA |
| 4 | Paris | +33 14 723 4404 | France |
| NULL | NULL | NULL | NULL |

17. Dentro de la tabla offices, obtén el código de la oficina, ciudad, teléfono y país de aquellas oficinas que *no* se encuentren en USA o France.

```
19 •  select officeCode, city, phone, country from offices where not (country = 'USA' or country = 'France');
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| 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 |

18. Dentro de la tabla orders, obtén el número de orden, número de cliente, estado y fecha de envío de todas las órdenes con el número 10165, 10287 o 10310.

```
21 •  r, status, shippedDate from orders where orderNumber = 10165 or orderNumber = '10287' or orderNumber = '10310';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| orderNumber | customerNumber | status | shippedDate |
|---|---|---|---|
| 10165 | 148 | Shipped | 2003-12-26 |
| 10287 | 298 | Shipped | 2004-09-01 |
| 10310 | 259 | Shipped | 2004-10-18 |

19. Dentro de la tabla customers, obtén el apellido y nombre de cada cliente y ordena los resultados por apellido de forma ascendente.

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

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| contactFirstName | contactLastName |
|---|---|
| Paolo | Accorti |
| Raanan | Altagar,G M |
| Mel | Andersen |
| Carmen | Anton |
| Rachel | Ashworth |
| Miguel | Barajas |
| Violeta | Benitez |
| Helen | Bennett |
| Christina | Berglund |

20. Dentro de la tabla customers, obtén el apellido y nombre de cada cliente y ordena los resultados por apellido de forma descendente.

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

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| contactFirstName | contactLastName |
|---|---|
| Jeff | Young |
| Julie | Young |
| Mary | Young |
| Dorothy | Young |
| Juri | Yoshido |
| Brydey | Walker |
| Wendy | Victorino |
| Braun | Urs |
| Jerry | Tseng |

21. Dentro de la tabla customers, obtén el apellido y nombre de cada cliente y ordena los resultados por apellido de forma descendente y luego por nombre de forma ascendente.

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

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| contactFirstName | contactLastName |
|---|---|
| Adrian | Huxley |
| Akiko | Shimamura |
| Alejandra | Camino |
| Alexander | Feuer |
| Alexander | Semenov |
| Allen | Nelson |
| Ann | Brown |
| Anna | O'Hara |
| Annette | Roulet |

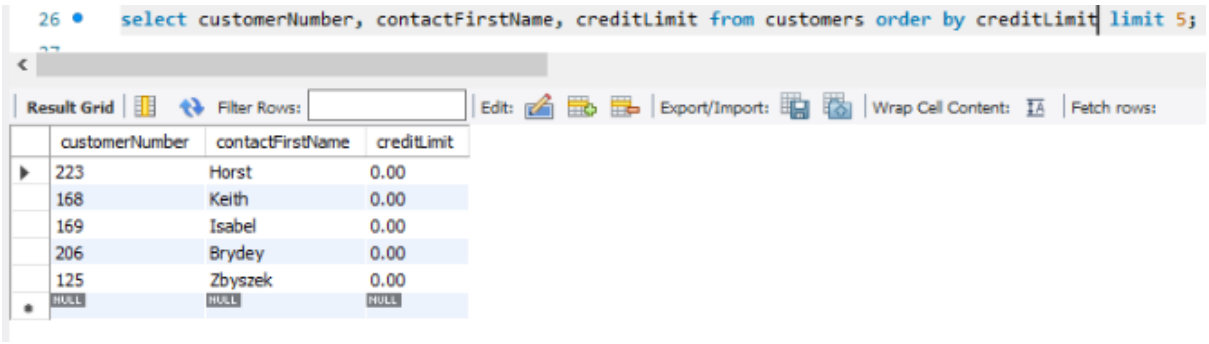
22. Dentro de la tabla customers, obtén el número de cliente, nombre de cliente y el límite de crédito de los cinco clientes con el límite de crédito más alto (top 5).

```
26 • select customerNumber, contactFirstName, creditLimit from customers order by creditLimit desc limit 5;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: | Fetch rows:

| customerNumber | contactFirstName | creditLimit |
|---|---|---|
| 141 | Diego | 227600.00 |
| 124 | Susan | 210500.00 |
| 298 | Mihael | 141300.00 |
| 151 | Jeff | 138500.00 |
| 187 | Rachel | 136800.00 |
| NULL | NULL | NULL |

23. Dentro de la tabla customers, obtén el número de cliente, nombre de cliente y el límite de crédito de los cinco clientes con el límite de crédito más bajo.



```
26 •  select customerNumber, contactFirstName, creditLimit from customers order by creditLimit limit 5;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: | Fetch rows:

| customerNumber | contactFirstName | creditLimit |
|---|---|---|
| 223 | Horst | 0.00 |
| 168 | Keith | 0.00 |
| 169 | Isabel | 0.00 |
| 206 | Brydey | 0.00 |
| 125 | Zbyszek | 0.00 |
| NULL | NULL | NULL |

## SESION 2
## PROYECTO

1. Dentro de la tabla `employees`, obten el número de empleado, apellido y nombre de todos los empleados cuyo nombre empiece con `a`.

```
5 •  select employeeNumber, firstName, lastName from employees where firstName like 'A%';
```

| employeeNumber | firstName | lastName |
|---|---|---|
| 1143 | Anthony | Bow |
| 1611 | Andy | Fixter |
| NULL | NULL | NULL |

2. Dentro de la tabla `employees`, obten el número de empleado, apellido y nombre de todos los empleados cuyo nombre termina con `on`.

```
6 •  select employeeNumber, lastName, firstName from employees where firstName like '%n';
```

| employeeNumber | lastName | firstName |
|---|---|---|
| 1702 | Gerard | Martin |
| NULL | NULL | NULL |

3. Dentro de la tabla `employees`, obten el número de empleado, apellido y nombre de todos los empleados cuyo nombre incluye la cadena `on`.

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

| employeeNumber | lastName | firstName |
|---|---|---|
| 1143 | Bow | Anthony |
| 1286 | Tseng | Foon Yue |
| NULL | NULL | NULL |

4. Dentro de la tabla `employees`, obten el número de empleado, apellido y nombre de todos los empleados cuyos nombres tienen tres letras e inician con `T` y finalizan con `m`.

```
select employeeNumber, lastName, firstName from employees where firstName like 'T%m';
```

| employeeNumber | lastName | firstName |
|---|---|---|
| 1619 | King | Tom |
| NULL | NULL | NULL |

5. Dentro de la tabla `employees`, obten el número de empleado, apellido y nombre de todos los empleados cuyo nombre *no* inicia con `B`.

```
select employeeNumber, lastName, firstName from employees where not firstName like 'B%';
```

| employeeNumber | lastName | firstName |
|---|---|---|
| 1002 | Murphy | Diane |
| 1056 | Patterson | Mary |
| 1076 | Firrelli | Jeff |
| 1088 | Patterson | William |
| 1102 | Bondur | Gerard |
| 1143 | Bow | Anthony |
| 1165 | Jennings | Leslie |
| 1166 | Thompson | Leslie |
| 1188 | Firrelli | Julie |

6. Dentro de la tabla `products`, obten el código de producto y nombre de los productos cuyo código incluye la cadena `_20`.

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

| productCode | productName |
|---|---|
| S10_2016 | 1996 Moto Guzzi 1100i |
| S24_2000 | 1960 BSA Gold Star DBD34 |
| S24_2011 | 18th century schooner |
| S24_2022 | 1938 Cadillac V-16 Presidential Limousine |
| S700_2047 | HMS Bounty |
| NULL | NULL |

7. Dentro de la tabla `orderdetails`, obten el total de cada orden.

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

| orderNumber | Ordenes |
|---|---|
| 10106 | 18 |
| 10159 | 18 |
| 10165 | 18 |
| 10168 | 18 |

8. Dentro de la tabla `orders` obten el número de órdenes por año.

```
select year(orderDate), count(*) as Total from orders group by year(orderDate);
```

| year(orderDate) | Total |
|---|---|
| 2003 | 111 |
| 2004 | 151 |
| 2005 | 64 |

9. Obten el apellido y nombre de los empleados cuya oficina está ubicada en `USA`.

```
select * from employees where officeCode in(select officeCode from offices where country = 'USA');
```

| employeeNumber | lastName | firstName | extension | email | officeCode | reportsTo | jobTitle |
|---|---|---|---|---|---|---|---|
| 1002 | Murphy | Diane | x5800 | dmurphy@classicmodelcars.com | 1 | NULL | President |
| 1056 | Patterson | Mary | x4611 | mpatterso@classicmodelcars.com | 1 | 1002 | VP Sales |
| 1076 | Firrelli | Jeff | x9273 | jfirrelli@classicmodelcars.com | 1 | 1002 | VP Marketing |
| 1143 | Bow | Anthony | x5428 | abow@classicmodelcars.com | 1 | 1056 | Sales Manager (NA) |
| 1165 | Jennings | Leslie | x3291 | ljennings@classicmodelcars.com | 1 | 1143 | Sales Rep |
| 1166 | Thompson | Leslie | x4065 | lthompson@classicmodelcars.com | 1 | 1143 | Sales Rep |
| 1188 | Firrelli | Julie | x2173 | jfirrelli@classicmodelcars.com | 2 | 1143 | Sales Rep |
| 1216 | Patterson | Steve | x4334 | spatterson@classicmodelcars.com | 2 | 1143 | Sales Rep |
| 1286 | Tseng | Foon Yue | x2248 | ftseng@classicmodelcars.com | 3 | 1143 | Sales Rep |

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

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

| customerNumber | checkNumber | Maximo |
|---|---|---|
| 141 | JE105477 | 120166.58 |

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

```
select avg(amount) from payments;
select customerNumber, checkNumber, amount from payments where amount > 32431.645531;
```

| customerNumber | checkNumber | amount |
|---|---|---|
| 112 | HQ55022 | 32641.98 |
| 112 | ND748579 | 33347.88 |
| 114 | GG31455 | 45864.03 |
| 114 | MA765515 | 82261.22 |
| 114 | NR27552 | 44894.74 |
| 119 | LN373447 | 47924.19 |
| 119 | NG94694 | 49523.67 |
| 121 | DB889831 | 50218.95 |
| 121 | MA302151 | 34638.14 |

12. Obten el nombre de aquellos clientes que no han hecho ninguna orden.

```
select customerName from customers where customerNumber
in(select customerNumber from orders where status = 'Cancelled');
```

| customerName |
|---|
| Scandinavian Gift Ideas |
| Kelly's Gift Shop |
| Land of Toys Inc. |
| UK Collectables, Ltd. |
| GiftsForHim.com |
| Euro+ Shopping Channel |

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

```
select max(quantityOrdered) as maximo, min(quantityOrdered) as minimo, avg( quantityOrdered) as promedio
 from orderdetails;
```

| maximo | minimo | promedio |
|---|---|---|
| 97 | 6 | 35.2190 |

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

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

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

## SESION 3
## PROYECTO

*Para estas consultas usa RIGHT JOIN*

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

```
select productCode, productName, productDescription from products;
```

| productCode | productName | productDescription |
|---|---|---|
| S10_1678 | 1969 Harley Davidson Ultimate Chopper | This replica features working kickstand, front su... |
| S10_1949 | 1952 Alpine Renault 1300 | Turnable front wheels; steering function; detail... |
| S10_2016 | 1996 Moto Guzzi 1100i | Official Moto Guzzi logos and insignias, saddle b... |
| S10_4698 | 2003 Harley-Davidson Eagle Drag Bike | Model features, official Harley Davidson logos a... |
| S10_4757 | 1972 Alfa Romeo GTA | Features include: Turnable front wheels; steeri... |
| S10_4962 | 1962 LanciaA Delta 16V | Features include: Turnable front wheels; steeri... |
| S12_1099 | 1968 Ford Mustang | Hood, doors and trunk all open to reveal highly ... |
| S12_1108 | 2001 Ferrari Enzo | Turnable front wheels; steering function; detail... |
| S12_1666 | 1958 Setra Bus | Model features 30 windows, skylights & glare re... |

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

```
select o.orderNumber Orden, o.status Estado, sum(p.amount) Cantidad from orders o right join payments p
on p.customerNumber = o.customerNumber group by Orden;
```

| Orden | Estado | Cantidad |
|---|---|---|
| 10123 | Shipped | 22314.36 |
| 10298 | Shipped | 22314.36 |
| 10345 | Shipped | 22314.36 |
| 10124 | Shipped | 80180.98 |
| 10278 | Shipped | 80180.98 |
| 10346 | Shipped | 80180.98 |
| 10120 | Shipped | 180585.07 |
| 10125 | Shipped | 180585.07 |
| 10223 | Shipped | 180585.07 |
| 10342 | Shipped | 180585.07 |

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 o.orderNumber Orden, o.orderDate Fecha, od.orderLineNumber Linea,
       p.productName Nombre, od.quantityOrdered Cantidad, od.priceEach Precio
 from orders o right join orderdetails od on o.orderNumber = od.orderNumber
 right join products p on od.productCode = p.productCode order by Linea;
```

| Orden | Fecha | Linea | Nombre | Cantidad | Precio |
|---|---|---|---|---|---|
| NULL | NULL | NULL | 1985 Toyota Supra | NULL | NULL |
| 10208 | 2004-01-02 | 1 | The USS Constitution Ship | 46 | 63.61 |
| 10206 | 2003-12-05 | 1 | 1982 Camaro Z28 | 33 | 89.01 |
| 10168 | 2003-10-28 | 1 | 1969 Harley Davidson Ultimate Chopper | 36 | 94.74 |
| 10188 | 2003-11-18 | 1 | 1969 Harley Davidson Ultimate Chopper | 48 | 95.70 |
| 10103 | 2003-01-29 | 1 | 1962 Volkswagen Microbus | 36 | 107.34 |
| 10223 | 2004-02-20 | 1 | 1969 Harley Davidson Ultimate Chopper | 37 | 80.39 |
| 10354 | 2004-12-04 | 1 | 1960 BSA Gold Star DBD34 | 28 | 62.46 |
| 10275 | 2004-07-23 | 1 | 1969 Harley Davidson Ultimate Chopper | 45 | 81.35 |
| 10152 | 2003-09-25 | 1 | 1970 Triumph Spitfire | 35 | 117.77 |

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

```
select od.orderNumber Orden, p.productName Producto, p.MSRP MSRP, p.buyPrice
    from products p right join orderdetails od on p.productCode = od.productCode order by Orden;
```

| Orden | Producto | MSRP | buyPrice |
|---|---|---|---|
| 10100 | 1917 Grand Touring Sedan | 170.00 | 86.70 |
| 10100 | 1911 Ford Town Car | 60.54 | 33.30 |
| 10100 | 1932 Alfa Romeo 8C2300 Spider Sport | 92.03 | 43.26 |
| 10100 | 1936 Mercedes Benz 500k Roadster | 41.03 | 21.75 |
| 10101 | 1932 Model A Ford J-Coupe | 127.13 | 58.48 |
| 10101 | 1928 Mercedes-Benz SSK | 168.75 | 72.56 |
| 10101 | 1939 Chevrolet Deluxe Coupe | 33.19 | 22.57 |
| 10101 | 1938 Cadillac V-16 Presidential Limousine | 44.80 | 20.61 |
| 10102 | 1937 Lincoln Berline | 102.74 | 60.62 |
| 10102 | 1936 Mercedes-Benz 500K Special Roadster | 53.91 | 24.26 |

*Para estas consultas usa LEFT JOIN*

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

```
select c.customerNumber No_Cliente, c.customerName Cliente, o.orderNumber No_Orden, c.state Estado
    from customers c left join orders o on c.customerNumber = o.customerNumber;
```

| No_Cliente | Cliente | No_Orden | Estado |
|---|---|---|---|
| 103 | Atelier graphique | 10123 | NULL |
| 103 | Atelier graphique | 10298 | NULL |
| 103 | Atelier graphique | 10345 | NULL |
| 112 | Signal Gift Stores | 10124 | NV |
| 112 | Signal Gift Stores | 10278 | NV |
| 112 | Signal Gift Stores | 10346 | NV |
| 114 | Australian Collectors, Co. | 10120 | Victoria |
| 114 | Australian Collectors, Co. | 10125 | Victoria |
| 114 | Australian Collectors, Co. | 10223 | Victoria |
| 114 | Australian Collectors, Co. | 10342 | Victoria |

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

```
select c.customerNumber No_Cliente, c.customerName Cliente, o.orderNumber No_Orden, c.state Estado
      from customers c left join orders o on c.customerNumber = o.customerNumber
      where isnull(o.orderNumber);
```

| No_Cliente | Cliente | No_Orden | Estado |
|---|---|---|---|
| 125 | Havel & Zbyszek Co | NULL | NULL |
| 168 | American Souvenirs Inc | NULL | CT |
| 169 | Porto Imports Co. | NULL | NULL |
| 206 | Asian Shopping Network, Co | NULL | NULL |
| 223 | Natürlich Autos | NULL | NULL |
| 237 | ANG Resellers | NULL | NULL |
| 247 | Messner Shopping Network | NULL | NULL |
| 273 | Franken Gifts, Co | NULL | NULL |
| 293 | BG&E Collectables | NULL | NULL |
| 303 | Schuyler Imports | NULL | NULL |

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

```
select concat(e.lastName, ' ', e.firstName) Empleado, c.customerName Cliente, p.checkNumber Cheque
from employees e left join customers c on e.reportsTo = c.salesRepEmployeeNumber
left join payments p on c.customerNumber = p.customerNumber order by Cheque desc;
```

| Empleado | Cliente | Cheque |
|---|---|---|
| Kato Yoshimi | Dragon Souveniers, Ltd. | ME497970 |
| Kato Yoshimi | Dragon Souveniers, Ltd. | KM172879 |
| Kato Yoshimi | Tokyo Collectables, Ltd | KB54275 |
| Kato Yoshimi | Tokyo Collectables, Ltd | JPMR4544 |
| Kato Yoshimi | Cruz & Sons Co. | EK785462 |
| Kato Yoshimi | Tokyo Collectables, Ltd | DO787644 |
| Kato Yoshimi | Dragon Souveniers, Ltd. | DD635282 |
| Kato Yoshimi | Cruz & Sons Co. | CP804873 |
| Kato Yoshimi | Osaka Souveniers Co. | CI381435 |
| Kato Yoshimi | Cruz & Sons Co. | BN347084 |

*Para estas consultas usa RIGHT JOIN*

8. Repite los ejercicios 5 a 7 usando *RIGHT JOIN*.

```
select c.customerNumber No_Cliente, c.customerName Cliente, o.orderNumber No_Orden, c.state Estado
    from customers c right join orders o on c.customerNumber = o.customerNumber;
```

| No_Cliente | Cliente | No_Orden | Estado |
|---|---|---|---|
| 103 | Atelier graphique | 10123 | NULL |
| 103 | Atelier graphique | 10298 | NULL |
| 103 | Atelier graphique | 10345 | NULL |
| 112 | Signal Gift Stores | 10124 | NV |
| 112 | Signal Gift Stores | 10278 | NV |
| 112 | Signal Gift Stores | 10346 | NV |
| 114 | Australian Collectors, Co. | 10120 | Victoria |
| 114 | Australian Collectors, Co. | 10125 | Victoria |
| 114 | Australian Collectors, Co. | 10223 | Victoria |
| 114 | Australian Collectors, Co. | 10342 | Victoria |

```
select concat(e.lastName, ' ', e.firstName) Empleado, c.customerName Cliente, p.checkNumber Cheque
from employees e right join customers c on e.reportsTo = c.salesRepEmployeeNumber
right join payments p on c.customerNumber = p.customerNumber order by Cheque desc;
```

| Empleado | Cliente | Cheque |
|---|---|---|
| NULL | Signal Collectibles Ltd. | PT550181 |
| NULL | Down Under Souveniers, Inc | PQ803830 |
| NULL | Double Decker Gift Stores, Ltd | PO860906 |
| NULL | Online Diecast Creations Co. | PN238558 |
| NULL | Extreme Desk Decorations, Ltd | PJ434867 |
| NULL | Mini Wheels Co. | PI42991 |
| NULL | Gift Depot Inc. | PI15215 |
| NULL | Mini Caravy | PH785937 |
| NULL | Salzburg Collectables | PH29054 |
| NULL | FunGiftIdeas.com | PE176846 |

9. Escoge 3 consultas de los ejercicios anteriores, crea una vista y escribe una consulta para cada una.

```sql
CREATE
    ALGORITHM = UNDEFINED
    DEFINER = `root`@`%`
    SQL SECURITY DEFINER
VIEW `RCA_orden` AS
    SELECT
        `o`.`orderNumber` AS `Orden`,
        `o`.`status` AS `Estado`,
        SUM(`p`.`amount`) AS `Cantidad`
    FROM
        (`payments` `p`
        LEFT JOIN `orders` `o` ON ((`p`.`customerNumber` = `o`.`customerNumber`)))
    GROUP BY `Orden`
```

```sql
select * from RCA_orden;
```

Result Grid | Filter Rows:

| Orden | Estado | Cantidad |
|---|---|---|
| 10123 | Shipped | 22314.36 |
| 10298 | Shipped | 22314.36 |
| 10345 | Shipped | 22314.36 |
| 10124 | Shipped | 80180.98 |
| 10278 | Shipped | 80180.98 |
| 10346 | Shipped | 80180.98 |
| 10120 | Shipped | 180585.07 |
| 10125 | Shipped | 180585.07 |
| 10223 | Shipped | 180585.07 |
| 10342 | Shipped | 180585.07 |

---

```sql
CREATE
    ALGORITHM = UNDEFINED
    DEFINER = `root`@`%`
    SQL SECURITY DEFINER
VIEW `RCA_detalle_orden` AS
    SELECT
        `o`.`orderNumber` AS `Orden`,
        `o`.`orderDate` AS `Fecha`,
        `od`.`orderLineNumber` AS `Linea`,
        `p`.`productName` AS `Nombre`,
        `od`.`quantityOrdered` AS `Cantidad`,
        `od`.`priceEach` AS `Precio`
```

```
13      FROM
14          (`products` `p`
15          LEFT JOIN (`orderdetails` `od`
16          LEFT JOIN `orders` `o` ON ((`o`.`orderNumber` = `od`.`orderNumber`))) ON ((`od`.`productCode`
17      ORDER BY `od`.`orderLineNumber`
```

```
35 •    select * from RCA_detalle_orden;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetc

| Orden | Fecha | Linea | Nombre | Cantidad | Precio |
|---|---|---|---|---|---|
| NULL | NULL | NULL | 1985 Toyota Supra | NULL | NULL |
| 10208 | 2004-01-02 | 1 | The USS Constitution Ship | 46 | 63.61 |
| 10206 | 2003-12-05 | 1 | 1982 Camaro Z28 | 33 | 89.01 |
| 10168 | 2003-10-28 | 1 | 1969 Harley Davidson Ultimate Chopper | 36 | 94.74 |
| 10188 | 2003-11-18 | 1 | 1969 Harley Davidson Ultimate Chopper | 48 | 95.70 |
| 10103 | 2003-01-29 | 1 | 1962 Volkswagen Microbus | 36 | 107.34 |
| 10223 | 2004-02-20 | 1 | 1969 Harley Davidson Ultimate Chopper | 37 | 80.39 |
| 10354 | 2004-12-04 | 1 | 1960 BSA Gold Star DBD34 | 28 | 62.46 |
| 10275 | 2004-07-23 | 1 | 1969 Harley Davidson Ultimate Chopper | 45 | 81.35 |
| 10152 | 2003-09-25 | 1 | 1970 Triumph Spitfire | 35 | 117.77 |

---

```
1  •  CREATE
2          ALGORITHM = UNDEFINED
3          DEFINER = `root`@`%`
4          SQL SECURITY DEFINER
5      VIEW `RCA_producto` AS
6          SELECT
7              `od`.`orderNumber` AS `Orden`,
8              `p`.`productName` AS `Producto`,
9              `p`.`MSRP` AS `MSRP`,
10             `p`.`buyPrice` AS `buyPrice`
11         FROM
12             (`orderdetails` `od`
13             LEFT JOIN `products` `p` ON ((`p`.`productCode` = `od`.`productCode`)))
14         ORDER BY `od`.`orderNumber`
```

```
36 •  select * from RCA_producto;
```

Result Grid | Filter Rows: | Export: | Wrap Cell

| Orden | Producto | MSRP | buyPrice |
|---|---|---|---|
| 10100 | 1917 Grand Touring Sedan | 170.00 | 86.70 |
| 10100 | 1911 Ford Town Car | 60.54 | 33.30 |
| 10100 | 1932 Alfa Romeo 8C2300 Spider Sport | 92.03 | 43.26 |
| 10100 | 1936 Mercedes Benz 500k Roadster | 41.03 | 21.75 |
| 10101 | 1932 Model A Ford J-Coupe | 127.13 | 58.48 |
| 10101 | 1928 Mercedes-Benz SSK | 168.75 | 72.56 |
| 10101 | 1939 Chevrolet Deluxe Coupe | 33.19 | 22.57 |
| 10101 | 1938 Cadillac V-16 Presidential Limousine | 44.80 | 20.61 |
| 10102 | 1937 Lincoln Berline | 102.74 | 60.62 |
| 10102 | 1936 Mercedes-Benz 500K Special Roadster | 53.91 | 24.26 |

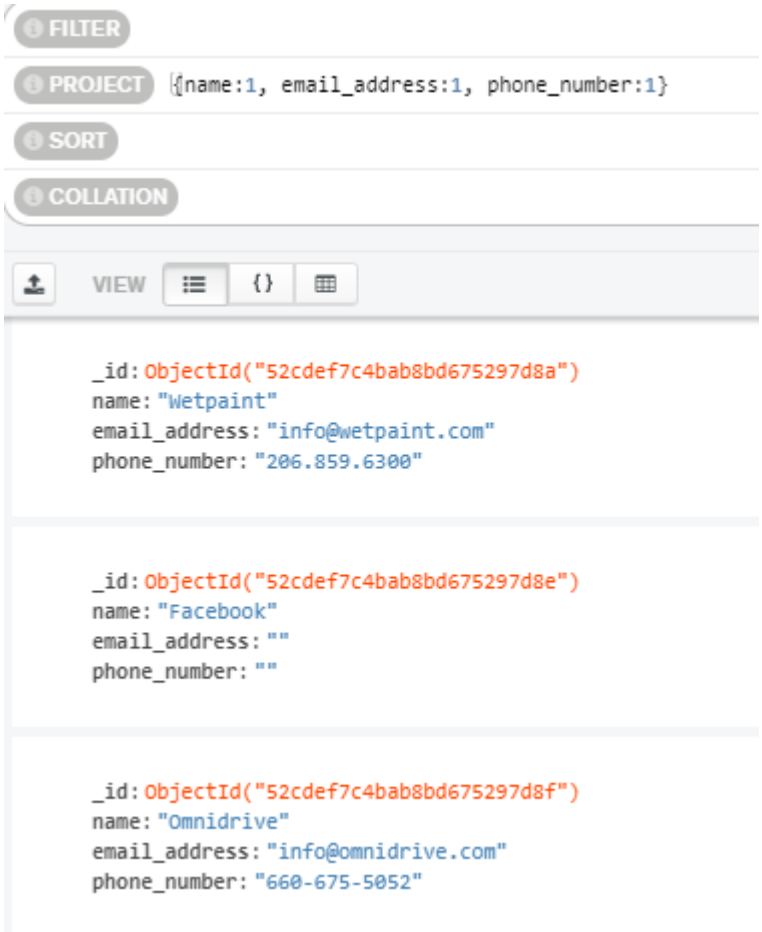
## SESION 4
## PROYECTO

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

**PS4-1**

PROJECT

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

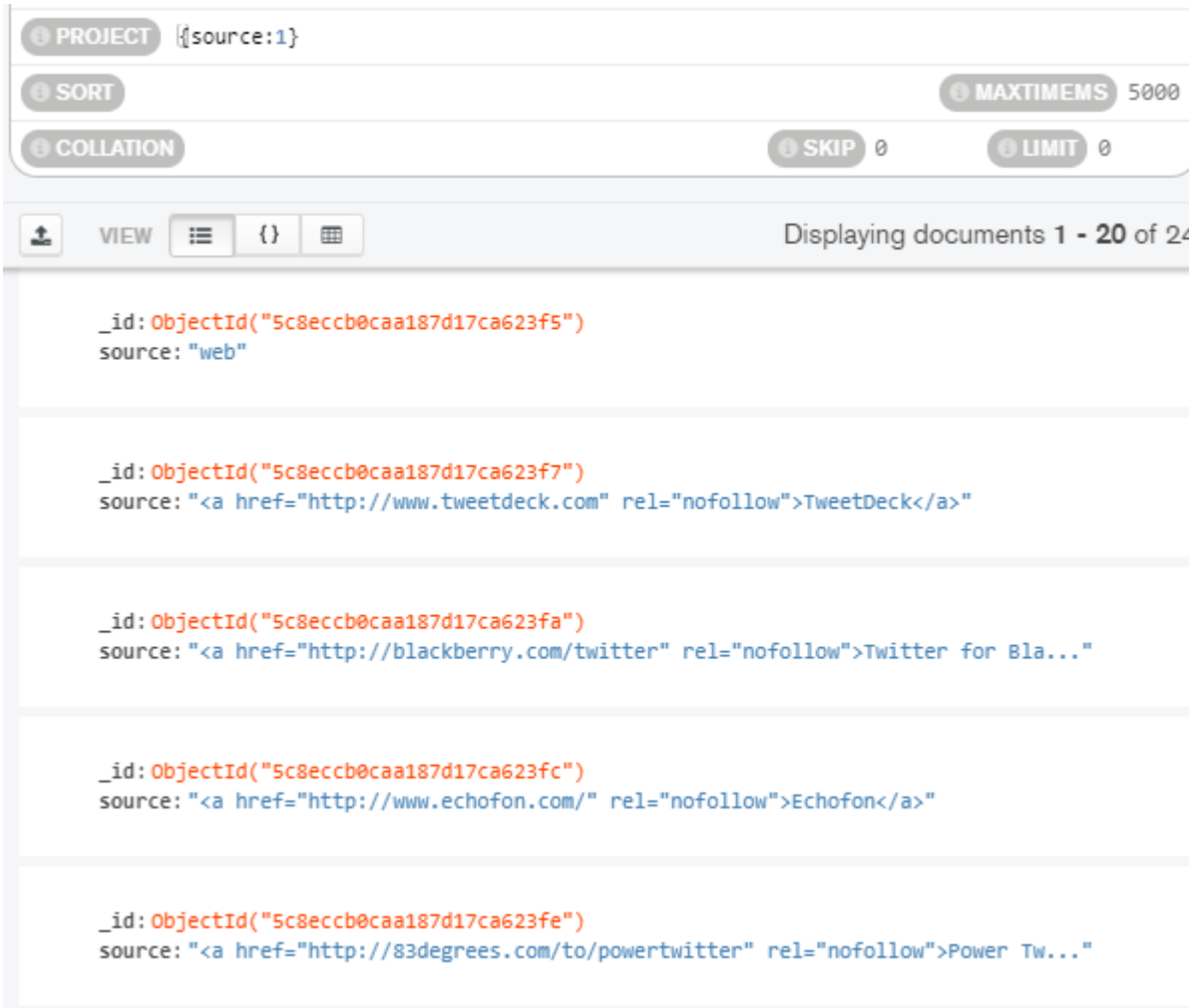



2.- Obtén la fuente de cada tweet.

**PS4-2**

PROJECT

```
{
 source: 1
}
```




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

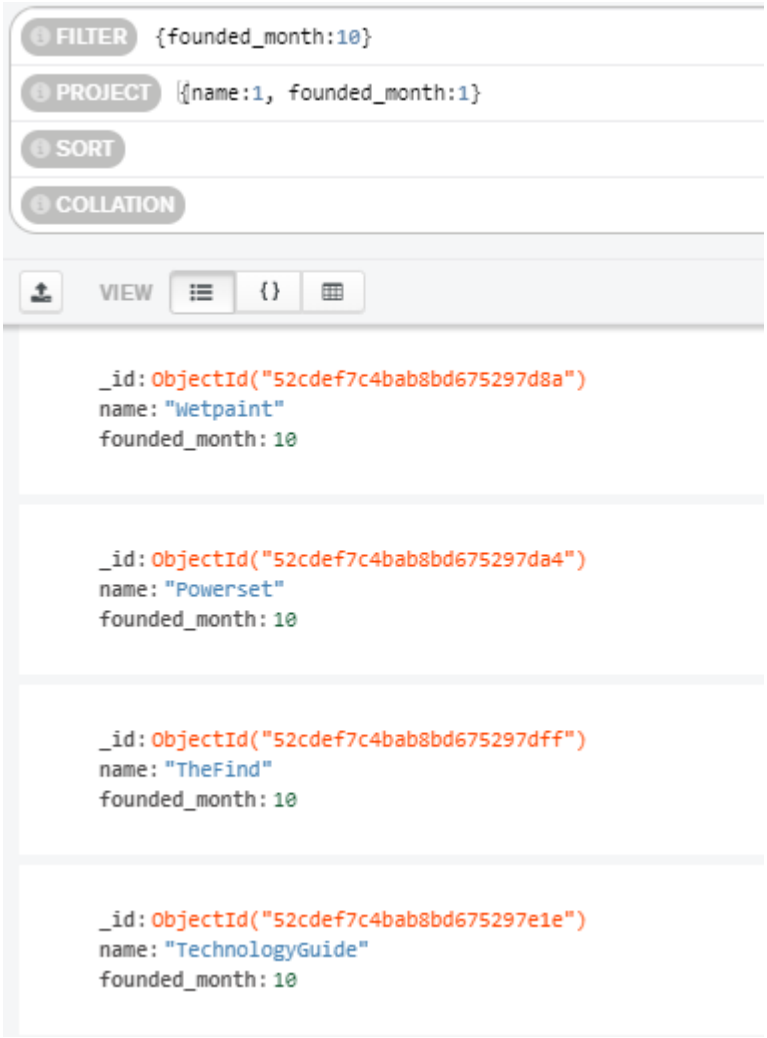
**PS4-3**

FILTER

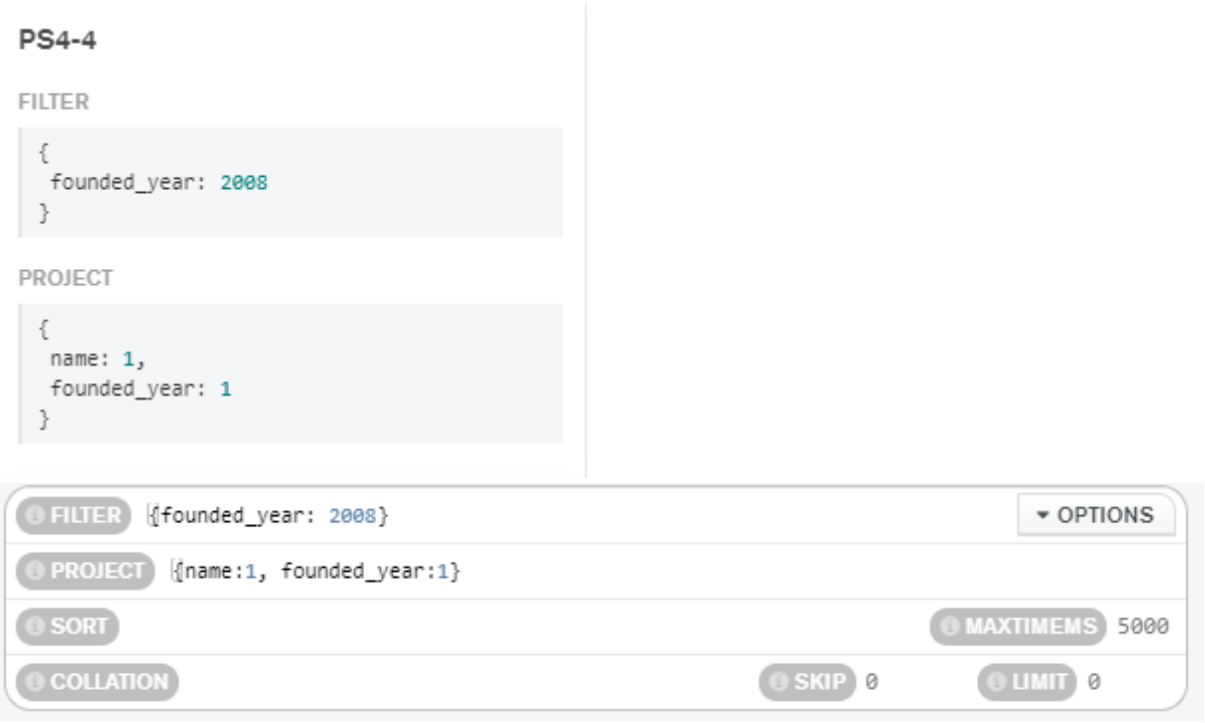
```
{
 founded_month: 10
}
```

PROJECT

```
{
 name: 1,
 founded_month: 1
}
```




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



```
_id: ObjectId("52cdef7c4bab8bd675297da8")
name: "OpenX"
founded_year: 2008
```

```
_id: ObjectId("52cdef7c4bab8bd675298218")
name: "WonderHowTo"
founded_year: 2008
```

```
_id: ObjectId("52cdef7c4bab8bd675298232")
name: "First30Days"
founded_year: 2008
```

```
_id: ObjectId("52cdef7c4bab8bd675298244")
name: "Mibura"
founded_year: 2008
```

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

**PS4-5**

PROJECT

```
{
 author: 1,
 body: 1
}
```

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

**PS4-6**

FILTER

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

PROJECT

```
{
 text: 1,
 source: 1
}
```


```
_id: ObjectId("5c8eccb0caa187d17ca623f5")
text: "eu preciso de terminar de fazer a minha tabela, está muito foda **"
source: "web"
```

```
_id: ObjectId("5c8eccb0caa187d17ca623ff")
text: "First week of school is over :P"
source: "web"
```

```
_id: ObjectId("5c8eccb0caa187d17ca62400")
text: "fair today!!!! then jersey shore!!!=D"
source: "web"
```

```
_id: ObjectId("5c8eccb0caa187d17ca62404")
text: "@teetoolegit lmfao!! No BS! hahaha"
source: "web"
```

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

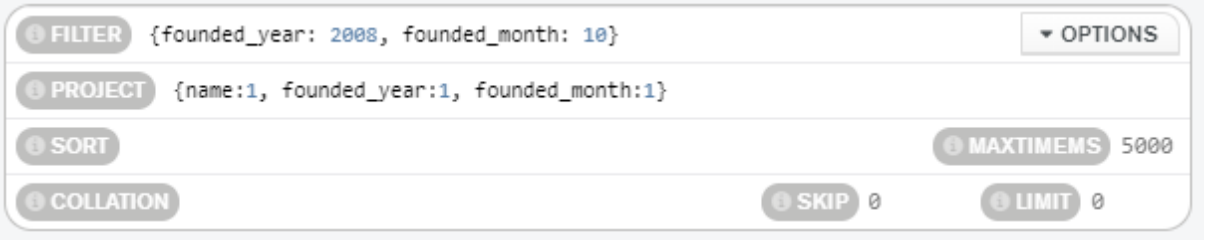
**PS4-7**

FILTER

```
{
 founded_year: 2008,
 founded_month: 10
}
```

PROJECT

```
{
 name: 1,
 founded_year: 1,
 founded_month: 1
}
```




```
_id: ObjectId("52cdef7c4bab8bd6752985ca")
name: "tunesBag"
founded_year: 2008
founded_month: 10
```

```
_id: ObjectId("52cdef7d4bab8bd675298d21")
name: "Muecs"
founded_year: 2008
founded_month: 10
```

```
_id: ObjectId("52cdef7d4bab8bd675299a43")
name: "Rush Hour"
founded_year: 2008
founded_month: 10
```

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

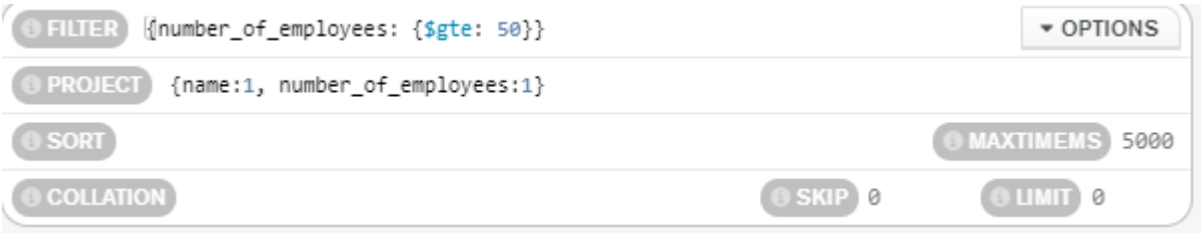
**PS4-8**

FILTER

```
{
 number_of_employees: {
  $gte: 50
 }
}
```

PROJECT

```
{
 name: 1,
 number_of_employees: 1
}
```




```
_id: ObjectId("52cdef7c4bab8bd675297d8e")
name: "Facebook"
number_of_employees: 5299
```

```
_id: ObjectId("52cdef7c4bab8bd675297d94")
name: "Twitter"
number_of_employees: 1300
```

```
_id: ObjectId("52cdef7c4bab8bd675297d97")
name: "Scribd"
number_of_employees: 50
```

```
_id: ObjectId("52cdef7c4bab8bd675297da1")
name: "Plaxo"
number_of_employees: 50
```

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

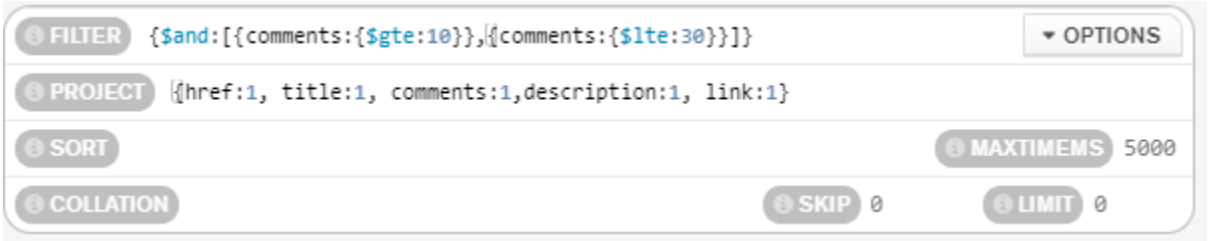
**PS4-9**

FILTER

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

PROJECT

```
{
 href: 1,
 title: 1,
 comments: 1,
 description: 1,
 link: 1
}
```



```
_id: ObjectId("4ba267dc238d3ba3ca000006")
href: "http://digg.com/travel_places/11_Amazing_Treehouses_from_Around_the_Wo..."
title: "11 Amazing Treehouses from Around the World"
comments: 15
description: "Treehouses bring us closer to nature, and appeal to the kid in all of ..."
link: "http://www.thedailygreen.com/green-homes/latest/treehouse-photos-46031..."
```

```
_id: ObjectId("4ba267dc238d3ba3ca00000b")
href: "http://digg.com/space/NASA_The_Wizard_Nebula"
title: "NASA - The Wizard Nebula "
comments: 14
description: "This image of the open star cluster NGC 7380, also known as the Wizard..."
link: "http://www.nasa.gov/multimedia/imagegallery/image_feature_1615.html"
```

```
_id: ObjectId("4ba267dc238d3ba3ca00000c")
href: "http://digg.com/space/WISE_Captures_a_Cosmic_Rose"
title: "WISE Captures a Cosmic Rose"
comments: 12
description: "A new infrared image from NASA's Wide-field Infrared Survey Explorer, ..."
link: "http://www.physorg.com/news187977528.html"
```

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

**PS4-10**

FILTER

```
{
 $and: [
  {
   number_of_employees: {
    $ne: null
   }
  },
  {
   number_of_employees: {
    $ne: 0
   }
  }
 ]
}
```

PROJECT

```
{
 name: 1,
 number_of_employees: 1
}
```

LIMIT

```
1
```


```
_id: ObjectId("52cdef7c4bab8bd675297d8a")
name: "Wetpaint"
number_of_employees: 47
```

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



```
_id: ObjectId("52cdef7c4bab8bd67529856a")
name: "IBM"
number_of_employees: 388000
```

12.- Obtén la historia más comentada.

**PS4-12**

PROJECT

```
{
 comments: 1,
 title: 1
}
```

SORT

```
{
 comments: -1
}
```

LIMIT

```
1
```


```
_id: ObjectId("4ba27ea0238d3ba3ca002251")
title: "Republican Brown wins Massachusetts Senate seat!"
comments: 1864
```

13.- Obtén la historia menos comentada.

**PS4-13**

PROJECT

```
{
 comments: 1,
 title: 1
}
```

SORT

```
{
 comments: 1
}
```

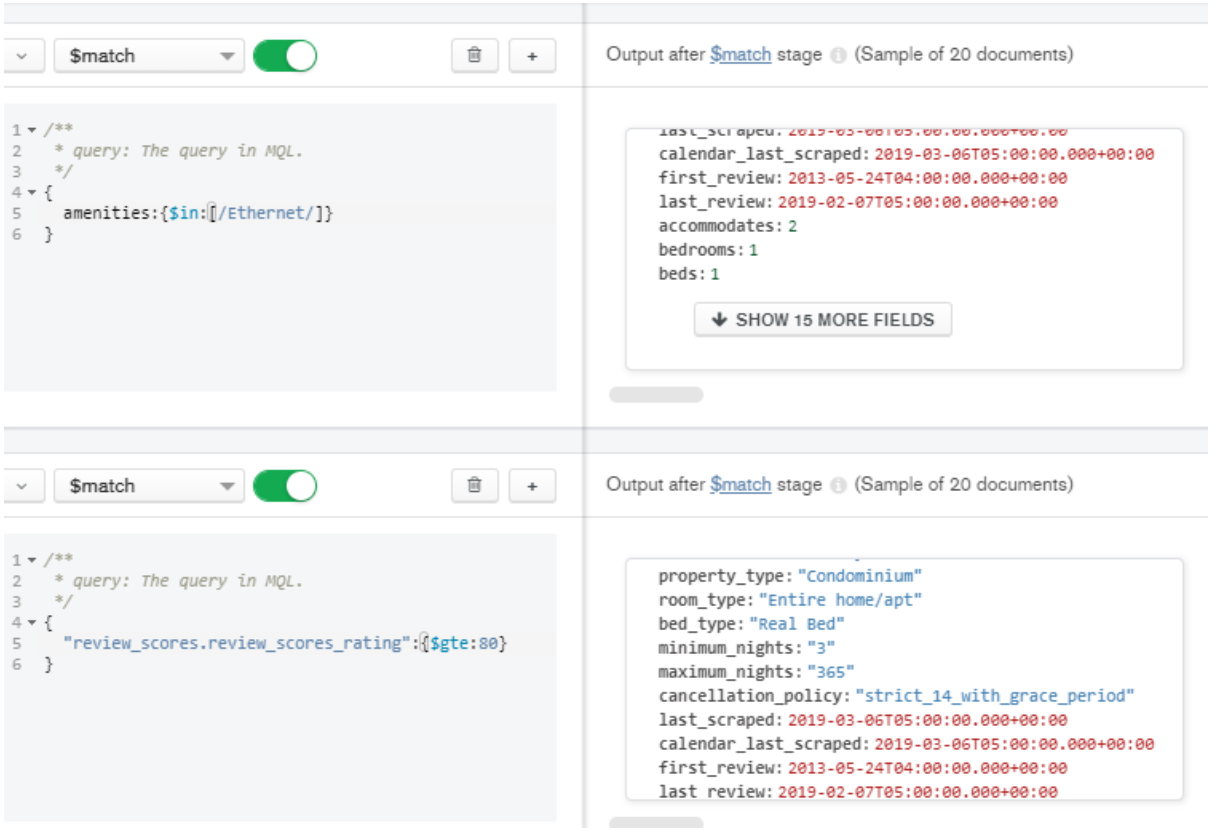
LIMIT

```
1
```


```
_id: ObjectId("4ba27e1a238d3ba3ca002161")
title: "UA Tech Park chosen for $32 million 'Solar Zone' project"
comments: 0
```

**SESION 5**
**PROYECTO**

1. 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

```
/**
 * query: The query in MQL.
 */
{
  number_of_reviews:{$gt:50}
}
```

Output after $match stage (Sample of 20 documents)

```
_id: "1001265"
listing_url: "https://www.airbnb.com/rooms/1001265"
name: "Ocean View Waikiki Marina w/prkg"
summary: "A short distance from Honolulu's billion doll
        mall, and the same dis..."
space: "Great studio located on Ala Moana across the
      street from Yacht Harbor ..."
description: "A short distance from Honolulu's billion
           mall, and the same dis..."
```

$match

```
/**
 * query: The query in MQL.
 */
{
  "address.country_code":"BR"
}
```

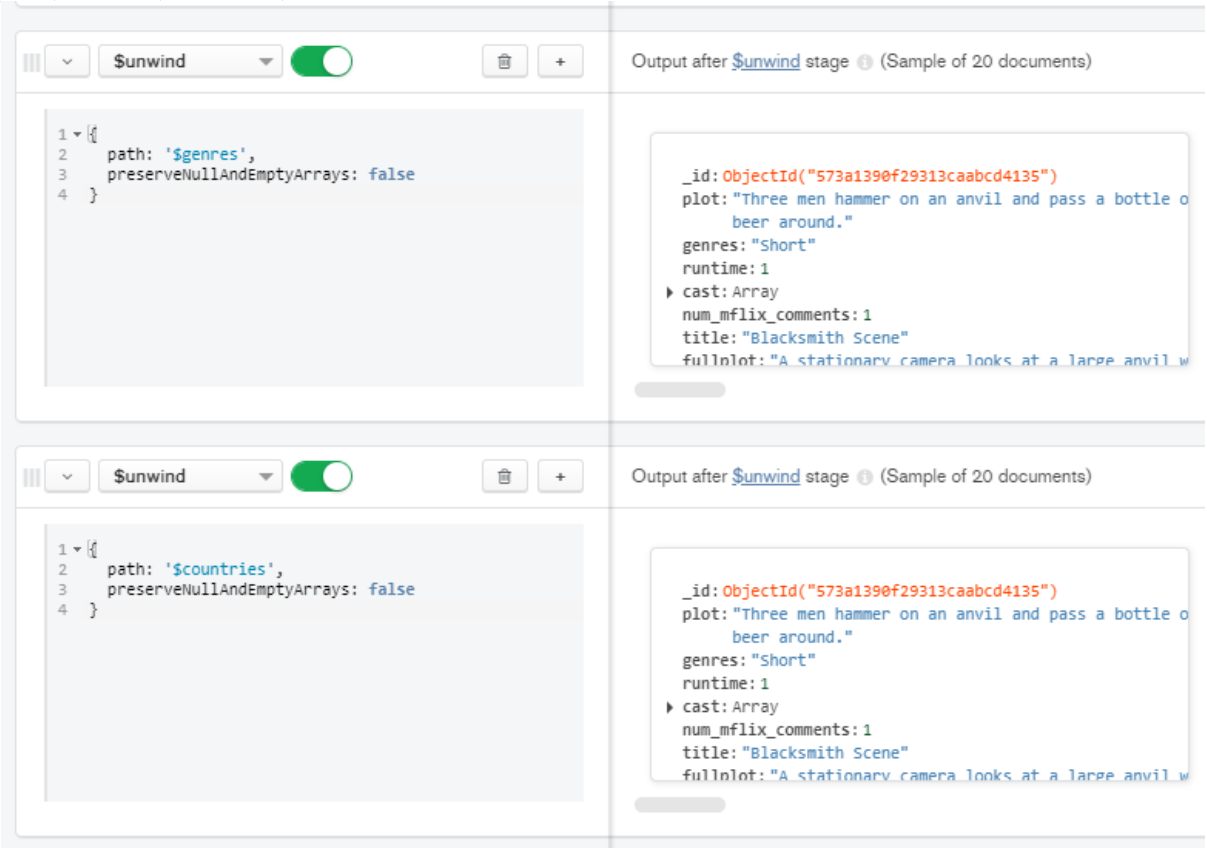
Output after $match stage (Sample of 6 documents)

```
space: "It is a bedroom and living room, charming,
      private, finely decorated, ..."
description: "It is a bedroom and living room, charming
           private, finely decorated, ..."
neighborhood_overview: "There are a lot of bars, restau
                     supermarkets, bakery, banks... I
notes: "1) Enjoy the apartment 2) Enjoy Rio 3) Come bac
      soon"
transit: "Buses, taxis, metro and bicicle, that you can
        rent near to the buildin..."
```

# SESION 6
# PROYECTO

El proyecto consiste en obtener, por país, el número de películas que hay de cada género. Un ejemplo de salida en formato de tabla sería:

| pais | genero | peliculas |
|---|---|---|
| USA | Short | 10 |
| USA | Drama | 20 |
| ... | ... | ... |



```
{
  _id: '$countries',
  total: {
    $push: {
      genero: '$genres',
      titulo: '$title'
    }
  }
}
```

```
_id: "Nepal"
total: Array
```

$unwind

Output after $unwind stage (Sample of 20 documents)

```
{
  path: '$total',
  preserveNullAndEmptyArrays: false
}
```

```
_id: "Canada"
total: Object
```

$addFields

Output after $addFields stage (Sample of 20 documents)

```
{
  genero: '$total.genero'
}
```

```
_id: "Greece"
total: Object
genero: "Drama"
```

$group

Output after $group stage (Sample of 20 documents)

```
{
  _id: {
    pais: '$_id',
    genero: '$genero'
  },
  suma: {
    $sum: 1
  }
}
```

```
_id: Object
suma: 2
```

$addFields

```
{
  pais: '$_id.pais',
  genero: '$_id.genero'
}
```

Output after $addFields stage (Sample of 20 documents)

```
_id: Object
suma: 148
pais: "Australia"
genero: "Comedy"
```

$project

```
{
  _id: 0
}
```

Output after $project stage (Sample of 20 documents)

```
suma: 1
pais: "Guatemala"
genero: "Adventure"
```

$sort

```
{
  pais: 1
}
```

Output after $sort stage (Sample of 20 documents)

```
suma: 1
pais: "Afghanistan"
genero: "Action"
```

Viendo desde la vista.

sample_mflix.JRCAP6 (view on: sample_mflix.movies) MODIFY SOURCE

Documents | Aggregations | Schema | Explain Plan | Indexes

FILTER

VIEW

JRCAP6

| | suma Int32 | pais String | genero String |
|---|---|---|---|
| 1 | 1 | "Algeria" | "Comedy" |
| 2 | 1 | "Albania" | "War" |
| 3 | 4 | "Afghanistan" | "Drama" |
| 4 | 2 | "Algeria" | "Crime" |
| 5 | 13 | "Algeria" | "Drama" |
| 6 | 1 | "Albania" | "Comedy" |

## SESION 7
## PROYECTO

A continuación se realizaran algunas operaciones de agregar, modificar y eliminar un documento JSON en una Colección.

Agregar los siguientes registros en formato CSV a la Colección movies
4000,Avengers: Endgame (2019),Fantasy|Sci-Fi
4001,Glass (2019),Drama|Fantasy

```
FILTER {id: {$in: ["4000", "4001"]}}
```

```
_id: ObjectId("5f1f25d8549a9edc90f26dd2")
id: "4000"
titulo: "Avengers: Endgame (2019)"
genres: "Fantasy|Sci-Fi"
```

```
_id: ObjectId("5f1f26b5549a9edc90f26dd3")
id: "4001"
titulo: "Glass (2019)"
genres: "Drama|Fantasy"
```

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"
    }
  ]
}
```

```
_id: ObjectId("5f1f26b5549a9edc90f26dd3")
id: "4001"
titulo: "Glass (2019)"
genres: "Drama|Fantasy"
valoraciones: Array
  0: Object
      userid: "1563"
      movieid: "4001"
      rating: "4"
  1: Object
      userid: "434"
      movieid: "4001"
      rating: "5"
```

## RETOS
## SESION 1

RETO 1

Usando la base de datos tienda, muestra la descripción de las tablas articulo, puesto y venta. Por cada tipo de dato que encuentras llena la siguiente tabla, a mano. Usa la Documentación de MySQL como referencia.

```
4 • describe articulo;
```

Result Grid | Filter Rows: | Export:

| Field | Type | Null | Key | Default | Extra |
|---|---|---|---|---|---|
| id_articulo | int | NO | PRI | NULL | |
| nombre | varchar(45) | NO | | NULL | |
| precio | double | NO | | NULL | |
| iva | double | NO | | NULL | |
| cantidad | int | NO | | 0 | |

```
4 • describe puesto;
```

Result Grid | Filter Rows: | Export:

| Field | Type | Null | Key | Default |
|---|---|---|---|---|
| id_puesto | int | NO | PRI | NULL |
| nombre | varchar(45) | NO | | NULL |
| salario | double | NO | | NULL |

```
4 • describe venta;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| Field | Type | Null | Key | Default | Extra |
|---|---|---|---|---|---|
| id_venta | int | NO | PRI | NULL | |
| id_articulo | int | NO | MUL | NULL | |
| id_empleado | int | NO | MUL | NULL | |
| clave | varchar(45) | NO | | NULL | |
| fecha | timestamp | NO | | CURRENT_TIMESTAMP | DEFAULT_GENERATED on update CURRENT_TI... |

RETO 2

Usando la base de datos `cursos`, escribe consultas que permitan responder las siguientes preguntas.

¿Cuál es el nombre de los empleados con el puesto 4?

```
4 • select * from puesto where id_puesto = 4;
```

Result Grid | Filter Rows: | Edit:

| id_puesto | nombre | salario |
|---|---|---|
| 4 | Staff Scientist | 14965.31 |
| NULL | NULL | NULL |

¿Qué puestos tienen un salario mayor a $10,000?

```
5 •  select * from puesto where salario > 10000;
```

Result Grid | Filter Rows: | Edit:

| id_puesto | nombre | salario |
|---|---|---|
| 1 | Analog Circuit Design manager | 28500.98 |
| 2 | Junior Executive | 10508.47 |
| 3 | Director of Sales | 28725.56 |
| 4 | Staff Scientist | 14965.31 |
| 5 | Desktop Support Technician | 15885.41 |
| 6 | Budget/Accounting Analyst III | 17131.23 |
| 7 | Accounting Assistant III | 29257.91 |
| 8 | Programmer Analyst II | 23223.95 |

¿Qué articulos tienen un precio mayor a $1,000 y un iva mayor a 100?

```
5 •  select * from articulo where precio >1000 and iva > 100;
```

Result Grid | Filter Rows: | Edit: | Export/I

| id_articulo | nombre | precio | iva | cantidad |
|---|---|---|---|---|
| 2 | Pasta - Angel Hair | 4391.73 | 959.51 | 503 |
| 3 | Soup Campbells - Tomato Bisque | 2991.35 | 587.59 | 604 |
| 4 | Wine - Valpolicella Masi | 2625.2 | 770.1 | 575 |
| 5 | Mousse - Banana Chocolate | 3701.62 | 893.46 | 248 |
| 7 | Nantucket - Kiwi Berry Cktl. | 5579.47 | 1012.33 | 527 |
| 8 | Wine - Fontanafredda Barolo | 2684.64 | 327.16 | 682 |
| 9 | Lotus Rootlets - Canned | 1996.46 | 324.72 | 636 |
| 10 | Wine - Vovray Sec Domaine Huet | 6066.99 | 890.47 | 397 |

¿Qué ventas incluyen los artículo 135 o 963 y fueron hechas por los empleados 835 o 369?

```
5 •  select * from venta where id_articulo = 135 or id_articulo =963
6    and id_empleado = 835 and id_empleado = 369;
```

Result Grid | Filter Rows: | Edit: | Export/Import:

| id_venta | id_articulo | id_empleado | clave | fecha |
|---|---|---|---|---|
| 6 | 135 | 835 | 0049-0032 | 2020-02-03 15:05:27 |
| 614 | 135 | 436 | 52125-277 | 2020-02-03 15:04:57 |
| NULL | NULL | NULL | NULL | NULL |

RETO 3

Usando la base de datos `tienda`, escribe una consulta que permita obtener el top 5 de puestos por salarios.

```
4 •  select * from puesto order by salario desc limit 5;
```

Result Grid | Filter Rows: | Edit:

| id_puesto | nombre | salario |
|---|---|---|
| 494 | Sales Representative | 29996.58 |
| 18 | Speech Pathologist | 29967.17 |
| 487 | Analog Circuit Design manager | 29923.95 |
| 79 | Junior Executive | 29916.06 |
| 893 | Technical Writer | 29912.53 |
| NULL | NULL | NULL |

## SESION 2

RETO 1

¿Qué artículos incluyen la palabra `Pasta` en su nombre?

```
9 •  select * from articulo where nombre like 'Pasta%';
```

Result Grid | Filter Rows: | Edit: | Export/

| id_articulo | nombre | precio | iva | cantidad |
|---|---|---|---|---|
| 2 | Pasta - Angel Hair | 4391.73 | 959.51 | 503 |
| 27 | Pasta - Elbows, Macaroni, Dry | 3668.7 | 253.66 | 392 |
| 70 | Pasta - Shells, Medium, Dry | 801.74 | 773.8 | 206 |
| 91 | Pasta - Cheese / Spinach Bauletti | 5811.44 | 619.36 | 15 |
| 134 | Pasta - Orzo, Dry | 6537.91 | 1113.99 | 906 |
| 213 | Pasta - Rotini, Colour, Dry | 1830.13 | 373.98 | 309 |
| 233 | Pasta - Cannelloni, Sheets, Fresh | 2316.37 | 605.55 | 307 |
| 327 | Pasta - Cappellini, Dry | 6994.49 | 766.18 | 828 |
| 361 | Pasta - Penne, Rigate, Dry | 2222.62 | 584.88 | 276 |

¿Qué artículos incluyen la palabra `Cannelloni` en su nombre?

```
10 •  select * from articulo where nombre like '%Cannelloni%';
```

Result Grid | Filter Rows: | Edit: | Export/Impo

| id_articulo | nombre | precio | iva | cantidad |
|---|---|---|---|---|
| 233 | Pasta - Cannelloni, Sheets, Fresh | 2316.37 | 605.55 | 307 |
| NULL | NULL | NULL | NULL | NULL |

¿Qué nombres están separados por un guión (-) por ejemplo `Puree - Kiwi`?

```
11 •  select * from articulo where nombre like '%-%';
```

Result Grid | Filter Rows: | Edit: | Expo

| id_articulo | nombre | precio | iva | cantidad |
|---|---|---|---|---|
| 1 | Chocolate - Feathers | 2738.93 | 12.26 | 144 |
| 2 | Pasta - Angel Hair | 4391.73 | 959.51 | 503 |
| 3 | Soup Campbells - Tomato Bisque | 2991.35 | 587.59 | 604 |
| 4 | Wine - Valpolicella Masi | 2625.2 | 770.1 | 575 |
| 5 | Mousse - Banana Chocolate | 3701.62 | 893.46 | 248 |
| 6 | Yeast Dry - Fleischman | 923.18 | 524.08 | 818 |
| 7 | Nantucket - Kiwi Berry Cktl. | 5579.47 | 1012.33 | 527 |
| 8 | Wine - Fontanafredda Barolo | 2684.64 | 327.16 | 682 |
| 9 | Lotus Rootlets - Canned | 1996.46 | 324.72 | 636 |

RETO 2

¿Cuál es el promedio de salario de los puestos?

```
22 •  select avg(salario) as "promedio" from puesto;
```

Result Grid | Filter Rows: | Export: | Wrap

| promedio |
|---|
| 19595.051179999973 |

¿Cuántos artículos incluyen la palabra `Pasta` en su nombre?

```
23 •  select * from articulo where nombre like '%Pasta%';
```

Result Grid | Filter Rows: | Edit: | Export/

| id_articulo | nombre | precio | iva | cantidad |
|---|---|---|---|---|
| 2 | Pasta - Angel Hair | 4391.73 | 959.51 | 503 |
| 27 | Pasta - Elbows, Macaroni, Dry | 3668.7 | 253.66 | 392 |
| 70 | Pasta - Shells, Medium, Dry | 801.74 | 773.8 | 206 |
| 91 | Pasta - Cheese / Spinach Bauletti | 5811.44 | 619.36 | 15 |

¿Cuál es el salario mínimo y máximo?

```
24 •  select max(salario) as "Maximo" from puesto;
```

Result Grid | Filter Rows: | Export: | Wra

| Maximo |
|---|
| 29996.58 |

```
24 •  select min(salario) as "Minimo" from puesto;
```

Result Grid | Filter Rows: | Export: | Wra

| Minimo |
|---|
| 10013.44 |

¿Cuál es la suma del salario de los últimos cinco puestos agregados?

```
25 •  select sum(salario) as "Promedio" from puesto order by salario desc limit 5;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| Promedio |
|---|
| 19595051.179999974 |

RETO 3

¿Cuántos registros hay por cada uno de los puestos?

```
34 •  select nombre, count(*) as cantidad from puesto group by nombre;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| nombre | cantidad |
|---|---|
| Analog Circuit Design manager | 8 |
| Junior Executive | 8 |
| Director of Sales | 8 |
| Staff Scientist | 9 |
| Desktop Support Technician | 5 |
| Budget/Accounting Analyst III | 4 |

¿Cuánto dinero se paga en total por puesto?

```
36 •  select nombre, sum(salario) from puesto group by nombre;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| nombre | sum(salario) |
|---|---|
| Analog Circuit Design manager | 179310.18000000002 |
| Junior Executive | 156846.26 |
| Director of Sales | 136630.69 |
| Staff Scientist | 157528.98 |
| Desktop Support Technician | 92315.22 |
| Budget/Accounting Analyst III | 70107.77 |
| Accounting Assistant III | 78947.08 |
| Programmer Analyst II | 35658.78 |
| Nurse Practicioner | 296384.04 |

¿Cuál es el número total de ventas por vendedor?

```
37 •  select id_empleado, count(clave) as ventas from venta group by id_empleado;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| id_empleado | ventas |
|---|---|
| 2 | 2 |
| 3 | 2 |
| 4 | 1 |
| 5 | 1 |

¿Cuál es el número total de ventas por artículo?

```
38 •  select id_articulo, count(*) from venta group by id_articulo;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| id_articulo | count(*) |
|---|---|
| 2 | 1 |
| 3 | 1 |
| 4 | 2 |
| 8 | 1 |

RETO 4

¿Cuál es el nombre de los empleados cuyo sueldo es menor a $10,000?

```
7  •  select nombre, apellido_paterno
8     from empleado
9     where id_puesto IN
10    (select id_puesto from puesto where salario < 20000);
11    --
```

esult Grid | Filter Rows: | Export: | Wrap Cell Content:

| nombre | apellido_paterno |
|---|---|
| Norrie | McGarrie |
| Maxy | Udden |
| Della | Fulbrook |
| Katya | Banbridge |
| Robyn | Hancock |
| Hayyim | Verdon |
| Analise | Beteriss |
| Artair | Dearn |

¿Cuál es la cantidad mínima y máxima de ventas de cada empleado?

```
12 •  select id_empleado, min(total_ventas), max(total_ventas)
13    from
14    (select clave, id_empleado, count(*) total_ventas
15    from venta
16    group by clave, id_empleado) as sq
17    group by id_empleado;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| id_empleado | min(total_ventas) | max(total_ventas) |
|---|---|---|
| 569 | 1 | 1 |
| 413 | 1 | 2 |
| 765 | 1 | 1 |
| 119 | 1 | 1 |
| 90 | 1 | 1 |
| 835 | 1 | 1 |
| 369 | 1 | 1 |
| 555 | 1 | 1 |

¿Cuál es el nombre del puesto de cada empleado?

```
20 •  SELECT nombre, apellido_paterno, (SELECT nombre FROM puesto p WHERE p.id_puesto = e.id_puesto)
21    FROM empleado e;
22
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

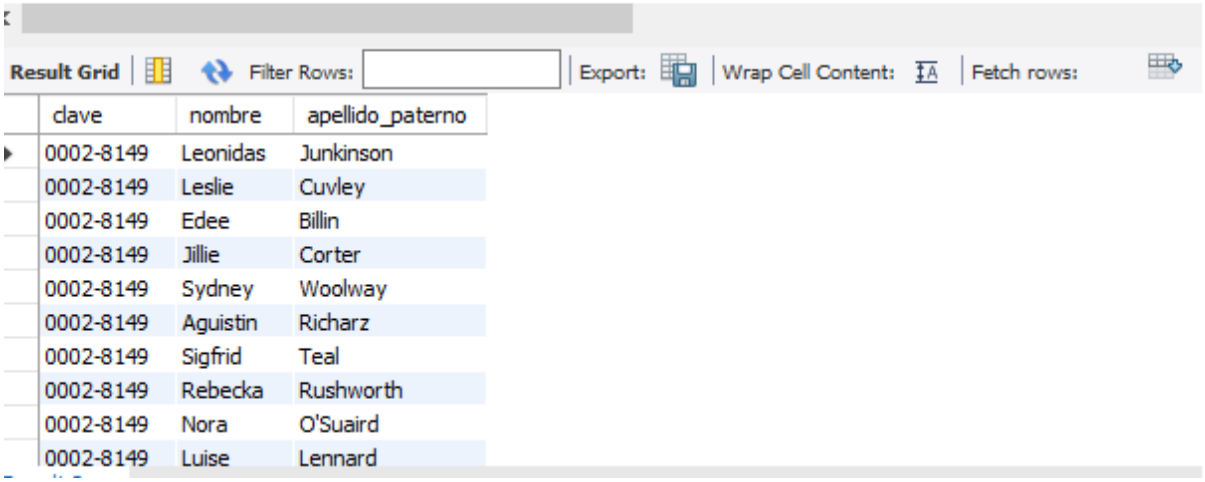
| nombre | apellido_paterno | (SELECT nombre FROM puesto p WHERE p.id_puesto = e.id_puesto) |
|---|---|---|
| Enrichetta | Bodechon | Product Engineer |
| Morey | Bowskill | Budget/Accounting Analyst IV |
| Jeannette | Potes | Occupational Therapist |
| Cassey | Womersley | Financial Advisor |
| Gnni | Risom | Physical Therapy Assistant |
| Lisle | Carlsson | Marketing Assistant |
| Andre | Theurer | Tax Accountant |
| Land | Locksley | Product Engineer |
| Nikki | Fayerbrother | Sales Associate |

## SESION 3

RETO 1

¿Cuál es el nombre de los empleados que realizaron cada venta?

```
4 •  select clave, nombre, apellido_paterno from venta as v join empleado as e
5      on v.id_empleado = e.id_empleado order by clave;
```

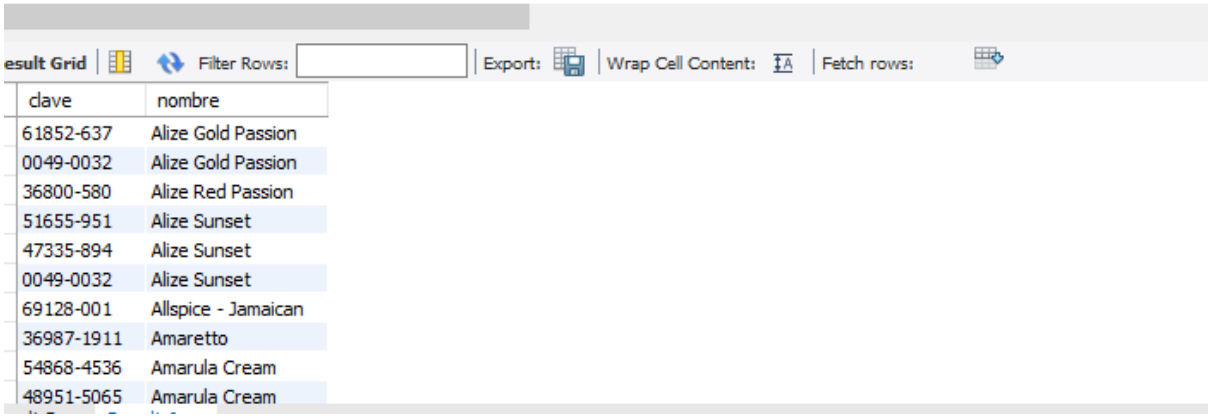


Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

| clave | nombre | apellido_paterno |
|---|---|---|
| 0002-8149 | Leonidas | Junkinson |
| 0002-8149 | Leslie | Cuvley |
| 0002-8149 | Edee | Billin |
| 0002-8149 | Jillie | Corter |
| 0002-8149 | Sydney | Woolway |
| 0002-8149 | Aguistin | Richarz |
| 0002-8149 | Sigfrid | Teal |
| 0002-8149 | Rebecka | Rushworth |
| 0002-8149 | Nora | O'Suaird |
| 0002-8149 | Luise | Lennard |

¿Cuál es el nombre de los artículos que se han vendido?

```
7 •  select clave, nombre from venta as v join articulo as a on v.id_articulo = a.id_articulo
8    order by nombre;
```



esult Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

| clave | nombre |
|---|---|
| 61852-637 | Alize Gold Passion |
| 0049-0032 | Alize Gold Passion |
| 36800-580 | Alize Red Passion |
| 51655-951 | Alize Sunset |
| 47335-894 | Alize Sunset |
| 0049-0032 | Alize Sunset |
| 69128-001 | Allspice - Jamaican |
| 36987-1911 | Amaretto |
| 54868-4536 | Amarula Cream |
| 48951-5065 | Amarula Cream |

¿Cuál es el total de cada venta?

```
10 •  select clave, sum(precio) as total from venta as v join articulo as a
11    on v.id_articulo = a.id_articulo group by id_venta;
12
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

| clave | total |
|---|---|
| 0228-3661 | 3714.37 |
| 52125-277 | 1157.42 |
| 0049-0032 | 4788.24 |
| 52125-277 | 4786.97 |
| 13107-062 | 5816.84 |
| 0049-0032 | 5066.16 |
| 47335-894 | 2735.46 |
| 52125-277 | 1133.63 |
| 0049-0032 | 2115.44 |
| 13107-062 | 2689.33 |

RETO 2

Obtener el puesto de un empleado.

```
1 •  CREATE
2        ALGORITHM = UNDEFINED
3        DEFINER = `root`@`%`
4        SQL SECURITY DEFINER
5    VIEW `vistaRCA` AS
6        SELECT
7            CONCAT(`e`.`nombre`,
8                    ' ',
9                    `e`.`apellido_paterno`) AS `concat(e.nombre, ' ', e.apellido_paterno)`,
10           `p`.`nombre` AS `nombre`
11       FROM
12           (`empleado` `e`
13           JOIN `puesto` `p` ON ((`e`.`id_puesto` = `p`.`id_puesto`)))
```

```
select * from vistaRCA;
```

| concat(e.nombre,'', e.apellido_paterno) | nombre |
|---|---|
| Enrichetta Bodechon | Product Engineer |
| Morey Bowskill | Budget/Accounting Analyst IV |
| Jeannette Potes | Occupational Therapist |
| Cassey Womersley | Financial Advisor |
| Gnni Risom | Physical Therapy Assistant |
| Lisle Carlsson | Marketing Assistant |
| Andre Theurer | Tax Accountant |
| Land Locksley | Product Engineer |
| Nikki Fayerbrother | Sales Associate |

Saber qué artículos ha vendido cada empleado.

```
CREATE
    ALGORITHM = UNDEFINED
    DEFINER = `root`@`%`
    SQL SECURITY DEFINER
VIEW `RCA_empleado_articulo` AS
    SELECT
        CONCAT(`e`.`nombre`,
                ' ',
                `e`.`apellido_paterno`) AS `Nombre`,
        `a`.`nombre` AS `Articulo`
    FROM
        ((`empleado` `e`
        JOIN `venta` `v` ON ((`e`.`id_empleado` = `v`.`id_empleado`)))
        JOIN `articulo` `a` ON ((`v`.`id_articulo` = `a`.`id_articulo`)))
    ORDER BY CONCAT(`e`.`nombre`,
```

```
select * from RCA_empleado_articulo;
```

| Nombre | Articulo |
|---|---|
| Aaren Pryce | Lemonade - Pineapple Passion |
| Aaren Pryce | Honey - Liquid |
| Aaron Klossmann | Bread - 10 Grain Parisian |
| Aaron Klossmann | Beans - Long, Chinese |
| Abagael Buzzing | Food Colouring - Green |
| Abbie Tibald | Chef Hat 25cm |
| Abigail Shama | Tilapia - Fillets |
| Adan Bauckham | Mix Pina Colada |
| Adan Bauckham | Bread - Bistro White |
| Adan Berthelmot | Steampan Lid |

Saber qué puesto ha tenido más ventas.

```
CREATE
    ALGORITHM = UNDEFINED
    DEFINER = `root`@`%`
    SQL SECURITY DEFINER
VIEW `RCA_puesto_ventas` AS
    SELECT
        `p`.`nombre` AS `Puesto`, COUNT(`v`.`clave`) AS `Cantidad`
    FROM
        ((`puesto` `p`
        JOIN `empleado` `e` ON ((`p`.`id_puesto` = `e`.`id_puesto`)))
        JOIN `venta` `v` ON ((`v`.`id_empleado` = `e`.`id_empleado`)))
    GROUP BY `Puesto`
    ORDER BY `Cantidad` DESC
    LIMIT 1
```

```
select * from RCA_puesto_ventas;
```

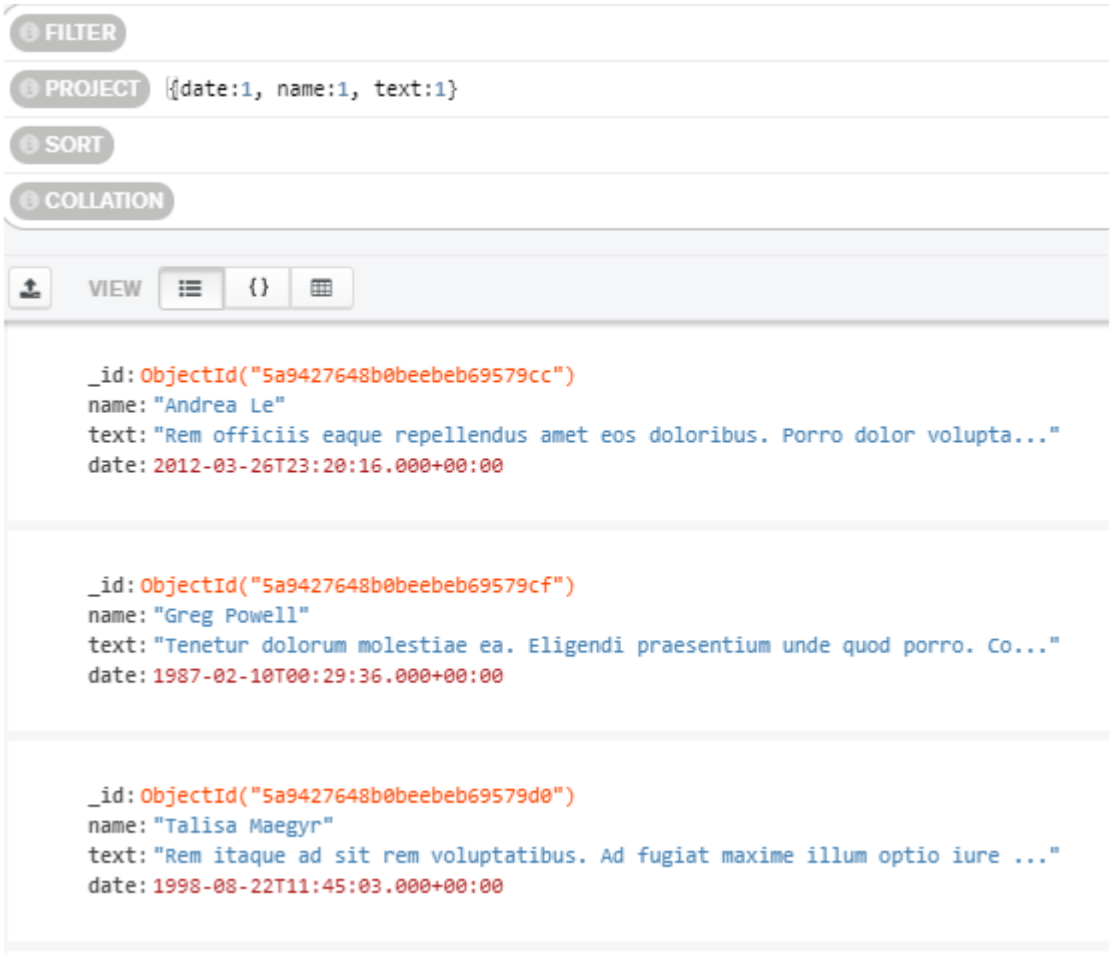
| Puesto | Cantidad |
|---|---|
| Physical Therapy Assistant | 23 |

## SESION 4

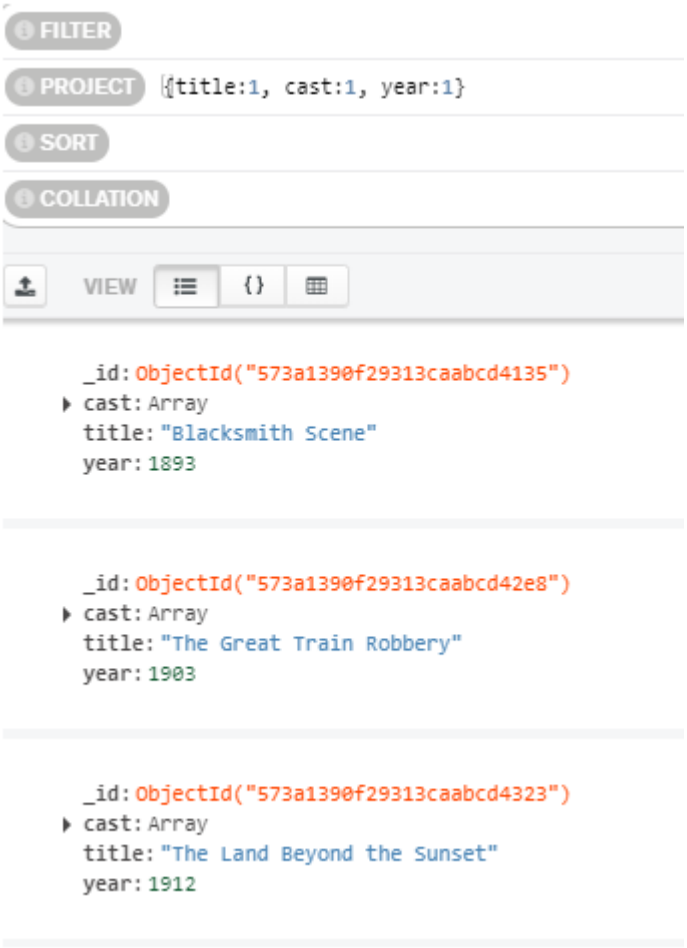
RETO 1

Usando la base de datos sample_mflix, proyecta los datos que se solicitan.

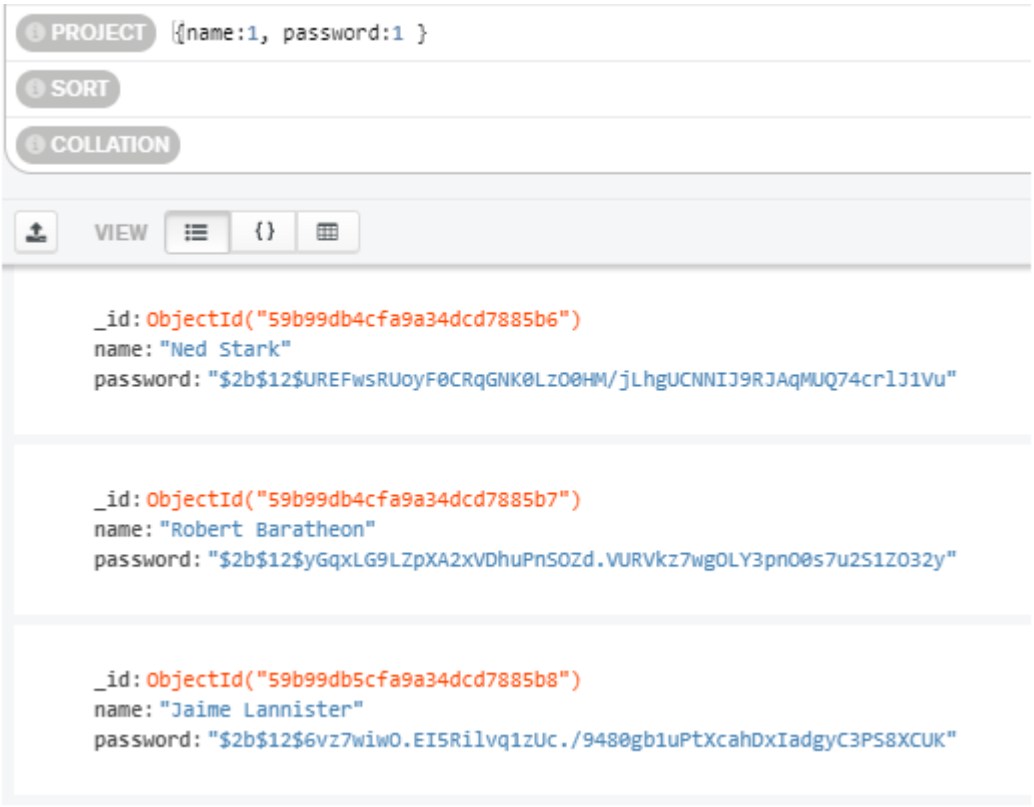
Fecha, nombre y texto de cada comentario.



Título, elenco y año de cada película.



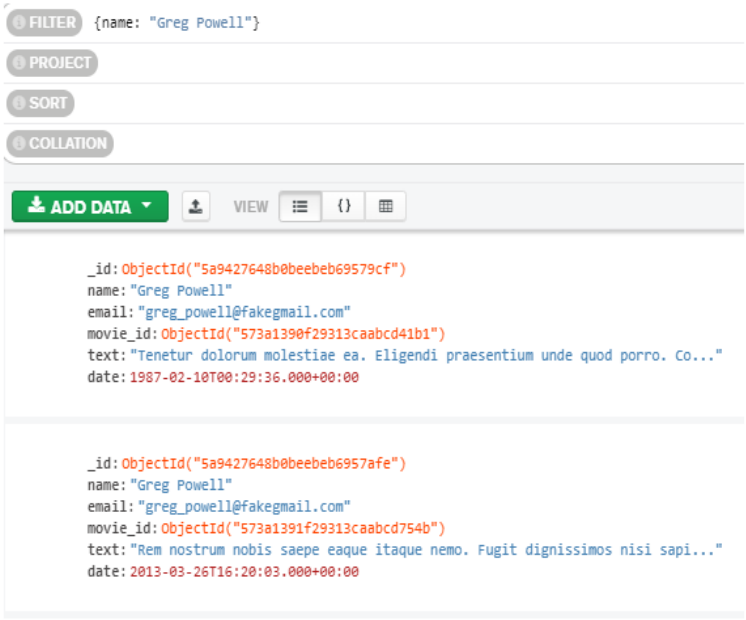
Nombre y contraseña de cada usuario.



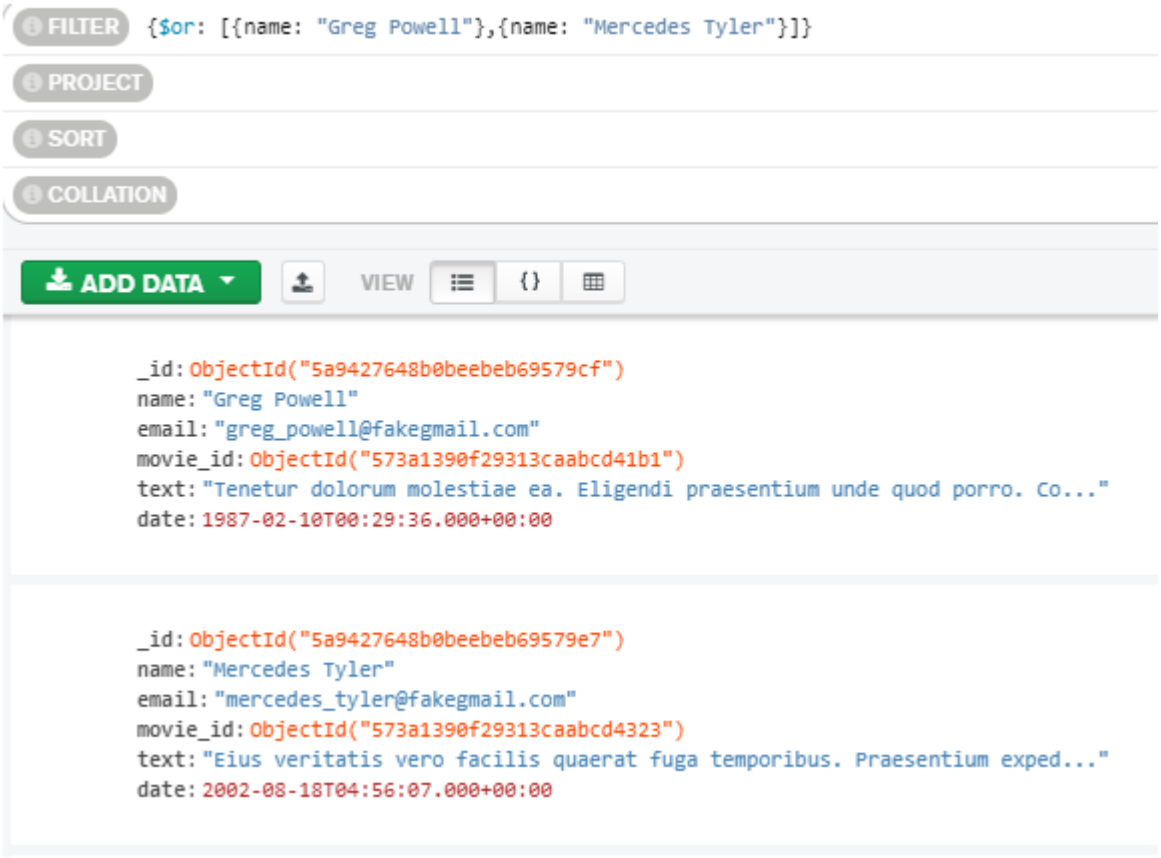

RETO 2

Usando la base de datos sample_mflix, agrega proyeccciones, filtros, ordenamientos y límites que permitan contestar las siguientes preguntas.

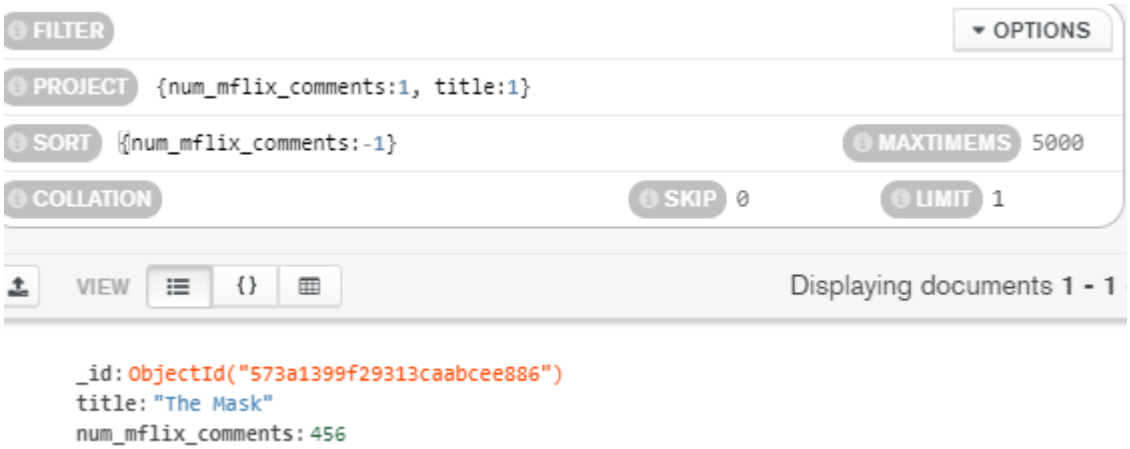
¿Qué comentarios ha hecho Greg Powell?



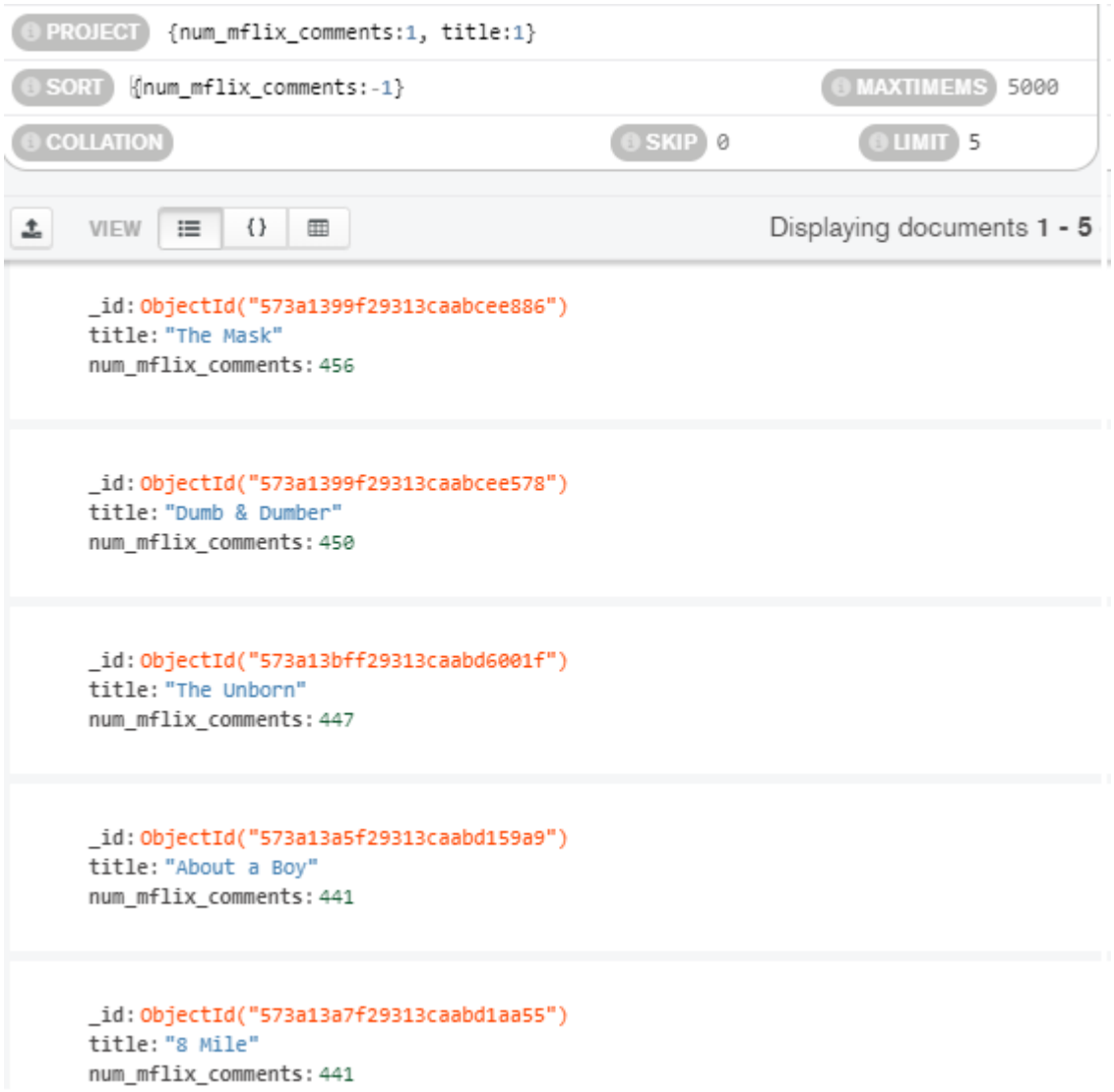
¿Qué comentarios han hecho Greg Powell o Mercedes Tyler?




¿Cuál es el máximo número de comentarios en una película?



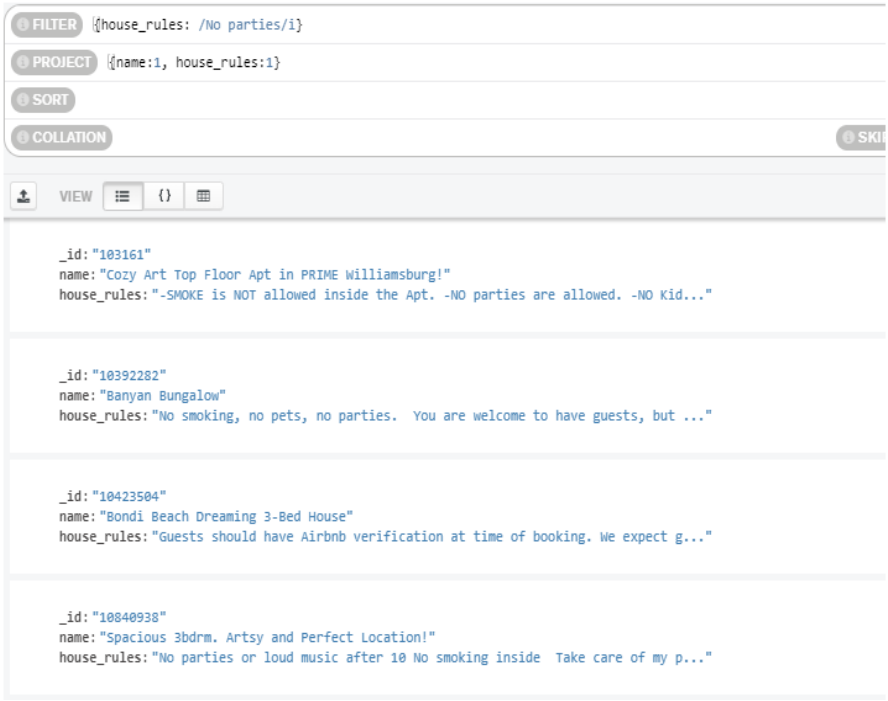
¿Cuál es título de las cinco películas más comentadas?



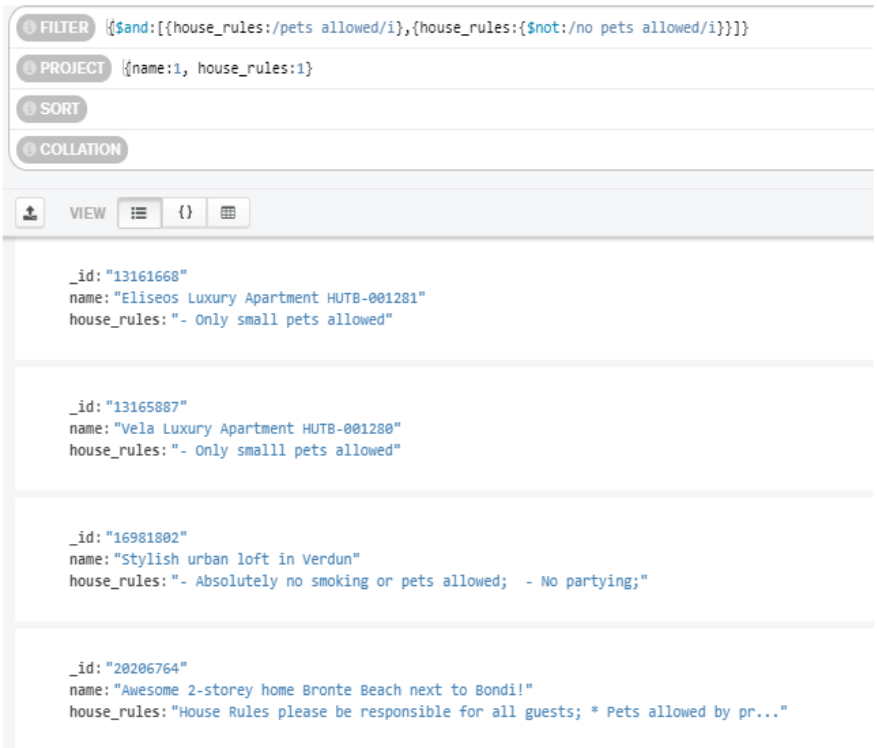
## SESION 5

RETO 1

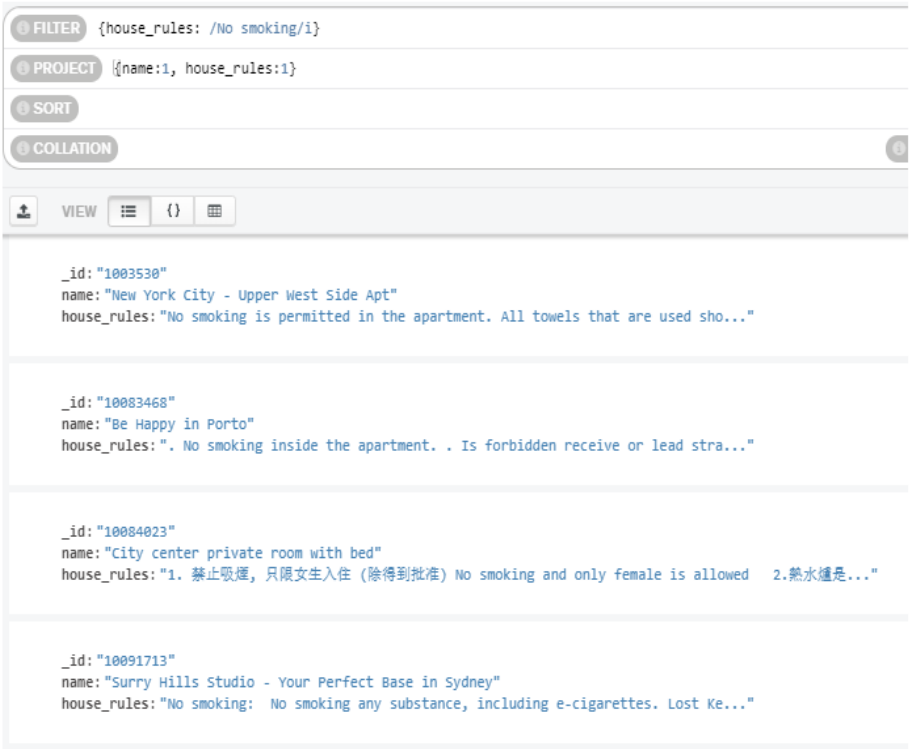
a) Propiedades que no permitan fiestas.



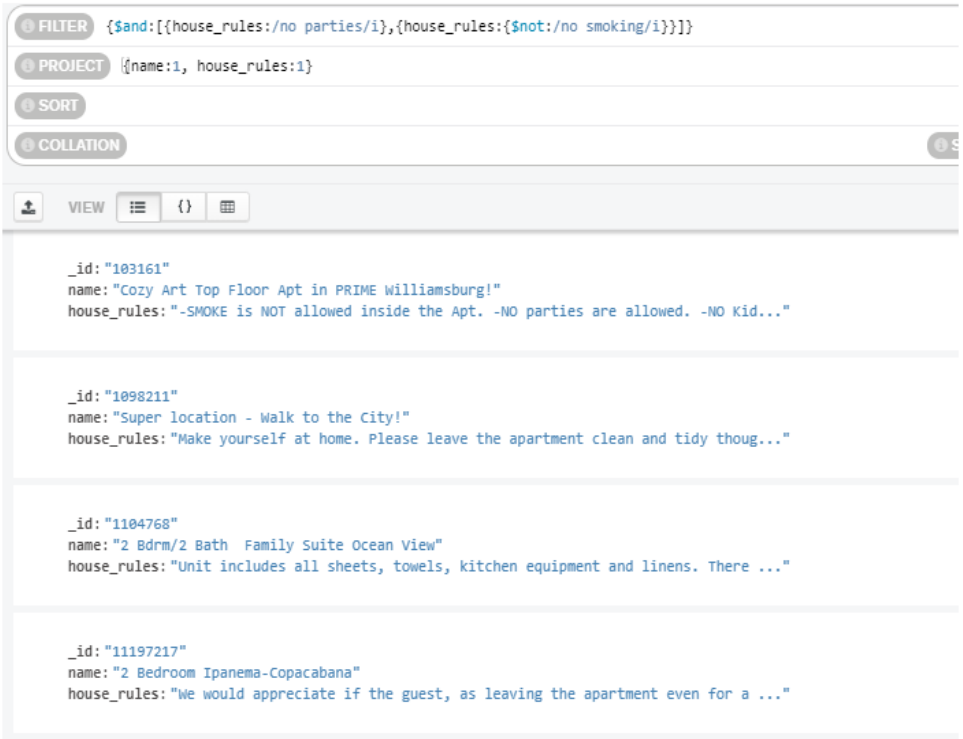

b) Propiedades que admitan mascotas.



c) Propiedades que no permitan fumadores.



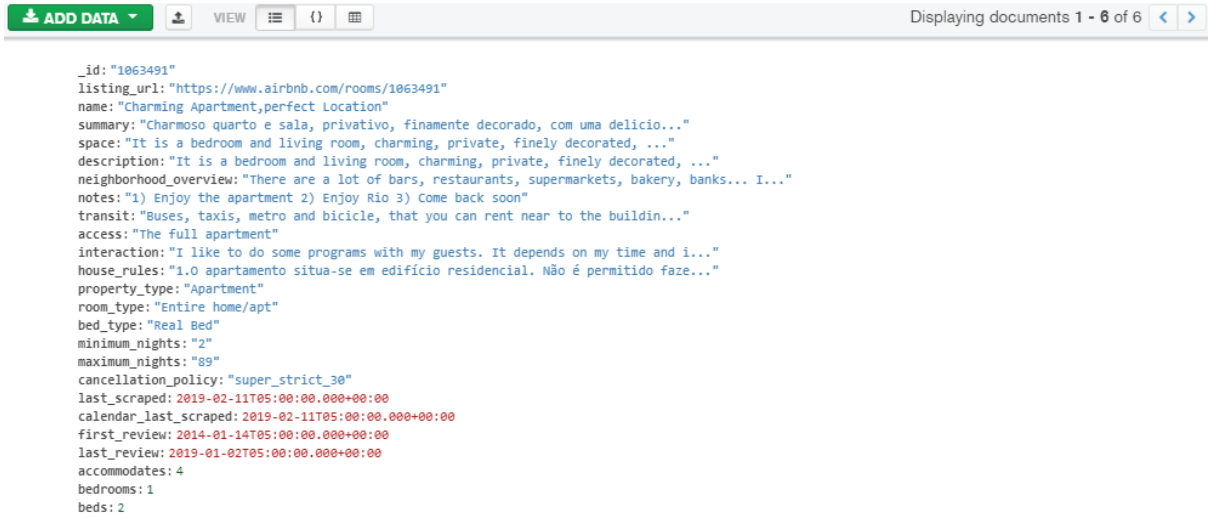

d) Propiedades que no permitan fiestas ni fumadores.



RETO 2

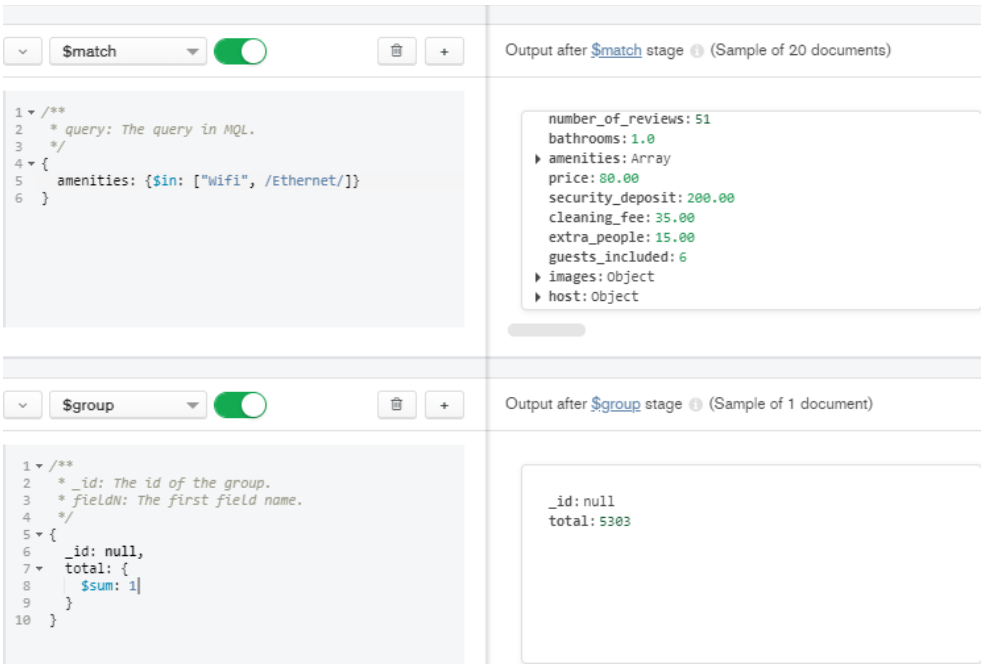
a) Usando la colección `sample_airbnb.listingsAndReviews`, agrega un filtro que permita obtener todas las publicaciones que tengan 50 o más comentarios, que la valoración sea mayor o igual a 80, que cuenten con conexión a Internet vía cable y estén ubicada en Brazil.

{number_of_reviews:{$gt:50 },"address.country": "Brazil","review_scores.review_scores_rating": { $gte: 80 },amenities: {$in: [/Ethernet/]}}




RETO 3

a) Usando la colección `sample_airbnb.listingsAndReviews`, mediante el uso de agregaciones, encontrar el número de publicaciones que tienen conexión a Internet, sea desde Wifi o desde cable (Ethernet).



## SESION 6

RETO 1
Con base en el ejemplo 1, modifica el agrupamiento para que muestre el costo promedio por habitación por país de las propiedades de tipo casa.

```
[{$match: {
  property_type: "House",
  bedrooms:{$gte: 1}
}}, {$addFields: {
  costo_recamara: {$divide: ["$price" , "$bedrooms"]}
}}, {$group: {
  _id: "$address.country",
  recamaras: {
    $sum: 1
  },
  total: {
    $sum: "$costo_recamara"
  }
}}, {$addFields: {
  pais: "$_id",
  costo_promedio: {
    $divide: ["$total","$recamaras"]
  }
}}, {$project: {
  _id:0,
  pais:1,
  costo_promedio:1
}}]
```

$match

```
/**
 * query: The query in MQL.
 */
{
  property_type: "House",
  bedrooms:{$gte: 1}
}
```

Output after $match stage (Sample of 20 documents)

```
_id: "16253247"
listing_url: "https://www.airbnb.com/rooms/16253247"
name: "Gorgeous Remodeled Modern Home w/ Beach Across St."
summary: "Newly remodeled! Gorgeous home with fully remodeled master bedroom + b..."
space: "Guests love: - Mid Century Modern Main house: upgraded king bed, newly..."
description: "Newly remodeled! Gorgeous home with fully
```

$addFields

```
{
  costo_recamara: {$divide: ["$price" , "$bedrooms"]}
}
```

Output after $addFields stage (Sample of 20 documents)

```
▸ images: Object
▸ host: Object
▸ address: Object
▸ availability: Object
▸ review_scores: Object
▸ reviews: Array
  costo_recamara: 97.00
```

HIDE 15 FIELDS

$group

```
/**
 * _id: The id of the group.
 * fieldN: The first field name.
 */
{
  _id: "$address.country",
  recamaras: {
    $sum: 1
  },
  total: {
    $sum: "$costo_recamara"
  }
}
```

Output after $group stage (Sample of 9 documents)

```
_id: "Australia"
recamaras: 166
total: 17891.328571428571428571428571428571428571428571
```

$addFields

```
/**
 * newField: The new field name.
 * expression: The new field expression.
 */
{
  pais: "$_id",
  costo_promedio: {
    $divide: ["$total","$recamaras"]
  }
}
```

Output after $addFields stage (Sample of 9 documents)

```
_id: "United States"
recamaras: 189
total: 21495.749999999999999999999999999999999999999999
pais: "United States"
costo_promedio: 113.73412698412698412698412698412698412698412698
```


RETO 2

Usando las colecciones `comments` y `users`, se requiere conocer el correo y contraseña de cada persona que realizó un comentario. Construye un pipeline que genere como resultado estos datos.

```
[{$lookup: {
  from: 'users',
  localField: 'email',
  foreignField: 'email',
  as: 'user'
}}, {$addFields: {
  usr_obj :{$arrayElemAt:["$user",0]}
}}, {$match: {
  usr_obj :{$exists:true}
}}, {$addFields: {
  usuario_password: "$usr_obj.password"
}}, {$project: {
  _id:0,
  name:1,
  usuario_password:1,
  email:1
}}]
```

$lookup

```
/**
 * from: The target collection.
 * localField: The local join field.
 * foreignField: The target join field.
 * as: The name for the results.
 * pipeline: The pipeline to run on the joined colle
 * let: Optional variables to use in the pipeline fi
 */
{
  from: 'users',
  localField: 'email',
  foreignField: 'email',
  as: 'user'
}
```

Output after $lookup stage (Sample of 20 documents)

```
_id: ObjectId("5a9427648b0beebeb69579cc")
name: "Andrea Le"
email: "andrea_le@fakegmail.com"
movie_id: ObjectId("573a1390f29313caabcd418c")
text: "Rem officiis eaque repellendus amet eos
      doloribus. Porro dolor volupta..."
date: 2012-03-26T23:20:16.000+00:00
▸ user: Array
```

$addFields

```
/**
 * newField: The new field name.
 * expression: The new field expression.
 */
{
  usr_obj :{$arrayElemAt:["$user",0]}
}
```

Output after $addFields stage (Sample of 20 documents)

```
_id: ObjectId("5a9427648b0beebeb69579cc")
name: "Andrea Le"
email: "andrea_le@fakegmail.com"
movie_id: ObjectId("573a1390f29313caabcd418c")
text: "Rem officiis eaque repellendus amet eos
      doloribus. Porro dolor volupta..."
date: 2012-03-26T23:20:16.000+00:00
▸ user: Array
▸ usr_obj: Object
```

$match

```
/**
 * query: The query in MQL.
 */
{
  usr_obj :{$exists:true}
}
```

Output after $match stage (Sample of 20 documents)

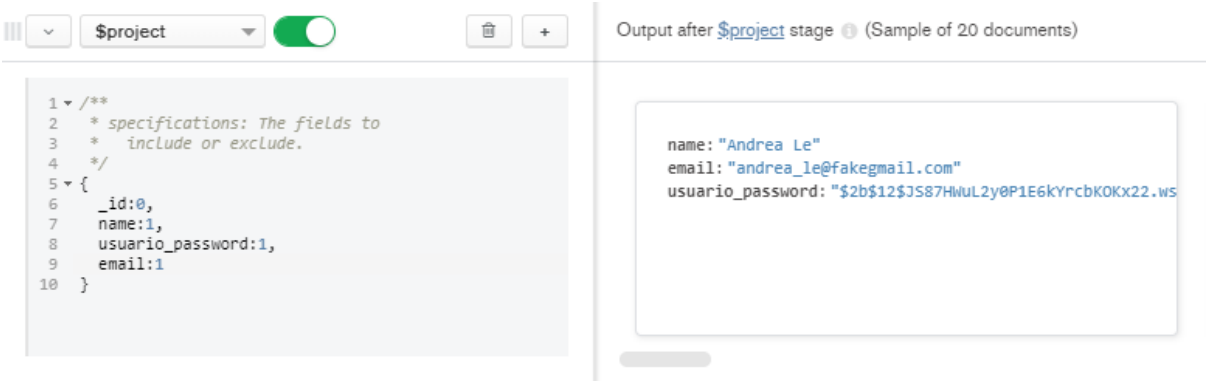
```
_id: ObjectId("5a9427648b0beebeb69579cc")
name: "Andrea Le"
email: "andrea_le@fakegmail.com"
movie_id: ObjectId("573a1390f29313caabcd418c")
text: "Rem officiis eaque repellendus amet eos
      doloribus. Porro dolor volupta..."
date: 2012-03-26T23:20:16.000+00:00
▸ user: Array
▸ usr_obj: Object
```

$addFields

```
/**
 * newField: The new field name.
 * expression: The new field expression.
 */
{
  usuario_password: "$usr_obj.password"
}
```

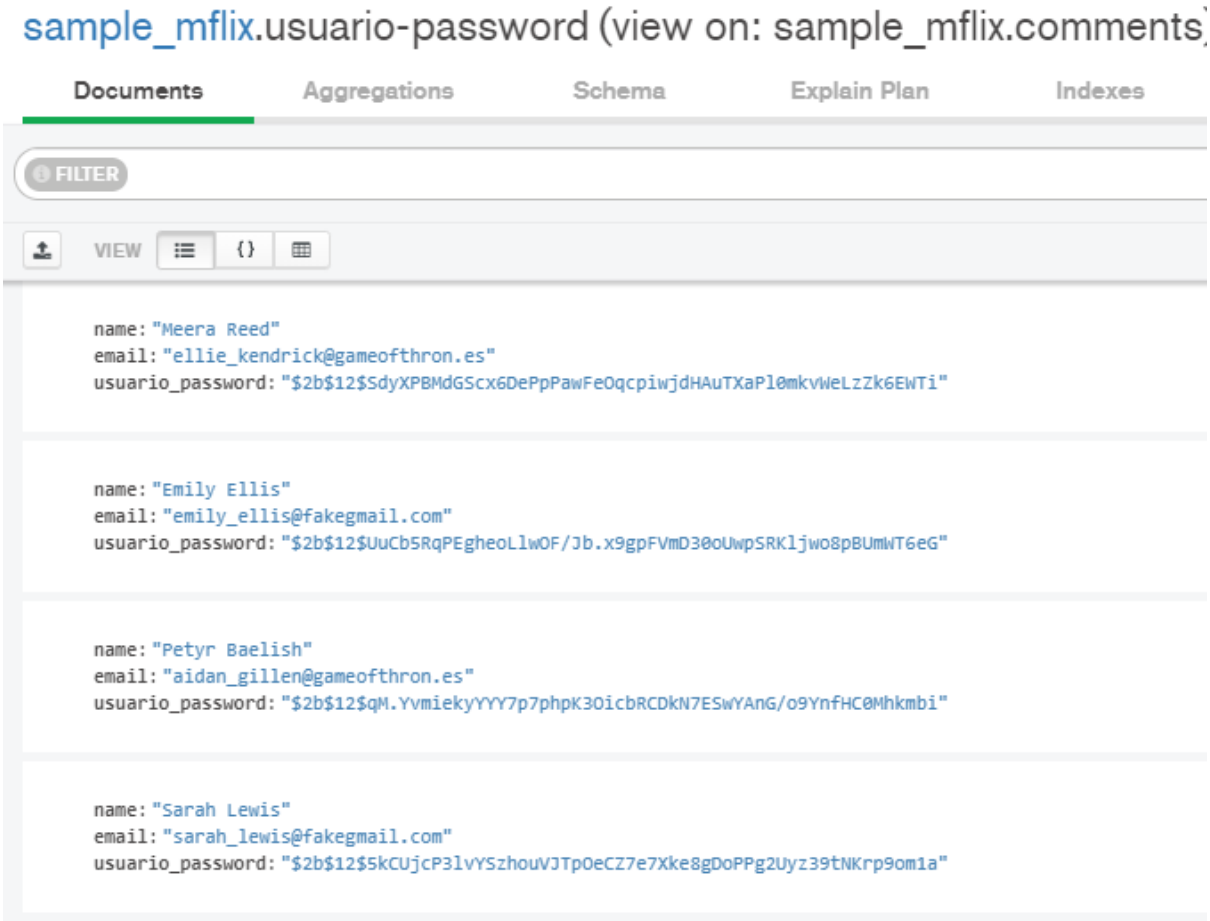
Output after $addFields stage (Sample of 20 documents)

```
name: "Andrea Le"
email: "andrea_le@fakegmail.com"
movie_id: ObjectId("573a1390f29313caabcd418c")
text: "Rem officiis eaque repellendus amet eos
      doloribus. Porro dolor volupta..."
date: 2012-03-26T23:20:16.000+00:00
▸ user: Array
▸ usr_obj: Object
usuario_password: "$2b$12$JS87HWuL2y0P1E6kYrcbKOKx22.ws
```



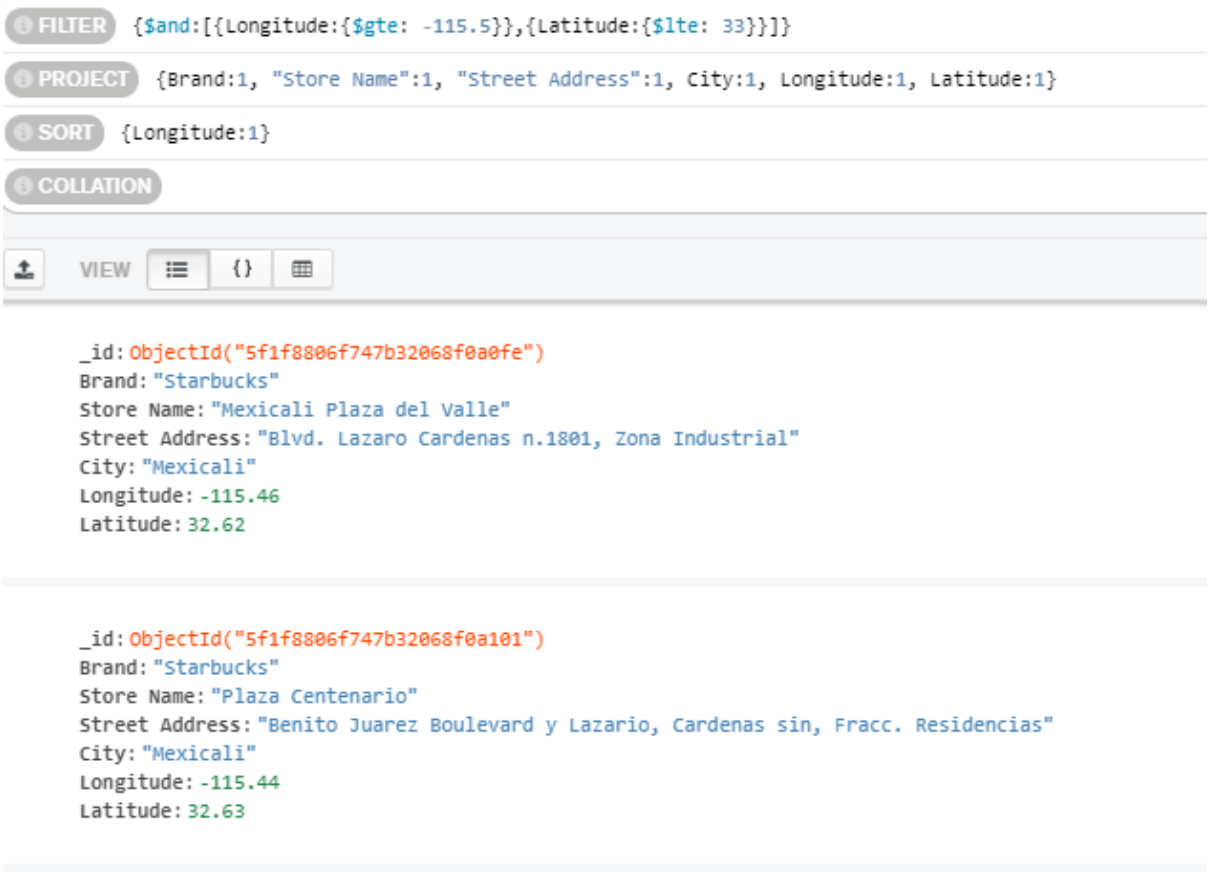

RETO 3

Usando el *pipeline* que generaste en el Reto 2, genera la vista correspondiente.



SESION 8
RETO 1

1. Descarga la fuente de datos de los locales de Starbucks: directory.csv
2. Analiza los datos, limpia los datos en caso de ser necesario.
3. Elige MySQL o MongoDB y crea una base de datos para el conjunto de datos del reto.
4. Carga los datos en la base de datos que elegiste y revisa que éstos se muestren correctamente.
5. Usando la latitud y longitud de tu posición actual, encuenta el Starbucks más cercano a tu posición. Para conocer tu posición actual puedes usar Google Maps para, sólo debes copiar los datos de la URL.



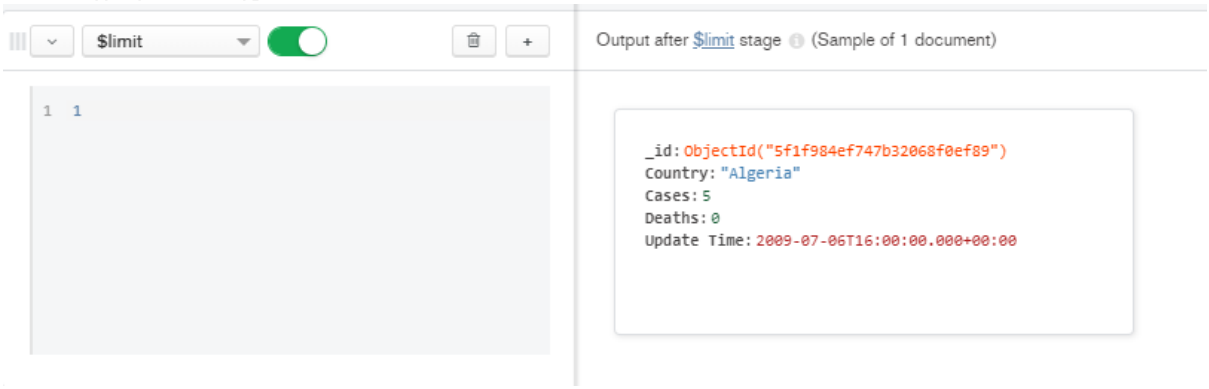
RETO 2

- ¿Cuál fue el país con mayor número de muertes?

```
[{$match: {
  Country: {
    $ne: 'Grand Total'
  }
}}, {$sort: {
  date: -1
}}, {$sort: {
  Deaths: -1
}}, {$limit: 1}]
```

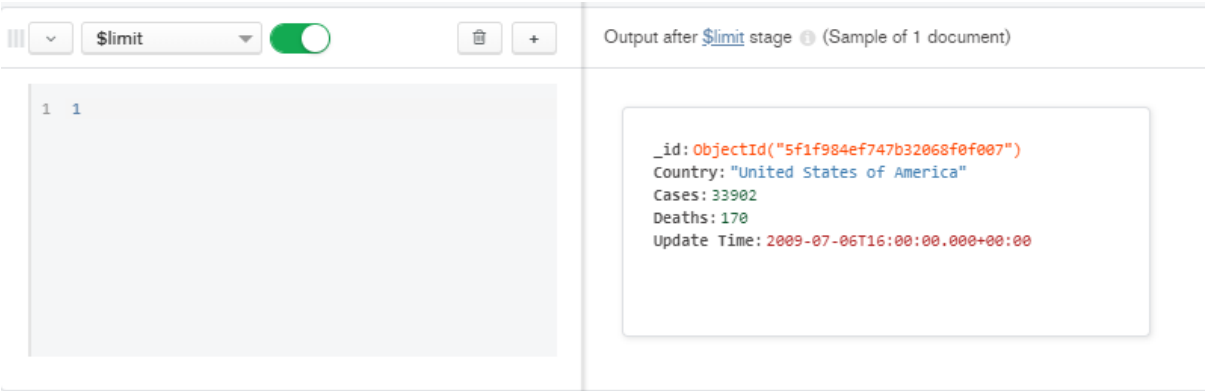

- ¿Cuál fue el país con menor número de muertes?

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



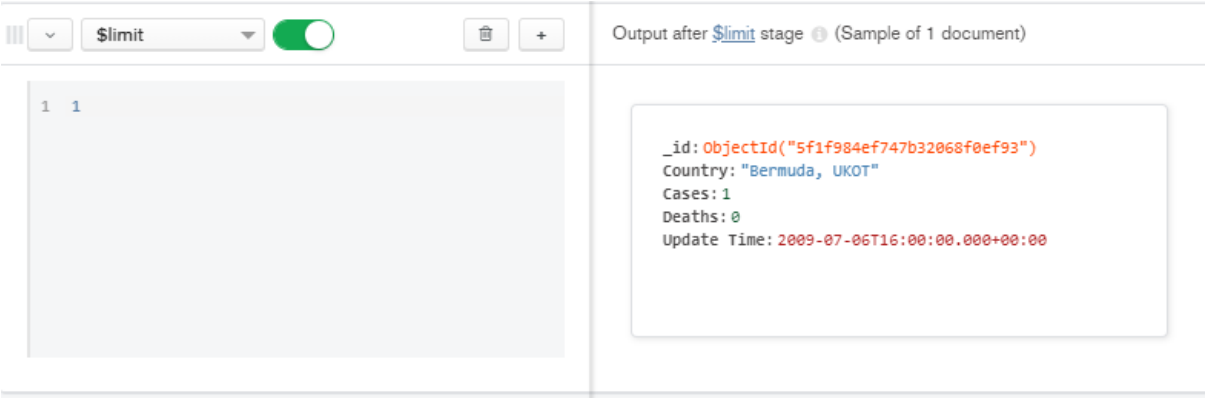
- ¿Cuál fue el país con el mayor número de casos?

```
[{$match: {
  Country: {
    $ne: 'Grand Total'
  }
}}, {$sort: {
  date: -1
}}, {$sort: {
  Cases: -1
}}, {$limit: 1}]
```




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

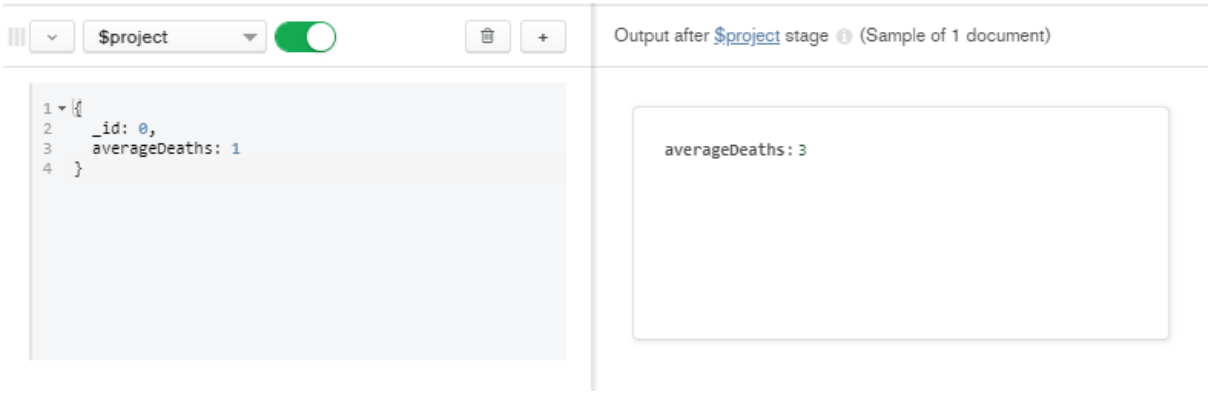
```
[{$match: {
  Country: {
    $ne: 'Grand Total'
  }
}}, {$sort: {
  date: -1
}}, {$sort: {
  Cases: 1
}}, {$limit: 1}]
```




- ¿Cuál fue el número de muertes promedio?

```
[{$match: {
  Country: {
    $ne: 'Grand Total'
  }
}}, {$group: {
  _id: '$Country',
```

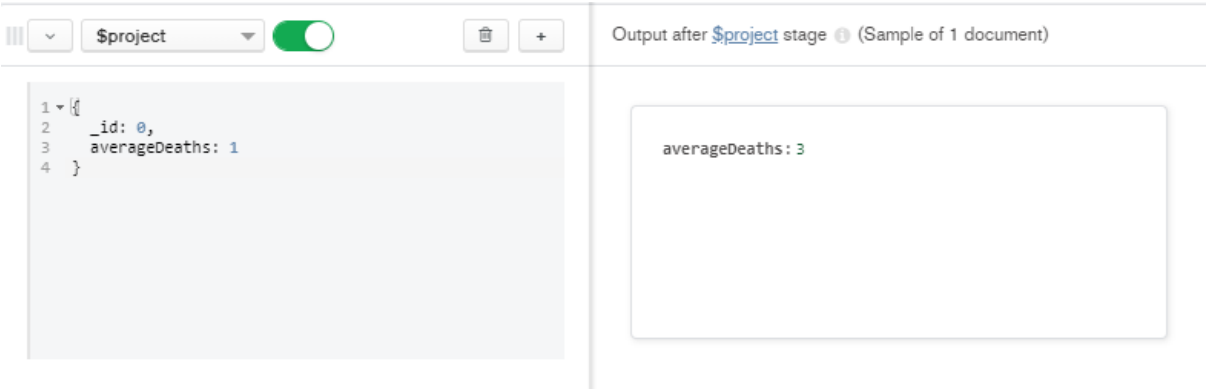
```
  maxDeathsPerCountry: {
    $max: '$Deaths'
  }
}}, {$sort: {
  maxDeathsPerCountry: -1
}}, {$group: {
  _id: null,
  totalDeaths: {
    $sum: '$maxDeathsPerCountry'
  },
  totalCountries: {
    $sum: 1
  }
}}, {$addFields: {
  averageDeaths: {
    $divide: [
      '$totalDeaths',
      '$totalCountries'
    ]
  }
}}, {$project: {
  _id: 0,
  averageDeaths: 1
}}]
```




- ¿Cuál fue el número de casos promedio?

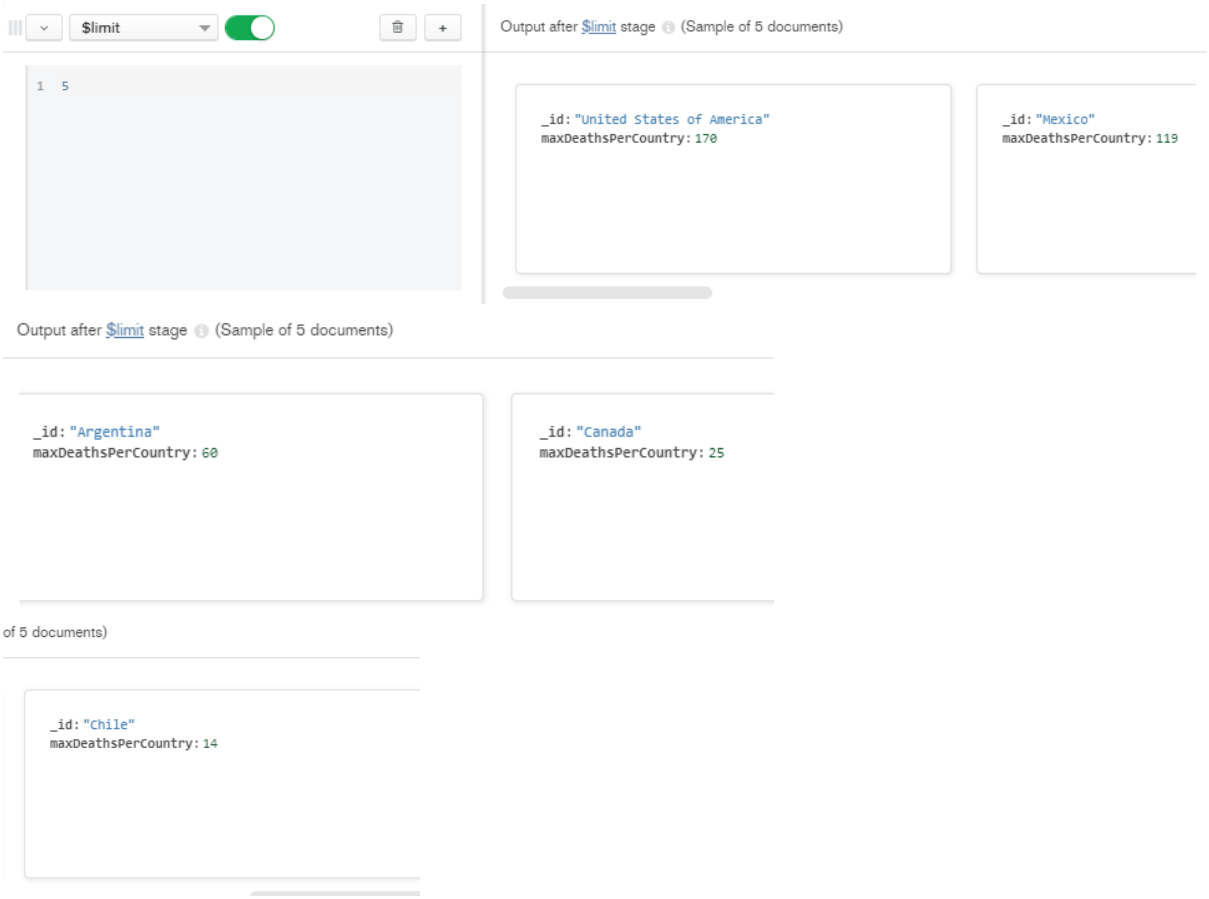
```
[{$match: {
  Country: {
    $ne: 'Grand Total'
  }
}}, {$group: {
  _id: '$Country',
  maxDeathsPerCountry: {
    $max: '$Deaths'
  }
}}, {$sort: {
  maxDeathsPerCountry: -1
```

```
}}, {$group: {
  _id: null,
  totalDeaths: {
    $sum: '$maxDeathsPerCountry'
  },
  totalCountries: {
    $sum: 1
  }
}}, {$addFields: {
  averageDeaths: {
    $divide: [
      '$totalDeaths',
      '$totalCountries'
    ]
  }
}}, {$project: {
  _id: 0,
  averageDeaths: 1
}}]
```



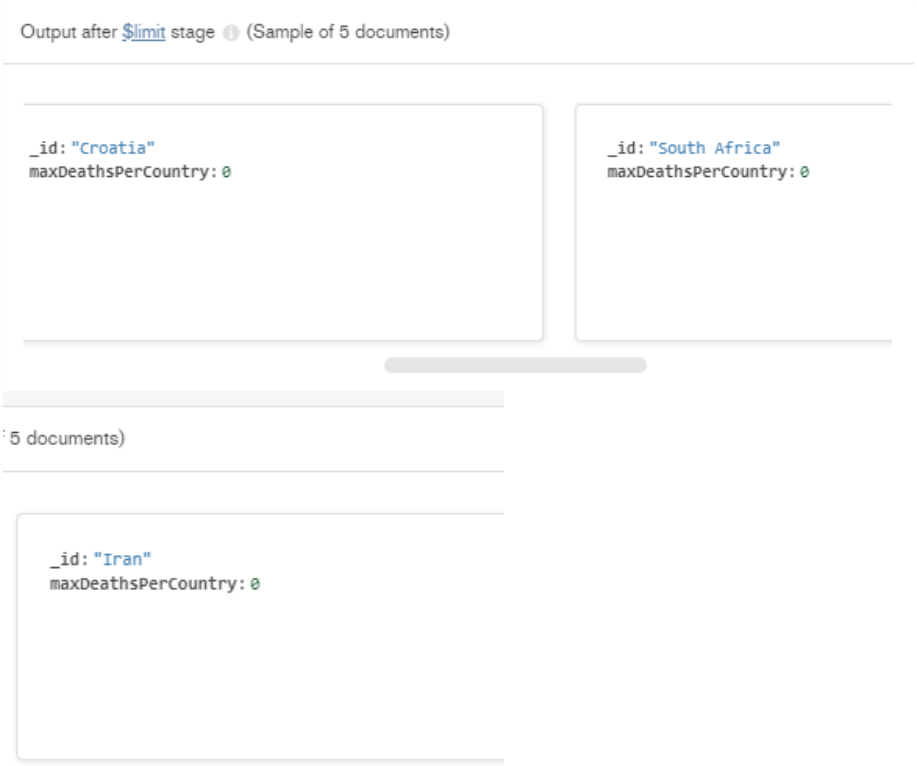

- Top 5 de países con más muertes

```
[{$match: {
  Country: {
    $ne: 'Grand Total'
  }
}}, {$group: {
  _id: '$Country',
  maxDeathsPerCountry: {
    $max: '$Deaths'
  }
}}, {$sort: {
  maxDeathsPerCountry: -1
}}, {$limit: 5}]
```




- Top 5 de países con menos muertes

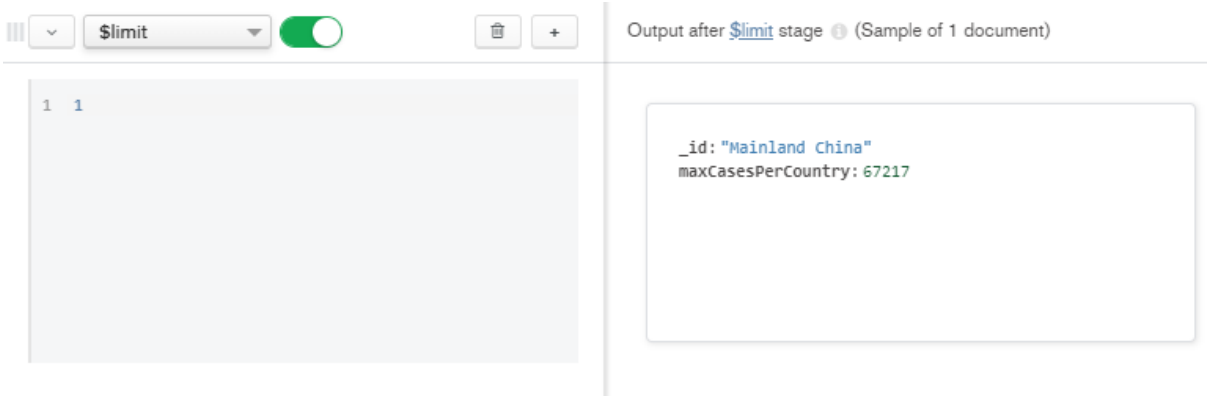
```
[{$match: {
  Country: {
    $ne: 'Grand Total'
  }
}}, {$group: {
  _id: '$Country',
  maxDeathsPerCountry: {
    $max: '$Deaths'
  }
}}, {$sort: {
  maxDeathsPerCountry: 1
}}, {$limit: 5}]
```




RETO 3

¿Cuál es país con mayor número de casos?

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




¿Cuál es el país con mayor número de muertes?

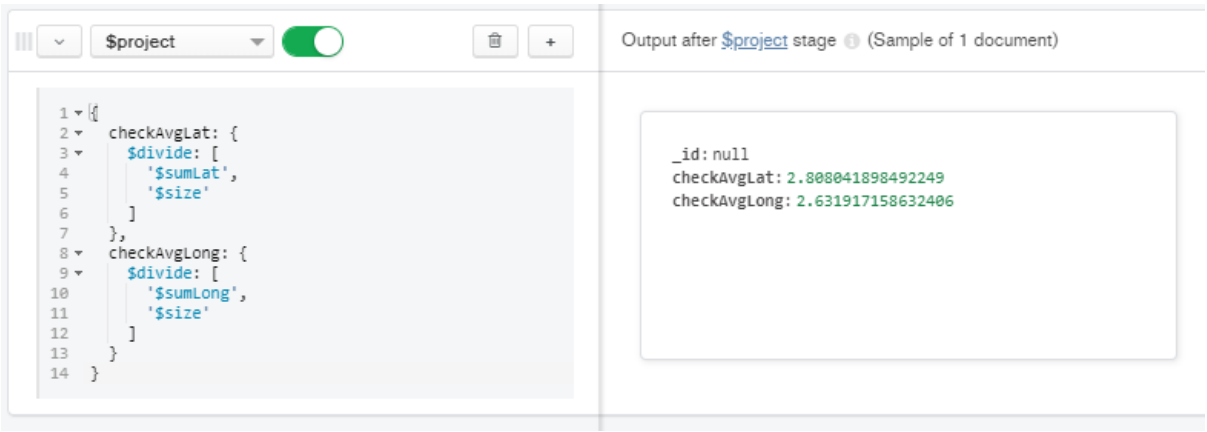
```
[{$group: {
  _id: '$Region',
  maxDeathsPerCountry: {
```

```
    $max: '$Deaths'
  }
}}, {$sort: {
  maxDeathsPerCountry: -1
}}, {$limit: 1}]
```


Usando las coordenadas, encuentra el epicentro del virus

```
[{$match: {
  Lat: {
    $ne: ''
  },
  Long: {
    $ne: ''
  }
}}, {$addFields: {
  Lat: {
    $convert: {
      input: '$Lat',
      to: 'double'
    }
  },
  Long: {
    $convert: {
      input: '$Long',
      to: 'double'
    }
  }
}}, {$group: {
  _id: null,
  size: {
    $sum: 1
  },
  sumLat: {
    $sum: '$Lat'
  },
  sumLong: {
    $sum: '$Long'
```

```
  },
  avgLat: {
    $avg: '$Lat'
  },
  avgLong: {
    $avg: '$Long'
  }
}}, {$project: {
  checkAvgLat: {
    $divide: [
      '$sumLat',
      '$size'
    ]
  },
  checkAvgLong: {
    $divide: [
      '$sumLong',
      '$size'
    ]
  }
}}]
```



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

```
[{$match: {
  Lat: {
    $ne: ''
  },
  Long: {
    $ne: ''
  }
}}, {$group: {
  _id: '$Region',
  Lat: {
    $max: '$Lat'
  },
  Long: {
    $max: '$Long'
  }
}}, {$addFields: {
  Lat: {
    $convert: {
      input: '$Lat',
      to: 'double'
    }
  },
  Long: {
    $convert: {
      input: '$Long',
      to: 'double'
    }
  }
}}, {$match: {
  $and: [
    {
      Lat: {
        $gte: 21
      }
    },
    {
      Lat: {
        $lte: 35
      }
    },
    {
      Long: {
        $gte: 30
      }
    },
    {
      Long: {
```

```
        $lte: 45
      }
    }
  ]
}}, {$limit: 5}, {$project: {
  _id: 1
}}]
```