The Marketer's Guide to SQL Queries

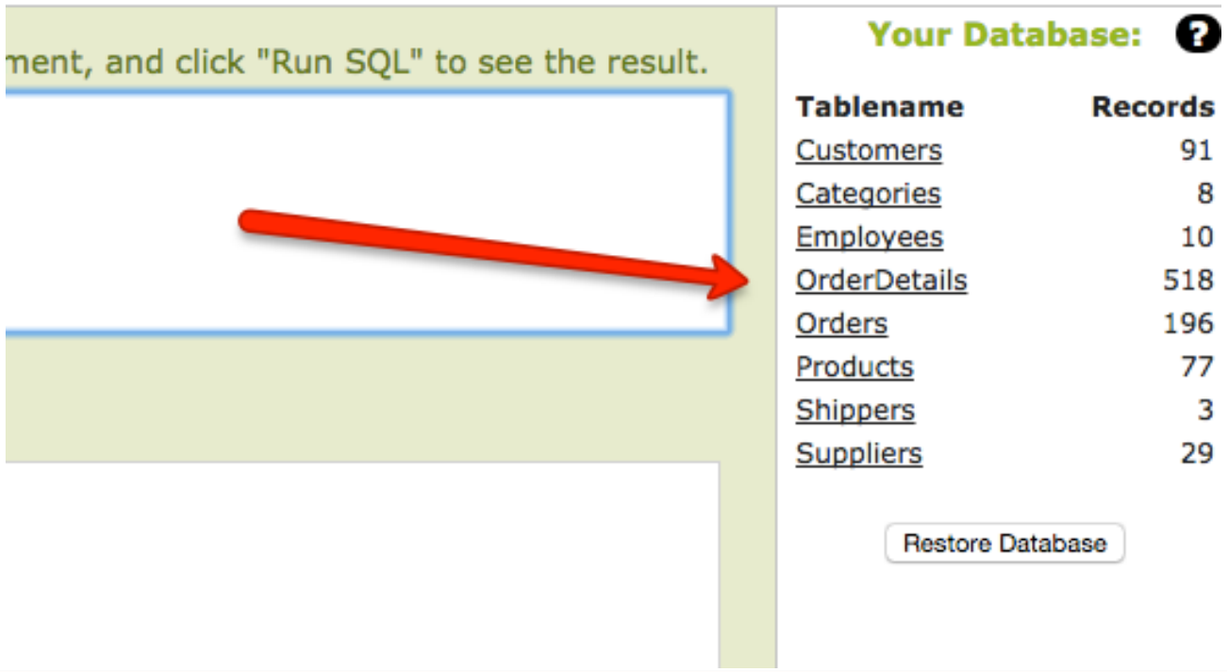
Introduction to SQL

Follow along at **http://bit.ly/1foSkgu** (the w3 Schools test SQL database)

Table Structure

A database is a collection of tables, and a table is like an excel spreadsheet.

In this example database, there are 8 tables you can see in the right hand column.



Select

The most basic SQL command is “SELECT” which lets you tell the database what information you want it to show you.

Select

SQL Statement: Edit the SQL Statement, and click "Run SQL" to see the result.

```
SELECT * FROM products
```

Run SQL »

Result:

Number of Records: 77

ProductID	ProductName	SupplierID	CategoryID	Unit	Price
1	Chais	1	1	10 boxes x 20 bags	18
2	Chang	1	1	24 - 12 oz bottles	19
3	Aniseed Syrup	1	2	12 - 550 ml bottles	10
4	Chef Anton's Cajun Seasoning	2	2	48 - 6 oz jars	22
5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35
6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25

Select

```
SELECT * from products
```

What that did is SELECT(ed) everything (the *) from the table called “products”

From

The FROM statement tells SQL where to pull data *from.*

SELECT tells SQL *what* data to look at, FROM tells SQL *where* to find the data.

Select

SQL Statement: Edit the SQL Statement, and click "Run SQL" to see the result.

```
SELECT * FROM products
```

Run SQL »

Result:

Number of Records: 77

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Select + From

You can also select specific columns!

```
SELECT CustomerName from customers
```

will give you a list of all names in the Customers table.

Select + From

SQL Statement: Edit the SQL Statement, and click "Run SQL" to see the result.

```
SELECT CustomerName from Customers
```

Run SQL »

Result:

Number of Records: 91

CustomerName
Alfreds Futterkiste
Ana Trujillo Emparedados y helados
Antonio Moreno Taquería
Around the Horn
Berglunds snabbköp
Blauer See Delikatessen

Where

WHERE tells SQL *how* to access the right data.

SELECT tells SQL *what* data to look at, FROM tells SQL *where* to find the data, and WHERE tells SQL *what* data it should return.

Confusing, I know.

Select + From + Where

```
SELECT * from products where Price > 20
```

And you'll have all of the Products that cost more than 20 dollars. You can filter by any column on the table, using >, <, or =.

Select + From + Where

SQL Statement: Edit the SQL Statement, and click "Run SQL" to see the result.

```
SELECT * FROM products where price > 20
```

Run SQL »

Result:

Number of Records: 37

ProductID	ProductName	SupplierID	CategoryID	Unit	Price
4	Chef Anton's Cajun Seasoning	2	2	48 - 6 oz jars	22
5	Chef Anton's Gumbo Mix	2	2	36 boxes	21.35
6	Grandma's Boysenberry Spread	3	2	12 - 8 oz jars	25
7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30
8	Northwoods Cranberry Sauce	3	2	12 - 12 oz jars	40
9	Mishi Kobe Niku	4	6	18 - 500 g pkgs.	97
10	Ikura	4	8	12 - 200 ml jars	31

Select + From + Where

Here's another example:

```
SELECT * from Customers where Country =
"Germany"
```

What do you think this will return?

Select + From + Where

SQL Statement: Edit the SQL Statement, and click "Run SQL" to see the result.

```
select * from Customers where Country = "Germany"
```

Run SQL »

Result:

Number of Records: 11

CustomerID	CustomerName	ContactName	Address	City	PostalCode	Country
1	Alfreds Futterkiste	Maria Anders	Obere Str. 57	Berlin	12209	Germany
6	Blauer See Delikatessen	Hanna Moos	Forsterstr. 57	Mannheim	68306	Germany
17	Drachenblut Delikatessend	Sven Ottlieb	Walserweg 21	Aachen	52066	Germany
25	Frankenversand	Peter Franken	Berliner Platz 43	München	80805	Germany
39	Königlich Essen	Philip Cramer	Maubelstr. 90	Brandenburg	14776	Germany
44	Lehmanns Marktstand	Renate Messner	Magazinweg 7	Frankfurt a.M.	60528	Germany
52	Morgenstern Gesundkost	Alexander Feuer	Heerstr. 22	Leipzig	04179	Germany
56	Ottilies Käseladen	Henriette Pfalzheim	Mehrheimerstr. 369	Köln	50739	Germany

Select + From + Where

Every customer from Germany!

CHALLENGE

Answer this question: How many customers in the test database live in London?

*Give it a shot at **http://bit.ly/1foSkgu** (the w3 Schools test SQL database)*

Answer

SELECT * FROM Customers
where city = “London"

6

*Give it a shot at **http://bit.ly/1foSkgu** (the w3 Schools test SQL database)*

Join

These are powerful, but `Select, From` and `Where` are limiting.

`Join` makes SQL a lot more useful, allowing you to temporarily join two tables together, to get their combined information in one chart.

`Join` statements have 3 parts:

- The data you want to Select, and thus print out
- The two tables you want to combine
- The column you want to use to match them up

Join

```
SELECT * from Customers
join orders on orders.customerid = customers.customerid
where Country = “Germany”
```

Join

SQL Statement: Edit the SQL Statement, and click "Run SQL" to see the result.

```
SELECT *
from Customers
join orders on orders.customerid = customers.customerid
where Country = "Germany"
```

Run SQL »

Result:

Number of Records: 25

CustomerID	CustomerName	ContactName	Address	City	PostalCode	Country	OrderID	EmployeeID	OrderDate	S
25	Frankenversand	Peter Franken	Berliner Platz 43	München	80805	Germany	10267	4	1996-07-29	1
63	QUICK-Stop	Horst Kloss	Taucherstraße 10	Cunewalde	01307	Germany	10273	3	1996-08-05	3
52	Morgenstern Gesundkost	Alexander Feuer	Heerstr. 22	Leipzig	04179	Germany	10277	2	1996-08-09	3
44	Lehmanns Marktstand	Renate Messner	Magazinweg 7	Frankfurt a.M.	60528	Germany	10279	8	1996-08-13	2

CHALLENGE

TBD

*Give it a shot at **http://bit.ly/1foSkgu** (the w3 Schools test SQL database)*

Answer

TBD

*Give it a shot at **http://bit.ly/1foSkgu** (the w3 Schools test SQL database)*

Sorting and Limiting

`Group By` – This statement tells SQL how to group your data when it returns a query result.

Group By

SQL Statement: Edit the SQL Statement, and click "Run SQL" to see the result.

```
SELECT * FROM [Orders]
group by customerid
```

Run SQL »

Result:

Number of Records: 74

OrderID	CustomerID	EmployeeID	OrderDate	ShipperID
10308	2	7	1996-09-18	3
10365	3	3	1996-11-27	2
10383	4	8	1996-12-16	3
10384	5	3	1996-12-16	3
10436	7	3	1997-02-05	2
10326	8	4	1996-10-10	2
10362	9	3	1996-11-25	1
10431	10	4	1997-01-30	2

Sorting and Limiting

`Group By` – This statement tells SQL how to group your data when it returns a query result.

`Order By` – Tells SQL how to order your data. This is useful when pulling large amounts of data out of a database.

Order By

SQL Statement: Edit the SQL Statement, and click "Run SQL" to see the result.

```
SELECT * FROM [Orders]
order by customerid
```

Run SQL »

Result:

Number of Records: 196

OrderID	CustomerID	EmployeeID	OrderDate	ShipperID
10308	2	7	1996-09-18	3
10365	3	3	1996-11-27	2
10355	4	6	1996-11-15	1
10383	4	8	1996-12-16	3
10278	5	8	1996-08-12	2
10280	5	2	1996-08-14	1
10384	5	3	1996-12-16	3
10265	7	2	1996-07-25	1

Sorting and Limiting

`Group By` - This statement tells SQL how to group your data when it returns a query result.

`Order By` - Tells SQL how to order your data. This is useful when pulling large amounts of data out of a database.

`Limit` - Tells SQL how many results to return.

Limit

SQL Statement: Edit the SQL Statement, and click "Run SQL" to see the result.

```
SELECT * FROM [Orders]
order by customerid
limit 5
```

Run SQL »

Result:

Number of Records: 5

OrderID	CustomerID	EmployeeID	OrderDate	ShipperID
10308	2	7	1996-09-18	3
10365	3	3	1996-11-27	2
10355	4	6	1996-11-15	1
10383	4	8	1996-12-16	3
10278	5	8	1996-08-12	2

CHALLENGE

TBD

*Give it a shot at **http://bit.ly/1foSkgu** (the w3 Schools test SQL database)*

Answer

TBD

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Count

`Count()` - Returns the number of rows that match a specific criteria.

Count

SQL Statement: Edit the SQL Statement, and click "Run SQL" to see the result.

```
Select orders.customerid, customers.customername, count(orders.customerid)
from orders join customers on customers.customerid = orders.customerid
group by (orders.customerid)
```

Run SQL »

Result:

Number of Records: 74

CustomerID	CustomerName	count(orders.customerid)
2	Ana Trujillo Emparedados y helados	1
3	Antonio Moreno Taquería	1
4	Around the Horn	2
5	Berglunds snabbköp	3
7	Blondel père et fils	4
8	Bólido Comidas preparadas	1
9	Bon app'	3

Average

`Avg()` - Returns the average value of a numeric column.

`First()` - Returns the first value in a column or row.

`Last()` - Returns the last value in a column or row.

`Min()` - Returns the smallest value in a column or row.

`Max()` - Returns the largest value in a column or row.

CHALLENGE

TBD

*Give it a shot at **http://bit.ly/1foSkgu** (the w3 Schools test SQL database)*

Answer

TBD

*Give it a shot at **http://bit.ly/1foSkgu** (the w3 Schools test SQL database)*

Let’s Pull it All Together!

Try to answer the following questions yourself
before getting the answer.

Exercise 1

Write a query that tells you how many orders each customer has placed.

What customer has placed the 3rd highest number of orders?

Answer 1

```
select orders.customerid,
customers.customername,
count(orders.customerid)
from orders
join customers on customers.customerid =
orders.customerid
group by orders.customerid
order by count(orders.customerid) desc
```

Answer 1

SQL Statement: Edit the SQL Statement, and click "Run SQL" to see the result.

```
select orders.customerid, customers.customername, count(orders.customerid)
from orders
join customers on customers.customerid = orders.customerid
group by orders.customerid
order by count(orders.customerid) desc
```

Run SQL »

Result:

Number of Records: 74

CustomerID	CustomerName	count(orders.customerid)
20	Ernst Handel	10
63	QUICK-Stop	7
65	Rattlesnake Canyon Grocery	7
87	Wartian Herkku	7
37	Hungry Owl All-Night Grocers	6
75	Split Rail Beer & Ale	6
41	La maison d'Asie	5

Exercise 2

Let's say you want to know what country most of your customers are from.

What country has customer with the most orders?

Answer 2

```
select orders.customerid,
customers.customername,
count(orders.customerid), customers.country
from orders
join customers on customers.customerid =
orders.customerid
group by customers.country
order by count(orders.customerid) desc
```

Exercise 2

SQL Statement: Edit the SQL Statement, and click "Run SQL" to see the result.

```
select orders.customerid, customers.customername, count(orders.customerid), customers.country
from orders
join customers on customers.customerid = orders.customerid
group by customers.country
order by count(orders.customerid) desc
```

Run SQL »

Result:

Number of Records: 21

CustomerID	CustomerName	count(orders.customerid)	Country
55	Old World Delicatessen	29	USA
79	Toms Spezialitäten	25	Germany
31	Gourmet Lanchonetes	19	Brazil
7	Blondel père et fils	18	France
20	Ernst Handel	13	Austria
16	Consolidated Holdings	12	UK
51	Mère Paillarde	9	Canada

Now, switch to SQL Pro

Exercise 3

Using our World.sql database, find the most popular language in the world and how many people speak it.

Answer 3

```
select country.region, country.population,
countrylanguage.countrycode, country.code,
countrylanguage.language
from Country
join `CountryLanguage` on
countrylanguage.countrycode = country.code
group by population desc
```

Exercise 3

```
1 select country.region, country.population, countrylanguage.countrycode, country.code, countrylanguage.language
2 from Country
3 join `CountryLanguage` on countrylanguage.countrycode = country.code
4 group by population desc
```

Query Favorites Query History

region	population	countrycode	code	language
Eastern Asia	1277558000	CHN	CHN	Chinese
Southern and Central Asia	1013662000	IND	IND	Asami
North America	278357000	USA	USA	Chinese
Southeast Asia	212107000	IDN	IDN	Bali
South America	170115000	BRA	BRA	German
Southern and Central Asia	156483000	PAK	PAK	Balochi
Eastern Europe	146934000	RUS	RUS	Avarian
Southern and Central Asia	129155000	BGD	BGD	Bengali

Exercise 4

Using our World.sql database, find the most populated cities in the world along with the country and region those cities exist in.

Answer 4

```
select country.region,
country.population, city.countrycode,
country.code, city.population, city.name
from Country
join `City` on city.countrycode =
country.code
group by city.population desc
```

Exercise 4

```
1 select country.region, country.population, city.countrycode, country.code, city.population, city.name
2 from Country
3 join `City` on city.countrycode = country.code
4 group by city.population desc
```

Query Favorites Query History

region	population	countrycode	code	population	name
Southern and Central Asia	1013662000	IND	IND	10500000	Mumbai (Bombay)
Eastern Asia	46844000	KOR	KOR	9981619	Seoul
South America	170115000	BRA	BRA	9968485	São Paulo
Eastern Asia	1277558000	CHN	CHN	9696300	Shanghai
Southeast Asia	212107000	IDN	IDN	9604900	Jakarta
Southern and Central Asia	156483000	PAK	PAK	9269265	Karachi
Middle East	66591000	TUR	TUR	8787958	Istanbul
Central America	98881000	MEX	MEX	8591309	Ciudad de México
Eastern Europe	146934000	RUS	RUS	8389200	Moscow
North America	278357000	USA	USA	8008278	New York
Eastern Asia	126714000	JPN	JPN	7980230	Tokyo
Eastern Asia	1277558000	CHN	CHN	7472000	Peking

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Go to **http://bit.ly/1foSkgu** and we'll run our first SQL query!