



DATA WITH BARAA

# SQL COMPONENTS

Baraa Khatib Salkini  
YouTube | **DATA WITH BARAA**  
SQL Course | SELECT Query



-- Retrieve Customers Data

**SELECT**

name ,

**LOWER**(country)

**FROM** customers

**WHERE** country = 'Italy'

## SQL STATEMENT

-- Retrieve Customers Data

**SELECT**

**name ,**

**LOWER (country)**

**FROM customers**

**WHERE country = 'Italy'**

Comment

-- Retrieve Customers Data

**SELECT**

name ,

**LOWER**(country)

**FROM** customers

**WHERE** country = 'Italy'

-- Retrieve Customers Data

**SELECT**

**name ,**

**LOWER (country)**

Clauses

**FROM customers**

**WHERE country = 'Italy'**

-- Retrieve Customers Data

**SELECT**

**name ,**

**LOWER (country)**

**Keywords**

**FROM** customers

**WHERE** country = 'Italy'

-- Retrieve Customers Data

**SELECT**

name ,

**LOWER**(country)

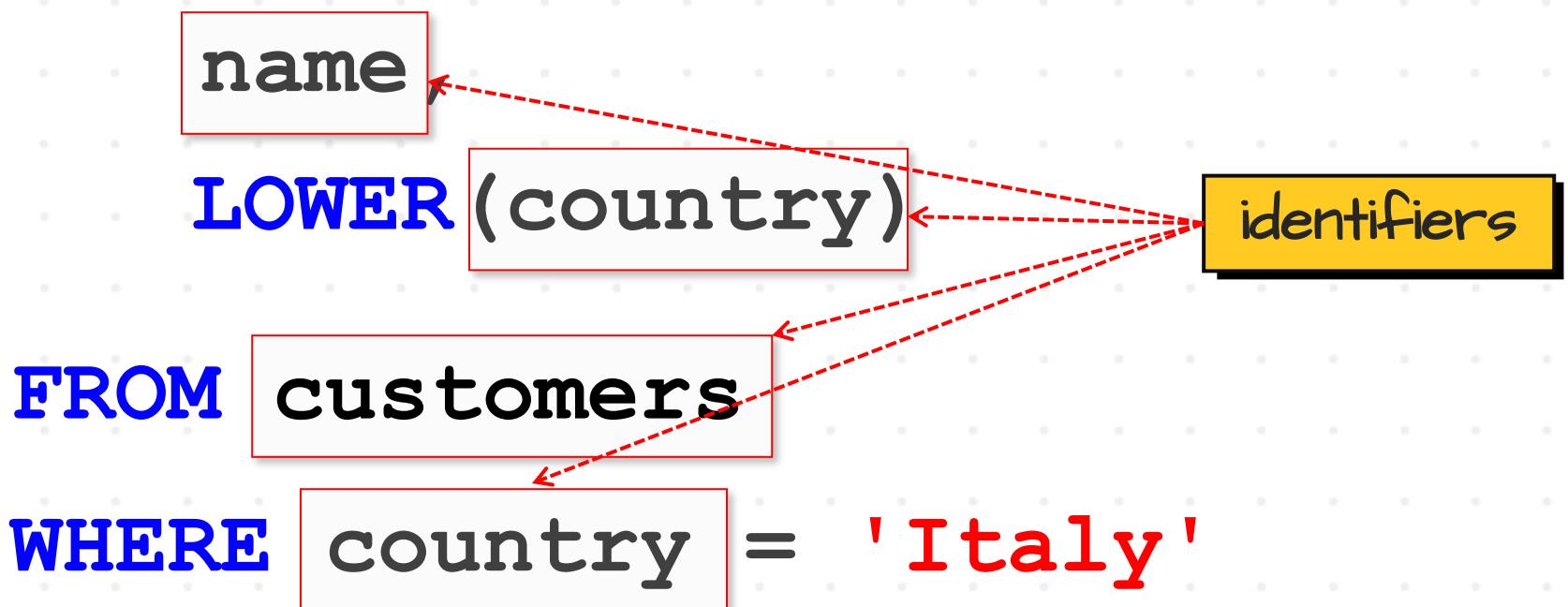
Function

**FROM** customers

**WHERE** country = 'Italy'

-- Retrieve Customers Data

**SELECT**



```
graph TD; identifiers[identifiers] --> name[name]; identifiers --> country1[country]; identifiers --> customers[customers]; country1 --> lowerCountry["LOWER(country)"];
```

**SELECT** **name**, **LOWER(country)** FROM **customers** WHERE **country** = 'Italy'

-- Retrieve Customers Data

**SELECT**

name ,

**LOWER**(country)

Operator

**FROM** customers

**WHERE** country = 'Italy'



-- Retrieve Customers Data

**SELECT**

name ,

**LOWER**(country)

Value

**FROM** customers

**WHERE** country = 'Italy'

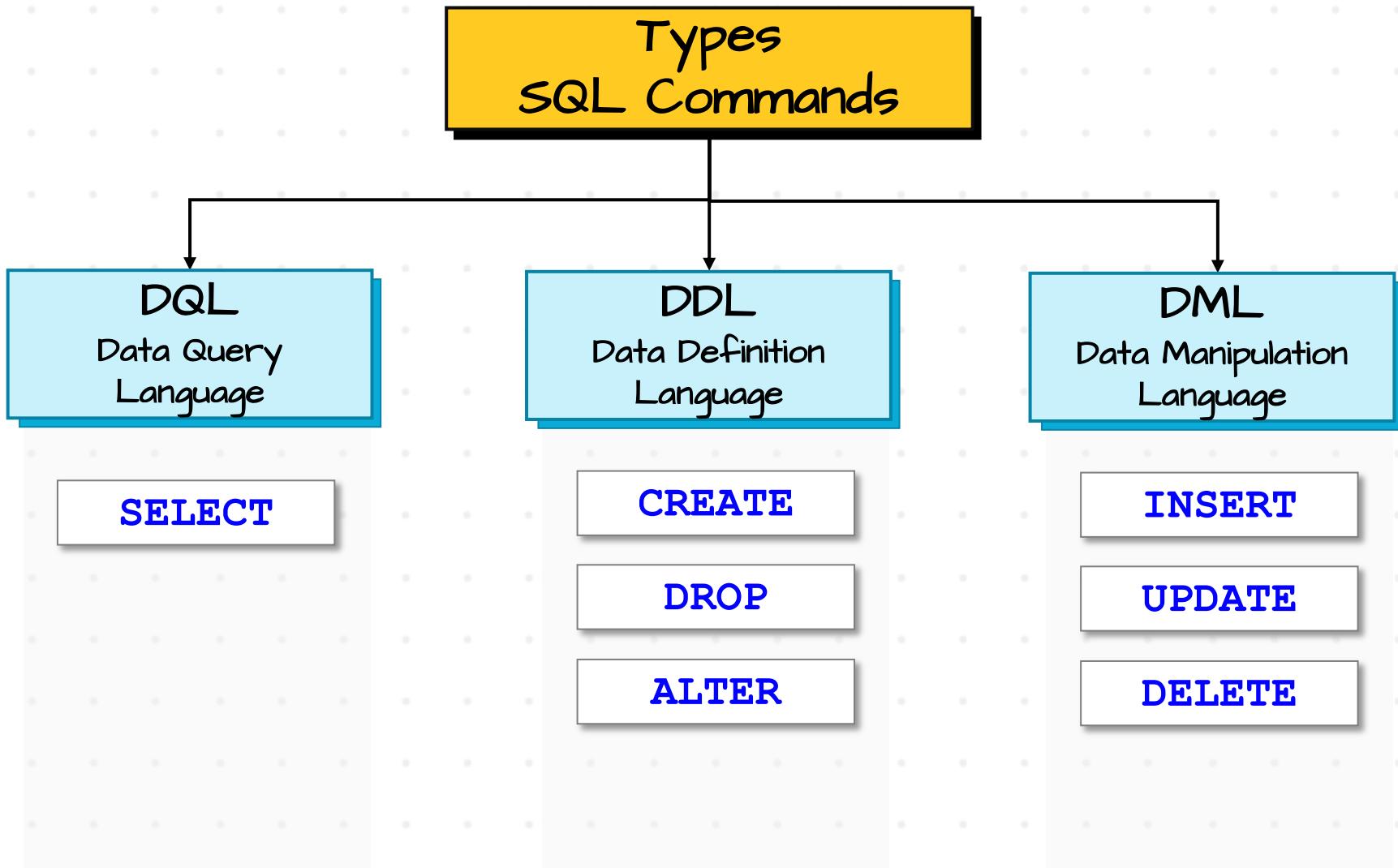


# QUERY DATA

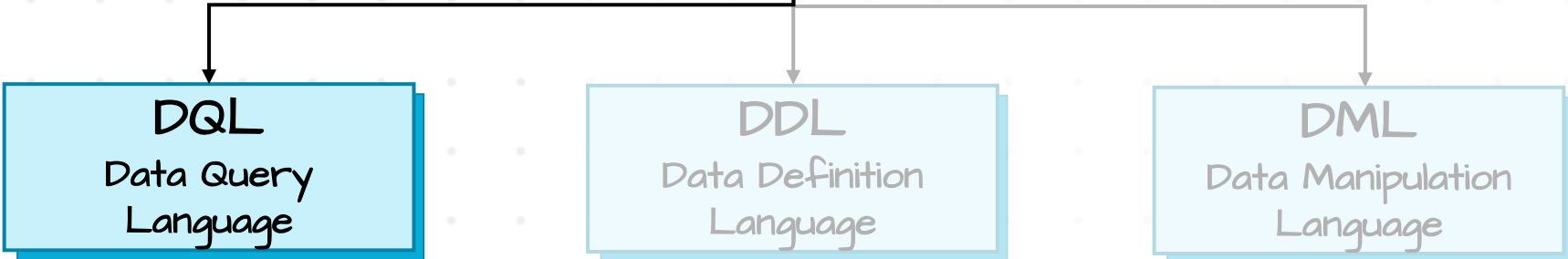
## SELECT STATEMENT

Baraa Khatib Salkini  
YouTube | **DATA WITH BARAA**  
SQL Course | SELECT Query





## Types SQL Commands



**SELECT**

**CREATE**

**INSERT**

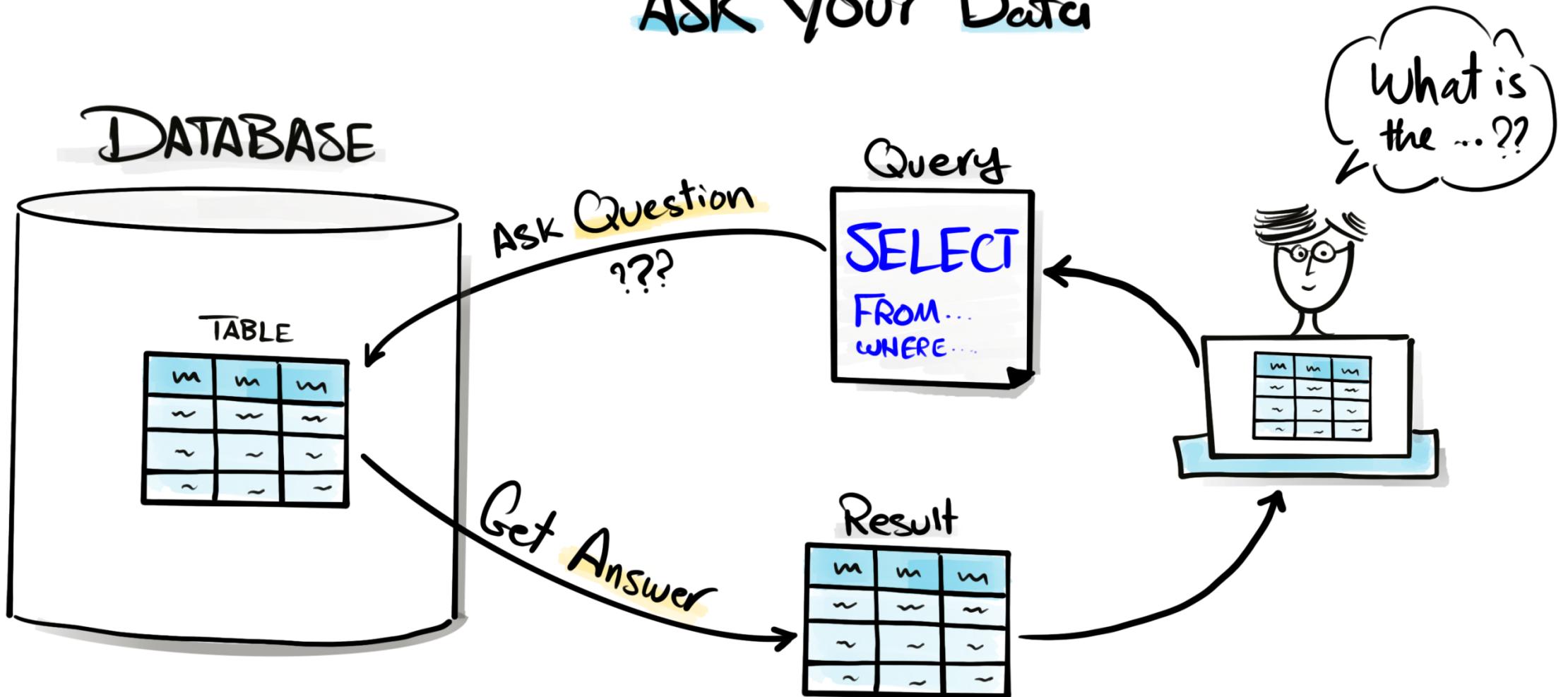
**DROP**

**UPDATE**

**ALTER**

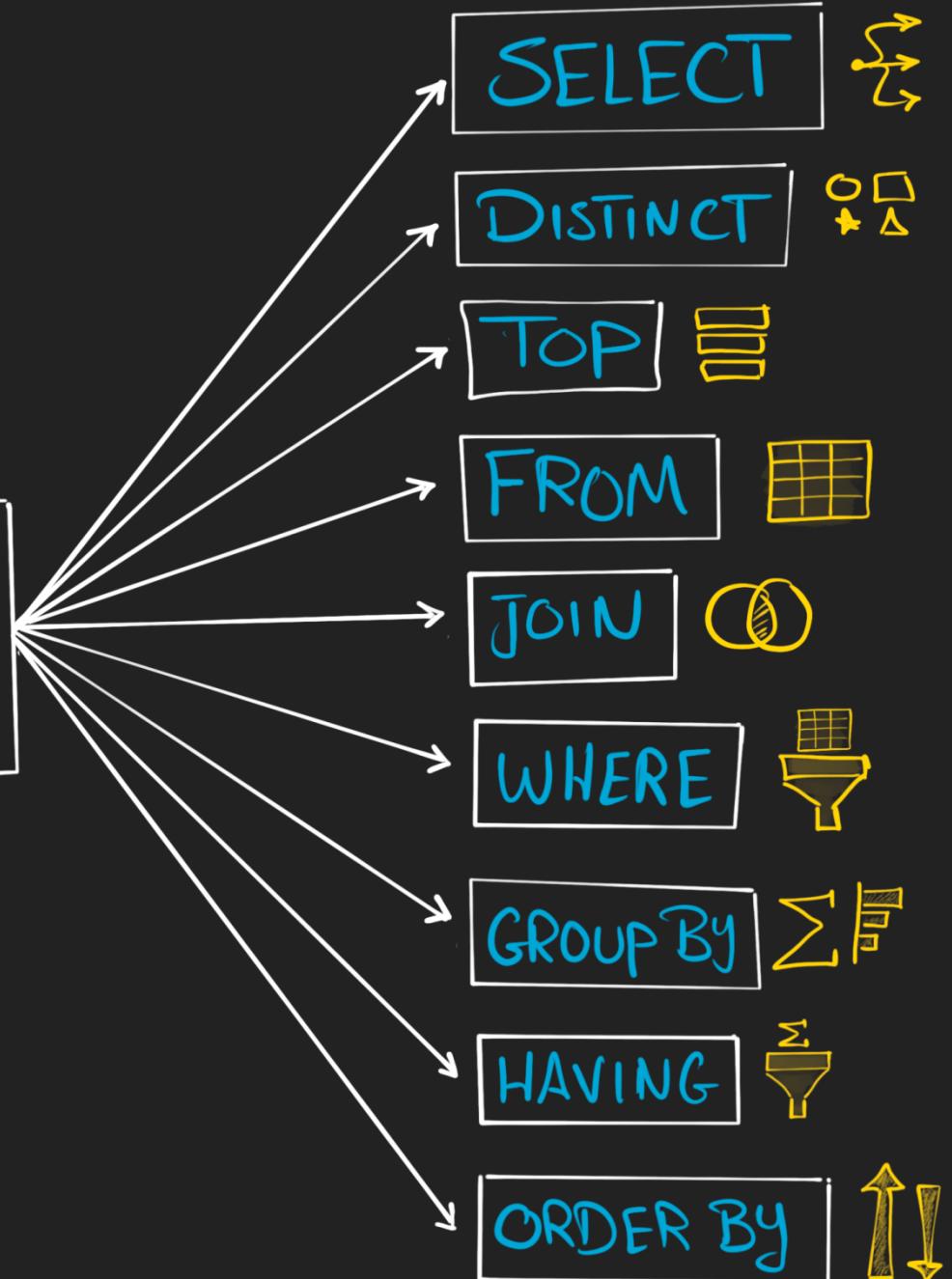
**DELETE**

# ASK YOUR DATA





SQL  
Query



Database



	id	name	Country	Score
1	Maria	Germany	350	
2	John	USA	900	
3	Georg	UK	750	
4	Martin	Germany	500	
5	Peter	USA	0	

SELECT \*  
FROM Table

Select \* (All)

Retrieves All Columns (Everything)

From

Tells SQL Where to find Your Data

Database



id	name	Country	Score
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0

Keep All Columns!!

id	name	Country	Score
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0

② SELECT   
 ① FROM Table



id	name	Country	Score
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0

Select Few Columns

Pick only the Columns You Need  
instead of All.

SELECT

Col 1,

Col 2

FROM Table



Database



id	name	Country	Score
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0

Keeps only  
Needed Columns

	name	Country
	Maria	Germany
	John	USA
	Georg	UK
	Martin	Germany
	Peter	USA

② SELECT

Col 1,

Col 2

① FROM Table

Database



id	name	Country	Score
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0

SELECT \*  
 FROM Table  
 WHERE Condition

Where

Filters Your Data based on a Condition

Score Higher than 500

Database



<u>id</u>	<u>name</u>	<u>Country</u>	<u>Score</u>
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0

① FROM Table

<u>id</u>	<u>name</u>	<u>Country</u>	<u>Score</u>
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0

③ SELECT \*① FROM Table② WHERE Condition

Score &gt; 500



Database

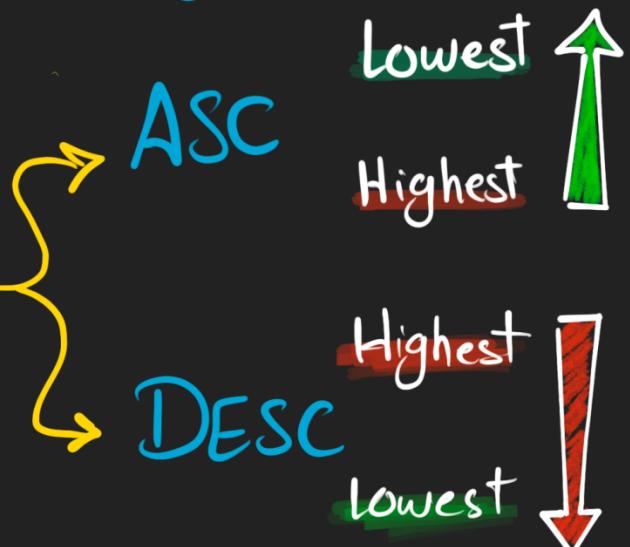


<u>id</u>	<u>name</u>	<u>Country</u>	<u>Score</u>
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0

SELECT \*  
 FROM Table  
 ORDER BY Score DESC

## Order By

Sort Your Data

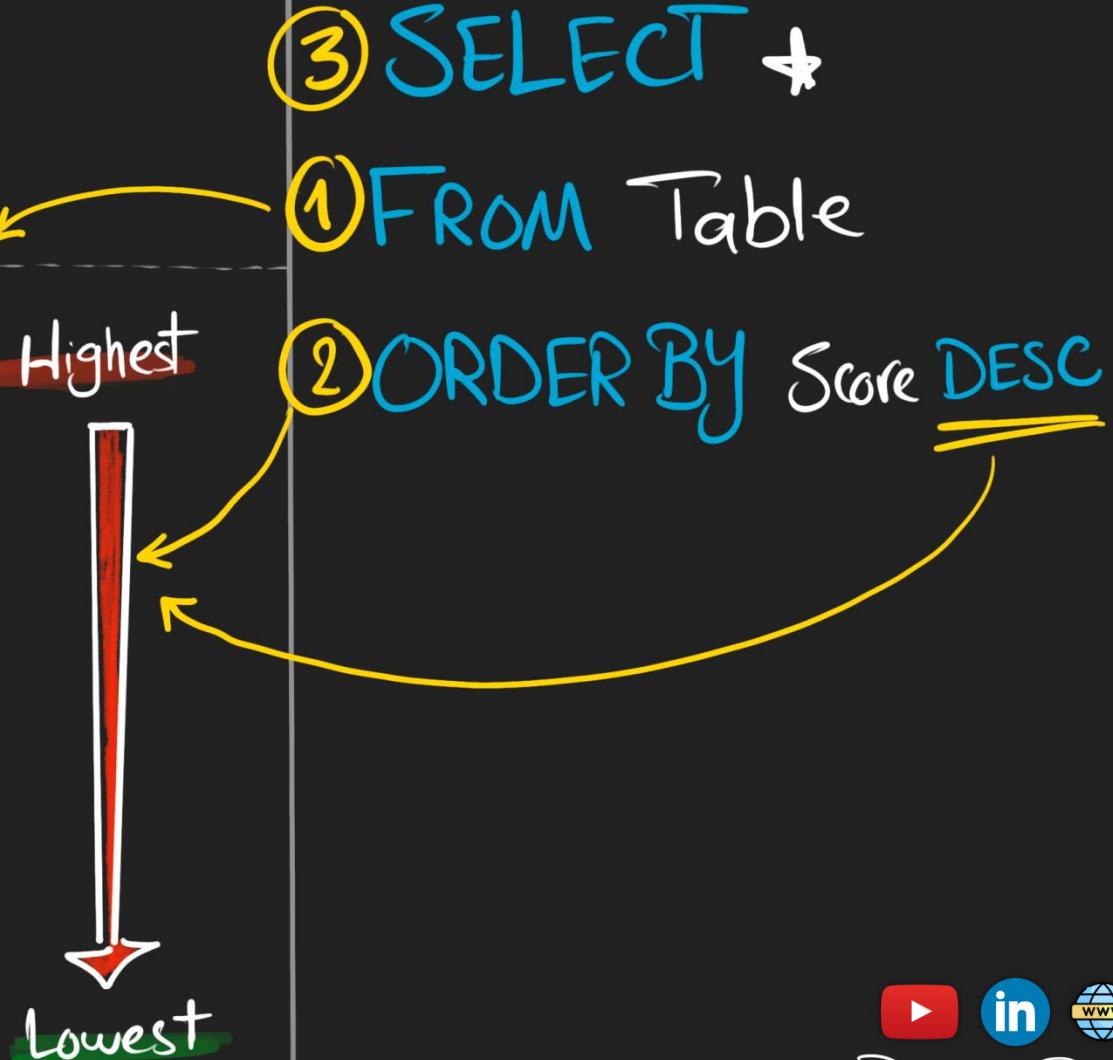


Database



id	name	Country	Score
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0

id	name	Country	Score
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
1	Maria	Germany	350
5	Peter	USA	0



Database



id	name	Country	Score
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0

Lowest

id	name	Country	Score
4	Martin	Germany	500
1	Maria	Germany	350
3	Georg	UK	750
2	John	USA	900
5	Peter	USA	0

Highest

③ SELECT \*

① FROM Table

② ORDER BY

Country ASC,

Score DESC



Database



<u>id</u>	<u>name</u>	<u>Country</u>	<u>Score</u>
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0

## Group By

Combines rows with the same value

Aggregates a Column By another Column

Total Score By Country

SELECT Category  
Country, Aggregation  
 SUM(score)  
 FROM Table  
 GROUP BY Country

Database



	id	name	Country	Score
1	1	Maria	Germany	350
2	2	John	USA	900
3	3	Georg	UK	750
4	4	Martin	Germany	500
5	5	Peter	USA	0

### ③ SELECT

Country,

SUM(score)

① FROM Table

② GROUP BY Country

1	Germany	850
2	USA	900
3	UK	750

Database



<u>id</u>	<u>name</u>	<u>Country</u>	<u>Score</u>
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0

HAVINGFilters Data After AggregationCan be used only with Group By

SELECT

Country,SUM(score)

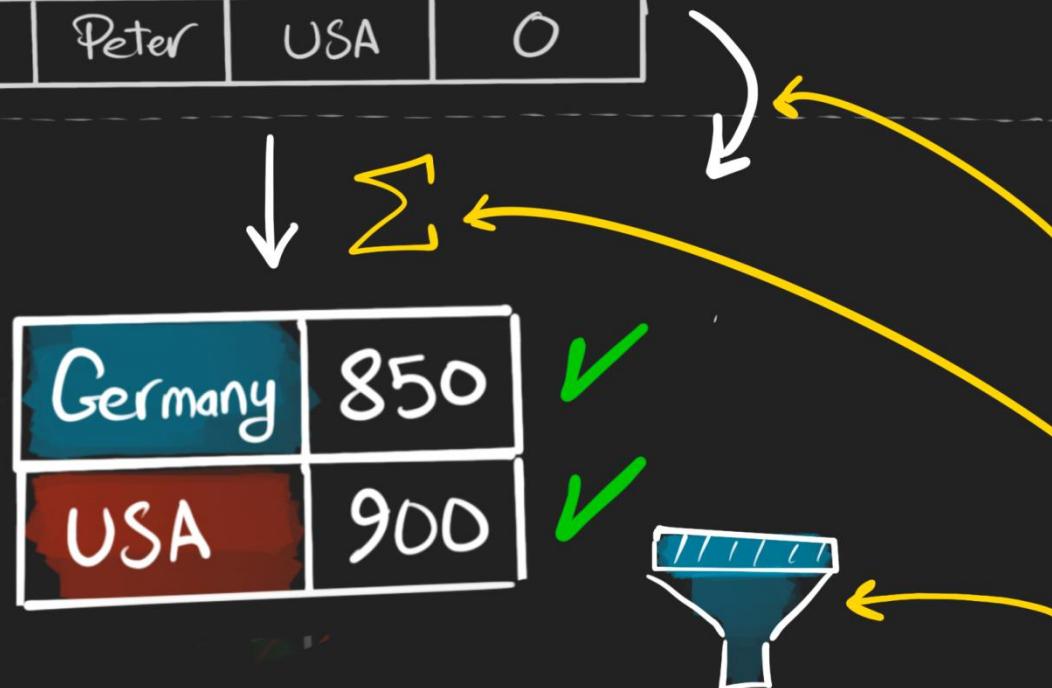
FROM Table

GROUP BY CountryHAVING SUM(score) > 800

Database



<i>id</i>	<i>name</i>	<i>Country</i>	<i>Score</i>
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0



## ④ SELECT

Country,

*SUM(score)*① *FROM Table*② *GROUP By Country*③ *HAVING SUM(score) > 800*

Total Score &gt; 800

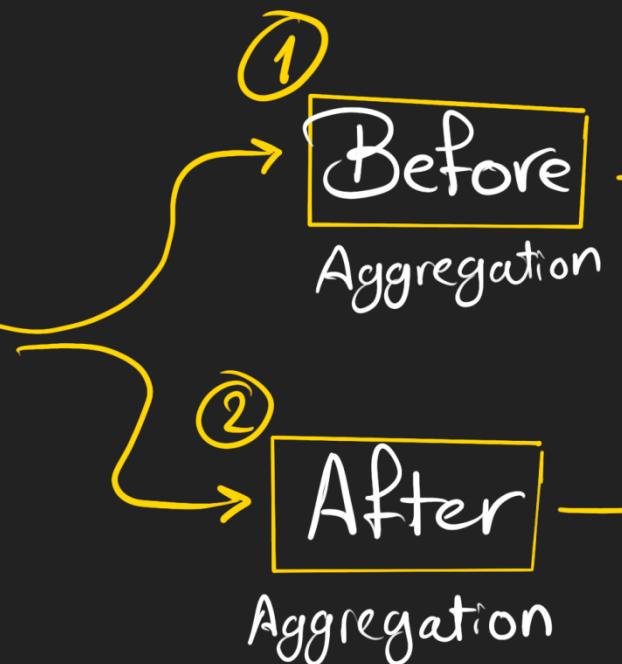
Database



id	name	Country	Score
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0



Filter  
Your Data



SELECT

Country,

SUM(score)

FROM Table

WHERE Score &gt; 400

GROUP BY Country

HAVING SUM(score) &gt; 800

Database



	id	name	Country	Score
1	Maria	Germany	350	
2	John	USA	900	
3	Georg	UK	750	
4	Martin	Germany	500	
5	Peter	USA	0	

## Distinct

Removes Duplicates (Repeated Values)

each Value appears only Once

SELECT DISTINCT  
Col  
FROM Table



Database



	id	name	Country	Score
1	Maria	Germany	350	
2	John	USA	900	
3	Georg	UK	750	
4	Martin	Germany	500	
5	Peter	USA	0	

Country

Germany
USA
UK
Germany
USA

only  
Once!

Germany
USA
UK

③ SELECT DISTINCT  
② Country  
① FROM Table

Database



<u>id</u>	<u>name</u>	<u>Country</u>	<u>Score</u>
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0

TOP (Limit)

Restrict the Number of Rows Returned

SELECT TOP 3

FROM Table

Database



id	name	Country	Score
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0

Row 1 →

Row 2 →

Row 3 →

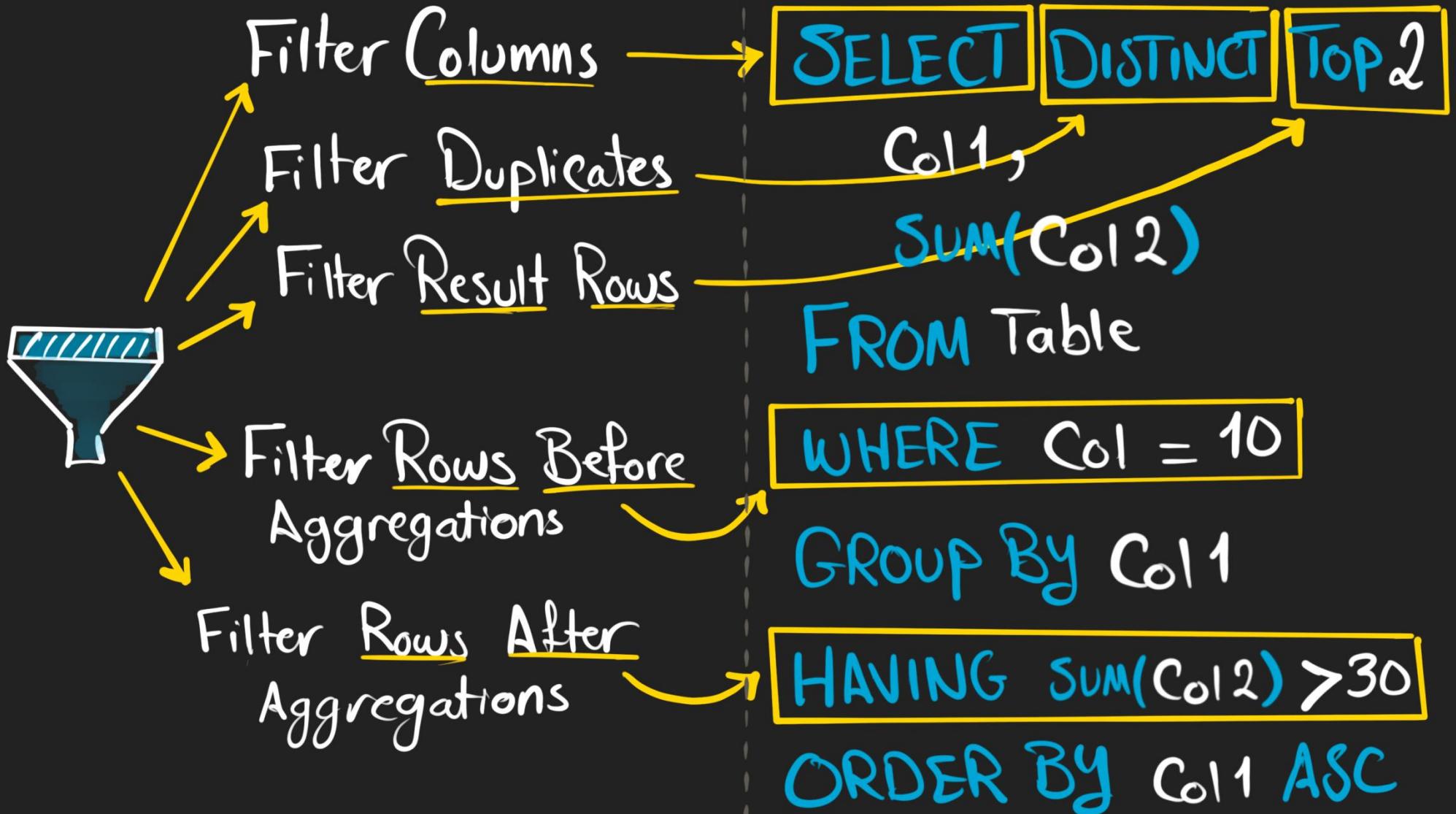
id	name	Country	Score
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750

③

② SELECT TOP 3

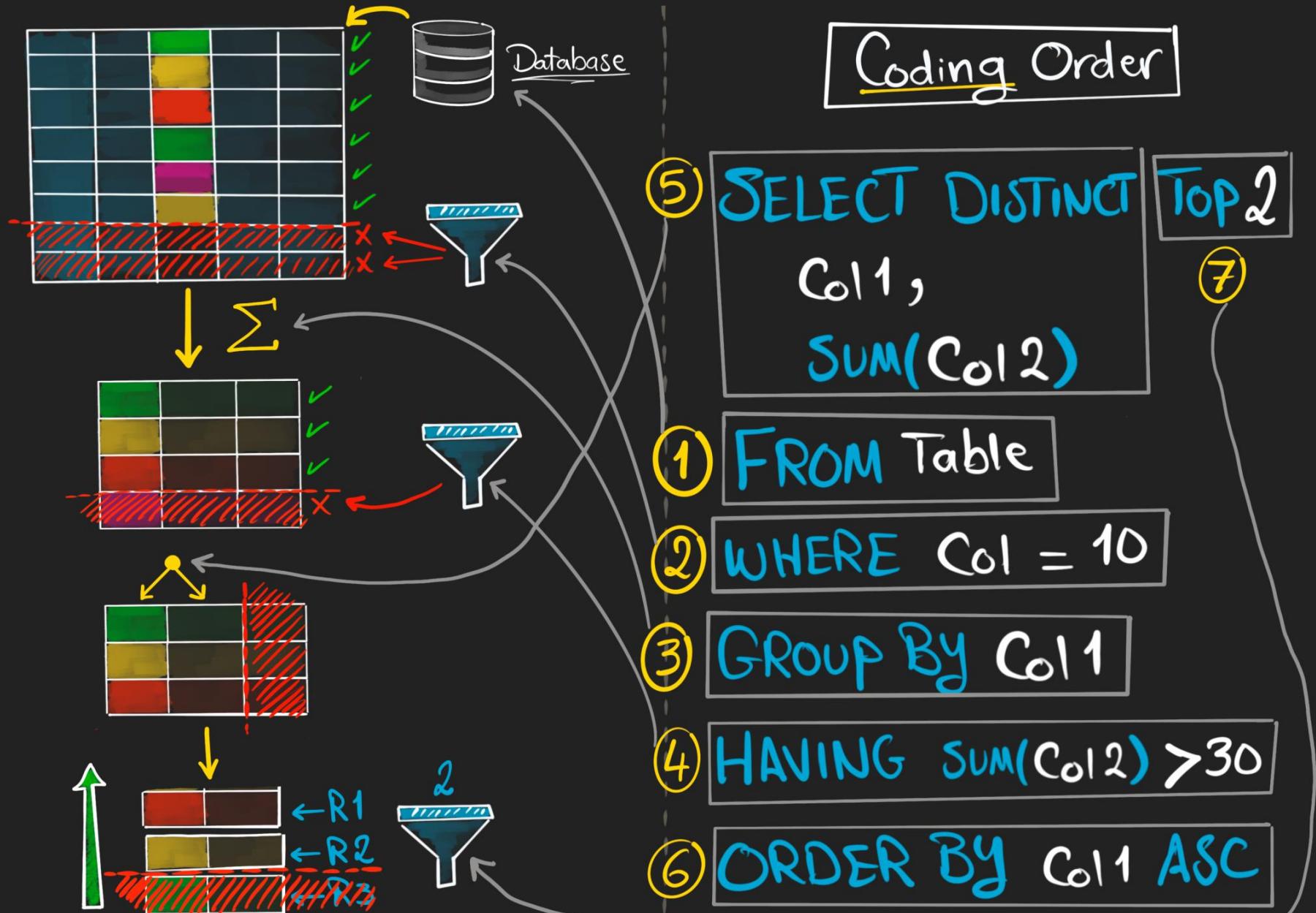
\*  
① FROM Table

## Execute Order



## Execute Order

- ① FROM
- ② WHERE
- ③ GROUP By
- ④ HAVING
- ⑤ SELECT DISTINCT
- ⑥ ORDER By
- ⑦ Top





# BONUS Sketches

Baraa Khatib Salkini  
YouTube | **DATA WITH BARAA**  
SQL Course | SELECT Query





## Database

### Customers

id	name	Country	Score
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0



## Result

② SELECT \*

① FROM

id	name	Country	Score
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0



Execute Order

① FROM

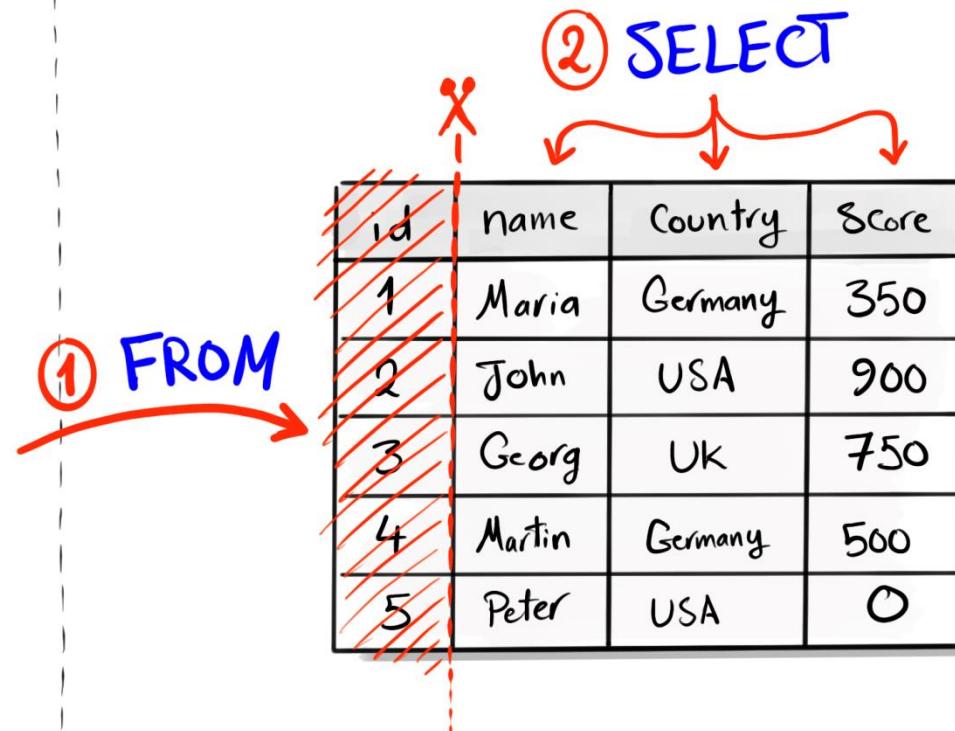


Database

Customers

id	name	Country	Score
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0

Result



Execute Order

**① FROM**  
**② SELECT**



## Database

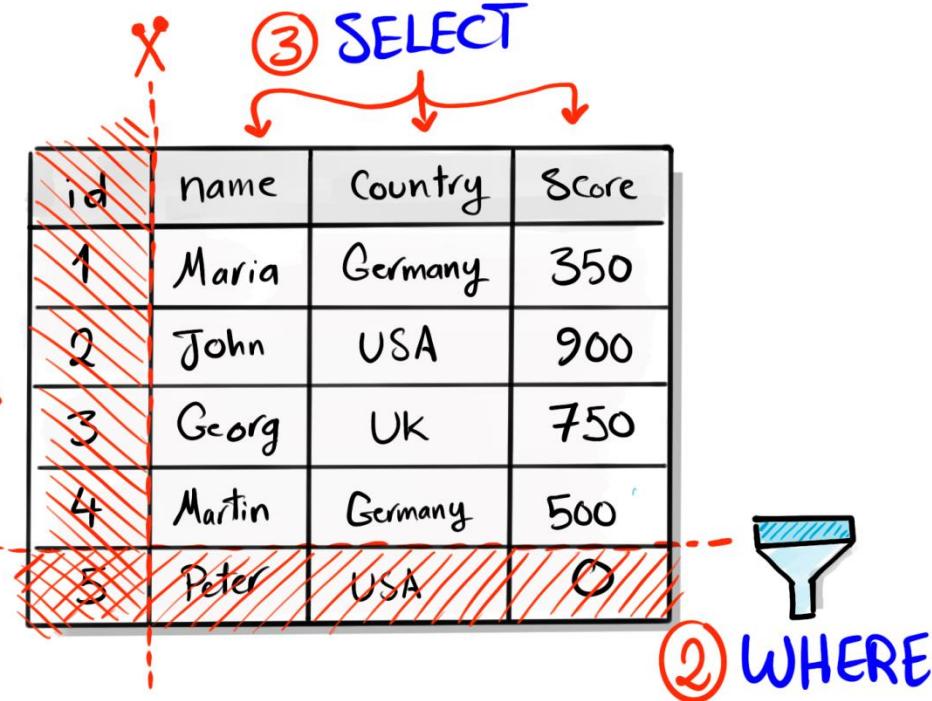
### Customers

id	name	Country	Score
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0



## Result

① FROM



Execute Order

① FROM

② WHERE

③ SELECT

Name	Score
Alex	90
Maria	50
Alex	30
Maria	80

DESC

Highest



Lowest

Name	Score
Alex	90
Maria	80
Maria	50
Alex	30

ASC

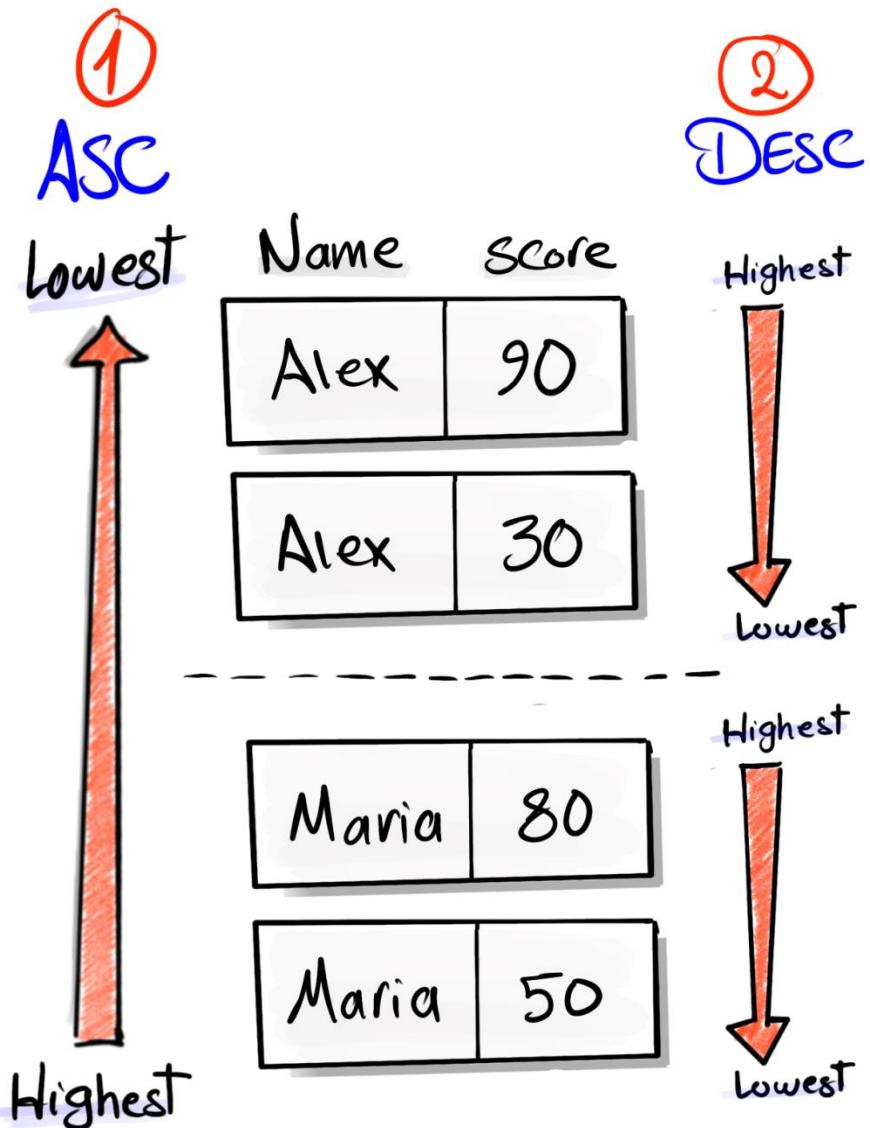
Lowest



Highest

Name	Score
Alex	30
Maria	50
Maria	80
Alex	90

Name	Score
Alex	90
Maria	50
Alex	30
Maria	80





## Database

### Customers

id	name	Country	Score
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0

① FROM

## Result

id	name	Country	Score
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0

② WHERE

Σ  
③ GROUP By

Country	Avg
Germany	425
USA	900
UK	500

④ SELECT

Execute Order

① FROM

② WHERE

③ GROUP By

④ SELECT

# Group By

Category

Country Sales

①	Germany	10
---	---------	----

②	Germany	30
---	---------	----

③	USA	15
---	-----	----

④	USA	45
---	-----	----

⑤	France	10
---	--------	----

⑥	France	15
---	--------	----

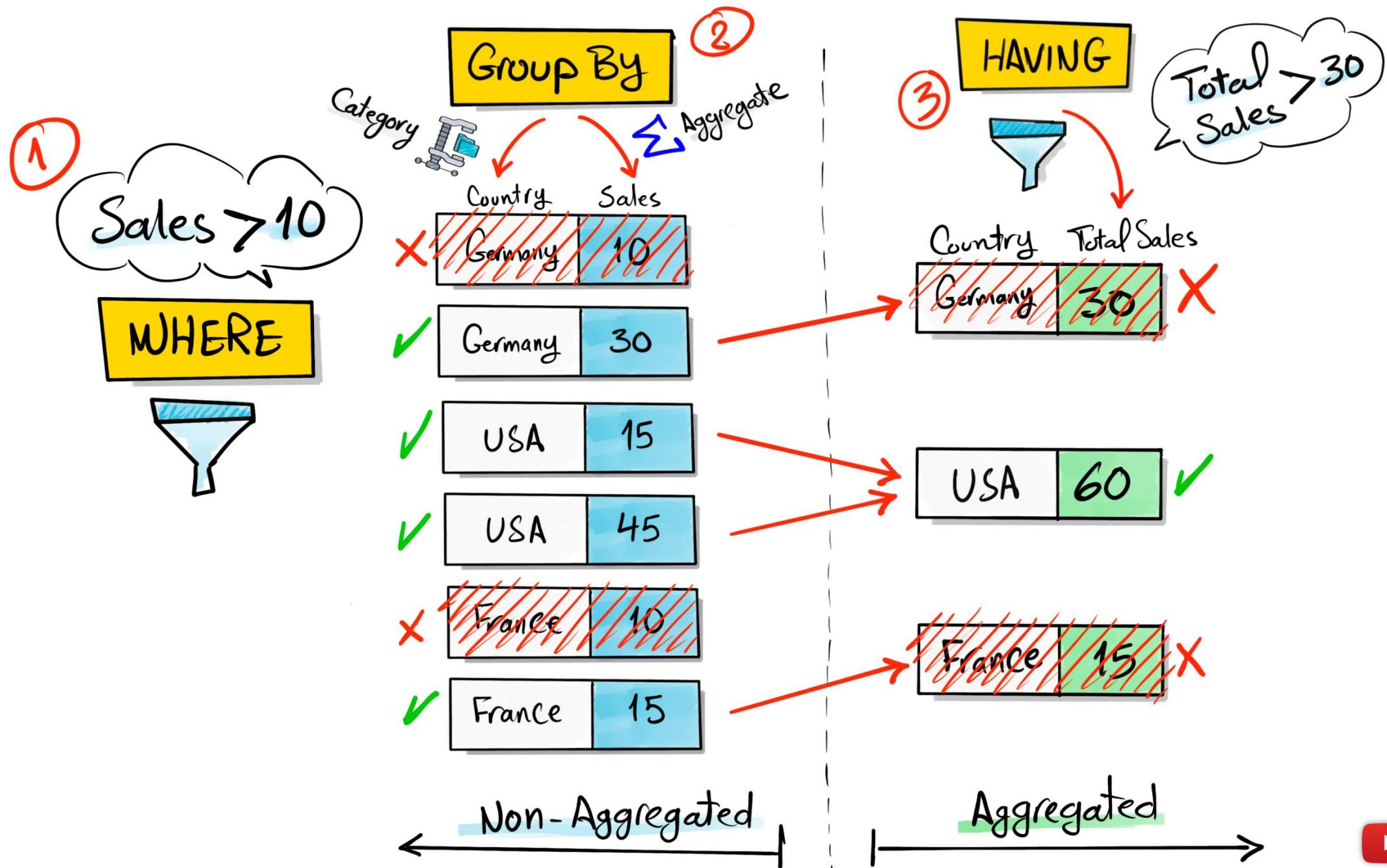
Aggregate

Country Total Sales

Germany	40
---------	----

USA	60
-----	----

France	25
--------	----



Germany

USA

Germany

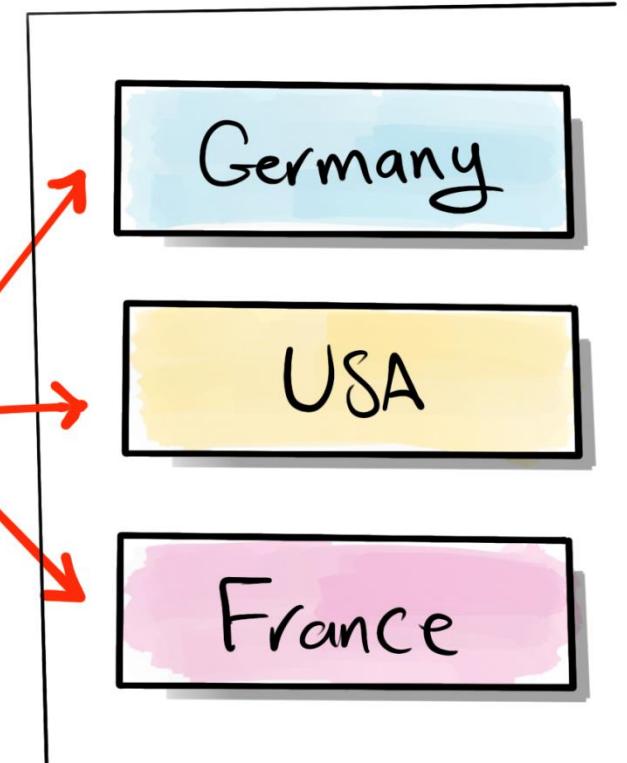
Germany

USA

France

DISTINCT

Unique  
List





## Database

### Customers

id	name	Country	Score
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0

① FROM

## Result

id	name	Country	Score
1	Maria	Germany	350
2	John	USA	900
3	Georg	UK	750
4	Martin	Germany	500
5	Peter	USA	0



② WHERE

Σ ③ GROUP BY

Country	Avg
Germany	425
USA	900
UK	500

④ HAVING

Country	Avg
UK	500
USA	900

⑤ ORDER BY  
ASC

⑥ SELECT

Execute Order

① FROM

② WHERE

③ GROUP BY

④ HAVING

⑤ ORDER BY

⑥ SELECT



## Execution Order

- ① **FROM JOIN**
- ② **WHERE**
- ③ **GROUP BY**
- ④ **HAVING**
- ⑤ **SELECT DISTINCT**
- ⑥ **ORDER BY**
- ⑦ **TOP**

