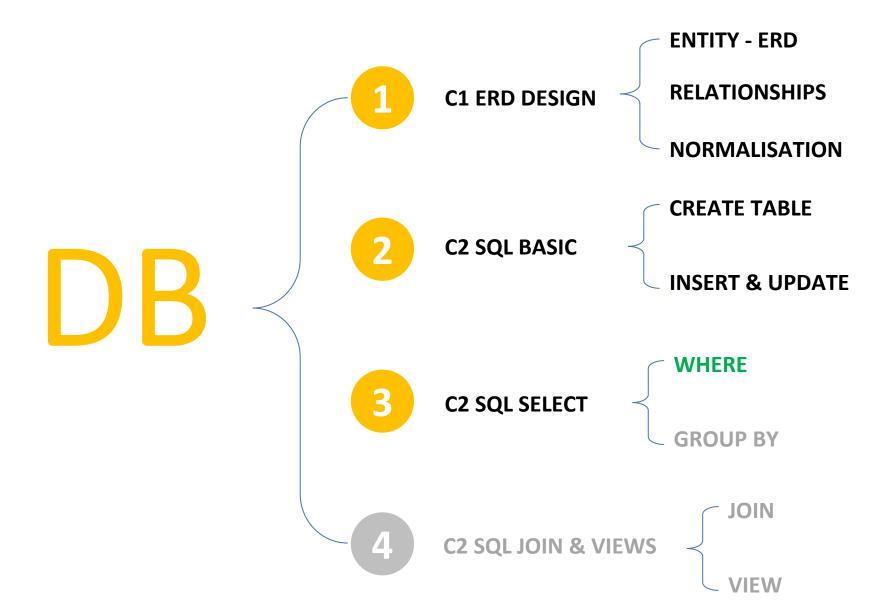
SELECT WHERE
IS NULL / IS NOT NULL
AND / OR
SUM / COUNT

Database content

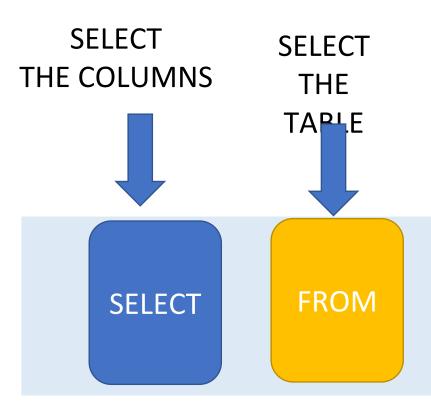




- ✓ SELECT WHERE statement
 - ✓ EQUAL/ NOT EQUAL / GREATER
 - ✓ IS NULL / NOT NULL
 - ✓ IN / NOT IN
- **✓** ORDER BY
 - ✓ ASC
 - **✓** DESC
- √ Sum / COUNT

SELECT COLUMNS

SELECT column1, column2 FROM table;



SELECT COLUMNS





https://www.w3schools.com/sql/trysql.asp?filename=trysql_op_in

Display all columns

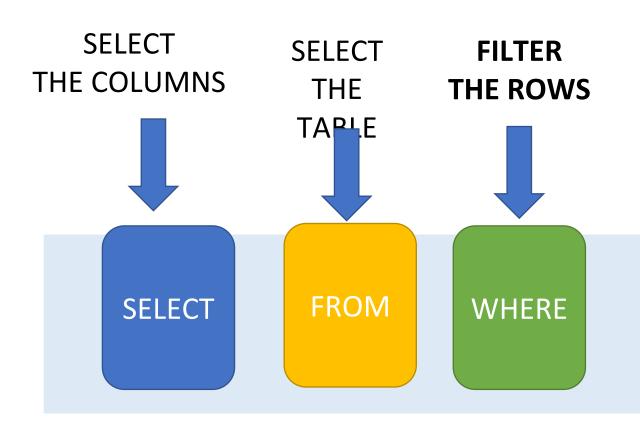
SELECT * FROM Customers;

Only the customer city and name

SELECT City, CustomerName FROM Customers;

FILTER ROWS

SELECT column1 FROM table WHERE city = "paris";



FILTER ROWS

GO HERE



https://www.w3schools.com/sql/trysql.asp?filename=trysql_op_in

Display the name of customers from Mexico

SELECT * FROM customers WHERE city = "paris";

Display all the data of employees that work in the department 57

-mm1			
employees			
id	first_name	last_name	dept
127323	Michale	Robbin	57
526689	Carlos	Snares	63
843795	Enric	Dosio	57
328717	Jhon	Snares	63
444527	Joseph	Dosni	47
659831	Zanifer	Emily	47
847674	Kuleswar	Sitaraman	57
748681	Henrey	Gabriel	47
555935	Alex	Manuel	57
539569	George	Mardy	27
733843	Mario	Saule	63
631548	Alan	Snappy	27
839139	Maria	Foster	57

		Expected result		
id	first_name	last_name	dept	
127323	Michale	Robbin	57	
843795	Enric	Dosio	57	
847674	Kuleswar	Sitaraman	57	
555935	Alex	Manuel	57	
839139	Maria	Foster	57	

```
FROM employees
WHERE dept= 57;

B SELECT *
OF employees
WHERE dept= 57;
```

```
SELECT *

OF employees

WHERE dept == 57;

D SELECT *

WHERE dept = 57;
```

Display all the data of employees that work in the department 57

employees			
empioyees			
id	first_name	last_name	dept
127323	Michale	Robbin	57
526689	Carlos	Snares	63
843795	Enric	Dosio	57
328717	Jhon	Snares	63
444527	Joseph	Dosni	47
659831	Zanifer	Emily	47
847674	Kuleswar	Sitaraman	57
748681	Henrey	Gabriel	47
555935	Alex	Manuel	57
539569	George	Mardy	27
733843	Mario	Saule	63
631548	Alan	Snappy	27
839139	Maria	Foster	57

WHERE dept= 57;

		Expected resul	t	
id	first_name	last_name	dept	
127323	Michale	Robbin	57	
843795	Enric	Dosio	57	
847674	Kuleswar	Sitaraman	57	
555935	Alex	Manuel	57	
839139	Maria	Foster	57	

```
SELECT *
FROM employees
WHERE dept= 57;

B SELECT *
OF employees
```

```
SELECT *

OF employees

WHERE dept == 57;

D SELECT *

WHERE dept = 57;
```

Find the first + last name of employees whose last name is **Snares**

-mm1			
employees			
id	first_name	last_name	dept
127323	Michale	Robbin	57
526689	Carlos	Snares	63
843795	Enric	Dosio	57
328717	Jhon	Snares	63
444527	Joseph	Dosni	47
659831	Zanifer	Emily	47
847674	Kuleswar	Sitaraman	57
748681	Henrey	Gabriel	47
555935	Alex	Manuel	57
539569	George	Mardy	27
733843	Mario	Saule	63
631548	Alan	Snappy	27
839139	Maria	Foster	57

```
first_name last_name

Carlos Snares
Jhon Snares
```

```
FROM employees
WHERE last_name= 'Snares';

SELECT * OF first_name , last_name
FROM employees
WHERE last_name= 'Snares';
```

```
SELECT *
    IN employees
    WHERE last_name= 'Snares';

SELECT first_name , last_name
    FROM employees
    WHERE last_name= 'Snares';
```

Find the first + last name of employees whose last name is **Snares**

-mm1			
employees			
id	first_name	last_name	dept
127323	Michale	Robbin	57
526689	Carlos	Snares	63
843795	Enric	Dosio	57
328717	Jhon	Snares	63
444527	Joseph	Dosni	47
659831	Zanifer	Emily	47
847674	Kuleswar	Sitaraman	57
748681	Henrey	Gabriel	47
555935	Alex	Manuel	57
539569	George	Mardy	27
733843	Mario	Saule	63
631548	Alan	Snappy	27
839139	Maria	Foster	57

```
first_name last_name

Carlos Snares
Jhon Snares
```

```
FROM employees

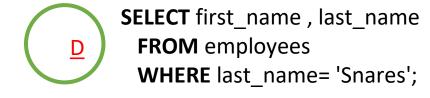
WHERE last_name= 'Snares';
```

```
SELECT * OF first_name , last_name

FROM employees

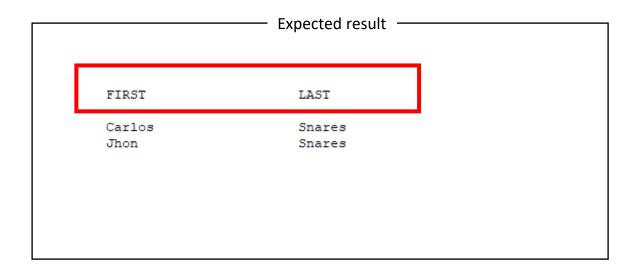
WHERE last_name= 'Snares';
```

```
SELECT *
IN employees
WHERE last_name= 'Snares';
```



What to change in this query to display columns as expected?

FROM employees
WHERE last_name 'Snares';



```
SELECT first_name
FROM employees
WHERE last_name= 'Snares'

AS "FIRST", "LAST";

SELECT first_name AS "FIRST", last_name AS "LAST"
FROM employees
WHERE last_name= 'Snares';
```

```
SELECT first_name
FROM employees
WHERE last_name= 'Snares'

LIKE "FIRST", "LAST";

SELECT first_name LIKE "FIRST", last_name LIKE "LAST"
FROM employees
WHERE last_name= 'Snares';
```

What to change in this query to display columns as expected?

FROM employees
WHERE last_name 'Snares';

```
FIRST LAST

Carlos Snares
Jhon Snares
```

```
SELECT first_name
FROM employees
WHERE last_name= 'Snares'
AS "FIRST", "LAST";
```

```
SELECT first_name AS "FIRST", last_name AS "LAST"
FROM employees
WHERE last_name= 'Snares';
```

```
SELECT first_name
FROM employees
WHERE last_name= 'Snares'

LIKE "FIRST", "LAST";

SELECT first_name LIKE "FIRST", last_name LIKE "LAST"
FROM employees
```

WHERE last_name= 'Snares';

Display all the data of employees that work in department 63 but exclude employee whose last name is 'Snares'.

2		Database ————	
employees			
id	first_name	last_name	dept
127323	Michale	Robbin	57
526689	Carlos	Snares	63
843795	Enric	Dosio	57
328717	Jhon	Snares	63
444527	Joseph	Dosni	47
659831	Zanifer	Emily	47
847674	Kuleswar	Sitaraman	57
748681	Henrey	Gabriel	47
555935	Alex	Manuel	57
539569	George	Mardy	27
733843	Mario	Saule	63
631548	Alan	Snappy	27
839139	Maria	Foster	57

```
id first_name last_name dept
733843 Mario Saule 63
```

```
SELECT *

FROM employees
WHERE dept= 63
AND last_name != 'Snares';

SELECT *
FROM employees
WHERE dept= 63
EXCLUDES last_name = 'Snares';
```

```
SELECT *

FROM employees

WHERE dept= 63

AND last_name = 'Snares';

SELECT *

FROM employees

WHERE dept= 63

OR last_name != 'Snares';
```

Display all the data of employees that work in department 63 but exclude employee whose last name is 'Snares'.

		Database ————	
employees			
id	first_name	last_name	dept
127323	Michale	Robbin	57
526689	Carlos	Snares	63
843795	Enric	Dosio	57
328717	Jhon	Snares	63
444527	Joseph	Dosni	47
659831	Zanifer	Emily	47
847674	Kuleswar	Sitaraman	57
748681	Henrey	Gabriel	47
555935	Alex	Manuel	57
539569	George	Mardy	27
733843	Mario	Saule	63
631548	Alan	Snappy	27
839139	Maria	Foster	57

		— Expected result ———	
id	first_name	last_name	dept
733843	Mario	Saule	63

```
FROM employees
WHERE dept= 63
AND last_name != 'Snares';

SELECT *
FROM employees
WHERE dept= 63
WHERE dept= 63
EXCLUDES last_name = 'Snares';
```

```
SELECT *

FROM employees

WHERE dept= 63

AND last_name = 'Snares';

SELECT *

FROM employees

WHERE dept= 63

OR last_name != 'Snares';
```

Put in order the below query

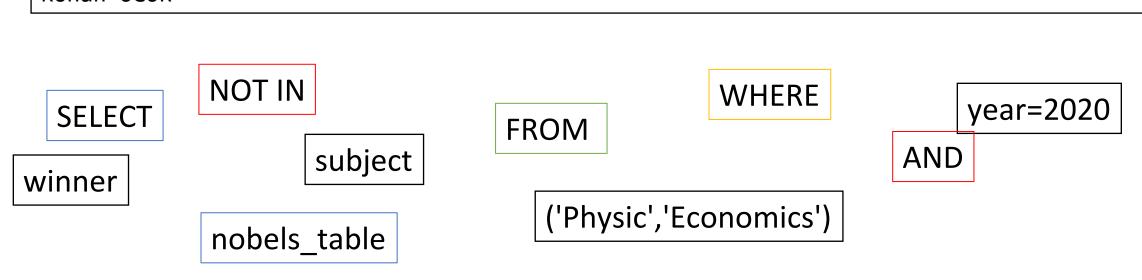
10 MIN - ACTIVITY

nobels_tab	ole			
year	subject	winner	country	category
1999	Physics	Rith Nhel	Cambodia	Scientist
2020	Physics	Hannes Alfven	Sweden	Scientist
2020	Economics	Robert Solow	USA	Economist
2020	Computer Science	Ronan OGOR	France	Best Teacher

To get this

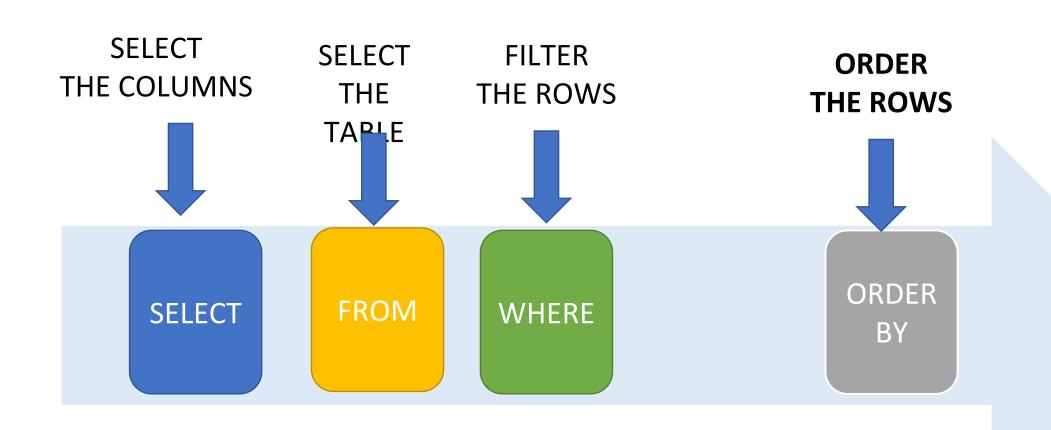
Winner

Ronan OGOR



ORDER ROWS

SELECT column1, column2 FROM table ORDER BY city ASC;



ID	NAME	11.50		1	ADDRESS	SALARY	1
1	Ramesh	1	32	+	Ahmedabad	2000.00	†
2	Khilan	1	25	1	Delhi	1500.00	ĺ
3	kaushik	1	23	1	Kota	2000.00	1
4	Chaitali	1	25	1	Mumbai	6500.00	1
5	Hardik	1	27	1	Bhopal	8500.00	Ī
6	Komal	1	22	1	MP	4500.00	I
7	Muffy	1	24	1	Indore	10000.00	1

A SELECT *
FROM customers
ORDER BY name;

SELECT *FROM customersORDER BY name, salary;

Expected

result		+		++
ID	NAME	AGE	ADDRESS	SALARY
++		+		++
4	Chaitali	25	Mumbai	6500.00
5	Hardik	27	Bhopal	8500.00
3	kaushik	23	Kota	2000.00
2	Khilan	25	Delhi	1500.00
6	Komal	22	MP	4500.00
7	Muffy	24	Indore	10000.00
1	Ramesh	32	Ahmedabad	2000.00
++		+	·	++

SELECT *FROM customersORDER BY name or salary;

SELECT *
FROM customers
ORDER BY "name salary";

ID	1	NAME	1	AGE	1	ADDRESS	SALARY
	-+		+				++
1		Ramesh	1	32	ı	Ahmedabad	2000.00
2		Khilan		25		Delhi	1500.00
3	1	kaushik	1	23	1	Kota	2000.00
4	1	Chaitali	1	25	1	Mumbai	6500.00
5	1	Hardik	1	27	1	Bhopal	8500.00
6	1	Komal	1	22	1	MP	4500.00
7	1	Muffy	1	24	1	Indore	10000.00



B SELECT *
FROM customers
ORDER BY name, salary;

Expected

result	. +			+
ID	NAME	AGE	ADDRESS	SALARY
+	+	+	·	++
4	Chaitali	25	Mumbai	6500.00
5	Hardik	27	Bhopal	8500.00
3	kaushik	23	Kota	2000.00
2	Khilan	25	Delhi	1500.00
6	Komal	22	MP	4500.00
7	Muffy	24	Indore	10000.00
1	Ramesh	32	Ahmedabad	2000.00
+	+	+	+	++

SELECT *
FROM customers
ORDER BY name or salary;

SELECT *
FROM customers
ORDER BY "name salary";

ID		1 10 100 500 1	ADDRESS	SALARY
1	Ramesh		+ Ahmedabad	2000.00
2	Khilan	25	Delhi	1500.00
3	kaushik	23	Kota	2000.00
4	Chaitali	25	Mumbai	6500.00
5	Hardik	27	Bhopal	8500.00
6	Komal	22	MP	4500.00
7	Muffy	24	Indore	10000.00

A SELECT *
FROM customers
ORDER BY name DESC;

B SELECT *
FROM customers
ORDER BY @name DESC;

Expected

++	+		++
ID NAME	AGE	ADDRESS	SALARY
++			++
1 Ramesh	32	Ahmedabad	2000.00
7 Muffy	24	Indore	10000.00
6 Komal	22	MP	4500.00
2 Khilan	25	Delhi	1500.00
3 kaushik	23	Kota	2000.00
5 Hardik	27	Bhopal	8500.00
4 Chaitali	25	Mumbai	6500.00
++	+		++

SELECT *
FROM customers
ORDER BY name;

SELECT *
FROM customers
ORDER BY "name DESC";

ID	NAME				ADDRESS	SALARY
1	Ramesh	+-	32		Ahmedabad	2000.00
2	Khilan	ĺ	25	İ	Delhi	1500.00
3	kaushik	İ	23	İ	Kota	2000.00
4	Chaitali	ĺ	25	1	Mumbai	6500.00
5	Hardik	1	27	1	Bhopal	8500.00
6	Komal		22	1	MP	4500.00
7	Muffy	1	24	1	Indore	10000.00



B SELECT *
FROM customers
ORDER BY @name;

Expected

++	+		++
ID NAME	AGE	ADDRESS	SALARY
++			++
1 Ramesh	32	Ahmedabad	2000.00
7 Muffy	24	Indore	10000.00
6 Komal	22	MP	4500.00
2 Khilan	25		1500.00
3 kaushik	23	Kota	2000.00
5 Hardik	27	Bhopal	8500.00
4 Chaitali	25	Mumbai	6500.00
++	+		++

SELECT *
FROM customers
ORDER BY name;

SELECT *
FROM customers
ORDER BY "name";

++	AGE	ADDRESS	++ SALARY +
1 Ramesh	32	Ahmedabad	2000.00
2 Khilan	25	Delhi	1500.00
3 kaushik	23	Kota	2000.00
4 Chaitali	25	Mumbai	6500.00
5 Hardik	27	Bhopal	8500.00
6 Komal	22	MP	
7 Muffy	24	Indore	
++	++		++

A SELECT ID, name, address, salary FROM customers
WHERE salary = NULL;

B SELECT ID, name, address, salary FROM customers
WHERE salary IS NULL;

Expected Result

+)	NAME	+ <i> </i>		ADDRESS	++ SALARY
		Komal Muffy	 	22 24	MP Indore	

SELECT ID, name, address, salary FROM customers
WHERE salary #NULL;

SELECT ID, name, address, salaryFROM customersWHERE salary @NOT NULL;

++	AGE		SALARY
1 Ramesh	32	Ahmedabad	2000.00
2 Khilan	25	Delhi	1500.00
3 kaushik	23	Kota	2000.00
4 Chaitali	25	Mumbai	6500.00
5 Hardik	27	Bhopal	8500.00
6 Komal	22	MP	
7 Muffy	24	Indore	l l
+	++		++

A SELECT ID, name, age, address, salary FROM customers
WHERE salary = NULL;

B SELECT ID, name, age, address, salary FROM customers
WHERE salary IS NULL;

Expected Result

ID	NAME	-++ AGE	ADDRESS	SALARY
	Komal Muffy	22 24	MP Indore	

SELECT ID, name, address, salary FROM customers
WHERE salary #NULL;

SELECT ID, name, address, salaryFROM customersWHERE salary @NOT NULL;

1 Ramesh 32 Ahmedabad 2000.00 2 Khilan 25 Delhi 1500.00 3 kaushik 23 Kota 2000.00 4 Chaitali 25 Mumbai 6500.00 5 Hardik 27 Bhopal 8500.00	+-	ID	NAME	AGE	ADDRESS	SALARY
7 Muffy 24 Indore	 	2 3 4	Ramesh Khilan kaushik Chaitali Hardik Komal	32 25 23 25 27 22	Ahmedabad Delhi Kota Mumbai Bhopal MP	2000.00 1500.00 2000.00 6500.00

A SELECT ID, name, address, salary FROM customers
WHERE salary NOT NULL;

SELECT ID, name, address, salary **FROM** customers
WHERE salary = NOT NULL;

Expected Result

++	AGE	ADDRESS	SALARY
1 Ramesh	32	Ahmedabad	2000.00
2 Khilan	25	Delhi	1500.00
3 kaushik	23	Kota	2000.00
4 Chaitali	25	Mumbai	6500.00
5 Hardik	27	Bhopal	8500.00
++	++		++

SELECT ID, name, address, salary FROM customers
WHERE salary IS NOT NULL;

SELECT ID, name, address, salaryFROM customersWHERE salary @NOT NULL;

++	AGE		SALARY
1 Ramesh	32	Ahmedabad	2000.00
2 Khilan	25	Delhi	1500.00
3 kaushik	23	Kota	2000.00
4 Chaitali	25	Mumbai	6500.00
5 Hardik	27	Bhopal	8500.00
6 Komal	22	MP	
7 Muffy	24	Indore	l l
+	++		++

A SELECT ID, name, age, address, salary FROM customers
WHERE salary NOT NULL;

B SELECT ID, name, age, address, salary FROM customers
WHERE salary = NOT NULL;

Expected Result

++	AGE	ADDRESS	SALARY
1 Ramesh 2 Khilan 3 kaushik 4 Chaitali	25 23	Delhi Kota	1500.00 2000.00
5 Hardik	27	Bhopal	8500.00

SELECT ID, name, age, address, salary FROM customers
WHERE salary IS NOT NULL;

SELECT ID, name, age, address, salary FROM customers
WHERE salary @NOT NULL;

CustomerID	CustomerName	ContactName	Address	City	PostalCode	Country
1	Alfreds Futterkiste	Maria Anders	Obere Str. 57	Berlin	12209	Germany
2	Ana Trujillo Emparedados y helados	Ana Trujillo	Avda. de la Constitución 2222	México D.F.	05021	Mexico
3	Antonio Moreno Taquería	Antonio Moreno	Mataderos 2312	México D.F.	05023	Mexico
4	Around the Horn	Thomas Hardy	120 Hanover Sq.	London	WA1 1DP	UK
5	Berglunds	Christina	Berguvsvägen 8	Luleå	S-958 22	Sweden

Expected Result

City	PostalCode	Country
Berlin	12209	Germany
London	WA1 1DP	UK
Mannheim	68306	Germany
Strasbourg	67000	France
Marseille	13008	France

A SELECT * FROM Customers
WHERE Country IN ('Germany',
'France', 'UK');

B SELECT * FROM Customers
WHERE Country IN 'Germany',
'France', 'UK';

SELECT * FROM Customers
WHERE Country IN = ('Germany',
'France', 'UK');

SELECT * FROM Customers
WHERE Country IN@ ('Germany', 'France', 'UK');

CustomerID	CustomerName	ContactName	Address	City	PostalCode	Country
1	Alfreds Futterkiste	Maria Anders	Obere Str. 57	Berlin	12209	Germany
2	Ana Trujillo Emparedados y helados	Ana Trujillo	Avda. de la Constitución 2222	México D.F.	05021	Mexico
3	Antonio Moreno Taquería	Antonio Moreno	Mataderos 2312	México D.F.	05023	Mexico
4	Around the Horn	Thomas Hardy	120 Hanover Sq.	London	WA1 1DP	UK
5	Berglunds	Christina	Berguvsvägen 8	Luleå	S-958 22	Sweden

Expected Result

City	PostalCode	Country
Berlin	12209	Germany
London	WA1 1DP	UK
Mannheim	68306	Germany
Strasbourg	67000	France
Marseille	13008	France

```
A SELECT * FROM Customers WHERE Country IN ('Germany', 'France', 'UK');
```

SELECT * FROM Customers
WHERE Country IN = ('Germany',
'France', 'UK');

B SELECT * FROM Customers
WHERE Country IN 'Germany',
'France', 'UK';

SELECT * FROM Customers
WHERE Country IN@ ('Germany', 'France', 'UK');

CustomerID	CustomerName	ContactName	Address	City	PostalCode	Country
1	Alfreds Futterkiste	Maria Anders	Obere Str. 57	Berlin	12209	Germany
2	Ana Trujillo Emparedados y helados	Ana Trujillo	Avda. de la Constitución 2222	México D.F.	05021	Mexico
3	Antonio Moreno Taquería	Antonio Moreno	Mataderos 2312	México D.F.	05023	Mexico
4	Around the Horn	Thomas Hardy	120 Hanover Sq.	London	WA1 1DP	UK
5	Berglunds	Christina	Berguvsvägen 8	Luleå	S-958 22	Sweden

Expected Result

City	PostalCode	Country
México D.F.	05021	Mexico
México D.F.	05023	Mexico
Luleå	S-958 22	Sweden
Madrid	28023	Spain

A SELECT * FROM Customers
WHERE Country !=IN ('Germany', 'France', 'UK');

B SELECT * FROM Customers
WHERE Country NOT IN 'Germany', 'France', 'UK';

SELECT * FROM Customers
WHERE Country NOT IN ('Germany', 'France', 'UK');

☑ SELECT * FROM Customers
WHERE Country NOT IN@
('Germany', 'France', 'UK');

CustomerID	CustomerName	ContactName	Address	City	PostalCode	Country
1	Alfreds Futterkiste	Maria Anders	Obere Str. 57	Berlin	12209	Germany
2	Ana Trujillo Emparedados y helados	Ana Trujillo	Avda. de la Constitución 2222	México D.F.	05021	Mexico
3	Antonio Moreno Taquería	Antonio Moreno	Mataderos 2312	México D.F.	05023	Mexico
4	Around the Horn	Thomas Hardy	120 Hanover Sq.	London	WA1 1DP	UK
5	Berglunds	Christina	Berguvsvägen 8	Luleå	S-958 22	Sweden

Expected Result

City	PostalCode	Country
México D.F.	05021	Mexico
México D.F.	05023	Mexico
Luleå	S-958 22	Sweden
Madrid	28023	Spain

A SELECT * FROM Customers
WHERE Country !=IN ('Germany', 'France', 'UK');

SELECT * FROM Customers
WHERE Country NOT IN ('Germany',
'France', 'UK');

B SELECT * FROM Customers
WHERE Country NOT IN 'Germany',
'France', 'UK';

SELECT * FROM Customers WHERE Country NOT IN@ ('Germany', 'France', 'UK');

Products

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

Expected Result 77

ProductID	ProductName
1	Chais
2	Chang
3	Aniseed Syrup
75	Rhönbräu Klosterbier
76	Lakkalikööri
77	Original Frankfurter grüne Soße

A SELECT COUNT@ProductID FROM Products;

SELECT COUNTS(ProductID)
FROM Products;

<u>B</u> SELECT COUNT ProductID FROM Products;

SELECT COUNT(ProductID)
FROM Products;

Products

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

Expected Result

77

ProductID	ProductName		
1	Chais		
2	Chang		
3	Aniseed Syrup		
75	Rhönbräu Klosterbier		
76	Lakkalikööri		
77	Original Frankfurter grüne Soße		

A SELECT COUNT@ProductID FROM Products;

SELECT COUNTS(ProductID)
FROM Products;

<u>B</u> SELECT COUNT ProductID FROM Products;

SELECT COUNT(ProductID) FROM Products;

OrderDetails

Expected Result 12743

OrderDetailID	OrderID	ProductID	Quantity
1	10248	11	12
2	10248	42	10
3	10248	72	5
4	10249	14	9
5	10249	51	40

SELECT SUM(Quantity)
FROM OrderDetails;

<u>C</u> SELECT SUMS(Quantity) FROM OrderDetails;

<u>B</u> <u>SELECT SUM</u> @Quantity FROM OrderDetails;

SELECT SUM "Quantity" FROM OrderDetails;

OrderDetails

Expected Result 12743

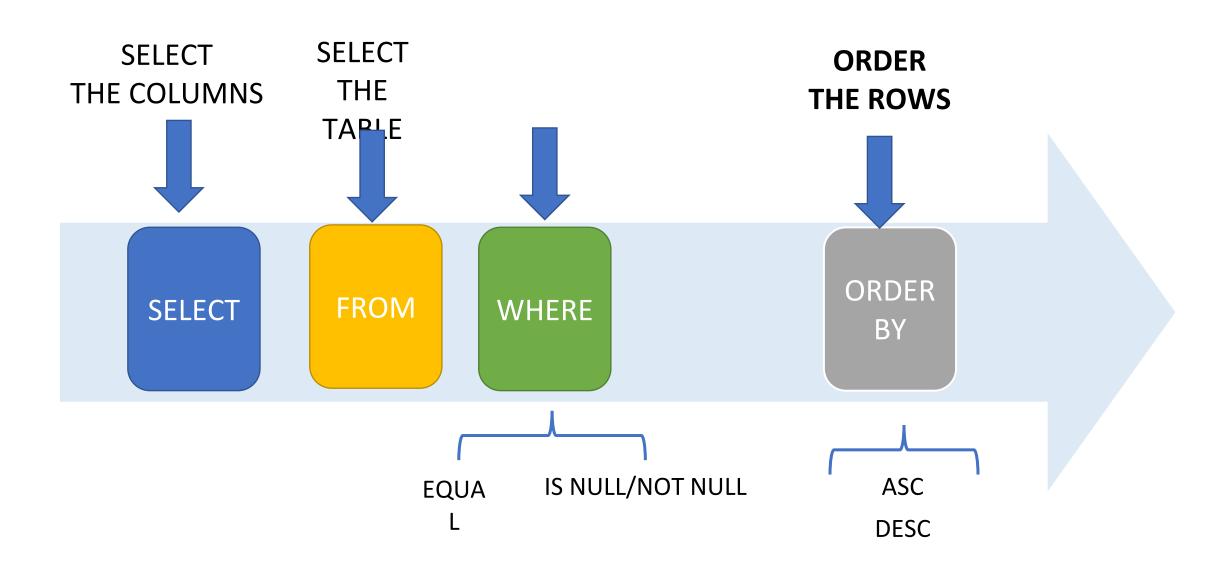
OrderDetailID	OrderID	ProductID	Quantity
1	10248	11	12
2	10248	42	10
3	10248	72	5
4	10249	14	9
5	10249	51	40

<u>A</u> SELECT SUM(Quantity) FROM OrderDetails; <u>C</u> SELECT SUMS(Quantity) FROM OrderDetails;

<u>B</u> <u>SELECT SUM</u> @Quantity FROM OrderDetails;

SELECT SUM "Quantity"
FROM OrderDetails;

LET'S SUM UP!



HOMEWORK

C3-S1-THEORY - WHERE