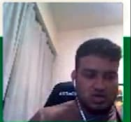


Operators in SQL



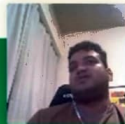
SQL operators

```
graph TD; A[SQL operators] --> B[Arithmetic]; A --> C[Comparison]; A --> D[Logical];
```

Arithmetic

Comparison

Logical



SQL Arithmetic Operators

Operator	Description
+	Add
-	Subtract
*	Multiply
/	Divide
%	Modulo



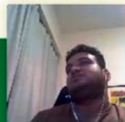
Addition in SQL

SQL Query

```
SELECT (15 + 6) AS ADDITION
```

Output Table

ADDITION





Subtraction in SQL

SQL Query

```
SELECT (15 - 6) AS SUBTRACTION
```

Output Table

SUBTRACTION



Multiplication in SQL

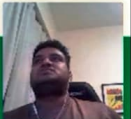
SQL Query

```
SELECT (15 * 6) AS MULTIPLICATION
```

Output Table

MULTIPLICATION

90





Division in SQL

SQL Query

```
SELECT (15 / 3) AS DIVISION
```

Output Table

DIVISION

5

01:22

< 26 / 46 >



vimeo



Modulo in SQL

SQL Query

```
SELECT (15 % 4) AS MODULO
```

Output Table

MODULO
3

01:26



SQL Comparison Operators

Operator	Description
==	Equal
!=	Not equal
>	Greater than
<	Less than
>=	Greater than or equal
<=	Less than or equal to

01:29



vimeo

Comparison Equal Operator in SQL

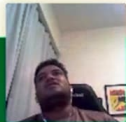
SQL Query

```
SELECT (11 == 6) AS EQUAL_OPERATOR
```

Output Table

EQUAL_OPERATOR

0



Comparison Not Equal Operator in SQL

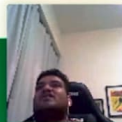
SQL Query

```
SELECT (1 != 6) AS NOT_EQUAL_OPERATOR
```

Output Table

NOT_EQUAL_OPERATOR

1



Comparison Greater than Operator in SQL

SQL Query

```
SELECT (11 > 31) AS GREATER_OPERATOR
```

Output Table

GREATER_OPERATOR
0



Comparison Lesser Than Operator in SQL

SQL Query

```
SELECT (11 < 5) AS LESSER_OPERATOR
```

Output Table

LESSER_OPERATOR

0



Comparison Greater Than and Equal Operator in SQL

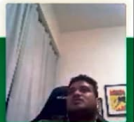
SQL Query

```
SELECT (11 >= 11) AS GREATER_EQUAL_OPERATOR
```

Output Table

	GREATER_EQUAL_OPERATOR
--	------------------------

1	1
---	---



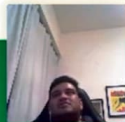
Comparison Lesser Than and Equal Operator in SQL

SQL Query

```
SELECT (11 <= 21) AS LESSER_EQUAL_OPERATOR
```

Output Table

LESSER_EQUAL_OPERATOR	
1	



SQL Logical Operators

Operator	Description
And	TRUE if all the conditions separated by AND is TRUE
All	TRUE if all of the subquery values meet the condition
Any	TRUE if any of the subquery values meet the condition
Between	TRUE if the operand is within the range of comparisons
Exists	TRUE if the subquery returns one or more records
In	TRUE if the operand is equal to one of a list of expressions
Like	TRUE if the operand matches a pattern
Not	Displays a record if the condition(s) is NOT TRUE
Or	TRUE if any of the conditions separated by OR is TRUE4
Some	TRUE if any of the subquery values meet the condition



And Operator

Table Customers

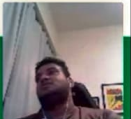
ID	NAME	AGE	ADDRESS	SALARY
1	Ramesh	32	Ahmedabad	2000.00
2	Khilan	25	Delhi	1500.00
3	kaushik	23	Kota	2000.00
4	Chaitali	25	Mumbai	6500.00
5	Hardik	27	Bhopal	8500.00
6	Komal	22	MP	4500.00
7	Muffy	24	Indore	10000.00

SQL Query

```
SELECT ID, NAME, SALARY  
FROM Customers  
WHERE SALARY > 2000 AND AGE < 25;
```

Output Table

ID	NAME	SALARY
6	Komal	4500.00
7	Muffy	10000.00



ALL Operator

Table 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
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

Table OrderDetails

OrderDetailID	OrderID	ProductID	Quantity
1	10248	11	12
2	10248	42	10
3	10248	72	5
4	10249	14	8
5	10249	51	40
6	10250	41	10
7	10250	51	35
8	10250	65	15
9	10251	22	6
10	10251	57	15

SQL Query

```
SELECT ALL ProductName  
FROM Products  
WHERE TRUE;
```

Output Table

ProductName
Chais
Chang
Aniseed Syrup
Chef Anton's Cajun Seasoning
Chef Anton's Gumbo Mix
Boysenberry Spread
Organic Dried Pears
Northwoods Cranberry Sauce
Mishi Kobe Niku



ANY Operator

Table 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	4 - 8 oz jars	22
5	Chef Anton's Gumbo Mix	2	2	36 - 4 oz jars	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 pags.	30
8	Northwoods Cranberry Sauce	3	2	12 - 12 oz jars	40
9	Mishi Kobe Niku	4	6	18 - 500 g pkgs.	97

Table OrderDetails

OrderDetailID	OrderID	ProductID	Quantity
1	10248	11	12
2	10248	42	10
3	10248	72	5
4	10249	14	9
5	10249	51	40
6	10250	41	10
7	10250	51	35
8	10250	65	15
9	10251	22	6
10	10251	57	15

SQL Query

```
SELECT ProductName
FROM Products
WHERE ProductID = ANY (SELECT ProductID
FROM OrderDetails WHERE Quantity > 99);
```

Output Table

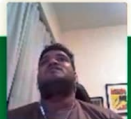
Result:

Number of Records: 2

ProductName

Steeleye Stout

Pâté chinois



BETWEEN Operator

Table Products

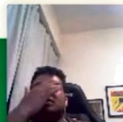
Fname	Lname	SSN	Salary	DOB
John	Smith	123456789	30000	1988-05-02
Franklin	Wong	333445555	40000	1986-01-02
Joyce	English	453453453	80000	1977-12-08
Ramesh	Narayan	666884444	38000	1987-03-05
James	Borg	888665555	55000	1982-11-01
Jennifer	Wallace	987654321	43000	1985-08-01
Ahmad	Jabbar	987987987	25000	1990-06-28
Alicia	Zeala	999887777	25000	1980-09-14

SQL Query

```
SELECT Fname, Lname  
FROM Employee  
WHERE Salary  
BETWEEN 30000 AND 45000;
```

Output Table

Fname	Lname
John	Smith
Franklin	Wong
Ramesh	Narayan
Jennifer	Wallace



EXISTS Operator

Customers

customer_id	lname	fname	website
401	Singh	Dolly	abc.com
402	Chauhan	Anuj	def.com
403	Kumar	Nitesh	ghi.com
404	Gupta	Shubham	jkl.com
405	Walecha	Divya	abc.com
406	Jain	Sandeep	jkl.com
407	Mehta	Rajiv	abc.com
408	Mehra	Anand	abc.com

Orders

order_id	c_id	order_date
1	407	2017-03-03
2	405	2017-03-05
3	408	2017-01-18
4	404	2017-02-05

SQL Query

```
SELECT fname, lname  
FROM Customers  
WHERE EXISTS (SELECT * FROM Orders  
              WHERE Customers.customer_id = Orders.c_id);
```

Output Table

fname	lname
Shubham	Gupta
Divya	Walecha
Rajiv	Mehta
Anand	Mehra



NOT Operator

Table customers

Cust_id	first_name	last_name
01	Jhon	Cramer
02	Mathew	George
03	Phillip	McCain
04	Andrew	Thomas

Table transactionsn

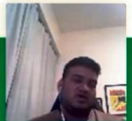
Transaction_ID	Cust_id	Product_ID	Amount	subject
01	01	02	10	5.99
02	03	01	12	6.59
03	01	05	09	8.99
04	01	04	18	6.59
05	03	02	15	5.99

SQL Query

Select first_name, last_name, cust_id
from customer where cust_id NOT
IN (Select cust_id from transactions)

Output Table

first_name	last_name	Cust_id
Mathew	George	02
Andrew	Thomas	04



OR statement

SQL Query

```
select name from instructor  
where Salary > some(select Salary  
from instructor  
where dept='Computer Science');
```

Output Table

Visweswaran

Samantha

Debarka

Instructor Table:

Name	Department	Salary
Chandra	Computational Biology	1
Visweswaran	Electronics	1.5
Abraham	Computer Science	1.3
John	Electronics	1.2
Samantha	Computer Science	2
Jyoti	Electronics	1.2
Debarka	Computer Science	2
Ganesh	Computational Biology	0.9

