#56daysofSQL

Day 16
SET Operators - (Part 2)
INTERSECT

Aditya Shenoy

#56daysofSQL

What is an **INTERSECT** Operator?

- The **INTERSECT** operator is a set operator that returns only distinct rows of two queries or more queries.

MySQL does not support INTERSECT operator.

General Syntax :

```
(SELECT column_list
FROM table_1)
INTERSECT
(SELECT column_list
FROM table_2);
```

#56daysofSQL

Key Points:

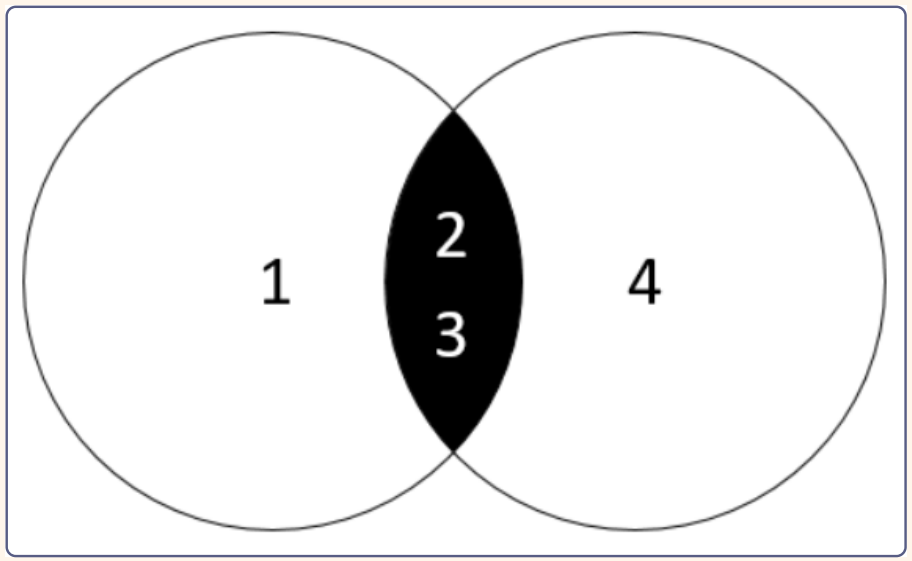
1. The order and the number of columns in the select list of the queries must be the same.
2. The data types of the corresponding columns must be compatible.

Aditya Shenoy

#56daysofSQL

INTERSECT Operator

The following diagram illustrates the **INTERSECT** operator:



- The left query produces a result set of (1,2,3).
- The right query returns a result set of (2,3,4).
- The **INTERSECT** operator returns the distinct rows of both result sets which include (2,3).

#56daysofSQL

Emulate INTERSECT in MySQL

Creating Sample Tables :

```sql
CREATE TABLE t1 (
    id INT PRIMARY KEY
);

CREATE TABLE t2 LIKE t1;

INSERT INTO t1(id) VALUES(1),(2),(3);

INSERT INTO t2(id) VALUES(2),(3),(4);
```

- **Emulating INTERSECT using DISTINCT and INNER JOIN clause**

```
SELECT DISTINCT
    id
FROM t1
    INNER JOIN t2 USING(id);
```

Output :

	id
▶	2
	3

How it works :

1. The **INNER JOIN** clause returns rows from both left and right tables.
2. The **DISTINCT** operator removes the duplicate rows.

- **Emulating INTERSECT using IN and subquery**

```sql
SELECT DISTINCT id
FROM t1
WHERE id IN (SELECT id FROM t2);
```

Output :

	id
▶	2
	3

How it works :

1. The subquery returns the first result set.
2. The outer query uses the **IN** operator to select only values that exist in the first result set. The **DISTINCT** operator ensures that only distinct values are selected.