

**Experiment No 10: Use Set operators to perform different operations**

**I. Practical Significance:** Set operators in SQL help to combine and compare the results of two or more queries. You can use set operators to find common elements, unique elements, or differences between tables. This makes it easier to analyze and understand your data. Students will learn to manipulate and analyze data by combining and comparing multiple datasets using set operators in SQL.

**II. INDUSTRY / EMPLOYER EXPECTED OUTCOME:**

To write SQL queries to implement SET operators using SQL

**III. COURSE LEVEL LEARNING OUTCOMES(COS):CO3**

- Manage database using SQL.

**IV. LABORATORY LEARNING OUTCOME:**

Write Queries to implement SET operations using SQL.

**V. Relevant Affective Domain related outcome(s)**

- a. Follow precautionary measures.
- b. Follow installation steps.
- c. Follow ethical practices.

**VI. Relevant Theoretical Background**

There are certain rules which must be followed to perform operations using *set operators* in SQL.

Rules are as follows:

1. The *number and order of columns* must be the *same*.
2. *Data types* must be *compatible*

Serial Number	Operator	Description	Syntax	SQL Query Example
1	UNION	Combines two	SELECT * FROM	SELECT * FROM emp

		tables, removes duplicates	tablename1 UNION SELECT * FROM tablename2;	UNION SELECT * FROM dept;
2	UNION ALL	Combines two tables, keeps duplicates	SELECT * FROM tablename1 UNION ALL SELECT * FROM tablename2;	SELECT * FROM emp UNION ALL SELECT * FROM dept;
3	INTERSECT	Returns common rows between two tables	SELECT * FROM tablename1 INTERSECT SELECT * FROM tablename2;	SELECT * FROM emp INTERSECT SELECT * FROM dept;
4	MINUS	(table1 minus table2) Returns rows from first table not in second	SELECT * FROM tablename1 MINUS SELECT * FROM tablename2;	SELECT * FROM emp MINUS SELECT * FROM dept;

VII. Required Resources/apparatus/equipment with specifications

Sr.No	Equipment Name with Broad Specifications	Relevant LLO Number
1	Computer system with all necessary components like; motherboard, random access memory (RAM), read-only memory (ROM), internal hard disk drives, Mouse, Keyboard, and RDBMS applications such as Oracle Express Edition, MySql, SQLite, Oracle Live SQL etc.	All

VIII. Procedure

1. Create tables for the given application
2. Apply set operators on the given tables

IX. Result(s)

In this practical we learn to use set operators to perform different operations

(1/100)



## \* Practical related questions

→

Set operators are used to combine or exclude the results of two or more select statement queries into a single result set. They perform by combining rows from two or more tables as opposed to columns in SQL joins.

Set operators are similar to a mathematical operation

It is most important to understand the difference between the way SQL set operators and joins perform

There are four fundamental set operators in SQL

### 1. Union :

Combines two or more result sets without duplicating values

### 2. Union all:

Combines two or more result sets including duplicate values.

### 3. Intersect :

includes only the values present between two or more sets

4. Except or minus : includes only results from first result set that are not included in second set.

2]



Set operators in SQL are used to combine the results of two or more select statements.

• The primary set operators in SQL

- ① Union
- ② Union all
- ③ Intersect
- ④ minus

1] Union :

- Combines the results of two or more select statements into a single result set.
- Removing duplicate rows from the result set.

Syntax:

```
SELECT * FROM tablename 1
```

Union

```
SELECT * FROM tablename 2 ;
```

Ex:

```
Select * from emp
```

Union

```
Select * from dept;
```

## 2] union all:

Union all operator is used to combine the result sets of two or more select statements into a single result set.

- It written output including duplicate rows.

### Syntax:

```
SELECT * from tablename 1
```

```
Union all
```

```
SELECT * from tablename 2 ;
```

### Ex :

```
SELECT * from emp
```

```
Union all
```

```
SELECT * from dept ;
```

## 3] Intersect :

The intersect operator written the common rows between the result sets of two or more select statement.

- It only includes rows that appears in all the result sets

### Syntax:

```
SELECT * from tablename 1
```

```
intersect
```

```
SELECT * from tablename 2 ;
```

47 Minus:

The minus

ex: Select \* from emp

Intersect

Select \* from dept;

47 minus :

The minus operator returns rows from the result set of first select statement that are not present in the result set of the second select statement.

Syntax:

Select \* from tablename 1

minus

Select \* from tablename 2 ;

ex:

Select \* from emp

minus

Select \* from dept;

## \* Exercise

Q. Consider following schema:

emp1 (empno, ename, deptno)

emp2 (empno, ename, deptno)

Write SQL query for the following statements.

1] Display the names of employees including duplicate employee name.

```
→ SELECT ename from emp1  
Union all  
SELECT ename from emp2;
```

2] Display the names of employees excluding duplicate employee names.

```
→ SELECT ename from emp1  
Union  
SELECT ename from emp2;
```

3] Display the common employee names from both the tables.

```
→ SELECT ename from emp1  
Intersect  
SELECT ename from emp2;
```

4] List employees who are not assigned to any department ?

```
→ SELECT ename from emp1 where deptno is Null  
Union  
Select ename from emp2 where deptno is Null.
```