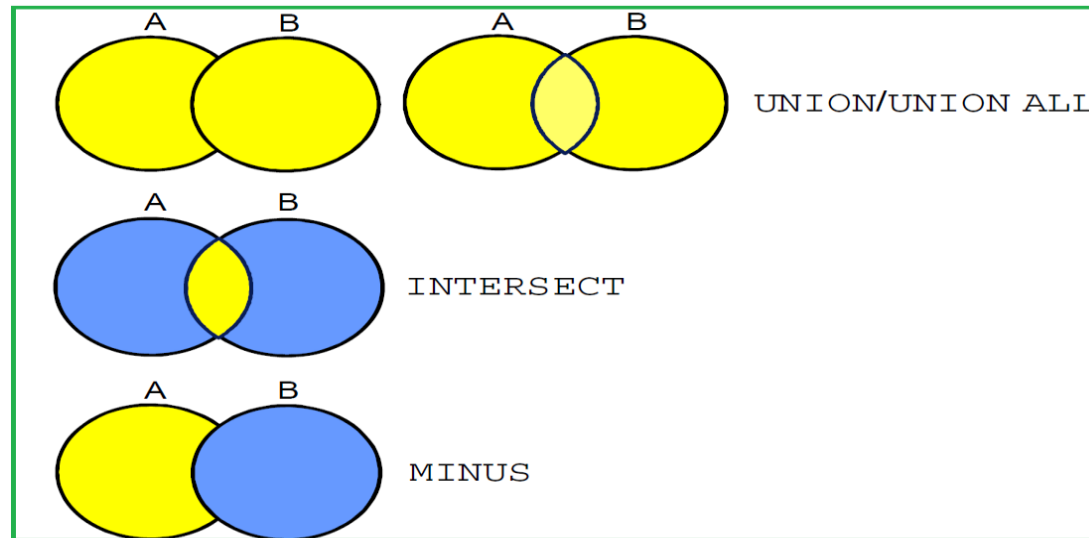# Using the Set Operators

Set operators combine the results of two or more component queries into one result. Queries containing set operators are called *compound queries*.

Operator	Returns
UNION	Rows from both queries after eliminating duplications
UNION ALL	Rows from both queries, including all duplications
INTERSECT	Rows that are common to both queries
MINUS	Rows in the first query that are not present in the second query

Union

TABLE A				empno		ename	
empno	ename			1		khaled	
1	khaled			2		ali	
2	ali	select empno, ename		3		samer	
3	samer	from A		4		ahmed	
4	ahmed	union		~~1~~		~~khaled~~	
		select empno, ename		~~2~~		~~ali~~	UNION eliminate duplicates
TABLE B		from B		3		sara	
empno	ename			4		nabil	
1	khaled						
2	ali						
3	sara						
4	nabil						

The UNION operator returns all rows that are selected by either query. Use the UNION operator to return all rows from multiple tables and eliminate any duplicate rows.

Guidelines

- The number of columns being selected must be the same.
- The data types of the columns being selected must be in the same data type group (such as numeric or character).
- The names of the columns need not be identical.
- UNION operates over all of the columns being selected.
- NULL values are not ignored during duplicate checking.
- By default, the output is sorted in ascending order of the columns of the SELECT clause.

Union All

TABLE A			
empno	ename
1	khaled
2	ali
3	samer
4	ahmed

select empno, ename
from A
union all
select empno, ename
from B

TABLE B	
empno	ename
1	khaled
2	ali
3	sara
4	nabil

empno	ename
1	khaled
2	ali
3	samer
4	ahmed
1	khaled
2	ali
3	sara
4	nabil

Use the UNION ALL operator to return all rows from multiple queries.

Guidelines

The guidelines for UNION and UNION ALL are the same, with the following two exceptions that pertain to UNION ALL: Unlike UNION, duplicate rows are not eliminated and the output is not sorted by default.

Intersect

TABLE A	
empno	ename
1	khaled
2	ali
3	samer
4	ahmed

empno	ename
1	khaled
2	ali

```
select empno, ename
from A
intersect
select empno, ename
from B
```

TABLE B	
empno	ename
1	khaled
2	ali
3	sara
4	nabil

Use the INTERSECT operator to return all rows that are common to multiple queries.

Guidelines

- The number of columns and the data types of the columns being selected by the SELECT statements in the queries must be identical in all the SELECT statements used in the query. The names of the columns, however, need not be identical.
- Reversing the order of the intersected tables does not alter the result.
- INTERSECT does not ignore NULL values.

Minus

TABLE A	
empno	ename
1	khaled
2	ali
3	samer
4	ahmed

empno	ename
3	samer
4	ahmed

```
select empno, ename
from A
Minus
select empno, ename
from B
```

TABLE B	
empno	ename
1	khaled
2	ali
3	sara
4	nabil

Use the MINUS operator to return all distinct rows selected by the first query, but not present in the second query result set (the first SELECT statement MINUS the second SELECT statement).

Note: The number of columns must be the same and the data types of the columns being selected by the SELECT statements in the queries must belong to the same data type group in all the SELECT statements used in the query. The names of the columns, however, need not be identical.

Oracle Server and Set Operators

- Duplicate rows are automatically eliminated except in UNION ALL.

- Column names from the first query appear in the result.

- The output is sorted in ascending order by default except in UNION ALL.

Matching the Select statement

```
SELECT EMPLOYEE_ID, JOB_ID, email
FROM
EMPLOYEES
UNION
SELECT EMPLOYEE_ID, JOB_ID, to_char(null) email
FROM
JOB_HISTORY;
```

no email in
job_history
so use dummy column
with same data type

```
SELECT EMPLOYEE_ID, JOB_ID, salary
FROM
EMPLOYEES
UNION
SELECT EMPLOYEE_ID, JOB_ID, 0 salary
FROM
JOB HISTORY;
```

no salary in table
job_history, so use
dummy column like
zero (same data type)

Using the ORDER BY Clause in Set Operations

- The ORDER BY clause can appear only once at the end of the compound query.

- Component queries cannot have individual ORDER BY clauses.

- The ORDER BY clause recognizes only the columns of the first SELECT query.

▶Thank You