DBMS SQL

Lesson 08: Set Operators

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Lesson Objectives

➢ To understand the following topics:
- Set Operators
  - UNION operator
  - INTERSECT operator
  - MINUS operator

SET Operators in Oracle

➢ SQL supports the following four Set operations:
- UNION ALL
  - Combines the results of two SELECT statements into one result set.

➢ UNION
- Same as UNION ALL. Eliminates duplicate rows from that result set.

➢ MINUS
- Takes the result set of one SELECT statement, and removes those rows that are also returned by a second SELECT statement.
- INTERSECT
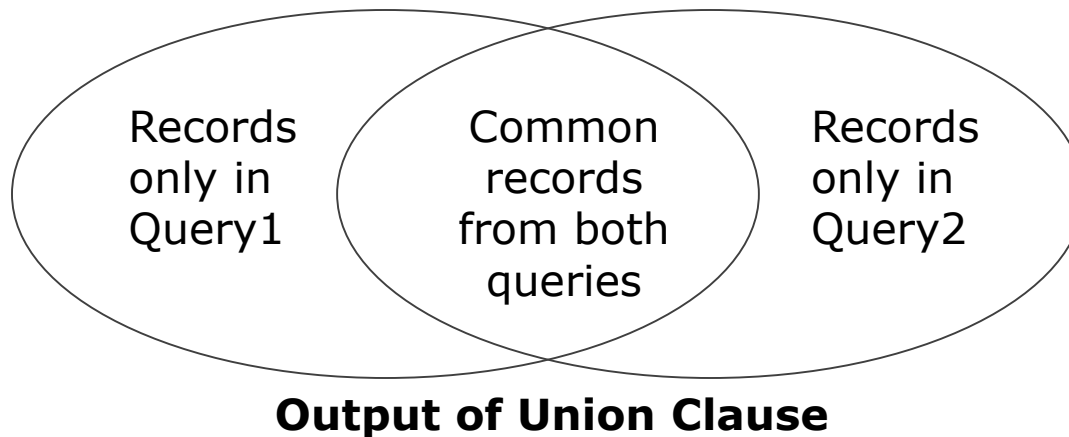 - Returns only those rows that are returned by each of two SELECT statements.

SET Operators in Oracle

➢ Each of these operations combines the results of two SELECT statements into a single result.

➢ Note: While using SET operators, the column names from the first query appear in the result set.

UNION Operator

➢ By using the UNION clause, multiple queries can be put together, and their output can be combined.

➢ The UNION clause merges the output of two or more queries into a single set of rows and columns.

Records only in Query1 | Common records from both queries | Records only in Query2

Output of Union Clause

UNION Operator- Example

Example: To display all students who are listed for 2006, 2007 and both the years

```
SELECT Student_Code FROM Student_Marks
 WHERE Student_year=2006
 UNION
 SELECT Student_Code FROM  Student_Marks
 WHERE Student_year=2007;
```

UNION Operator- Example

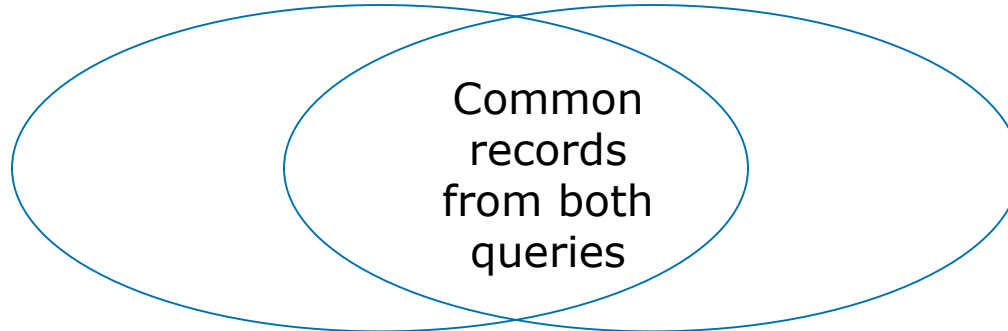Some situations, if you need duplicate row as well use UNION ALL
Operator

SELECT Student_Code FROM Student_Marks
WHERE Student_year=2006
UNION ALL
SELECT Student_Code FROM Student_Marks
WHERE Student_year=2007;

INTERSECT Operator

➢ The INTERSECT operator returns those rows, which are retrieved by both the queries.

Common
records
from both
queries

**Output of Intersect
Clause**

INTERSECT Operator – Example

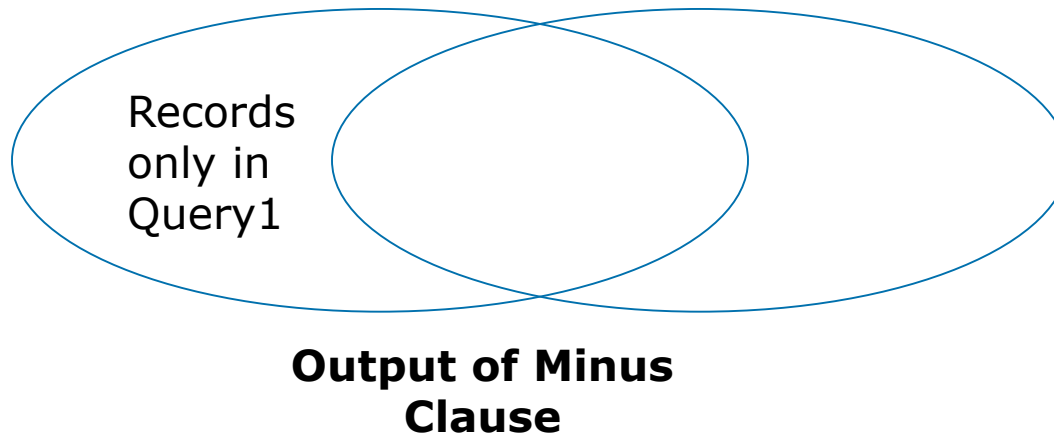Example : To display students who are listed for both the years

```
      SELECT Student_Code
FROM Student_Marks WHERE Student_year=2006
INTERSECT
SELECT Student_Code
FROM Student_Marks WHERE Student_year=2007;
```

MINUS Operator

➢ The MINUS operator returns all rows retrieved by the first query but not by the second query.

Records
only in
Query1

Output of Minus Clause

MINUS Operator - Example

Example: To display all students who are listed only for year 2006

```
        SELECT Student_Code
FROM Student_Marks WHERE Student_year=2006
MINUS
SELECT Student_Code
FROM Student_Marks WHERE Student_year=2007;
```

Quick Guidelines

➢ Use UNION ALL in place of UNION.

- The UNION clause forces all rows returned by each portion of the union to be sorted, merged and filtered for duplicates before the first row is returned to the "calling module".

- A UNION ALL simply returns all rows including duplicates. It does not perform SORT, MERGE and FILTER.

Summary

➢ In this lesson you have learnt,
- Use of Set Operations
- Use of UNION operator
  - Advantage of UNION ALL over UNION operator
- Use of INTERSECT operator
- Use of MINUS operator

Summary

Review – Questions

➢ Question 1: The Set operation that will show all the rows from both the resultsets including duplicates is ____.

- Option 1: Union All
- Option 2: Union
- Option 3: Intersect
- Option 4: Minus

➢ Question 2: The Intersect operator returns ____.

Review – Questions

➢ Question 3: The output of set operators shows the columns names from ____.

➢ Question 4: The Union ALL clause performs SORT, MERGE and FILTER to give the required output.

- True / False