SQL

SET OPERATORS

- UNION, UNION ALL, INTERSECT, MINUS

- For SET operators to work:
  -> You need 2 independent queries
  -> Same number of columns in Select statement
  -> Same data type in same order

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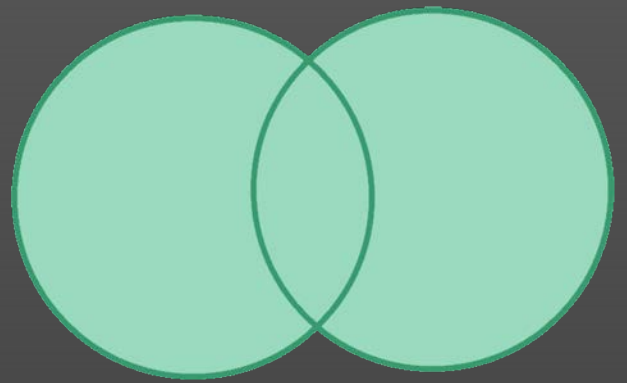
UNION

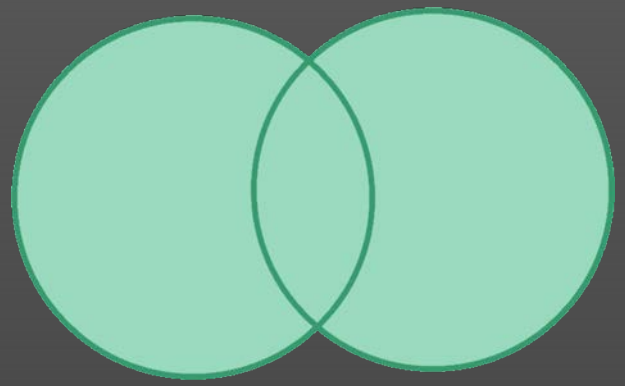
- The UNION operator combines result sets of two or more SELECT statements into a single result set.

```
SELECT column 1, column 2…  FROM  Table1
UNION
SELECT column 1, column 2…  FROM  Table2;
```



UNION

- The following are rules applied to the queries:
  - Both queries must return the same number of columns.
  - The corresponding columns in the queries must have compatible data types.



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UNION

- The UNION operator removes all duplicate rows unless the UNION ALL is used.
- We often use the UNION operator to combine data from similar tables that are not perfectly normalized.

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UNION VS UNION ALL

Developers
Name
Mike
John
Steven
Maria

UNION & UNION ALL

Testers
Name
Steven
Adam
Lex

=

UNION
Name
Adam
John
Lex
Maria
Mike
Steven

UNION ALL
Name
Mike
John
Steven
Maria
Steven
Adam
Lex

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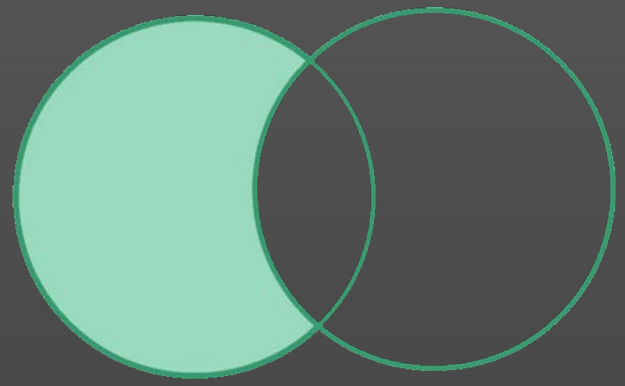
MINUS

- MINUS set operator returns records from first query that is not present in second query.
- It will only return values (from 1st query) that are not common in 2 queries



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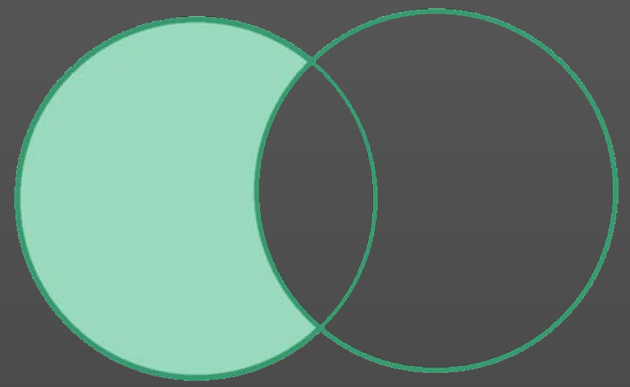
MINUS

- Let's say we have two query result.

Developers
Name
Mike
John
Steven
Maria

Testers
Name
Steven
Adam
Lex



MINUS

Developers
Name
Mike
John
Steven
Maria

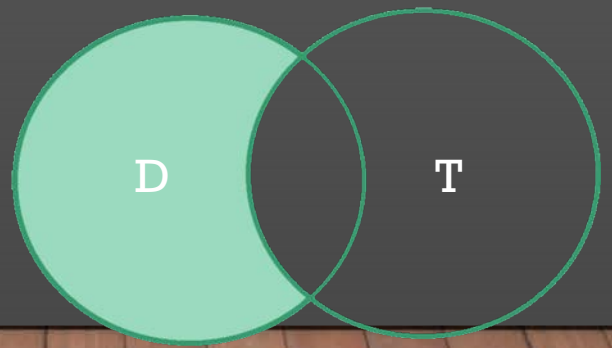
MINUS

Testers
Name
Steven
Adam
Lex

=

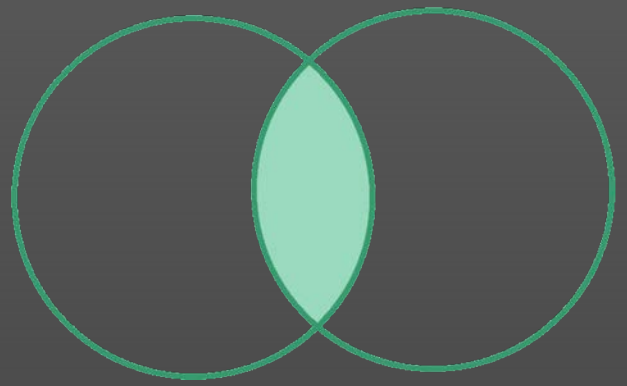
Result
Name
Mike
John
Maria

```
SELECT Name FROM Developers
MINUS
SELECT Name FROM Testers
```



INTERSECT

- INTERSECT set operators returns records that are present/common/appear in both query results.
- It will sort and remove duplicates.



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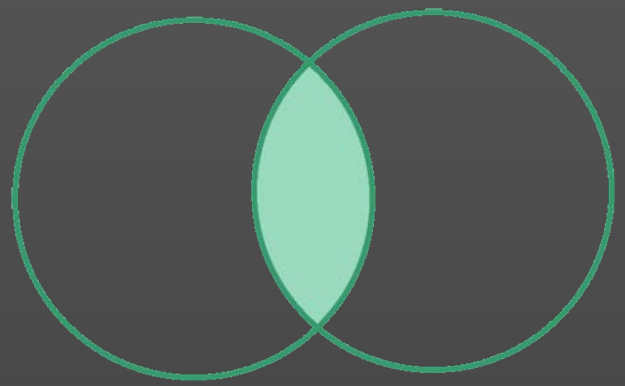
INTERSECT

- Let's say we have two query result.

Developers
Name
Mike
John
Steven
Maria

Testers
Name
Steven
Adam
Lex



INTERSECT

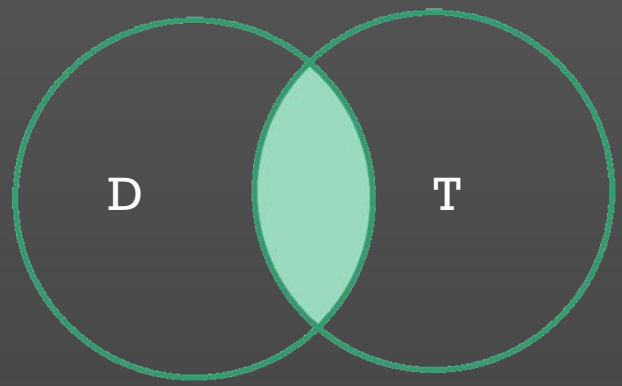
Developers
Name
Mike
John
Steven
Maria

INTERSECT

Testers
Name
Steven
Adam
Lex

=

RESULT
Name
Steven



SELECT Name **FROM** Developers
INTERSECT
SELECT Name **FROM** Testers

SUMMARY OF SET OPERATORS

- UNION -> combines, removes duplicates, sorts
- UNION ALL-> combines, does not remove duplicates, does not sort
- MINUS -> show records from query1 that are not present in query2
- INTERSECT -> show common records from 2 queries

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SELF JOIN

- join the table to itself.
- We use self join when we want to combine rows with other rows in the same table.
- To perform the self join operation, we must use a table alias to help SQL distinguish the left table from the right table of the same table.

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SELF JOIN

- Let's say we want to print out employee full name with their manager's name together.

- ```
  SELECT e1.first_name, e1.last_name, e1.manager_id, e2.last_name
  FROM employees e1 JOIN employees e2
  ON e1.manager_id = e2.employee_id;
  ```

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  ```