

BASICS OF SQL

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SQL stands for Structured Query Language

• What is SQL:

- SQL is a standard language for accessing and manipulating database.
- SQL stands for Structured Query Language

Basics

A database most often contains one or more tables. Each table identify by name (e.g. customer, student).

Tables contain records (rows) with data.

SQL Create Statement:

```
CREATE TABLE table-name {
```

```
    column1 datatype,
```

```
    column2 datatype,
```

```
    column3 datatype,
```

```
    ...
```

```
};
```

Note: SQL is not a case sensitive language

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- SQL Select Statement:

- Select statement used to select data from database.
- data returned is stored in result table.
Called the result-set.

The following SQL statement selects the 'CustomerName' & 'City' column from Customer table:

```
Select CustomerName, City from customers;
```

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```
SELECT * FROM customers;
```

→ selects all column from customer table

- SQL WHERE clause :

- The WHERE clause is used to filter records
- It is used to extract only those records that fulfilled a specified condition.

Syntax :

```
SELECT column1, column2, ...  
      FROM table-name  
      WHERE condition;
```

Comment:

- SQL comments are used to add notes to our code.

example: at the end of query

-- This is a comment.

..... Standard Name is %%

Logical operators:

Condition Four Specified With

1] **AND operator:**

The AND operator displays a record if all the conditions separated by AND

are TRUE.

AND syntax:

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Example :-

Select column1, column2, ...

From table-name

Where condition1 AND condition2 ...;

Records Displayed in Below Format

Records Displayed in Below Format

2] **OR operator:**

The OR operator display a record if any of the condition separated by OR is TRUE.

OR syntax:

Select column1, column2, ...

From table-name

Where condition1 OR condition2, ...

3] NOT Operator :

The NOT operator displays a record if the condition(s) is NOT TRUE.

Syntax:

```
SELECT column1, column2....
```

```
FROM table-name
```

```
WHERE condition, NOT condition;
```

Example:

```
SELECT * FROM customers  
WHERE NOT country = 'Italy';
```

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4] IN Operator :

The IN operator allow you to specify multiple values in a WHERE clause.

- The IN operator is a shorthand for multiple OR conditions.

Syntax:

```
SELECT column-name(s)
```

```
FROM table-name
```

```
WHERE column-name IN (value1, value2)...
```

3) SQL between operator

- The BETWEEN operator selects value within a given range. The numbers can be text or dates.
- The BETWEEN operator is inclusive: begin and end values are included

Syntax:

```
SELECT column-name(s)  
FROM table-name  
WHERE column-name BETWEEN value AND  
value2;
```

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4) LIKE Operator:

- The LIKE operator is used in a WHERE clause to search for a specified pattern in a column.

There are two wildcards often used in a conjunction with the LIKE operator:

- the percent sign(%) represent zero, one, or multiple characters.
- The underscore sign(_) represent one single character.

Syntax : SELECT column1, column2, ...
FROM tablename

WHERE column1 LIKE pattern;

SQL JOINS :

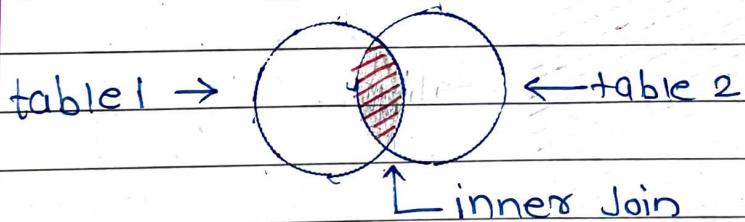
The SQL JOIN clause takes records from two or more tables in a database and combines it together.

ANSI Standard SQL defines 5 types of Joins -

- 1] inner join
 - 2] left outer join
 - 3] right outer join
 - 4] full outer join
 - 5] cross join

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1) inner Join :



The INNER JOIN keyword selects records that have matching values in both tables.

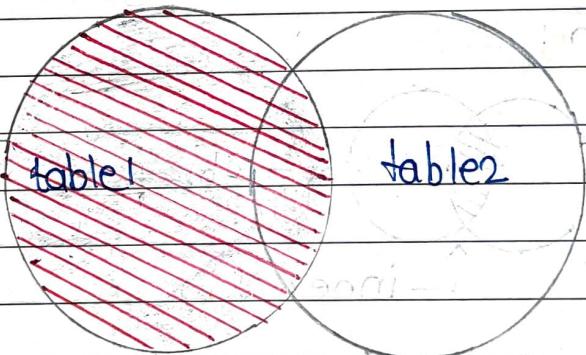
2) LEFT JOIN:

the left join keyword return all records from the left table (table1), and the matching records from the right table (table2).

the result is 0 records from the right side, if there is no match.

Syntax :

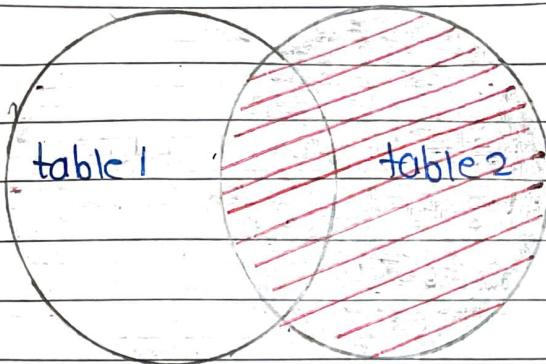
```
SELECT column-name(s)  
FROM table1  
LEFT JOIN table2  
ON TABLE1.column-name = table2.column-name;
```



3) RIGHT JOIN :

The Right Join keyword returns all records from right table (table2), and the matching records from the left table (table1). the result is 0 records from the left side, if there is no match.

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Right Join

Syntax :

```

SELECT Column-name(s)
FROM table1
RIGHT JOIN table2
ON table1.Column-name = table2.Column-
name;
    
```

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4) FULL JOIN :

- The FULL OUTER JOIN keyword returns all records when there is a match in left (table1) or right (table2) table records.

note: full outer join and full join are same



Full Join

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syntax:

```
SELECT column-name(s)
FROM table1 [CROSS] JOIN table2
PULL OUTER JOIN table2
ON table1.column-name = table2.column-1
[AND table1.column-name2 = table2.column-name2]
[AND table1.column-name3 = table2.column-name3]
[...]
WHERE condition;
```

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