# CRUD - 2

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Notes

8th Hard day challenge :

1. Assignments + Revision
2. Backlog (Assignments of prev. session)
3. Additional Questions

# Between

- Between Clause helps us to get values in a specific range.

**Students**

Range id-1 to id-3

| id | first_name | second_name | psp |
|---|---|---|---|
| 1 | Virat | Kohli | 80 |
| 2 | Rahul | KL | 75 |
| 3 | Rohit | Sharma | 95 |
| 4 | Rahul | KL | 80 |

**Question :** Get all the movies which were released between year 2006 and 2016.

Both inclusive.

*< / > Syntax*

```
SELECT *
FROM table
WHERE col_value between A and B
```

- Don't put brackets in **Between's** range of values as shown below

**Ex :** WHERE col_value between ( A and B )

```
SELECT  *
FROM film
WHERE release_year between 2006 and 2016
```

# Like


**Genre:** Horror
**Language:** English


**Genre:** Action
**Language:** English


**Genre:** Horror
**Language:** English


**Genre:** Action
**Language:** English

- Whenever there is a column storing strings, theres comes a requirement to do some kind of pattern matching.

**Ex** : Assume Scaler's databases where we have following rules to store batch name :

1. Every batch name should have ‘Academy’ / ‘DSML’ in them.
2. It should have ‘Beg’ / ‘Inter’ / ‘Adv’ in the naming convention.
3. It should have ‘Morn’ / ‘Eve’.
4. It should have month of the batch.

## Batches

| b_id | b_name |
|---|---|
| 1 | 'Acad_Apr_23_Morn_Beg' |
| 2 | 'June_23_DSML_Inter_Eve' |
| 3 | 'Mar_23_Acad_Adv_Eve' |

**Question** : Get all the morning beginner batches.

*' How to get these batches? '*

*' We can do pattern matching using LIKE operator ...'*

## We have two wildcards in Like operator :

- Consider them like fill in the blanks :

1. ' _ ' : Can have exactly one occurrence of a single character.
2. ' % ' : Can have any number of character or it can stay empty as

**Question** : Find all the beginner batches.

## How to use wildcards?

1. **% beg %** : Anything can come before beginner and after beginner.
   Anywhere in the string
2. **% beg** : Anything can come before beginner. Beg as suffix.
3. **beg%** : Anything can come after beginner. Beg as prefix.

## Let's do some pattern matching.

| String | Pattern | |
|---|---|---|
| C a t | C a t | bat, fat, rat |
| | % t | t, exact |
| | % | Any word / string |
| | % C a t % | Cattle, scatter, concat |
| | _ C a t _ | x |

**Question :** Get data of all the morning batches.

```
SELECT *
FROM batches
WHERE b_name like ' % Morning %' ;
```

## Quiz - 1

1. SELECT * FROM Customers WHERE Name LIKE '**son%**' ✗
2. SELECT * FROM Customers WHERE Name LIKE '**%son**' ✓
3. SELECT * FROM Customers WHERE Name LIKE '**son**' ✗
4. SELECT * FROM Customers WHERE Name LIKE '**son**' ✗

## Quiz - 2

1. SELECT * FROM Books WHERE Name LIKE '**moon%**' ✗
2. SELECT * FROM Books WHERE Name LIKE '**%moon**' ✗
3. SELECT * FROM Books WHERE Name LIKE '%**moon%**' ✓
4. SELECT * FROM Books WHERE Name LIKE '**moon**' ✗

## Quiz - 3

1. SELECT * FROM Orders WHERE OrderNumber LIKE '**%123%**' ✗
2. SELECT * FROM Orders WHERE OrderNumber LIKE '**123%**' ✗
3. SELECT * FROM Orders WHERE OrderNumber LIKE '**_123_**' ✓
4. SELECT * FROM Orders WHERE OrderNumber LIKE '**%123**' ✗

# NULL ( is null, is not null )

- Do you all remember how we store empties, no value for a particular column for a particular row? We store it as **NULL**, regardless of column's datatype.

- Interestingly working with null's is bit tricky. Let's see how.

Students

| s_id | s_name | status |
|---|---|---|
| 1 | A | 1 |
| 2 | B | Null |
| 3 | C | 0 |
| 4 | D | 1 |

**Question :** Get all the students whose status Is NULL

Let's try using the following query

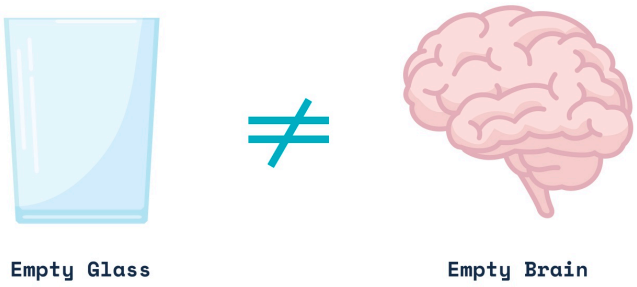
```
SELECT * FROM student WHERE status = NULL;
```

- The above query will not return any rows. **WHY?** Because NULL is not equal to NULL. in fact NULL is not equal to anything. Nor is it not equal to anything. It is just NULL.

Try this query and find the output

```
SELECT  NULL  =  NULL
```

- We can't compare **NULL** with anything like we can't compare an Empty Glass with an Empty Brain.




- The right operator is **IS NULL**

```
SELECT  *  FROM student WHERE status IS NULL;
```

- Similarly we don't use not equal to **NULL**, rather we use **IS NOT NULL**, when we want not NULL values.

# LIMIT Clause

- LIMIT clause allows us to limit the number of rows returned by a query.
  - Suppose we have this query :

SELECT * FROM table ;

*' What if a table has 1-million rows? '*

**How to get top two rows :** SELECT * FROM table LIMIT 2 ;

**Students Table :**

| s_id | s_name | name |
|---|---|---|
| 1 | James Jones | 1 |
| 2 | John Miller | 2 |
| 3 | John Martinez | 3 |
| 4 | Michael Garcia | 4 |
| 5 | Jennifer Miller | 5 |

- There's one more thing that we can do : **OFFSET**

OFFSET **:** 10 row after 100th row

# Update

*< / > Syntax*

UPDATE table_name SET col_name = value

WHERE conditions ;

*' I have added the wrong first_name in the table. Can you update it? '*

- Let's update first name of the student at s_id - 3

**Students**

| id | first_name | last_name | psp |
|---|---|---|---|
| 1 | Virat | Kohli | 80 |
| 2 | Rahul | KL | 75 |
| 3 | Virat | Sharma | 95 |
| 4 | Rahul | KL | 80 |

Update to Rohit at id - 3

```
update students
set firstname = 'Rohit'
where id = 3;
```

# Delete, Truncate, Drop

## Delete

- Removes specified rows one-by-one from table (may delete all rows if no condition is present in query but keeps table structure intact).

*< / > Syntax*

```
DELETE from table_name
WHERE conditions ;
```

TC ~ O(N)

**Students**

| id | first_name | last_name | psp |
|---|---|---|---|
| 1 | Rahul | KL | 80 |
| 2 | Virat | Kohli | 75 |
| 3 | Rahul | KL | 95 |
| 4 | Katrina | Sharma | 80 |

Delete

## Truncate

- Removes the complete table and then recreates it.

**Query :** TRUNCATE table_name;

**Students**

| id | first_name | last_name | psp |
|---|---|---|---|
| 1 | Rahul | KL | 80 |
| 2 | Virat | Kohli | 75 |
| 3 | Rahul | KL | 95 |
| 4 | Rohit | Sharma | 80 |

→

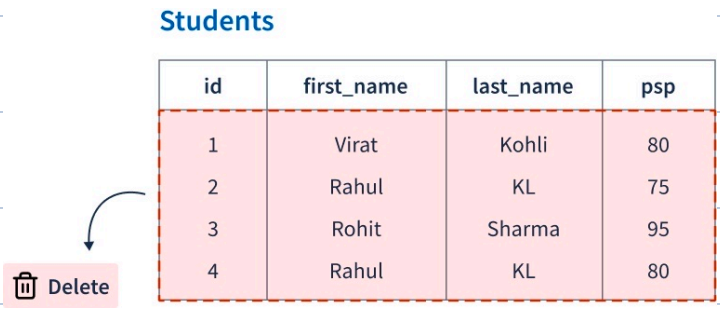
**Students**

| id | first_name | last_name | psp |
|---|---|---|---|
| | | | |

## Drop

- Removes complete table and the table structure as well.

**Query :** DROP table table_name;




## • Delete vs Truncate vs Drop

### Delete :

1. It is slower than TRUNCATE.
2. Doesn't reset the key.
3. It can be rolled back.

## Truncate :

1. Faster than DELETE.
2. Resets the key.
3. It can not be rolled back because the complete table is deleted as an intermediate step.
4. Schema is preserved

## Drop :

1. It can not be rolled back.
2. Schema is not preserved.

| Property | Delete | Truncate | Drop |
|---|---|---|---|
| Schema Preserved | ✓ | ✓ | ✗ |
| Efficiency | ✗ | ✓ | ✓ |
| Reversible | ✓ | ✗ | ✗ |