

# SQL

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# Constraints

SQL Constraints are nothing but the rules which we apply on columns of tables to define the behavior of Data.

# 1. Not Null Constraint

Ensures that a column does not contain any NULL values. It requires the specified column to have a non-null value.

Create table null1 (id int not null)

We use when we required the column which should not contain null values.

# Use not null on existing Table

- -- Delete rows with NULL values in the 'column\_name' column
- `DELETE FROM` table\_name `WHERE` column\_name IS NULL;
- -- Add NOT NULL constraint to the 'column\_name' column
- `ALTER TABLE` table\_name `MODIFY COLUMN` column\_name data\_type NOT NULL;

## 2. Unique Constraint

Ensures that the values in a column or a combination of columns are unique across the table. It prevents duplicate values in the specified column(s).

```
create table unique1 (id varchar(16), email varchar(16) unique)
```

We use this when we required our column to contain unique items.

```
alter table details2 add constraint j unique(col_name);
```

### 3. Primary Key Constraint

It ensures that the primary key values are unique and not null.

```
create table primary1 (id int primary key);
```

This is a combination of Unique and null constraint.

```
alter table details2 add constraint p primary key(id);
```

## 4. Foreign Key Constraint

Establishes a link between two tables based on a related column(s)

```
create table primary1 (id int primary key)
```

```
create table new3 (id1 int, order_id int, foreign key (id1) references  
primary1(id));
```

Id is the column between both table so id should be primary key in parent or first table and then it can be a foreign key in second or child table. Values of foreign key from child table should match with the value of first table or parent table.

## 5. Check Constraint

Applies a condition to a column to restrict the range of allowed values

```
create table c1(id int, qty int, price int,  
check (price > 0 and qty >=0));
```

```
insert into c1 values (101, 0, 0);
```

```
alter table emp_2 add constraint F check(col_name>0);
```

This constraint put some default condition for the particular column like here price should be greater than 0.



## 6. Default Constraint

Sets a default value for a column when no value is provided during an INSERT operation.

```
create table c2 (id int, name varchar(16), city varchar(16) default 'Pune');
```

```
insert into c2 (id,name) values (158, 'john');
```

```
ALTER TABLE details2 ALTER COLUMN id SET DEFAULT 0;
```

In the above code the default city is Pune so if we could not insert, this will take as Pune.

# Having Clause

```
SELECT avg(RND), STATE FROM 30_startups GROUP BY STATE  
HAVING  
AVG(RND) > 100000;
```

We are using the aggregate function on RND which is average.

```
SELECT COUNT(*), STATE FROM 30_startups  
GROUP BY STATE  
HAVING COUNT(RND) > 5  
order by count(RND);
```

Thank You