

SQL - Constraints

Constraints are the rules enforced on the data columns of a table. These are used to limit the type of data that can go into a table. This ensures the accuracy and reliability of the data in the database.

Constraints could be either on a column level or a table level. The column level constraints are applied only to one column, whereas the table level constraints are applied to the whole table.

Following are some of the most commonly used constraints available in SQL. These constraints have already been discussed in SQL - RDBMS Concepts chapter, but it's worth to revise them at this point.

| S.No. | Constraints |
|-------|---|
| 1 | NOT NULL Constraint Ensures that a column cannot have a NULL value. |
| 2 | DEFAULT Constraint Provides a default value for a column when none is specified. |
| 3 | UNIQUE Key Ensures that all the values in a column are different. |
| 4 | PRIMARY Key Uniquely identifies each row/record in a database table. |
| 5 | FOREIGN Key Uniquely identifies a row/record in any another database table. |
| 6 | CHECK Constraint Ensures that all values in a column satisfy certain conditions. |
| 7 | INDEX Constraint Used to create and retrieve data from the database very quickly. |

Constraints can be specified when a table is created with the CREATE TABLE statement or you can use the ALTER TABLE statement to create constraints even after the table is created.

Dropping Constraints

Any constraint that you have defined can be dropped using the ALTER TABLE command with the DROP CONSTRAINT option.

For example, to drop the primary key constraint in the EMPLOYEES table, you can use the following command.

```
ALTER TABLE EMPLOYEES DROP CONSTRAINT EMPLOYEES_PK;
```

Some implementations may provide shortcuts for dropping certain constraints. For example, to drop the primary key constraint for a table in Oracle, you can use the following command.

```
ALTER TABLE EMPLOYEES DROP PRIMARY KEY;
```

Some implementations allow you to disable constraints. Instead of permanently dropping a constraint from the database, you may want to temporarily disable the constraint and then enable it later.

Integrity Constraints

Integrity constraints are used to ensure accuracy and consistency of the data in a relational database. Data integrity is handled in a relational database through the concept of referential integrity.

There are many types of integrity constraints that play a role in **Referential Integrity (RI)**. These constraints include Primary Key, Foreign Key, Unique Constraints and other constraints which are mentioned above.
