

7. MYSQL – Constraints

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7. MySQL – Constraints

1. Constraints

- ✓ SQL constraints are used to specify **rules** for data in a table.
- ✓ We can specify constraints during table creation of the table or after table created with alter table.
- ✓ By using this we can restricts the type of the data to the column.
- ✓ This ensures the accuracy and reliability of the data in the table.
- ✓ We can apply constraints on column and table level as well.

2. Constraints table

Name	Description
✓ Not null	✓ Ensures that a column cannot have a NULL value
✓ Primary key	✓ Uniquely identifies each row in a table
✓ Check	✓ Ensures that the values in a column satisfies a specific condition

3. Not null constraint

- ✓ By default, a column values can store null values.
- ✓ If we apply not null constraint over column then columns will not allow null values.
- ✓ It means, columns should have a value instead of null.

Login Login with valid credentials
Query Creating a table

```
mysql> create table Persons10(  
    id int,  
    lastname varchar(255),  
    firstname varchar(255),  
    age int  
);
```

Output

Successfully table created

Login Login with valid credentials
Query Inserting data into table

```
mysql> insert into Persons10(id, lastname, firstname, age)
      values(NULL, 'daniel', '', 16);
```

Output

```
mysql> select * from persons10;
+-----+-----+-----+-----+
| id   | lastname | firstname | age |
+-----+-----+-----+-----+
| NULL | daniel   |          | 16  |
+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

Login Login with valid credentials
Query not null constraint

```
mysql> create table Persons11(
      id int not null,
      lastname varchar(255) not null,
      firstname varchar(255) not null,
      age int
    );
```

Output

Successfully table created

Login
Query

Login with valid credentials
not null constraint

```
mysql> insert into Persons11(id, lastname, firstname, age)
      values(NULL, 'daniel', '', 16);
```

Output

ERROR 1048 (23000): Column 'id' cannot be null

4. Primary key constraint

- ✓ The primary key constraint uniquely identifies each record in a table.
- ✓ Primary keys must contain UNIQUE values, and cannot contain null values.

Login Login with valid credentials
Query Primary key constraint

```
mysql> create table Persons12(  
    id int not null,  
    lastname varchar(255) not null,  
    firstname varchar(255) not null,  
    age int,  
    primary key(id)  
);
```

Output

Successfully table created

Login Login with valid credentials
Query not null constraint

```
mysql> insert into Persons12(id, lastname, firstname, age)  
    values(101, 'daniel', 'K', 16);
```

Output

Query OK, 1 row affected (0.01 sec)

Login Login with valid credentials
Query not null constraint

```
mysql> insert into Persons12(id, lastname, firstname, age)
      values(101, 'daniel', 'K', 16);
```

Output

```
ERROR 1062 (23000): Duplicate entry '101' for key
'persons12.PRIMARY'
```

5. Check constraint

- ✓ The check constraint is used to limit the value range that can be placed in a column.
- ✓ If we define a check constraint on a column it will allow only certain values for this column.

Login Login with valid credentials
Query check constraint

```
mysql> create table Persons13(  
      id int not null,  
      lastname varchar(255) not null,  
      firstname varchar(255) not null,  
      age int,  
      check (age >= 18)  
);
```

Output

Successfully table created

Login Login with valid credentials
Query not null constraint

```
mysql> insert into Persons13(id, lastname, firstname, age)
      values(101, 'daniel', 'K', 16);
```

Output

```
ERROR 3819 (HY000): Check constraint 'persons13_chk_1' is
violated
```