

# MySQL CONSTRAINTS

## ALL CONSTRAINTS

- 1) NOT NULL
- 2) UNIQUE
- 3) CHECK
- 4) PRIMARY KEY
- 5) FOREIGN KEY
- 6) DEFAULT
- 7) AUTO\_INCREMENT

## CREATING A DATABASE

```
MySQL Shell
MySQL localhost:33060+ ssl SQL >
MySQL localhost:33060+ ssl SQL >
MySQL localhost:33060+ ssl SQL > SHOW DATABASES;
+-----+
| Database |
+-----+
| hondacars |
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.0008 sec)
MySQL localhost:33060+ ssl SQL > CREATE DATABASE school;
Query OK, 1 row affected (0.0368 sec)
MySQL localhost:33060+ ssl SQL >
MySQL localhost:33060+ ssl SQL > SHOW DATABASES;
+-----+
| Database |
+-----+
| hondacars |
| information_schema |
| mysql |
| performance_schema |
| school |
| sys |
+-----+
6 rows in set (0.0009 sec)
MySQL localhost:33060+ ssl SQL > USE school;
Default schema set to `school`.
Fetching table and column names from `school` for auto-completion... Press ^C to stop.
MySQL localhost:33060+ ssl school SQL > SHOW TABLES;
Empty set (0.0011 sec)
MySQL localhost:33060+ ssl school SQL >
```

# CREATING A TABLE

I created a table namelist with 2 columns

- 1) id ( AUTO\_INCREMENT, PRIMARY KEY )
- 2) name ( NOT NULL )

```
MySQL Shell
MySQL localhost:33060+ ssl school SQL > CREATE TABLE namelist
-> ( id INT AUTO_INCREMENT,
-> name VARCHAR(30) NOT NULL,
-> PRIMARY KEY (id)
-> );
Query OK, 0 rows affected (0.1039 sec)
MySQL localhost:33060+ ssl school SQL > DESC namelist;
+-----+-----+-----+-----+-----+-----+
| Field | Type          | Null | Key | Default | Extra          |
+-----+-----+-----+-----+-----+-----+
| id    | int           | NO   | PRI | NULL    | auto_increment |
| name  | varchar(30)   | NO   |     | NULL    |                |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.0509 sec)
```

## OUTPUT for 'AUTO\_INCREMENT' :

```
MySQL Shell
MySQL localhost:33060+ ssl school SQL > SELECT * FROM namelist;
+----+-----+
| id | name |
+----+-----+
| 1  | Soorya |
| 2  | John |
| 3  | Doe |
+----+-----+
3 rows in set (0.0007 sec)
MySQL localhost:33060+ ssl school SQL > DESC namelist;
+----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+----+-----+-----+-----+-----+-----+
| id | int | NO | PRI | NULL | auto_increment |
| name | varchar(30) | NO | | NULL | |
+----+-----+-----+-----+-----+-----+
2 rows in set (0.0025 sec)
MySQL localhost:33060+ ssl school SQL > INSERT INTO namelist (id,name) VALUES (1000, 'Sam');
Query OK, 1 row affected (0.0391 sec)
MySQL localhost:33060+ ssl school SQL > SELECT * FROM namelist;
+----+-----+
| id | name |
+----+-----+
| 1  | Soorya |
| 2  | John |
| 3  | Doe |
| 1000 | Sam |
+----+-----+
4 rows in set (0.0315 sec)
MySQL localhost:33060+ ssl school SQL > INSERT INTO namelist (name) VALUES ('Ram'), ('Laxman');
Query OK, 2 rows affected (0.0366 sec)
Records: 2 Duplicates: 0 Warnings: 0
MySQL localhost:33060+ ssl school SQL > SELECT * FROM namelist;
+----+-----+
| id | name |
+----+-----+
| 1  | Soorya |
| 2  | John |
| 3  | Doe |
| 1000 | Sam |
| 1001 | Ram |
| 1002 | Laxman |
+----+-----+
```

## OUTPUT for 'NOT NULL' :

```
MySQL Shell
MySQL localhost:33060+ ssl school SQL >
MySQL localhost:33060+ ssl school SQL > DESC namelist;
+----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+----+-----+-----+-----+-----+-----+
| id | int | NO | PRI | NULL | auto_increment |
| name | varchar(30) | NO | | NULL | |
+----+-----+-----+-----+-----+-----+
2 rows in set (0.0395 sec)
MySQL localhost:33060+ ssl school SQL > INSERT INTO namelist (name) VALUES (NULL);
ERROR: 1048: Column 'name' cannot be null
```

# CREATING A TABLE WITH ALMOST ALL CONSTRAINTS

I created a table student\_details with 5 columns.

COLUMN – CONSTRAINT description

- 1) id ( **AUTO\_INCREMENT, PRIMARY KEY** )
- 2) name ( **NOT NULL** ), name must be NOT NULL
- 3) email ( **UNIQUE** ), email must be UNIQUE
- 4) age ( **CHECK** ), age must be ( > 18 and < 60 )
- 5) country ( **DEFAULT** ), the default value is 'India'

```
MySQL Shell
MySQL localhost:33060+ ssl school SQL >
MySQL localhost:33060+ ssl school SQL > CREATE TABLE student_details (
-> id INT AUTO_INCREMENT,
-> name VARCHAR(30) NOT NULL,
-> email VARCHAR(35) UNIQUE,
-> age INT,
-> country VARCHAR(40) DEFAULT 'India',
-> PRIMARY KEY (id),
-> CHECK (age > 18 AND age < 60)
-> );
Query OK, 0 rows affected (0.0549 sec)
MySQL localhost:33060+ ssl school SQL > INSERT INTO student_details (name, email,age,country) VALUES
-> ('Soorya','soorya@gmail.com',30,'India'),
-> ('Sam','sam@gmail.com',32,'Italy'),
-> ('John','john@gmail.com',35,'Australia');
Query OK, 3 rows affected (0.0145 sec)
Records: 3 Duplicates: 0 Warnings: 0
MySQL localhost:33060+ ssl school SQL > SELECT * FROM student_details;
+----+-----+-----+-----+-----+
| id | name  | email          | age | country |
+----+-----+-----+-----+-----+
| 1  | Soorya | soorya@gmail.com | 30  | India   |
| 2  | Sam    | sam@gmail.com   | 32  | Italy   |
| 3  | John   | john@gmail.com  | 35  | Australia |
+----+-----+-----+-----+-----+
3 rows in set (0.0010 sec)
MySQL localhost:33060+ ssl school SQL >
```

## OUTPUTS for the above CONSTRAINTS:

### OUTPUT INFERENCE :

id ( AUTO\_INCREMENT )  
country ( DEFAULT )

```
MySQL Shell
MySQL localhost:33060+ ssl school SQL >
MySQL localhost:33060+ ssl school SQL > DESC student_details;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| id     | int       | NO   | PRI | NULL    | auto_increment |
| name   | varchar(30) | NO   |     | NULL    |               |
| email  | varchar(35) | YES  | UNI | NULL    |               |
| age    | int       | YES  |     | NULL    |               |
| country | varchar(40) | YES  |     | India   |               |
+-----+-----+-----+-----+-----+
5 rows in set (0.0022 sec)
MySQL localhost:33060+ ssl school SQL > SELECT * FROM student_details;
+-----+-----+-----+-----+-----+
| id | name | email | age | country |
+-----+-----+-----+-----+-----+
| 1 | Soorya | soorya@gmail.com | 30 | India |
| 2 | Sam | sam@gmail.com | 32 | Italy |
| 3 | John | john@gmail.com | 35 | Australia |
+-----+-----+-----+-----+-----+
3 rows in set (0.0007 sec)
MySQL localhost:33060+ ssl school SQL > INSERT INTO student_details (name,email,age) VALUES ('Sarvothaman','sarvam@gmail.com',40), ('Samuel','samuel@gmail.com',45);
Query OK, 2 rows affected (0.0365 sec)
Records: 2 Duplicates: 0 Warnings: 0
MySQL localhost:33060+ ssl school SQL > SELECT * FROM student_details;
+-----+-----+-----+-----+-----+
| id | name | email | age | country |
+-----+-----+-----+-----+-----+
| 1 | Soorya | soorya@gmail.com | 30 | India |
| 2 | Sam | sam@gmail.com | 32 | Italy |
| 3 | John | john@gmail.com | 35 | Australia |
| 4 | Sarvothaman | sarvam@gmail.com | 40 | India |
| 5 | Samuel | samuel@gmail.com | 45 | India |
+-----+-----+-----+-----+-----+
5 rows in set (0.0017 sec)
MySQL localhost:33060+ ssl school SQL >
```

### OUTPUT INFERENCE :

age( CHECK )  
email ( UNIQUE )

```
MySQL Shell
MySQL localhost:33060+ ssl school SQL >
MySQL localhost:33060+ ssl school SQL > SELECT * FROM student_details;
+-----+-----+-----+-----+-----+
| id | name | email | age | country |
+-----+-----+-----+-----+-----+
| 1 | Soorya | soorya@gmail.com | 30 | India |
| 2 | Sam | sam@gmail.com | 32 | Italy |
| 3 | John | john@gmail.com | 35 | Australia |
| 4 | Sarvothaman | sarvam@gmail.com | 40 | India |
| 5 | Samuel | samuel@gmail.com | 45 | India |
+-----+-----+-----+-----+-----+
5 rows in set (0.0006 sec)
MySQL localhost:33060+ ssl school SQL > INSERT INTO student_details (name, email, age) VALUES
-> ('Saravana','soorya@gmail.com',12);
ERROR: 3819: Check constraint 'student_details_chk_1' is violated.
MySQL localhost:33060+ ssl school SQL > INSERT INTO student_details (name, email, age) VALUES
-> ('Saravana','soorya@gmail.com',20);
ERROR: 1062: Duplicate entry 'soorya@gmail.com' for key 'student_details.email'
MySQL localhost:33060+ ssl school SQL >
```