

## Understanding Table Constraints - Lecture 6

### Understanding Table Constraints ....

```
mysql> DESC personalInfo;
+-----+-----+-----+-----+-----+
| Field | Type  | Null | Key  | Default | Extra |
+-----+-----+-----+-----+-----+
| Name  | varchar(100) | YES | NO   | NULL    |       |
| Age   | int      | YES | NO   | NULL    |       |
| Gender | char(1)  | YES | NO   | NULL    |       |
| BirthDate | date   | YES | NO   | NULL    |       |
+-----+-----+-----+-----+-----+
4 rows in set (0.02 sec)
```

```
mysql> CREATE TABLE PersonalInfo1(
->   Name varchar(100) NOT NULL,
->   Age int,
->   Gender char(1),
->   BirthDate DATE
-> );
Query OK, 0 rows affected (0.05 sec)

mysql> SHOW TABLES;
+-----+
| Tables_in_employeedetail |
+-----+
| personalinfo
| personalinfo1
+-----+
2 rows in set (0.00 sec)

mysql> DESC personalinfo1;
+-----+-----+-----+-----+-----+
| Field | Type  | Null | Key  | Default | Extra |
+-----+-----+-----+-----+-----+
| Name  | varchar(100) | NO  | YES  | NULL    |       |
| Age   | int      | YES | YES  | NULL    |       |
| Gender | char(1)  | YES | YES  | NULL    |       |
| BirthDate | date   | YES | YES  | NULL    |       |
+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> INSERT INTO personalInfo1() VALUES();
ERROR 1364 (HY000): Field 'Name' doesn't have a default value
mysql> INSERT INTO personalInfo1(Name) VALUES("Aditya");
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM personalinfo1;
+-----+-----+-----+-----+
| Name | Age | Gender | BirthDate |
+-----+-----+-----+-----+
| Aditya | NULL | NULL | NULL |
+-----+-----+-----+-----+
```

```
mysql> CREATE TABLE PersonalInfo2(
->   Name varchar(100) NOT NULL DEFAULT 'Unknown',
->   Age int,
->   Gender char(1),
->   BirthDate DATE
-> );
Query OK, 0 rows affected (0.05 sec)

mysql> DESC PersonalInfo2;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key  | Default | Extra |
+-----+-----+-----+-----+-----+
| Name  | varchar(100) | NO  | YES  | Unknown |       |
| Age   | int        | YES | YES  | NULL    |       |
| Gender | char(1)  | YES | YES  | NULL    |       |
| BirthDate | date   | YES | YES  | NULL    |       |
+-----+-----+-----+-----+-----+
4 rows in set (0.01 sec)

mysql> INSERT INTO personalInfo2() VALUES();
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM PersonalInfo2;
+-----+-----+-----+-----+
| Name | Age | Gender | BirthDate |
+-----+-----+-----+-----+
| Unknown | NULL | NULL | NULL |
+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

```

mysql> INSERT INTO personalInfo2(Name) VALUES("Karan");
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM PersonalInfo2;
+-----+-----+-----+-----+
| Name | Age | Gender | BirthDate |
+-----+-----+-----+-----+
| Unknown | NULL | NULL | NULL |
| Karan | NULL | NULL | NULL |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)

```

Primary Key - Is a unique key used to define unique data in a table.  
Making sure there is no redundant/ duplicate data present.

P.K - NOT NULL , Storing Unique records.

```

mysql> CREATE TABLE Unique_PersonalInfo(
->   Id int PRIMARY KEY,
->   Name varchar(100) NOT NULL DEFAULT 'Unknown',
->   Age int DEFAULT 99,
->   Gender char(1),
->   BirthDate DATE
-> );
Query OK, 0 rows affected (0.05 sec)

mysql> SHOW TABLES;
+-----+
| Tables_in_employeedetail |
+-----+
| personalinfo
| personalinfo1
| personalinfo2
| unique_personalinfo |
+-----+
4 rows in set (0.00 sec)

mysql> DESC unique_personalinfo;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| Id | int | NO | PRI | NULL | |
| Name | varchar(100) | NO | | Unknown | |
| Age | int | YES | | 99 | |
| Gender | char(1) | YES | | NULL | |
| BirthDate | date | YES | | NULL | |
+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)

```

```

CREATE TABLE Unique_PersonalInfo(
    Id int,
    Name varchar(100) NOT NULL DEFAULT 'Unknown',
    Age int DEFAULT 99,
    Gender char(1),
    BirthDate DATE ,
    PRIMARY KEY(Id)
);

```

```

mysql> CREATE TABLE Unique_PersonalInfo2(
->   Id int auto_increment,
->   Name varchar(100) NOT NULL DEFAULT 'Unknown',
->   Age int DEFAULT 99,
->   Gender char(1),
->   BirthDate DATE,
->   PRIMARY KEY(Id)
-> );
Query OK, 0 rows affected (0.06 sec)

mysql> DESC Unique_PersonalInfo2;
+-----+-----+-----+-----+-----+-----+
| Field | Type  | Null | Key  | Default | Extra       |
+-----+-----+-----+-----+-----+-----+
| Id   | int   | NO   | PRI  | NULL    | auto_increment |
| Name | varchar(100)| NO  |      | Unknown |             |
| Age  | int   | YES  |      | 99     |             |
| Gender | char(1) | YES  |      | NULL    |             |
| BirthDate | date | YES  |      | NULL    |             |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)

mysql> INSERT Into Unique_PersonalInfo2(Id , Name) VALUES(1, "Manav");
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM Unique_PersonalInfo2;
+-----+-----+-----+-----+
| Id | Name | Age | Gender | BirthDate |
+-----+-----+-----+-----+
| 1 | Manav | 99 | NULL | NULL |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

```

```

mysql> INSERT Into Unique_PersonalInfo2(Name) VALUES("Ankita");
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM Unique_PersonalInfo2;
+-----+-----+-----+-----+
| Id | Name | Age | Gender | BirthDate |
+-----+-----+-----+-----+
| 1 | Manav | 99 | NULL | NULL |
| 2 | Ankita | 99 | NULL | NULL |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)

```

mysql> INSERT Into Unique\_PersonalInfo2(Id , Name) VALUES(1, "Manav");  
ERROR 1062 (23000): Duplicate entry '1' for key 'unique\_personalinfo2.PRIMARY'  
mysql> INSERT Into Unique\_PersonalInfo2(Name) VALUES("Manav");  
Query OK, 1 row affected (0.01 sec)

mysql> INSERT Into Unique\_PersonalInfo2(Name) VALUES("Manav");  
Query OK, 1 row affected (0.01 sec)

mysql> INSERT Into Unique\_PersonalInfo2(Name) VALUES("Manav");  
Query OK, 1 row affected (0.01 sec)

mysql> INSERT Into Unique\_PersonalInfo2(Name) VALUES("Manav");  
Query OK, 1 row affected (0.01 sec)

mysql> INSERT Into Unique\_PersonalInfo2(Name) VALUES("Manav");  
Query OK, 1 row affected (0.01 sec)

mysql> SELECT \* FROM Unique\_PersonalInfo2;
+-----+-----+-----+-----+
| Id | Name | Age | Gender | BirthDate |
+-----+-----+-----+-----+
1	Manav	99	NULL	NULL
2	Ankita	99	NULL	NULL
3	Manav	99	NULL	NULL
4	Manav	99	NULL	NULL
5	Manav	99	NULL	NULL
6	Manav	99	NULL	NULL
7	Manav	99	NULL	NULL
8	Manav	99	NULL	NULL
+-----+-----+-----+-----+
8 rows in set (0.00 sec)

It always increment the value by 1.

```

mysql> DROP TABLE Unique_PersonalInfo2;
Query OK, 0 rows affected (0.05 sec)

mysql> SHOW TABLES;
+-----+
| Tables_in_employeedetail |
+-----+
| personalinfo |
| personalinfo1 |
| personalinfo2 |
| unique_personalinfo |
+-----+
4 rows in set (0.00 sec)

mysql> CREATE TABLE Unique_PersonalInfo2(
    -> Id int auto_increment,
    -> Name varchar(100) NOT NULL DEFAULT 'Unknown',
    -> Age int DEFAULT 99,
    -> Gender char(1),
    -> BirthDate DATE,
    -> PRIMARY KEY(Id)
    -> );
Query OK, 0 rows affected (0.04 sec)

mysql> INSERT INTO Unique_PersonalInfo2(Name) VALUES("Aman");
Query OK, 1 row affected (0.02 sec)

mysql> SELECT * FROM Unique_PersonalInfo2;
+----+----+----+----+
| Id | Name | Age | Gender | BirthDate |
+----+----+----+----+
| 1 | Aman | 99 | NULL | NULL      |
+----+----+----+----+
1 row in set (0.00 sec)

```

```

mysql> INSERT INTO Unique_PersonalInfo2(Name) VALUES("Aman");
Query OK, 1 row affected (0.02 sec)

mysql> SELECT * FROM Unique_PersonalInfo2;
+----+----+----+----+
| Id | Name | Age | Gender | BirthDate |
+----+----+----+----+
| 1 | Aman | 99 | NULL | NULL      |
+----+----+----+----+
1 row in set (0.00 sec)

mysql> INSERT INTO Unique_PersonalInfo2(Id , Name) VALUES(32798293 , "Kriti");
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM Unique_PersonalInfo2;
+----+----+----+----+
| Id | Name | Age | Gender | BirthDate |
+----+----+----+----+
| 1 | Aman | 99 | NULL | NULL      |
| 32798293 | Kriti | 99 | NULL | NULL      |
+----+----+----+----+
2 rows in set (0.00 sec)

mysql> INSERT INTO Unique_PersonalInfo2(Name) VALUES("Abhishek");
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM Unique_PersonalInfo2;
+----+----+----+----+
| Id | Name | Age | Gender | BirthDate |
+----+----+----+----+
| 1 | Aman | 99 | NULL | NULL      |
| 32798293 | Kriti | 99 | NULL | NULL      |
| 32798294 | Abhishek | 99 | NULL | NULL      |
+----+----+----+----+
3 rows in set (0.00 sec)

```

```

mysql> DESC unique_personalinfo;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key  | Default | Extra |
+-----+-----+-----+-----+-----+
| Id    | int    | NO   | PRI   | NULL    |       |
| Name  | varchar(100) | NO   |        | Unknown |       |
| Age   | int    | YES  |        | 99      |       |
| Gender | char(1) | YES  |        | NULL    |       |
| BirthDate | date  | YES  |        | NULL    |       |
+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)

mysql> INSERT Into unique_personalinfo(Id , Name , Age , Gender , BirthDate)
-> VALUES(54, "Prateek" , 25 , 'M' , '1998-09-23');
Query OK, 1 row affected (0.02 sec)

mysql> SELECT * FROM unique_personalinfo;
+-----+-----+-----+-----+
| Id  | Name | Age | Gender | BirthDate |
+-----+-----+-----+-----+
| 54 | Prateek | 25 | M | 1998-09-23 |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> INSERT Into unique_personalinfo(Id , Name , Age , Gender , BirthDate)
-> VALUES(54, "Prateek" , 25 , 'M' , '1998-09-23');
ERROR 1062 (23000): Duplicate entry '54' for key 'unique_personalinfo.PRIMARY'
mysql> INSERT Into unique_personalinfo(Id , Name , Age , Gender , BirthDate)
-> VALUES(54, "Ritik" , 24 , 'M' , '1999-03-21');
ERROR 1062 (23000): Duplicate entry '54' for key 'unique_personalinfo.PRIMARY'
mysql>

```

## Define an Employees table, with the following fields:

- **id** - number(automatically increments)  
and primary key
- **last\_name** - text, mandatory
- **first\_name** - text, mandatory
- **middle\_name** - text, not mandatory
- **age** - number mandatory
- **current\_status** - text, mandatory,  
defaults to 'employed'

```

mysql> CREATE TABLE Employees(
->   id int PRIMARY KEY auto_increment,
->   last_name varchar(100) NOT NULL,
->   first_name varchar(100) NOT NULL,
->   middle_name varchar(100),
->   age int NOT NULL,
->   current_status varchar(100) NOT NULL DEFAULT 'Employed'
-> );
Query Ok, 0 rows affected (0.03 sec)

mysql> SHOW TABLES;
+-----+
| Tables_in_employeedetail |
+-----+
| employees
| personalinfo
| personalinfo1
| personalinfo2
| unique_personalinfo
| unique_personalinfo2
+-----+
6 rows in set (0.00 sec)

mysql> DESC employees;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id    | int  | NO   | PRI | NULL    | auto_increment |
| last_name | varchar(100) | NO | NULL | NULL |
| first_name | varchar(100) | NO | NULL | NULL |
| middle_name | varchar(100) | YES | NULL | NULL |
| age   | int  | NO   | NULL | NULL |
| current_status | varchar(100) | NO | | Employed |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

```

```

CREATE TABLE Employees(
  id int auto_increment,
  last_name varchar(100) NOT NULL,
  first_name varchar(100) NOT NULL,
  middle_name varchar(100),
  age int NOT NULL,
  current_status varchar(100) NOT NULL DEFAULT 'Employed' ,
  PRIMARY KEY(id)
);

```

```

mysql> INSERT INTO Employees(id , last_name , first_name , age)
-> VALUES(734673, "Johar", "Karan" , 45);
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM Employees;
+-----+-----+-----+-----+-----+
| id   | last_name | first_name | middle_name | age | current_status |
+-----+-----+-----+-----+-----+
| 734673 | Johar     | Karan      | NULL        | 45 | Employed      |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> INSERT INTO Employees(last_name , first_name , age , current_status)
-> VALUES("Khan", "Aamir" , 51 , "Enjoying Life");
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM Employees;
+-----+-----+-----+-----+-----+
| id   | last_name | first_name | middle_name | age | current_status |
+-----+-----+-----+-----+-----+
| 734673 | Johar     | Karan      | NULL        | 45 | Employed      |
| 734674 | Khan      | Aamir      | NULL        | 51 | Enjoying Life |
+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

```