

SQL Database Management: - p3

7:30PM - 8:00 PM - EA Session

4. Renaming a Column

Some databases allow renaming a column directly with the `ALTER TABLE` command.

- MySQL:

```
ALTER TABLE table_name
CHANGE COLUMN old_column_name new_column_name new_datatype;
```

```
69 • ALTER TABLE Student
70     CHANGE COLUMN Fees Semester_fee float;
```

Change the name to Stud_name;
& Add new column name State.

Field	Type	Null	Key	Default	Extra
student_id	varchar(265)	YES		NULL	
name	varchar(100)	YES		NULL	
Gender	char(1)	YES		NULL	
age	int	YES		NULL	
Date_of_birth	date	YES		NULL	
Semester_fee	float	YES		NULL	
city	varchar(100)	YES		NULL	
Country	varchar(100)	YES		NULL	

```
72 • ALTER TABLE Student
73     CHANGE COLUMN name Student_name varchar(100);
```

Field	Type	Null	Key	Default	Extra
student_id	varchar(265)	YES		NULL	
Student_name	varchar(100)	YES		NULL	
Gender	char(1)	YES		NULL	
age	int	YES		NULL	
Date_of_birth	date	YES		NULL	
Semester_fee	float	YES		NULL	
city	varchar(100)	YES		NULL	
Country	varchar(100)	YES		NULL	

```

75 • ALTER TABLE Student
76 ADD COLUMN State varchar(100);

```

Result Grid | Filter Rows: Export: Wrap Cell Content: □

Field	Type	Null	Key	Default	Extra
student_id	varchar(255)	YES		NULL	
Student_name	varchar(100)	YES		NULL	
Gender	char(1)	YES		NULL	
age	int	YES		NULL	
Date_of_birth	date	YES		NULL	
Semester_fee	float	YES		NULL	
city	varchar(100)	YES		NULL	
Country	varchar(100)	YES		NULL	
State	varchar(100)	YES		NULL	

Result 5 ×

→ 11 digit

```
78 • SELECT * FROM Student;
```

Result Grid | Filter Rows: Export: Wrap Cell Content: □

student_id	Student_name	Gender	age	Date_of_birth	Semester_fee	city	Country	State
123234	Hitesh	M	25	1998-12-21	10000	Delhi	India	NULL
123235	Rohini	F	25	1999-10-24	10000	Pune	India	NULL
123236	Bikash	M	26	1997-11-22	10000	Indore	India	NULL
123237	Vinay	M	24	NULL	11000	Gaya	India	NULL
123237	Vinay	M	24	NULL	11000	Gaya	India	NULL
123237	Vinay	M	24	NULL	11000	Gaya	India	NULL
123456A	Hitesh	M	24	1998-12-21	10000	Delhi	India	NULL

Constraints :

Patient

patient_id	first_name	last_name	birth_date
1	vikram	malik	2024-02-23
1	Karna	chaudary	2024-02-23

Fever

Select * from Patient where patient_id = 1;

Primary Key - Unique Value - ----- So that we wouldn't have redundant data.

```

CREATE TABLE patient (
    patient_id INT,
    first_name VARCHAR(100),
    last_name VARCHAR(100),
    birth_date DATE
);
Insert into patient (patient_id,first_name,last_name, birth_date)
values
(
    1,'vikram','malik','2024-02-23'
);
select * from patient

```

P.K

"2024-10-28"

	patient_id	first_name	last_name	birth_date
▶	1	vikram	malik	2024-02-23
	1	Karna	chaudary	2024-02-23

```

Insert into patient (patient_id,first_name,last_name, birth_date)
values
(
1,'Karna','chaudary', '2024-02-23'
);
select * from patient

```

error

```

mysql> SHOW DATABASES;
+-----+
| Database |
+-----+
| employee |
| film      |
| geekster  |
| ig_clone   |
| information_schema |
| mysql     |
| performance_schema |
| shirts_db  |
| soap_store |
+-----+
9 rows in set (0.01 sec)

mysql> USE Film;
Database changed
mysql> SHOW TABLES;
+-----+
| Tables_in_film |
+-----+
| films          |
| patient        |
| student         |
+-----+
3 rows in set (0.00 sec)

mysql> DESC patient;
+-----+-----+-----+-----+-----+-----+
| Field | Type  | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| patient_id | int    | YES  |   | NULL    |       |
| firstName   | varchar(100) | YES  |   | NULL    |       |
| lastName    | varchar(100) | YES  |   | NULL    |       |
| birthDate   | date   | YES  |   | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.01 sec)

```

```

mysql> INSERT INTO patient(patient_id , firstName , lastName , birthDate)
-> VALUES (1 , "Vikram" , "Mallik" , '2000-10-24');
Query OK, 1 row affected (0.01 sec)

```

```

mysql> SELECT * FROM patient;
+-----+-----+-----+
| patient_id | firstName | lastName | birthDate |
+-----+-----+-----+
| 1 | Vikram | Mallik | 2000-10-24 |
+-----+-----+-----+
1 row in set (0.00 sec)

```

```

mysql> INSERT INTO patient(patient_id , firstName , lastName , birthDate)
-> VALUES (1 , "Karna" , "Chaudhry" , "1999-12-20");
Query OK, 1 row affected (0.01 sec)

```

```

mysql> SELECT * FROM patient;
+-----+-----+-----+
| patient_id | firstName | lastName | birthDate |
+-----+-----+-----+
| 1 | Vikram | Mallik | 2000-10-24 |
| 1 | Karna | Chaudhry | 1999-12-20 |
+-----+-----+-----+
2 rows in set (0.00 sec)

```

```

mysql> INSERT INTO patient(patient_id , firstName , lastName , birthDate)
-> VALUES (1 , "Rohini" , "Shelar" , '2001-01-01');
Query OK, 1 row affected (0.00 sec)

```

```

mysql> SELECT * FROM patient;
+-----+-----+-----+
| patient_id | firstName | lastName | birthDate |
+-----+-----+-----+
| 1 | Vikram | Mallik | 2000-10-24 |
| 1 | Karna | Chaudhry | 1999-12-20 |
| 1 | Rohini | Shelar | 2001-01-01 |
+-----+-----+-----+
3 rows in set (0.00 sec)

```

No unique constraint to stop the redundancy.

```
mysql> DROP TABLE patient;
Query OK, 0 rows affected (0.02 sec)
```

```
mysql> SHOW TABLES;
+-----+
| Tables_in_film |
+-----+
| films          |
| student        |
+-----+
2 rows in set (0.00 sec)
```

Introducing Primary Key Constraint to avoid the redundant.

```
CREATE TABLE Patient(
    patient_id int PRIMARY KEY,
    firstName varchar(100),
    lastName varchar(100),
    birthDate Date
);
```

```
mysql> CREATE TABLE Patient(
    -> patient_id int PRIMARY KEY,
    -> firstName varchar(100),
    -> lastName varchar(100),
    -> birthDate Date
    -> );
Query OK, 0 rows affected (0.02 sec)
```

```
mysql> SHOW TABLES;
+-----+
| Tables_in_film |
+-----+
| films          |
| patient        |
| student        |
+-----+
3 rows in set (0.00 sec)
```

```
mysql> DESC Patient;
+-----+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| patient_id | int    | NO   | PRI | NULL    |       |
| firstName  | varchar(100) | YES  |     | NULL    |       |
| lastName   | varchar(100) | YES  |     | NULL    |       |
| birthDate  | date   | YES  | MUL | NULL    |       |
+-----+-----+-----+-----+-----+-----+
```

Primary Key.

Foreign Key.

```

mysql> DESC Patient;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| patient_id | int    | NO   | PRI | NULL    |       |
| firstName  | varchar(100) | YES  |      | NULL    |       |
| lastName   | varchar(100) | YES  |      | NULL    |       |
| birthDate  | date   | YES  |      | NULL    |       |
+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> INSERT INTO Patient(patient_id , firstName , lastName , birthDate)
-> VALUES(1 , "Vikram" , "Mallik" , '2020-10-24');
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM Patient;
+-----+-----+-----+-----+
| patient_id | firstName | lastName | birthDate |
+-----+-----+-----+-----+
| 1 | Vikram | Mallik | 2020-10-24 |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> INSERT INTO Patient(patient_id , firstName , lastName , birthDate)
-> VALUES(1 , "Karna" , "Kumar" , '1999-11-22');
ERROR 1062 (23000): Duplicate entry '1' for key 'patient.PRIMARY'
mysql>

```

After changing the id, it allow me to insert the data as it would not breaking the rule.

```

mysql> INSERT INTO Patient(patient_id , firstName , lastName , birthDate)
-> VALUES(2 , "Karna" , "Kumar" , '1999-11-22');
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM Patient;
+-----+-----+-----+-----+
| patient_id | firstName | lastName | birthDate |
+-----+-----+-----+-----+
| 1 | Vikram | Mallik | 2020-10-24 |
| 2 | Karna | Kumar | 1999-11-22 |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)

```

```

mysql> INSERT INTO Patient() VALUES();
ERROR 1364 (HY000): Field 'patient_id' doesn't have a default value
mysql> INSERT INTO Patient(patient_id) VALUES(3);
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM Patient;
+-----+-----+-----+-----+
| patient_id | firstName | lastName | birthDate |
+-----+-----+-----+-----+
| 1 | Vikram | Mallik | 2020-10-24 |
| 2 | Karna | Kumar | 1999-11-22 |
| 3 | NULL | NULL | NULL |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

```

```

mysql> DROP TABLE Patient;
Query OK, 0 rows affected (0.03 sec)

```

Except Patient_id we have default value for others.

```

mysql> CREATE TABLE Patient(
    -> patient_id int AUTO_INCREMENT,
    -> firstName varchar(100),
    -> lastName varchar(100),
    -> birthDate Date,
    -> PRIMARY KEY(patient_id)
    -> );
Query OK, 0 rows affected (0.04 sec)

mysql> DESC Patient;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| patient_id | int      | NO   | PRI | NULL    | auto_increment |
| firstName   | varchar(100) | YES  |     | NULL    |
| lastName    | varchar(100) | YES  |     | NULL    |
| birthDate   | date     | YES  |     | NULL    |
+-----+-----+-----+-----+-----+

mysql> INSERT INTO Patient(patient_id , firstName , lastName , birthDate)
-> VALUES(1 , "Vikram" , "Mallik" , '2020-10-24');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Patient(patient_id , firstName , lastName , birthDate)
-> VALUES(2 , "Karna" , "Kumar" , '1999-11-22');
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM Patient;
+-----+-----+-----+-----+
| patient_id | firstName | lastName | birthDate |
+-----+-----+-----+-----+
| 1 | Vikram | Mallik | 2020-10-24 |
| 2 | Karna | Kumar | 1999-11-22 |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> INSERT INTO Patient(firstName , lastName , birthDate)
-> VALUES("Karna" , "Kumar" , '1999-11-22');
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM Patient;
+-----+-----+-----+-----+
| patient_id | firstName | lastName | birthDate |
+-----+-----+-----+-----+
| 1 | Vikram | Mallik | 2020-10-24 |
| 2 | Karna | Kumar | 1999-11-22 |
| 3 | Karna | Kumar | 1999-11-22 |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

```

We are skipping the patient_id , still wouldn't get an error,
as auto_increment handles it.

Also the drawback is , we can add more redundant data.

```
mysql> INSERT INTO Patient(patient_id , firstName , lastName , birthDate)
-> VALUES(58728236 , "Vikram" , "Mallik" , '2020-10-24');
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM Patient;
+-----+-----+-----+-----+
| patient_id | firstName | lastName | birthDate |
+-----+-----+-----+-----+
| 4 | Karna | Kumar | 1999-11-22 |
| 58728236 | Vikram | Mallik | 2020-10-24 |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> INSERT INTO Patient(firstName , lastName , birthDate)
-> VALUES("Karna" , "Kumar" , '1999-11-22');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Patient(firstName , lastName , birthDate)
-> VALUES("Karna" , "Kumar" , '1999-11-22');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Patient(firstName , lastName , birthDate)
-> VALUES("Karna" , "Kumar" , '1999-11-22');
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM Patient;
+-----+-----+-----+-----+
| patient_id | firstName | lastName | birthDate |
+-----+-----+-----+-----+
| 4 | Karna | Kumar | 1999-11-22 |
| 58728236 | Vikram | Mallik | 2020-10-24 |
| 58728237 | Karna | Kumar | 1999-11-22 |
| 58728238 | Karna | Kumar | 1999-11-22 |
| 58728239 | Karna | Kumar | 1999-11-22 |
+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```