

Connection code:

```
cd\  
cd xampp  
cd mysql  
cd bin  
mysql -u root -p -h 127.0.0.1
```

1) create a database named customers_db.

Syntax:

```
MariaDB [(none)]> use customer_db;  
Database changed  
MariaDB [customer_db]> |
```

2) create a table named customers with following columns adding constraints following constraints Customer_id: Primary key

Name: not null

Customer_id	Name	Email	Age	Address
int	Varchar(30)	Varchar(30)	int	Varchar(30)

Syntax:

Field	Type	Null	Key	Default	Extra
customer_id	int(11)	NO	PRI	NULL	
name	varchar(30)	NO		NULL	
email	varchar(255)	YES		NULL	
age	int(11)	YES		NULL	
address	varchar(30)	YES		NULL	

3) We have already added two constraints (PRIMARY KEY and NULL) while creating table customers. We can add constraints after creating table as well.

- Email must be unique of each customer

Syntax:

- Age must be greater than 18

Syntax:

- The default value of address must be bhaktapur

Syntax:

Field	Type	Null	Key	Default	Extra
customer_id	int(11)	NO	PRI	NULL	
name	varchar(30)	NO		NULL	
email	varchar(255)	YES	UNI	NULL	
age	int(11)	YES		NULL	
address	varchar(30)	YES		bhaktapur	

4) Now insert records of customer with and without violating constraints.

Primary key

Syntax:

customer_id	name	email	age	address
1	ram	ram@gmail.com	22	kathmandu
2	sita	sita@gmail.com	25	pokhara

Syntax:

```
ERROR 1062 (23000): Duplicate entry '2' for key 'PRIMARY'
```

NOT NULL

Syntax:

customer_id	name	email	age	address
1	ram	ram@gmail.com	22	kathmandu
2	sita	sita@gmail.com	25	pokhara
3		gita@gmail.com	26	butwal

CHECK

Syntax:

customer_id	name	email	age	address
1	ram	ram@gmail.com	22	kathmandu
2	sita	sita@gmail.com	25	pokhara
3		gita@gmail.com	26	butwal
4	hari	hari@gmail.com	27	lalitpur

Syntax:

```
ERROR 4025 (23000): CONSTRAINT `CONSTRAINT_1` failed for `customer_db`.`customers`
```

UNIQUE

Syntax:

```
ERROR 1062 (23000): Duplicate entry 'ram@gmail.com' for key 'email'
```

DEFAULT

Syntax:

customer_id	name	email	age	address
1	ram	ram@gmail.com	22	kathmandu
2	sita	sita@gmail.com	25	pokhara
3		gita@gmail.com	26	butwal
4	hari	hari@gmail.com	27	lalitpur
5	gopal	gopal@gmail.com	20	bhaktapur

FOREIGN KEY

We have already created table customers with following columns

Customer_id	Name	Email	Age	Address
int	Varchar(30)	Varchar(30)	int	Varchar(30)

Now we have to create table **orders** with following columns.

Order_id	Product_name	price	Customer_id

and order_id is primary key and customer_id as foreign key for customer

Syntax:

Field	Type	Null	Key	Default	Extra
order_id	int(11)	NO	PRI	NULL	
product_name	varchar(30)	YES		NULL	
price	int(11)	YES		NULL	
customer_id	int(11)	YES	MUL	NULL	

Now let update customer table

Syntax:

customer_id	name	email	age	address
1	ram	ram@gmail.com	22	kathmandu
2	sita	sita@gmail.com	25	pokhara
3	gita	gita@gmail.com	26	butwal
4	hari	hari@gmail.com	27	lalitpur
5	gopal	gopal@gmail.com	20	bhaktapur

Again insert some rows in orders table

Syntax:

order_id	product_name	price	customer_id
1	iron	1200	1
2	guitar	4500	2
3	phone	57000	1
4	printer	88000	3
5	drone	125000	2
6	smartwatch	7500	4
7	oven	14500	5

Try to insert customer_id in orders table that does not exist in customers table

Syntax:

```
ERROR 1452 (23000): Cannot add or update a child row: a foreign key constraint fails ('customer_db'.'orders'
, CONSTRAINT 'orders_ibfk_1' FOREIGN KEY ('customer_id') REFERENCES 'customers' ('customer_id'))
```

DISSCUSION:

CONCLUSION: