

Create table

1. In create table, we can assign 2 types of constraints
 - a. Field level constraints → these constraints can be written immediately after field definition.
 - i. Not null
 - ii. Default
 - iii. Unique
 - iv. Auto_increment
 - b. Table level constraints → these constraints can be written immediately after field definition or after last field definition.
 - i. Foreign key
 - ii. Primary key
 - iii. Check constraint.

Not null	It does not allow null values in the column
default	It specifies the value to be added in the field, if user has given null value
unique	It does not allow duplicate values in the column
Auto_increment	It generates the value automatically
Primary key	<ul style="list-style-type: none"> It does not allow null values in the column and It does not allow duplicate values in the column, In the table there will be only one primary key If primary contains one column, then it is called as simple primary key. If primary key contains many columns, then it is called as composite key. Composite key has to be defined after last field definition
Check constraint	It checks some condition on the value entered by user, if condition satisfies then only the value will be stored in the column
Foreign key	It references primary key column of same or other table, if value exists in that column, then only it allows to store the value in the current column Primary key can also be a foreign key One table can have more than one foreign key

1. To create a table product, store following fields in the table

pid	int	Primary key	Create table product(pid int primary key, pname varchar(20) not null unique, qty int check(qty > 0) default 10, price double(9,2) check(price > 0), catid int, foreign key fk_cid(catid) references category(cid)
pname	Varchar(20)	Not null , unique	
qty	int	Check (qty > 0) default-10	
price	Double(9,2)	Check(price > 0)	

catid	int	Foreign key reference category(cid)	on delete set null on update cascade);
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2. To create a table Category, store following fields in the table

cid	int	Primary key	Category table : Create table category(cid int primary key , cname varchar(20) not null, cdesc varchar(20));
cname	Varchar(20)	Not null	
Cdesc	Varchar(20)		

3. Create a table studene_marks

sid	int	create table stud_marks(sid int, course varchar(20), marks int, primary key(sid,course), foreign key fk_sid(sid) references student(sid), foreign key fk_course(course) references coursedata(cname))
course	Varchar(20)	
marks	int	
Primary key	Sid+course	

Sid	course	marks
1	java	98
1	c++	96
1	database	100
2	java	95

- On delete cascade / set null
on update cascade
- Auto_increment→
 - in one table there can be only one auto_increment column
 - in the auto increment column values can be added explicitly
 - the start value is by default 1, but it can be changed by using alter table

ALTER TABLE student AUTO_INCREMENT=1001

Create table student(
Sid int primary key auto_increment,
Sname varchar(20),

Address varchar(20));

Create table coursedata(
cname varchar(20) primary key,
duration int)

- to insert data in auto increment columns
insert into student(sname,address) values('Rajan','Baner')
insert into student values(default,'Revati','Baner')
insert into student values(20,'Revati','Baner')

ALTER TABLE student AUTO_INCREMENT=1001

Alter table statement

Add new column	ALTER TABLE table_name ADD new_column_name column_definition [FIRST AFTER column_name], ADD new_column_name column_definition [FIRST AFTER column_name], ...
Delete a column	ALTER TABLE table_name Drop column column_name
Modify the column type	ALTER TABLE table_name MODIFY column_name column_definition [FIRST AFTER column_name];
Change column name	ALTER TABLE table_name

	change column old-column_name new-col-name data type
Add new constraint	ALTER TABLE table_name Add new-constraint
Drop a constraint	ALTER TABLE table_name drop constraint
Rename the table	ALTER TABLE table_name Rename to new-table-name

1. To add roomid column in coursedata table

ALTER TABLE table_name

Add roomid int after cname;

2. Add faculty id column in coursedata

Alter table coursedata

Add facid int ,

Add cdesc varchar(20);

3. To drop the column

Alter table coursedata

Drop column cdesc

4. To modify data type of facid from int to varchar(20)

Alter table coursedata

Modify facid varchar(20)

5. Change column name

Alter table coursedata

Change column facid fid int;

Create table mytable(

id int primary key,

name varchar(20) unique,

price int)

6. To drop primary key constraint

Alter table mytable

drop primary key

7. To drop foreign key constraint

ALTER TABLE `table_name`

DROP FOREIGN KEY `id_name_fk`;

8. Add new primary key constraint

Alter table mytable

Add primary key(id)

9. Add new foreign key constraint

Alter table mytable

Add constraint f12 foreign key(cid) references category(cid)

- 10.

create table mytable1(

-> id int primary key,

-> name varchar(20),

-> cid int,

-> constraint f11 foreign key(cid) references category(cid),

Constraint un unique(name));

To drop the constraint

Alter table mytable1

Drop foreign key f11

11. To change table name mytable1 to mytable_dac

alter table mytable1

rename to mytable_dac

-----to find constraint name

1. To see create table query to find constraint names

Show create table <tablename>

2. To see find constraint names

Select table_name,constraint_type,constraint_name

From information_schema.table_constraints

Where table_name=<name>

1. To find all employees who are not manager of any other employee.
Select *
From emp e
Where not exists(select * from emp m where e.empno=m.mgr)

Joins in the table

If you want to retrieve the information from more than one table, then use joins

There are 3 type joins

1. Cross join –combining data from multiple tables
2. Inner join (natural join)--- combining data from more than one table with join condition is called as inner join
 - a. Equi join -----if join condition is based on = sign then it is called as equi join
 - b. Non equi join
 - c. Self join
3. Outer join
 - a. Left outer join
 - b. Right outer join
 - c. Full outer join