SQL Day 17

Default Constraint

This constraint is used to apply default values.

Example1

Create table Emp (emp_no number, emp_name varchar(250), city varchar(100) default ‘Pune’

Summary

General Syntax to Apply Constraint on Column

1) Without using Constraint keyword

```
Column_name data_type  Constraint
```

```
Create table Student(
                    rollno   number    Primary Key,
                    s_name  varchar(200)   NOT NULL,
                    mark    number    check(mark>0),
                    mobileNo  number   Default   999999
                    );
```

Apply Constraint using Constraint Keeyword

```
Create table Student(
                    rollno    number   Constraint pk  Primary Key,
                    s_name   varchar(250)  Constraint  nl  Not Null,
                    mark   number  Constraint ck    check (mark>0),
                    mobileno  number  Constraint  uk  Unique,
                    city varchar(250)  Constraint df  default  'Pune'
                );
```

Foreign Key Constraints

1) when primary key column of one table is used in another table then it became foreign key.

2) We can apply Foreign Key constraints on single column or group of columns

3) If we apply Foreign Key on group of columns then it is known as Composite Foreign Key.

4) **Foreign key column can contain null or duplicate values**.

5) **One table can have multiple foreign keys**

6) We can apply foreign keys constraints at the time of table creation or after table creation.

7) By default, we can't delete a row in the Parent table, which is referenced

8) Before using Primary key of table into another table you must know the relation between these two tables.

Relations:

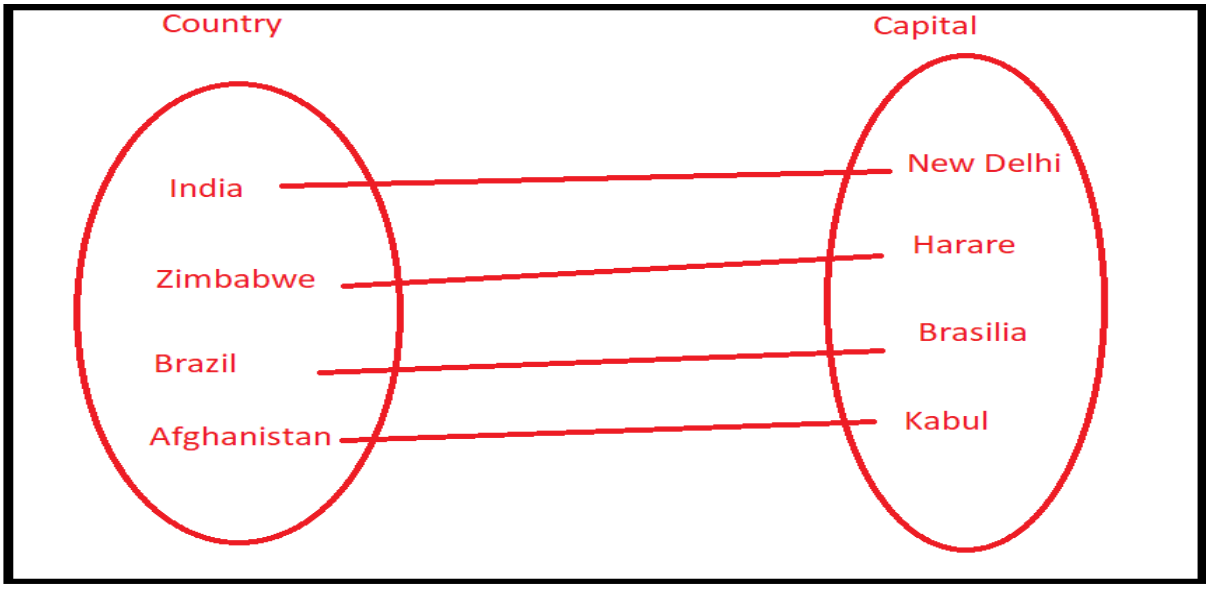
There are 4 types of relations are there

1) One to One Relation
2) One to Many Relation
3) Many to One Relation
4) Many to Many Relation

One to One Relation

In one-to-one relation one row of first table is associated with only one row of another table.

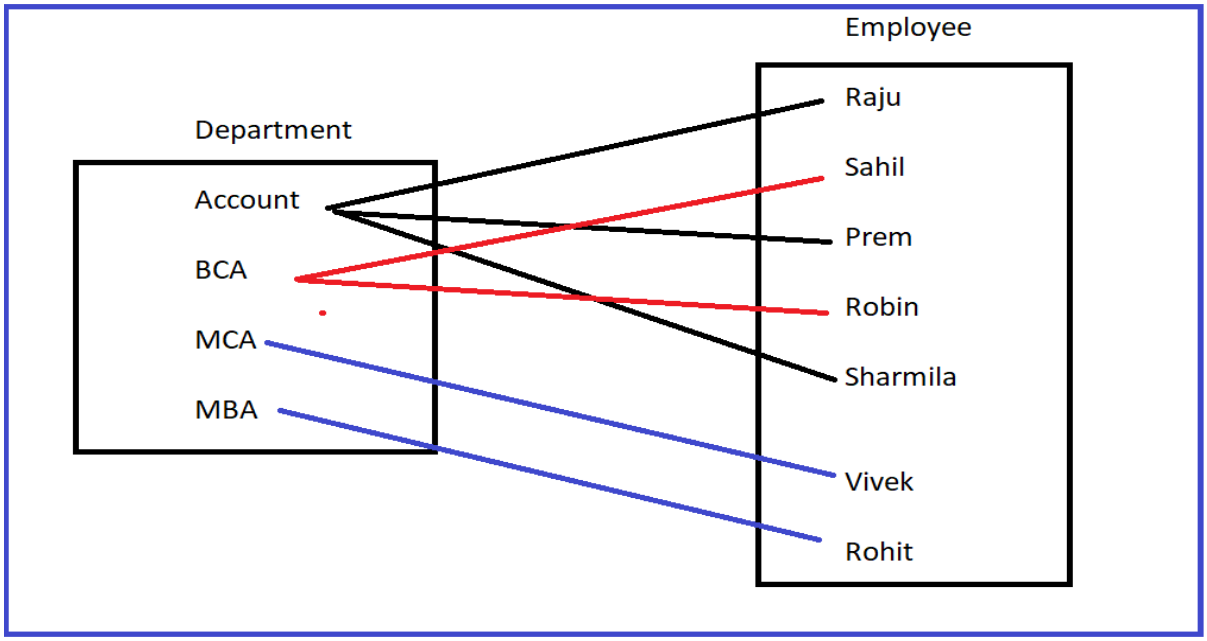
Example: Consider the two entity Country and Capital. One country has exactly one capital



One to Many Relation

In One-to-many relation one row from first table is associated with many rows of another table

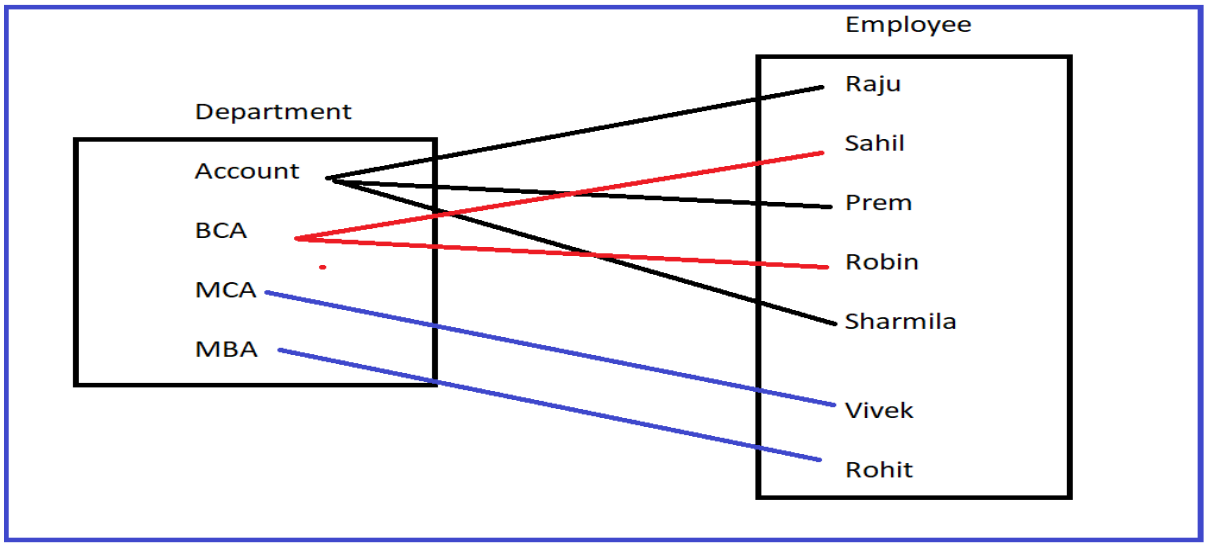
Example: Consider two entity Department and Employee. One Department can have many Employees



Many to One Relation

In Many to one relation Many rows form first table are associated with one row of another table

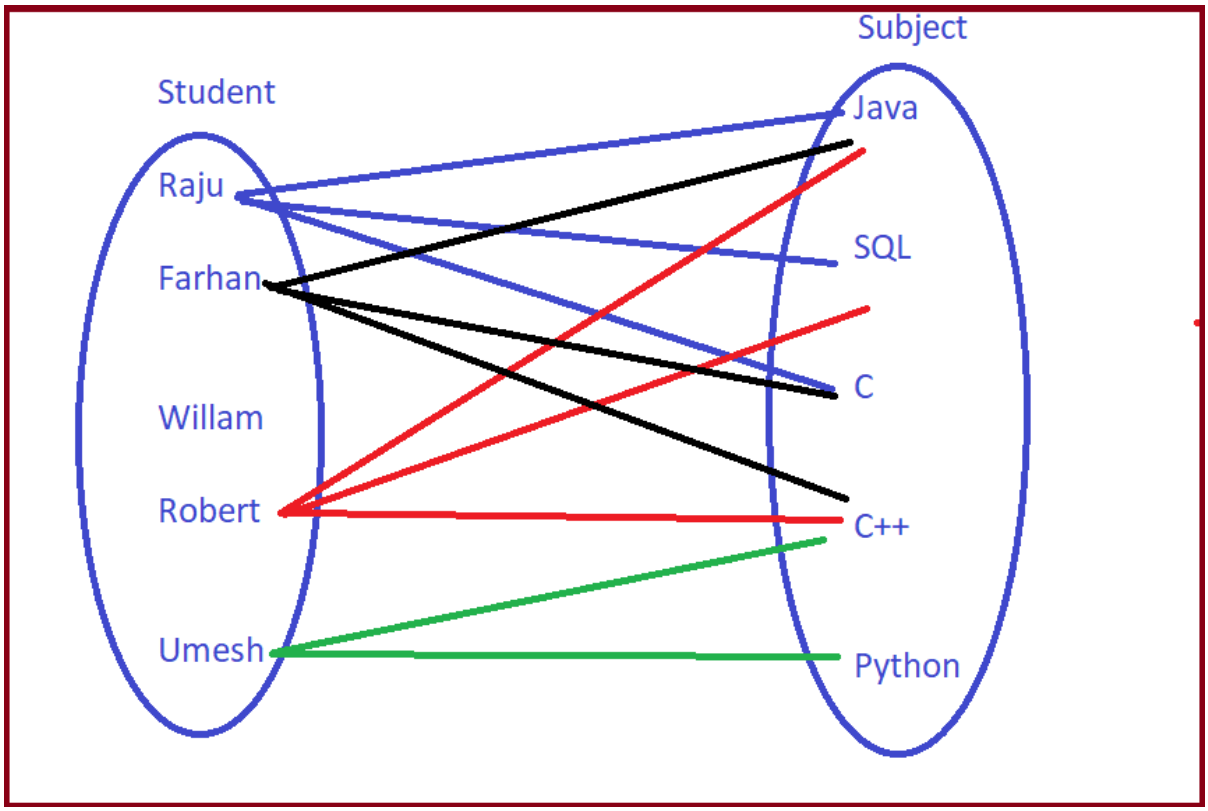
Consider again same example Department and Employee. Many Employees Associated with One Department



Many to Many Relations:

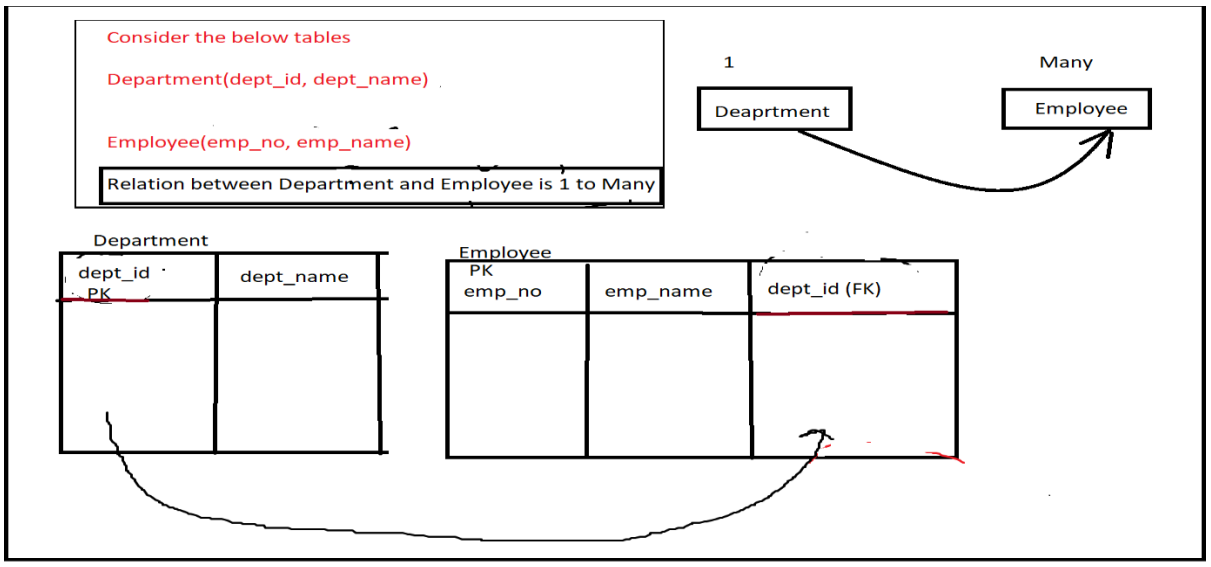
In many to many relations many rows from one table are associated with many rows of another table.

Example: Consider Student and Subject Entity. Many students can many Subject

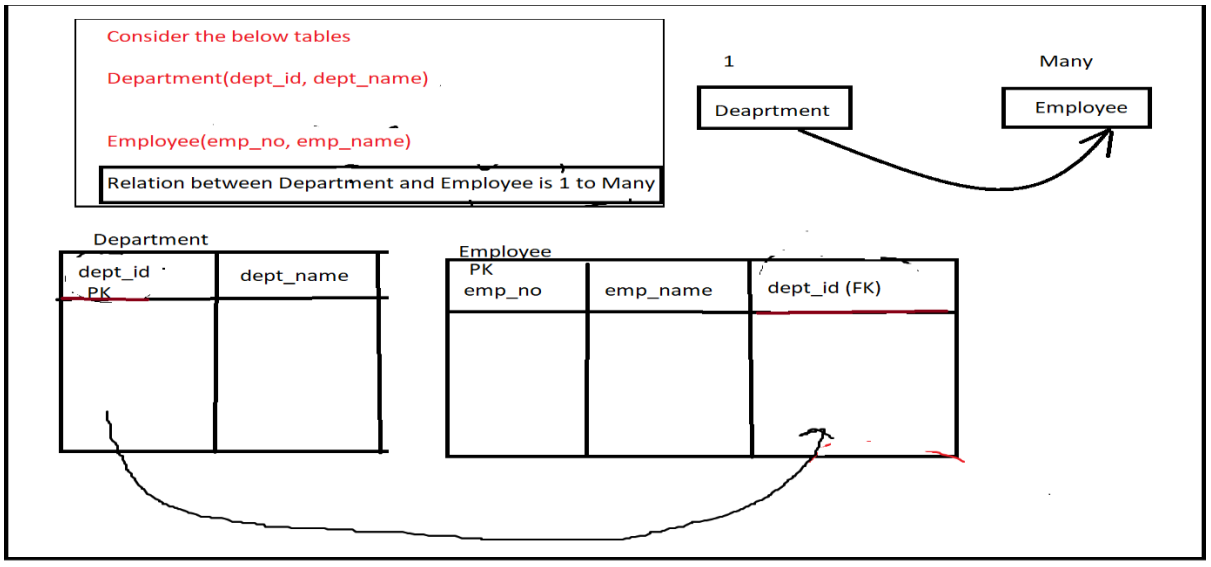


Important point for applying Foreign Key Constraint

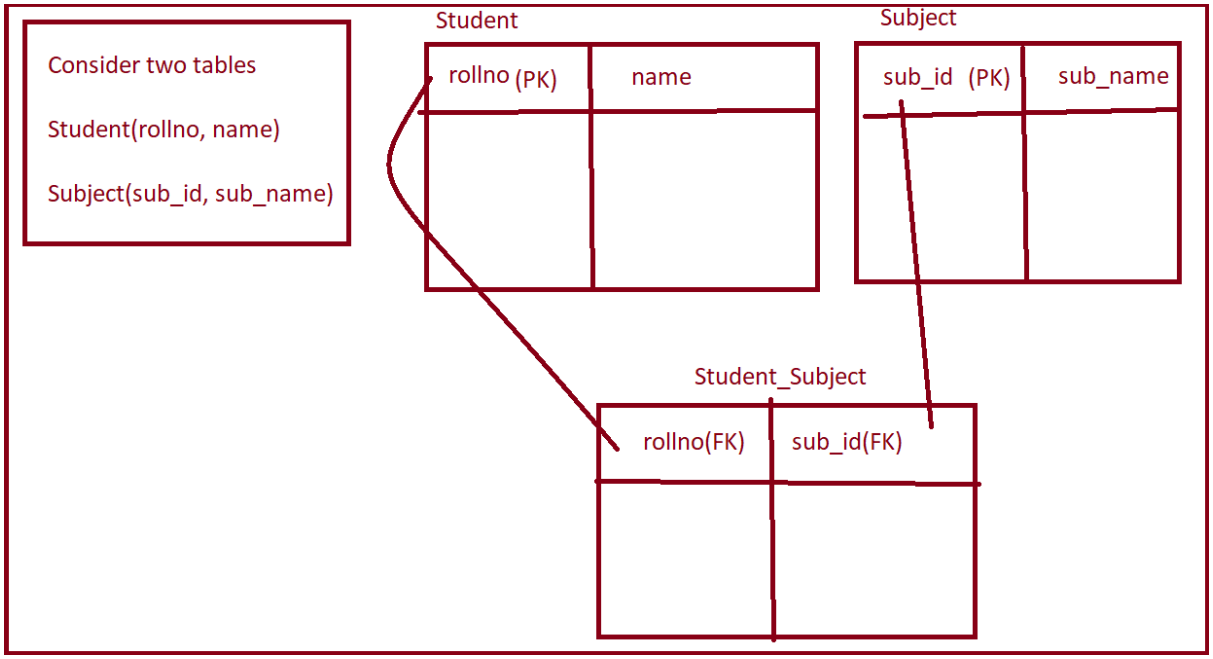
1) If Relation is one to many then 1's primary key is used in many



2) If relation is many to one then 1's primary key is used in many



3) If relation is **many to many** then third table need to create which contain primary key of both the table



Syntax to Apply foreign key for One to Many or Many to One relation

Consider Department and Employee table. Relation between department and Employee is One to Many.

```
Create table Department(
                        dept_id number Primary Key,
                        dept_name varchar(250) not null,
                        city varchar(250)

                       );
```

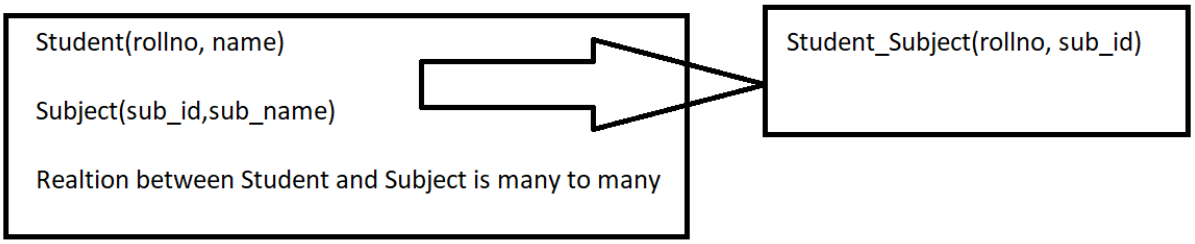
```
Create table Employee(
            Emp_no  number Primary Key,
            Emp_name varchar(250) not null
            salary  number,
dept_id number references Department(dept_id)
);
```

Another syntax using constraint keyword

```
Create table Employee
(
                    emp_no       number  Primary key,
                     emp_name   varchar(250)  not null,
                    salary          number,
                    dept_id  number,
Constraint  fk  FOREIGN KEY(dept_id)  REFERENCES  Department(dept_id)

);
```

Syntax to Apply foreign key for many to many relation




```
Create table Student(rollno   number  Primary Key, s_name varchar(250) not null

Create table Subject(sub_id number  Primary key, sub_name  varchar(100) not null

Create table Student_Subject( rollno  number  references   Student(rollno),
                                sub_id number  references   Subject(sub_id)
                              );
```

Important Points:

1) In Parent-child Relationship first need to create parent table then create child table

2) While inserting data into table, first you need to insert data into Parent table then in child table

3) While inserting values in child table's foreign key column you must insert those values which are present in Parent table.

4) While deleting values from Parent table , first you need to delete values from child table and then delete values from Parent table.

- we can't insert values into child table which is not exist in Parent table
- by default, we can't delete a row in the parent table which is referenced by Child table
- ON delete Cascade: Child record will be deleted if Parent record is deleted.
- ON delete set null: Child record value will be set to null value if Parent record is deleted.

How to Apply ON DELETE Cascade?

```
Create table Student201(roll_no  number Primary key,s_name   varchar(250) not null)

Create table Subject(sub_id  number Primary key,sub_name   varchar(250) not null)
```

Without on delete cascade or ON delete set NULL

```
Create table Student_Subject(roll_no  number references Student201(roll_no),
                    sub_id   number references Subject(sub_id)
                   )
```

with on delete cascade and on delete set null

```
Create table Student_Subject(roll_no  number references Student201(roll_no) ON DELETE CASCADE,
                    sub_id   number references Subject(sub_id) ON DELETE SET NULL
                   )
```