**Name : Kunal Baghele**

**Database Assignments**

* **Create Database**

create database school;

* **Use Database**

use school;

* **Create class table**

create table class (

id int auto\_increment primary key,

class\_name varchar(255) not null

);

* **Create teachers table**

create table teachers (

id int auto\_increment primary key,

full\_name varchar(255) not null,

contact varchar(20) not null,

email varchar(255),

class\_id int,

foreign key (class\_id) references class(id)

);

* **Create students table**

create table students (

id int auto\_increment primary key,

full\_name varchar(255) not null,

contact varchar(20) not null,

email varchar(255),

class\_id int,

foreign key (class\_id) references class(id)

);

* **Create library table**

create table library (

id int auto\_increment primary key,

book\_name varchar(255) not null,

quantity int,

std\_id int,

foreign key (std\_id) references students(id)

);

* **Inserting values in class table**

insert into class (class\_name) values

('one'),('two'),('three'),('four'),('five'),('six'),('seven'),('eight'),('nine'),('ten');

* **Inserting values in teachers table**

insert into teachers (full\_name, contact, email, class\_id) values

('Raj Kumar', '9876543210', 'raj.kumar@email.com', 1),

('Priya Sharma', '8765432109', 'priya.sharma@email.com', 2),

('Amit Singh', '7654321098', 'amit.singh@email.com', 3),

('Deepa Patel', '6543210987', 'deepa.patel@email.com', 4),

('Rahul Verma', '5432109876', 'rahul.verma@email.com', 5),

('Raj Kumar', '9876543210', 'raj.kumar@email.com', 3),

('Priya Sharma', '8765432109', 'priya.sharma@email.com', 5),

('Amit Singh', '7654321098', 'amit.singh@email.com', 2),

('Deepa Patel', '6543210987', 'deepa.patel@email.com', 4),

('Rahul Verma', '5432109876', 'rahul.verma@email.com', 5),

('Raj Kumar', '9876543210', 'raj.kumar@email.com', 6),

('Priya Sharma', '8765432109', 'priya.sharma@email.com', 6),

('Amit Singh', '7654321098', 'amit.singh@email.com', 7),

('Deepa Patel', '6543210987', 'deepa.patel@email.com', 4),

('Rahul Verma', '5432109876', 'rahul.verma@email.com', 8),

('Raj Kumar', '9876543210', 'raj.kumar@email.com', 3),

('Priya Sharma', '8765432109', 'priya.sharma@email.com', 9),

('Amit Singh', '7654321098', 'amit.singh@email.com', 10),

('Deepa Patel', '6543210987', 'deepa.patel@email.com', 10),

('Rahul Verma', '5432109876', 'rahul.verma@email.com', 10);

* **Inserting values in students table**

insert into students (full\_name, contact, email, class\_id) values

('Student One', '1234567890', 'student.one@email.com', 1),

('Student Two', '2345678901', 'student.two@email.com', 1),

('Student Three', '3456789012', 'student.three@email.com', 1),

('Student Seven', '7890123456', 'student.seven@email.com', 2),

('Student Eight', '8901234567', 'student.eight@email.com', 2),

('Student Ten', '0123456789', 'student.ten@email.com', 2),

('Student Eleven', '1234567890', 'student.eleven@email.com', 2),

('Student Twelve', '2345678901', 'student.twelve@email.com', 3),

('Student Thirteen', '3456789012', 'student.thirteen@email.com', 3),

('Student Fourteen', '4567890123', 'student.fourteen@email.com', 3),

('Student Fifteen', '5678901234', 'student.fifteen@email.com', 4),

('Student Sixteen', '6789012345', 'student.sixteen@email.com', 4),

('Student Twenty-One', '1234567890', 'student.twentyone@email.com', 4),

('Student Twenty-Two', '2345678901', 'student.twentytwo@email.com', 4),

('Student Twenty-Three', '1234567890', 'student.twentythree@email.com', 5),

('Student Twenty-Four', '2345678901', 'student.twentyfour@email.com', 5),

('Student Twenty-Five', '3456789012', 'student.twentyfive@email.com', 6),

('Student Twenty-Six', '4567890123', 'student.twentysix@email.com', 6),

('Student Twenty-Seven', '5678901234', 'student.twentyseven@email.com', 6),

('Student Twenty-Eight', '6789012345', 'student.twentyeight@email.com', 7),

('Student Forty', '6789012345', 'student.forty@email.com', 7),

('Student Forty-One', '7890123456', 'student.fortyone@email.com', 7),

('Student Forty-Two', '8901234567', 'student.fortytwo@email.com', 8),

('Student Forty-Three', '9012345678', 'student.fortythree@email.com', 8),

('Student Forty-Four', '0123456789', 'student.fortyfour@email.com', 8),

('Student Thirty-Five', '1234567890', 'student.thirtyfive@email.com', 9),

('Student Thirty-Six', '2345678901', 'student.thirtysix@email.com', 9),

('Student Thirty-Seven', '3456789012', 'student.thirtyseven@email.com', 9),

('Student Thirty-Eight', '4567890123', 'student.thirtyeight@email.com', 10),

('Student Thirty-Nine', '5678901234', 'student.thirtynine@email.com', 10);

* **Inserting values in library table**

insert into library (book\_name, quantity, std\_id) values

('Indian History Book', 10, 1),

('Science ', 8, 2),

('English Grammar ', 15, 8),

('Physics ', 12, 4),

('Mathematics ', 20, 12);

**select \* from class;**

**select \* from teachers;**

**select \* from library;**

**select \* from students;**

1. **List all students with their class names:**

select s.full\_name, c.class\_name

from students s

join class c on s.class\_id = c.id;

1. **Find the total number of books in the library:**

select sum(quantity) as total\_books

from library;

1. **List teachers along with the number of students they have:**

select t.full\_name, count(s.id) as num\_students

from teachers t

left join students s on t.class\_id = s.class\_id

group by t.full\_name;

1. **Find the class with the highest number of students:**

select c.class\_name, count(s.id) as num\_students

from class c

left join students s on c.id = s.class\_id

group by c.class\_name

order by num\_students desc

limit 1;

1. **Find the teacher who has the most students:**

select t.full\_name, count(s.id) as num\_students

from teachers t

left join students s on t.class\_id = s.class\_id

group by t.full\_name

order by num\_students desc

limit 1;

1. **List the books along with the students who borrowed them:**

select l.book\_name, s.full\_name

from library l

join students s on l.std\_id = s.id;

1. **List students who have borrowed more than 2 books: // DNR**

select s.full\_name

from students s

join library l on s.id = l.std\_id

group by s.full\_name

having count(l.id) > 2;

1. **Find the minimum and maximum quantity of books in the library:**

select min(quantity) as min\_books, max(quantity) as max\_books

from library;

1. **List the teachers and their contact numbers along with class names:**

select t.full\_name, t.contact, c.class\_name

from teachers t

join class c on t.class\_id = c.id;

1. **Count the number of distinct books in the library:**

select count(distinct book\_name) as distinct\_books

from library;

1. **Find the total number of students in each class:**

select c.class\_name, count(s.id) as num\_students

from class c

left join students s on c.id = s.class\_id

group by c.class\_name;

1. **List classes with students less than or equal to 3:**

select c.class\_name, count(s.id) as num\_students

from class c

left join students s on c.id = s.class\_id

group by c.class\_name

having num\_students <= 3;

1. **Calculate the average contact length for teachers:**

select avg(length(contact)) as avg\_contact\_length

from teachers;

1. **Crud Query**

**Class Table**

* insert into class (class\_name) values ('eleven');
* select \* from class;
* update class set class\_name = 'eleven\_updated' where id = 11;
* delete from class where id = 11;

**Teachers Table**

* insert into teachers (full\_name, contact, email, class\_id) values ('john doe', '9876543211', 'john.doe@email.com', 1);
* select \* from teachers;
* delete from teachers where id = 1;
* update teachers set email = 'john.doe.updated@email.com' where id = 1;

**Students Table**

* insert into students (full\_name, contact, email, class\_id) values ('student forty-five', '9876543210', 'student.fortyfive@email.com', 10);
* select \* from students;
* update students set email = 'student.fortyfive.updated@email.com' where id = 45;
* delete from students where id = 45;

**Library Table**

* insert into library (book\_name, quantity, std\_id) values ('chemistry', 5, 15);
* select \* from library;
* update library set quantity = 6 where id = 1;
* delete from library where id = 1;