

## -- Create the database

```
CREATE DATABASE IF NOT EXISTS institute_db;
```

```
USE institute_db;
```

## -- Create the Students table

```
CREATE TABLE IF NOT EXISTS Students (
```

```
student_id INT AUTO_INCREMENT PRIMARY KEY,
```

```
name VARCHAR(100) NOT NULL,
```

```
Gender Varchar(10),
```

```
email VARCHAR(100) UNIQUE NOT NULL,
```

```
phone VARCHAR(15),
```

```
graduation_year YEAR,
```

```
college VARCHAR(150)
```

```
);
```

## -- Create the Courses table

```
CREATE TABLE IF NOT EXISTS Courses (
```

```
course_id INT AUTO_INCREMENT PRIMARY KEY,
```

```
course_name VARCHAR(100) NOT NULL,
```

```
duration INT, -- Duration of the course in months
```

```
fees DECIMAL(10, 2) -- Fees for the course
```

```
);
```

## -- Create the Enrollments table

```
CREATE TABLE IF NOT EXISTS Enrollments (
```

```
enrollment_id INT AUTO_INCREMENT PRIMARY KEY,
```

```
student_id INT,
```

```
course_id INT,
```

```
enrollment_date DATE,
```

```
FOREIGN KEY (student_id) REFERENCES Students(student_id),
```

```
FOREIGN KEY (course_id) REFERENCES Courses(course_id)
```

```
);
```

## -- Inserting data into Students table

```
INSERT INTO Students (name, Gender, email, phone, graduation_year, college)
```

```
VALUES
```

```
('Ravi Kumar', 'Male', 'ravikumar01@gmail.com', '+91 9876543210', '2023', 'Indian Institute of Technology'),
```

```
('Priya Sharma', 'Female', 'priyasharma02@gmail.com', '+91 8765432109', '2022', 'Indian Institute of Technology'),
```

```
('Amit Singh', 'Male', 'amitsingh03@gmail.com', '+91 7654321098', '2022', 'Indian Institute of Technology'),
```

## -- Create the database

```
('Neha Patel', 'Female', 'nehapatel04@gmail.com', '+91 6543210987', '2021', 'Jawaharlal Nehru Technological University'),  
  
('Anjali Gupta', 'Female', 'anjali.gupta05@gmail.com', '+91 5432109876', '2021', 'Jawaharlal Nehru Technological University'),  
  
('Sandeep Verma', 'Male', 'sandeep.verma06@gmail.com', '+91 4321098765', '2022', 'Indian Institute of Technology'),  
  
('Divya Joshi', 'Female', 'divya.joshi07@gmail.com', '+91 3210987654', '2023', 'Anurag University'),  
  
('Rajesh Tiwari', 'Male', 'rajesh.tiwari08@gmail.com', '+91 2109876543', '2021', 'Indian Institute of Technology'),  
  
('Pooja Reddy', 'Female', 'pooja.reddy09@gmail.com', '+91 1098765432', '2022', 'Jawaharlal Nehru Technological University'),  
  
('Vivek Singhania', 'Male', 'vivek.singhania10@gmail.com', '+91 0987654321', '2023', 'Indian Institute of Technology'),  
  
('Kavita Sharma', 'Female', 'kavita.sharma11@gmail.com', '+91 9876543210', '2022', 'Anurag University'),  
  
('Aryan Kapoor', 'Male', 'aryan.kapoor12@gmail.com', '+91 8765432109', '2021', 'Chaitanya Bharathi Institute of Technology '),  
  
('Sanjay Patel', 'Male', 'sanjay.patel13@gmail.com', '+91 7654321098', '2022', 'Jawaharlal Nehru Technological University'),  
  
('Shweta Desai', 'Female', 'shweta.desai14@gmail.com', '+91 6543210987', '2022', 'Osmania University'),  
  
('Ananya Mishra', 'Female', 'ananya.mishra15@gmail.com', '+91 5432109876', '2023', 'Anurag University'),  
  
('Rahul Gupta', 'Male', 'rahul.gupta16@gmail.com', '+91 4321098765', '2023', 'Anurag University'),  
  
('Nikhil Sharma', 'Male', 'nikhil.sharma17@gmail.com', '+91 3210987654', '2023', 'Chaitanya Bharathi Institute of Technology '),  
  
('Sonal Verma', 'Female', 'sonal.verma18@gmail.com', '+91 2109876543', '2021', 'Chaitanya Bharathi Institute of Technology '),  
  
('Amita Das', 'Female', 'amita.das19@gmail.com', '+91 1098765432', '2022', 'Anurag University'),  
  
('Rajeev Kumar', 'Male', 'rajeev.kumar20@gmail.com', '+91 0987654321', '2023', 'Osmania University'),  
  
('Kritika Singh', 'Female', 'kritika.singh21@gmail.com', '+91 9876543210', '2022', 'Anurag University'),  
  
('Gaurav Gupta', 'Male', 'gaurav.gupta22@gmail.com', '+91 8765432109', '2021', 'Osmania University'),  
  
('Swati Patel', 'Female', 'swati.patel23@gmail.com', '+91 7654321098', '2021', 'Anurag University'),  
  
('Rohit Sharma', 'Male', 'rohit.sharma24@gmail.com', '+91 6543210987', '2022', 'Chaitanya Bharathi Institute of Technology '),  
  
('Preeti Tiwari', 'Female', 'preeti.tiwari25@gmail.com', '+91 5432109876', '2023', 'Anurag University');
```

## -- Inserting data in courses table

```
INSERT INTO Courses (course_name, duration, fees)
```

```
VALUES
```

```
('Full Stack Web Development', 6, 8000.00),
```

## -- Create the database

```
('Data Analysis with Python', 8, 10000.00),  
(  
'Mobile App Development with React Native', 6, 9000.00),  
(  
'Cloud Computing Fundamentals', 4, 7000.00),  
(  
'Ethical Hacking and Cybersecurity', 10, 12000.00);
```

## -- Inserting data into enrollments table

```
INSERT INTO Enrollments (student_id, course_id, enrollment_date)
```

```
VALUES
```

```
(1, 1, '2023-01-15'),  
(2, 2, '2023-02-20'),  
(3, 1, '2023-03-10'),  
(4, 3, '2023-04-05'),  
(5, 2, '2023-04-12'),  
(6, 3, '2023-04-12'),  
(7, 4, '2023-04-25'),  
(8, 5, '2023-01-03'),  
(9, 1, '2023-01-19'),  
(10, 4, '2023-01-28'),  
(11, 1, '2023-01-15'),  
(12, 2, '2023-02-20'),  
(13, 1, '2023-03-10'),  
(14, 3, '2023-04-05'),  
(15, 2, '2023-02-12'),  
(16, 3, '2023-02-18'),  
(17, 4, '2023-03-25'),  
(18, 5, '2023-01-03'),  
(19, 3, '2023-04-19'),  
(20, 4, '2023-02-28'),  
(21, 3, '2023-03-18'),  
(22, 4, '2023-01-25'),  
(23, 5, '2023-01-03'),  
(24, 5, '2023-04-19'),  
(25, 4, '2023-03-28');
```

## -- Create the database

-- Select all students:

```
select * from Students;
```

-- Select all courses:

```
select * from courses;
```

-- Select all enrollments:

```
select * from enrollments;
```

-- Select student by ID (e.g., ID=1):

```
SELECT * FROM Students WHERE student_id = 1;
```

-- Select enrollments by student ID (e.g., ID=1):

```
SELECT * FROM Enrollments WHERE student_id = 2;
```

-- Select enrollments by course ID (e.g., ID=1):

```
SELECT * FROM Courses WHERE course_id = 5;
```

-- Select courses by fees less than a certain value (e.g., fees < 1000):

```
SELECT * FROM Courses WHERE fees < 9000;
```

-- Select enrollments made after a specific date (e.g., enrollment\_date > '2023-01-01'):

```
SELECT * FROM Enrollments WHERE enrollment_date > '2023-03-01';
```

-- Select students who graduated in a specific year (e.g., graduation\_year=2023):

```
SELECT * FROM Students WHERE graduation_year = 2023;
```

-- Select enrollments with enrollment date between two specific dates (e.g., '2023-01-01' and '2023-04-31'):

```
SELECT * FROM Enrollments WHERE enrollment_date BETWEEN '2023-01-01' AND '2023-04-31';
```

-- Select students who graduated from a specific college (e.g., college='Anurag University'):

```
SELECT * FROM Students WHERE college = 'Anurag University';
```

## -- Create the database

-- Count the total number of students:

```
SELECT COUNT(*) AS total_students FROM Students;
```

-- Calculate the average duration of all courses:

```
SELECT AVG(duration) AS average_duration FROM Courses;
```

-- Find the maximum fee among all courses:

```
SELECT MAX(fees) AS max_fee FROM Courses;
```

-- Count the number of enrollments for each course:

```
SELECT course_id, COUNT(*) AS enrollment_count FROM Enrollments GROUP BY course_id;
```

-- Calculate the total fees collected from all enrollments:

```
SELECT SUM(Courses.fees) AS total_fees_collected
```

```
FROM Enrollments
```

```
JOIN Courses ON Enrollments.course_id = Courses.course_id;
```

-- Number of male and female students enrolled:

```
SELECT Gender, COUNT(*) AS count
```

```
FROM Students
```

```
GROUP BY Gender;
```

-- Average number of courses enrolled per student:

```
SELECT AVG(course_count) AS average_courses_per_student
```

```
FROM (SELECT student_id, COUNT(*) AS course_count FROM Enrollments GROUP BY student_id) AS  
course_counts;
```