# Tour Management System - SQL Query Questions & Tables

****

**BHAGWAN MAHAVIR UNIVERSITY**

**Theory & Practical Assignment**

Q.1 What is RDBMS? Explain Characteristics of RDBMS

Q.2 Explain DBMS Architecture with proper diagram

Q.3 Define Relational Model Concepts

Q.4 Explain Database Users with proper explanation

Q.5 Define Relational Algebra with examples

Table 1: Customers

CREATE TABLE Customers (

customer\_id INT PRIMARY KEY,

name VARCHAR(100) NOT NULL,

email VARCHAR(100) UNIQUE NOT NULL,

phone VARCHAR(15),

country VARCHAR(50)

);

Table 2: Tours

CREATE TABLE Tours (

tour\_id INT PRIMARY KEY,

tour\_name VARCHAR(100) NOT NULL,

location VARCHAR(100),

price DECIMAL(10,2),

duration\_days INT

);

Table 3: Bookings

CREATE TABLE Bookings (

booking\_id INT PRIMARY KEY,

customer\_id INT,

tour\_id INT,

booking\_date DATE,

travel\_date DATE,

status VARCHAR(20),

FOREIGN KEY (customer\_id) REFERENCES Customers(customer\_id),

FOREIGN KEY (tour\_id) REFERENCES Tours(tour\_id)

);

Table 4: Payments

CREATE TABLE Payments (

payment\_id INT PRIMARY KEY,

booking\_id INT,

payment\_date DATE,

amount DECIMAL(10,2),

payment\_method VARCHAR(50),

FOREIGN KEY (booking\_id) REFERENCES Bookings(booking\_id)

);

All the table should have the proper constrains with Primary key, foreign key, Check, Unique, not null and Default

1. Display all records from the Customers table.

2. Show first and last names of all customers from the USA.

3. Count how many customers are from India.

4. List all distinct countries from the Customers table.

5. Display all customers sorted by first name in ascending order.

6. Show all customers whose phone number starts with '98'.

7. Show all customers whose email contains 'example.com'.

8. Display the first 5 customers from the Customers table.

9. Update the phone number of the customer with customer\_id = 3 to '9999999999'.

10. Delete the customer whose customer\_id is 10.

11. Display all records from the Tours table.

12. Show tour name and price of all tours where price is greater than 2500.

13. Count how many tours have the destination 'India'.

14. List tour names in descending order of price.

15. Display all tours starting in September 2025.

16. Find the average price of all tours.

17. Find the cheapest tour price.

18. Find the most expensive tour price.

19. Increase the price by 10% for tours with destination 'France'.

20. Delete all tours with a price less than 2000.

21. Display all records from the Bookings table.

22. Count how many bookings have status 'Confirmed'.

23. Show all bookings where seats booked are 3 or more.

24. Display all bookings sorted by booking date in descending order.

25. List all distinct booking statuses.

26. Show all bookings made before '2025-08-01'.

27. Calculate the total seats booked from all bookings.

28. Display booking IDs where status is 'Pending'.

29. Change the status of booking with booking\_id = 2 to 'Confirmed'.

30. Delete all bookings with status 'Cancelled'.

31. Display all records from the Payments table.

32. Count how many payments were made using 'Credit Card'.

33. Calculate the total revenue from all payments.

34. Show payment IDs where the amount is greater than 5000.

35. Display all payments sorted by payment date in ascending order.

36. Find the average payment amount.

37. Find the smallest payment amount.

38. Find the largest payment amount.

39. Update the payment method to 'UPI' where payment\_id = 4.

40. Delete all payments where amount is less than 3000.

**Relational Algebra Queries**

1. **Student**(sid, sname, gender, dob, dept)
2. **Course**(cid, cname, credits, dept, start\_date)
3. **Enroll**(sid, cid, grade, enroll\_date)
4. **Professor**(pid, pname, dept, hire\_date)

#### Basic Selection & Projection

1. List all student names.
2. List names of female students.
3. Find students born after 2000.
4. Get student names and department only.
5. Get all courses offered by "CS" department.

#### Joins (Combining Relations)

1. List students enrolled in any course.
2. Find names of students enrolled in "DBMS".
3. List student names with course names.
4. Get names of students and their grades in each course.
5. List professors and courses taught in their department.

#### Set Operations

1. Find students in CS or IT departments.
2. Find students in both CS and IT departments.
3. Find students not in CS.
4. Find courses with 3 or 4 credits.
5. Students who enrolled but not yet graded.

#### Aggregation / Group

1. Find count of students per department.
2. Find average student age.
3. Find max credits among courses.
4. Count how many courses each student enrolled in.
5. Find average grade per course.

#### Date Function Queries

1. Find students whose age is more than 21 years.
2. Find professors hired before 2015.
3. List courses starting in the year 2024.
4. Find students who enrolled after "2023-01-01".
5. Find students who enrolled within 30 days of course start date.

#### Joins + Conditions

1. Find names of students and their department along with course names.
2. Get names of professors from same department as a student.
3. Find all female students enrolled in "AI".
4. Get student names who scored grade "A".
5. List student names who enrolled in courses after their 18th birthday.

**Question:**

Consider the following relational database schema consisting of the four relation schemas:

**passenger**( pid, pname, pgender, pcity)

**agency**( aid, aname, acity)

**flight**(fid, fdate, time, src, dest)

**booking**(pid, aid, fid, fdate)

Answer the following questions using relational algebra queries;

**a) Get the complete details of all flights to New Delhi.**

**b) Get the details about all flights from Chennai to New Delhi.**

**c) Find only the flight numbers for passenger with pid 123 for**

**flights to Chennai before 06/11/2020.**

**d) Find the passenger names for passengers who have bookings on**

**at least one flight.**

**e) Find the passenger names for those who do not have any**

**bookings in any flights.**

**f) Find the agency names for agencies that located in the same city**

**as passenger with passenger id 123.**

**g) Get the details of flights that are scheduled on both dates**

**01/12/2020 and 02/12/2020 at 16:00 hours.**

**h) Get the details of flights that are scheduled on either of the dates**

**01/12/2020 or 02/12/2020 or both at 16:00 hours.**

**i) Find the agency names for agencies who do not have any**

**bookings for passenger with id 123.**

**j) Find the details of all male passengers who are associated with**

**Jet agency.**