# DBMS LAB PROGRAMS

**1. Consider the following schema for a Library Database:**
**BOOK(Book_id, Title, Publisher_Name, Pub_Year)**
**BOOK_AUTHORS (Book_id, Author_Name)**
**PUBLISHER (Name, Address, Phone)**
**BOOK_COPIES(Book_id, Branch_id,No-of_Copies)**
**BOOK_LENDING (Book_id,Branch_id,Card_No, Date_Out,Due_Date)**
**LIBRARY_BRANCH (Branch_id, Branch_Name, Address)**

**Write SQL queries for the following:**
1. Retrieve details of all books in the library – id, title, name of publisher, authors, number of copies in each branch, etc.
2. Get the particulars of borrowers who have borrowed more than 3 books, but from Jan 2017 to Jun 2017
3. Delete a book in the BOOK table. Update the contents of other tables to reflect this data manipulation operation.
4. Create a view of all books and their number of copies that are currently available in the Library.

**2. Consider the schema for the College Database:**
**STUDENT (USN, SName, Address, Phone, Gender)**
**SEMSEC (SSID, Sem, Sec)**
**CLASS (USN, SSID)**
**SUBJECT (Subcode, Title, Sem, Credits)**
**IAMARKS (USN, Subcode, SSID, Test1, Test2, Test3, FinalIA)**
**Write SQL queries for the following:**
1. List all the student details studying in the fourth semester 'C' section.
2. Compute the total number of male and female students in each semester and in each section.
3. Create a view of Test1 marks of student USN '1BI15CS101' in all subjects.
4. Calculate the Final IA (average of best two test marks) and update the corresponding table for all students.
5. List the subjects based on ascending order of their credits.

**3. Consider the schema for the Company Database:**
**EMPLOYEE (SSN, Name, Address, Sex, Salary, SuperSSN, DNo)**
**DEPARTMENT (DNo, DName, MgrSSN, MgrStartDate)**
**DLOCATION (DNo,DLoc)**
**PROJECT (PNo, PName, PLocation, DNo)**
**WORKS_ON (SSN, PNo, Hours)**
**Write SQL queries for the following:**
1.Make a list of all project numbers for projects that involve an employee whose last name is 'Scott', either as a worker or as a manager of the department that controls the project.
2.Show the resulting salaries if every employee working on the 'IoT' project is given a 10 percent raise.
3.Find the sum of the salaries of all employees of the 'Accounts' department, as well as the maximum salary, the minimum salary, and the average salary in this department
4.Retrieve the name of each employee who works on all the projects controlled by the department number (use NOT EXISTS operator).
5. For each department that has more than five employees, retrieve the department number and the number of its employees who are making more than Rs. 6,00,000.

**4. Create an employee database with the fields: {eid, ename, dept, design, salary, yoj, address{dno, street, locality, city}}**

A. **Create 10 documents with data relevant to the following questions.**
B. **Write and execute the following MongoDB queries:**

1. Display all the employees with a salary in the range (50000, 75000).
2. Display all the employees with the designation “developer”.
3. Add the field age to the employee “Rahul”.
4. Remove YOJ from “Rahul”.
5. Remove p3 from “Rahul”.
6. Add a new embedded object “contacts” with “email” and “phone” as array objects to “Rahul.
7. Add two phone numbers to “Rahul”.

**5.Consider the following restaurant database with the following attributes – Name, address – (building, street, area, pincode), id, cuisine, nearby landmarks, online delivery- yes/no, famous for (name of the dish)**

A. **Create 10 documents with data relevant to the following questions.**
B. **Write and execute the following MongoDB queries:**

1. List the names and addresses of all restaurants in Bangalore with Italian cuisine
2. List the name, address and nearby landmarks of all restaurants in Bangalore where North Indian thali(cuisine) is available.
3. List the name and address of restaurants and also the dish the restaurant is famous for, in Bangalore.

**6.**

A. **Consider the schema for the Car Ownership database:**
**PERSON (driver – id #, name, address)**
**CAR (Regno, model, year)**
**OWNS (driver-id #, Regno)**
**Write SQL queries for the following:**

1. Display the number of cars owned by each driver.

B. **Airline Database:**
**AIRCRAFT (Aircraft ID, Aircraft_name, Cruising_range)**
**CERTIFIED (Emp ID, Aircraft ID)**
**EMPLOYEE (Emp ID, Ename, Salary)**

1. Find the employee ID's of employees who make the highest salary.
2. Find the employees who are not certified to operate any aircraft.