SQL LAB – 9

INNER JOIN, RIGHT OUTER JOIN, LEFT OUTER JOIN

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QUESTIONS

1. Let's consider a scenario where you have a database tracking student enrollment and some students may not be enrolled in any courses.
   John Doe (StudentID: 1) is enrolled in courses with EnrollmentIDs 101 and 102.
   Jane Smith (StudentID: 2) is enrolled in courses with EnrollmentIDs 103 and 104.
   Bob Johnson (StudentID: 3) is not enrolled in any courses.
   Now, run RIGHT OUTER JOIN query to retrieve data.

2. Assume a university where students can enroll in various courses. Here are some fictional details:
   Student Information:
   Student with ID 1: John, email: john@email.com
   Student with ID 2: Jane, email: jane@email.com
   Student with ID 3: Bob, email: bob@email.com
   Enrollment Information:
   Enrollment with ID 101: John (StudentID: 1) enrolls in Math CourseID: MATH101).
   Enrollment with ID 102: John (StudentID: 1) enrolls in History (CourseID: HIST201).
   Enrollment with ID 103: Jane (StudentID: 2) enrolls in Physics (CourseID: PHYS301).
   Enrollment with ID 104: Bob (StudentID: 3) enrolls in Chemistry (CourseID: CHEM401).
   Enrollment with ID 105: Alice (StudentID: 4) enrolls in English (CourseID: ENG501).
   Now, write a LEFT JOIN query to retrieve the data.

ChatGPT Exercise

Using ChatGPT generates SQL queries of the below problem.

Scenario 1: You have two tables, employees and departments. Retrieve a list of employees along with their department names using an inner join.

Scenario 2: In an employee database, join the employees table with itself to display each employee along with their manager, including employees without managers, using a left join.

We have an "Employee" table with the following columns:

EmployeeID, EmployeeName, ManagerID(Foreign Key) and "Manager" table with following columns: ManagerID, ManagerName. You want to retrieve each employee along with your manager. Generate a ChatGPT prompt for the scenario.

1. Let's consider a scenario where you have a database tracking student enrollment and some students may not be enrolled in any courses.
   - John Doe (StudentID: 1) is enrolled in courses with EnrollmentIDs 101 and 102.
   - Jane Smith (StudentID: 2) is enrolled in courses with EnrollmentIDs 103 and 104.
   - Bob Johnson (StudentID: 3) is not enrolled in any courses.

   Now, run RIGHT OUTER JOIN query to retrieve data.

   Code:

```
-- Join students and enrollments table using right join
SELECT * FROM enrollments as e RIGHT JOIN students as s
ON e.StudentID=s.StudentID;
```

   Output:

EnrollmentID	StudentID	CourseID	StudentID	Name	Email
101	1	MATH101	1	John	john@email.com
103	2	PHYS301	2	Jane	jane@email.com
104	3	CHEM401	3	Bob	bob@email.com

2. Assume a university where students can enroll in various courses. Here are some fictional details:
   Student Information:
   Student with ID 1: John, email: john@email.com,Student with ID 2: Jane, email: jane@email.com,Student with ID 3: Bob, email: bob@email.com
   Enrollment Information:
   Enrollment with ID 101: John (StudentID: 1) enrolls in Math CourseID: MATH101), Enrollment with ID 102: John (StudentID: 1) enrolls in History (CourseID: HIST201), Enrollment with ID 103: Jane (StudentID: 2) enrolls in Physics (CourseID: PHYS301), Enrollment with ID 104: Bob (StudentID: 3) enrolls in Chemistry (CourseID: CHEM401), Enrollment with ID 105: Alice (StudentID: 4) enrolls in English (CourseID: ENG501)
   Now, write a LEFT JOIN query to retrieve the data.

   Code:

```
-- Joining students and enrollments table using left join
SELECT * FROM students as s LEFT JOIN enrollments as e
ON s.StudentID=e.StudentID;
```

   Output:

StudentID	Name	Email	EnrollmentID	StudentID	CourseID
1	John	john@email.com	101	1	MATH101
2	Jane	jane@email.com	103	2	PHYS301
3	Bob	bob@email.com	104	3	CHEM401

ChatGPT Exercise

Using ChatGPT generates SQL queries of the below problem.

Scenario 1: You have two tables, employees and departments. Retrieve a list of employees along with their department names using an inner join.
Scenario 2: In an employee database, join the employees table with itself to display each employee along with their manager, including employees without managers, using a left join.
We have an "Employee" table with the following columns: EmployeeID, EmployeeName, ManagerID (Foreign Key) and "Manager" table with following columns: ManagerID, ManagerName. You want to retrieve each employee along with your manager. Generate a ChatGPT prompt for the scenario.

Scenario 1: Retrieve a list of employees along with their department names using an inner join.

SQL Query

sql Copy code

```sql
SELECT e.EmployeeName, d.DepartmentName
FROM employees e
INNER JOIN departments d ON e.DepartmentID = d.DepartmentID;
```

Scenario 2: Display each employee along with their manager, including employees without managers, using a left join.

SQL Query

sql Cop

```sql
SELECT e.EmployeeName, m.EmployeeName AS ManagerName
FROM employees e
LEFT JOIN employees m ON e.ManagerID = m.EmployeeID;
```

Scenario 3: Retrieve each employee along with their manager using separate 'Employee' and 'Manager' tables.

SQL Query

sql Copy code

```sql
SELECT e.EmployeeName, m.ManagerName
FROM Employee e
LEFT JOIN Manager m ON e.ManagerID = m.ManagerID;
```