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Lab 5 – Connect from SQL Server Database to Java Application (Query)

I – Lab Queries

1. Retrieve the subject names taught by a specific teacher with the ID 3.

- Query:

```
SELECT S.SubjectName
FROM Subject S
INNER JOIN TeacherSubject TS ON S.SubjectID = TS.SubID
WHERE TS.TeaID = 3
```

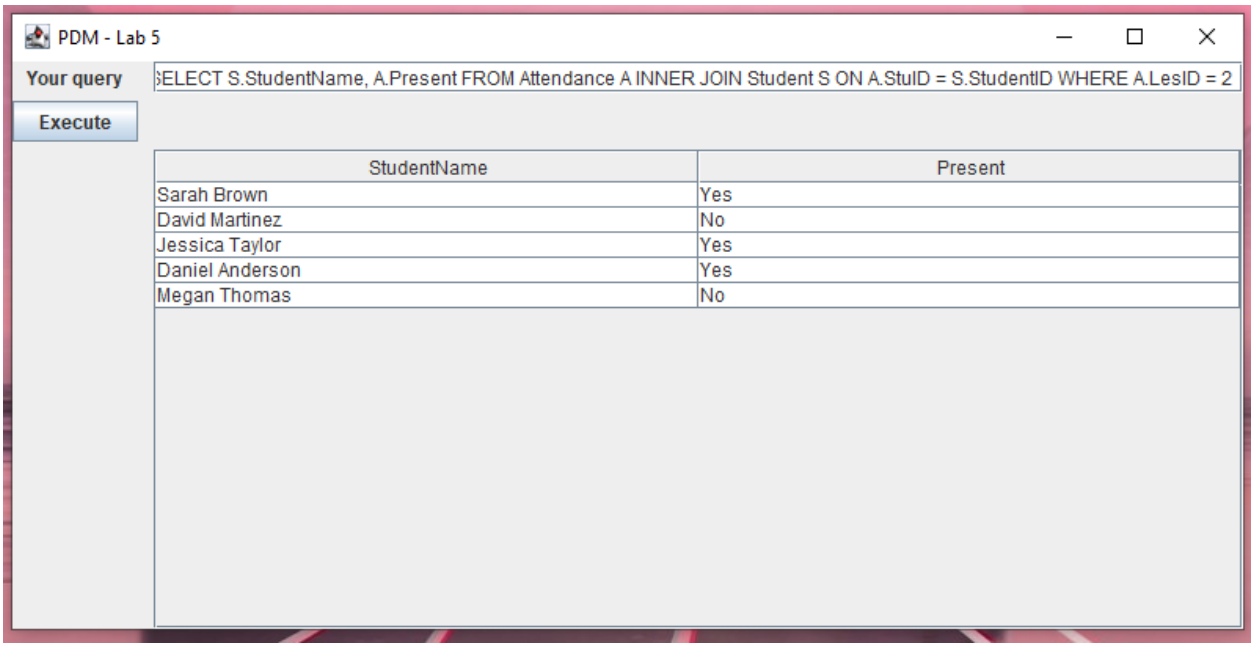
- Output:

2. Retrieve students' attendance status (present or absent) for a specific lesson with ID 2.

- Query:

```
SELECT S.StudentName, A.Present
FROM Attendance A
INNER JOIN Student S ON A.StuID = S.StudentID
WHERE A.LesID = 2
```

- Output:

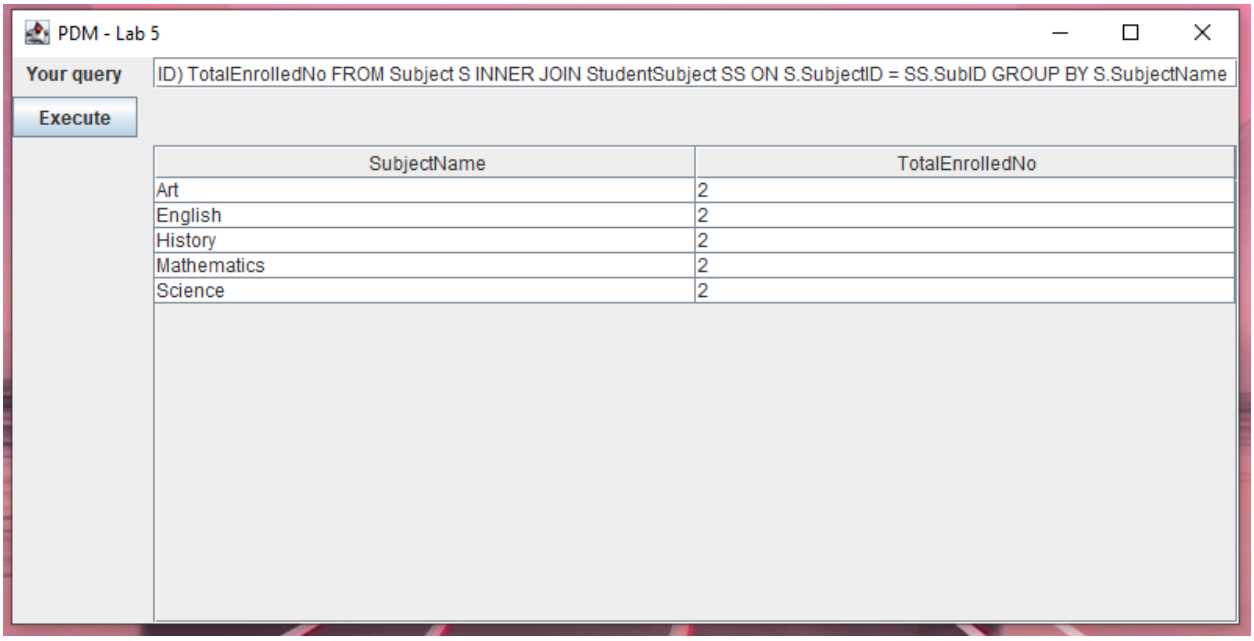


3. Retrieve the total number of students enrolled in each subject.

- Query:

```
SELECT S.SubjectName, COUNT(SS.StuID) TotalEnrolledNo
FROM Subject S
INNER JOIN StudentSubject SS ON S.SubjectID = SS.SubID
GROUP BY S.SubjectName
```

- Output:

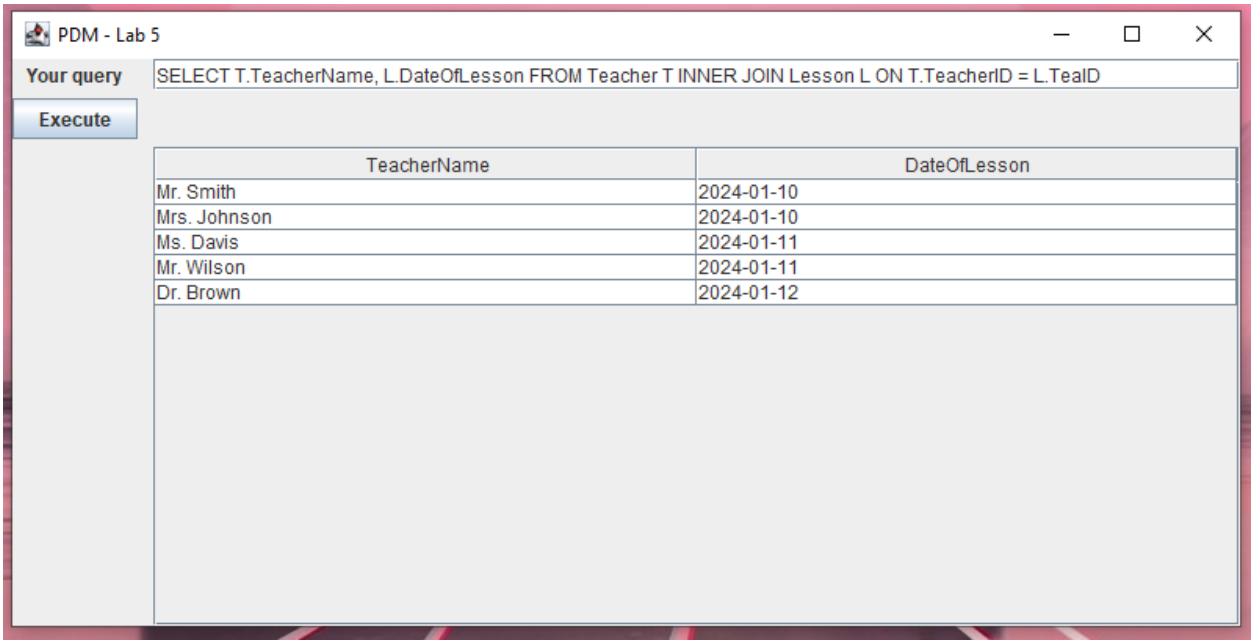


4. Retrieve the average length of lessons (in days) for each teacher.

- Query:

```
SELECT T.TeacherName, L.DateOfLesson
FROM Teacher T
INNER JOIN Lesson L ON T.TeacherID = L.TeaID
```

- Output:

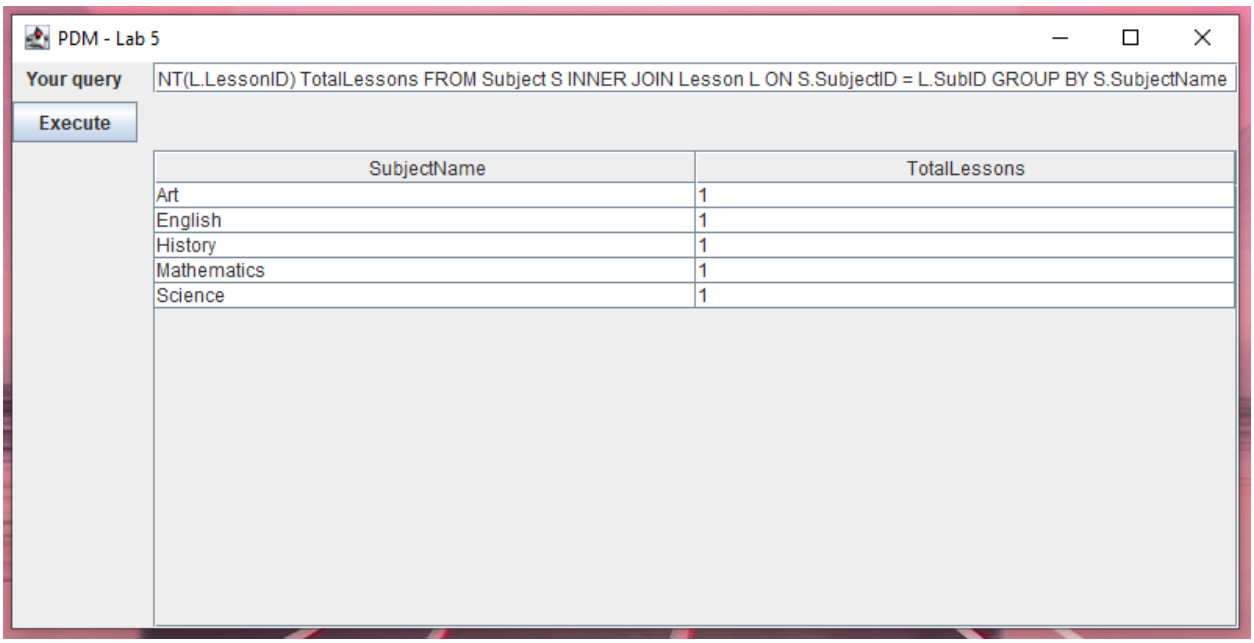


5. Retrieve the total number of lessons conducted for each subject.

- Query:

```
SELECT S.SubjectName, COUNT(L.LessonID) TotalLessons
FROM Subject S
INNER JOIN Lesson L ON S.SubjectID = L.SubID
GROUP BY S.SubjectName
```

- Output:

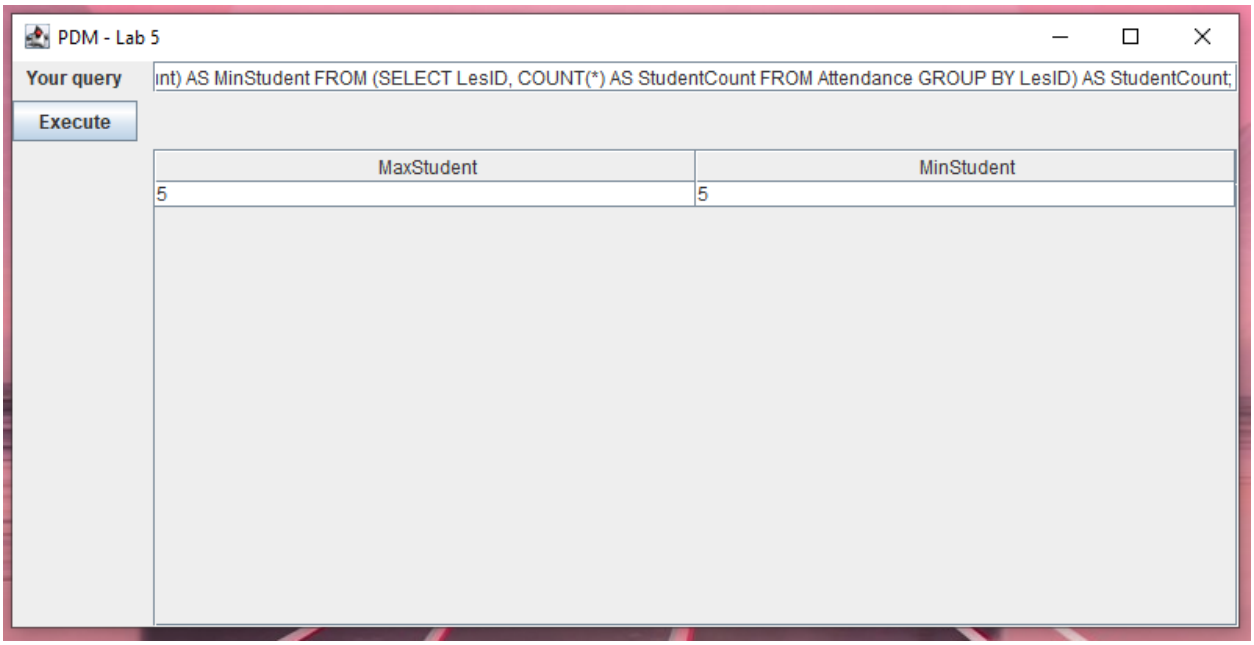


6. Retrieve the maximum and minimum number of students in a lesson across all subjects.

- Query:

```
SELECT MAX(StudentCount) AS MaxStudent,
MIN(StudentCount) AS MinStudent
FROM
(
SELECT LesID, COUNT(*) AS StudentCount
FROM Attendance
GROUP BY LesID
)
AS StudentCount;
```

- Output:

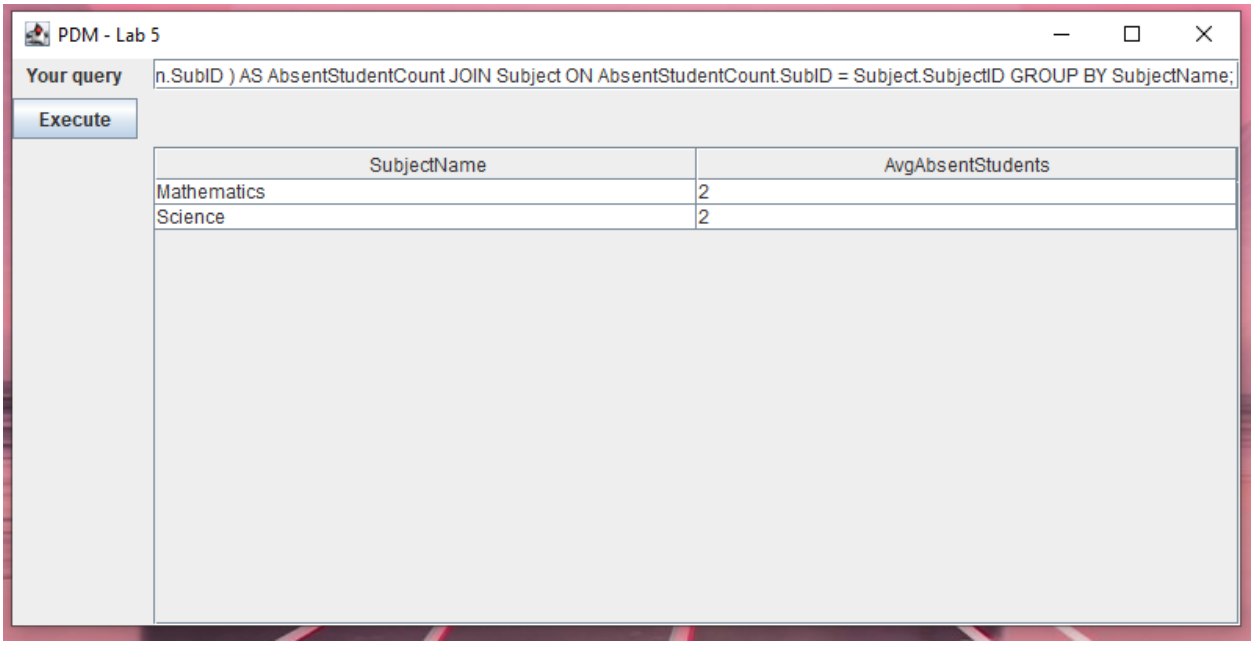


7. Retrieve the average number of students absent for each subject across all lessons.

- Query:

```
SELECT SubjectName, AVG(AbsentStudents) AS AvgAbsentStudents
FROM
(
SELECT Lesson.SubID, COUNT(Attendance.AttendanceID) AS
AbsentStudents
FROM Lesson
JOIN Attendance ON Lesson.LessonID = Attendance.LesID
WHERE Attendance.Present = 'No'
GROUP BY Lesson.SubID
)
AS AbsentStudentCount
JOIN Subject ON AbsentStudentCount.SubID = Subject.SubjectID
GROUP BY SubjectName;
```

- Output:



IV – Project Queries

1. Retrieve all the restaurants in the database.

- Query:

```
SELECT RestaurantName
FROM Restaurant
```

2. Retrieve all the users in the database.

- Query:

```
SELECT Username
FROM User
```

3. Retrieve all the products that have the price greater than 30.

- Query:

```
SELECT ProductName
FROM Product
WHERE Price > 50
```

4. Retrieve all the products within the category “Main Course”.

- Query:

```
SELECT ProductName
FROM Product
WHERE Category = 'Main Course'
```

5. Retrieve the users that use MoMo as a payment.

- Query:

```
SELECT Username
FROM User
WHERE Paymentid = 2
```

6. Retrieve all the restaurants and their products.

- Query:

```
SELECT R.RestaurantName, P.ProductName
FROM Restaurant R
INNER JOIN Product P ON R.RestaurantID = P.Restaurantid
```

7. Retrieve all products that are sold by the restaurant with ID = 2.

- Query:

```
SELECT P.ProductName
FROM Product P
INNER JOIN Restaurant R ON P.Restaurantid =
R.RestaurantID
WHERE R.RestaurantID = 2
```

8. Retrieve all orders that are delivered by the delivery personnel with ID = 1.

- Query:

```
SELECT O.OrderID
FROM Order O
INNER JOIN Deliverer D ON O.Deliverid = P.DelivererID
WHERE D.DelivererID = 1
```

9. Retrieve the total number of products from each category.

- Query:

```
SELECT P.Category, COUNT(P.ProductID) TotalProducts
FROM Product P
GROUP BY P.Category
```

10. Retrieve the total products that each restaurant sells.

- Query:

```
SELECT R.RestaurantName, COUNT(P.ProductID)
TotalProducts
FROM Restaurant R
INNER JOIN Product P ON R.RestaurantID = P.Restaurantid
GROUP BY R.RestaurantName
```