Lab Aggregation

Let us imagine a scenario where a company organizes an annual employee performance review event. During this event, employees are evaluated based on various criteria such as sales performance, customer feedback, and project completion. The data collected from this event is stored in a database with the following schema:
Tables:
employees
departments
performance_reviews

```
CREATE TABLE employees (
    employee_id INT PRIMARY KEY,
    employee_name VARCHAR(100),
    department_id INT
);
```

```
CREATE TABLE departments (
    department_id INT PRIMARY KEY,
    department_name VARCHAR(100)
);
```

```
CREATE TABLE performance_reviews (
    review_id INT PRIMARY KEY,
    employee_id INT,
    review_date DATE,
    sales_performance INT,
    customer_feedback INT,
```

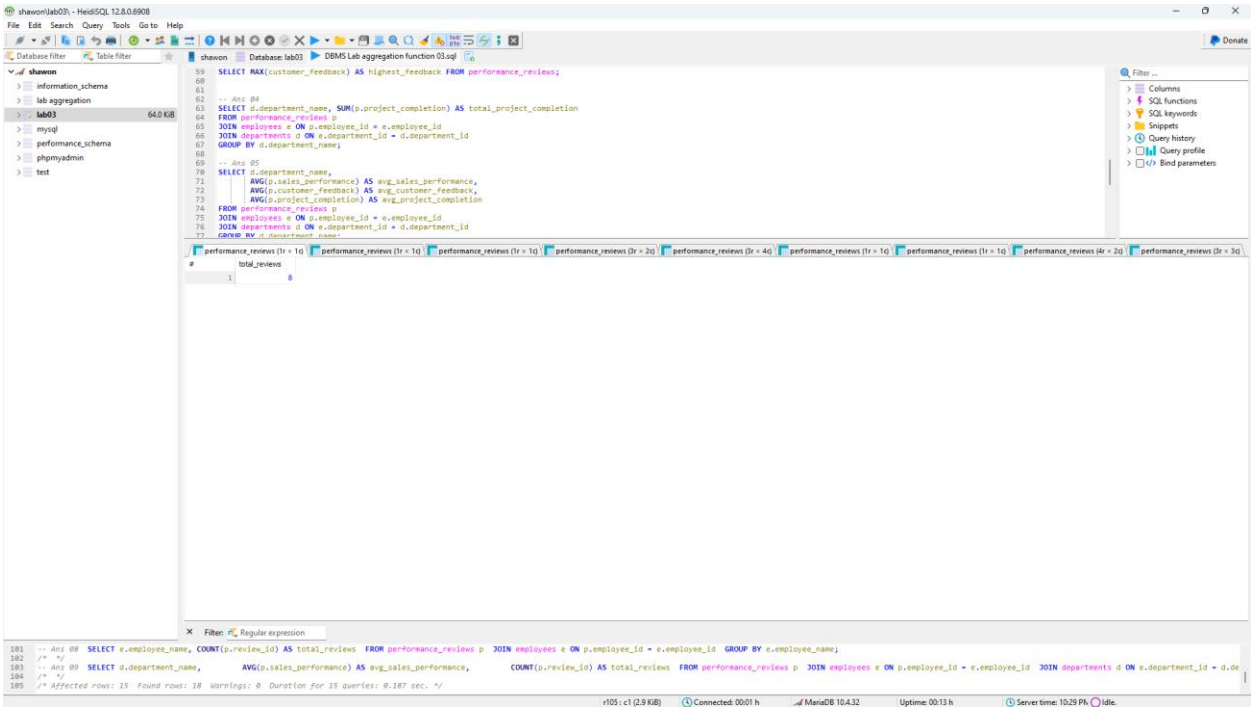
```
    project_completion INT,
    FOREIGN KEY (employee_id) REFERENCES employees(employee_id)
);

INSERT INTO departments (department_id, department_name)
VALUES
(1, 'Sales'),
(2, 'Customer Support'),
(3, 'Development');

INSERT INTO employees (employee_id, employee_name, department_id)
VALUES
(1, 'Jubayer', 1),
(2, 'Ahmed', 2),
(3, 'Shawon', 3),
(4, 'Sham', 1);

INSERT INTO performance_reviews (review_id, employee_id, review_date, sales_performance,
customer_feedback, project_completion)
VALUES
(1, 1, '2024-01-15', 85, 90, 75),
(2, 2, '2024-02-10', 70, 95, 80),
(3, 3, '2024-01-25', 60, 88, 85),
(4, 4, '2024-03-05', 90, 80, 88),
(5, 1, '2024-06-15', 87, 92, 76),
(6, 2, '2024-07-20', 78, 91, 82),
(7, 3, '2024-08-25', 65, 85, 90),
```

(8, 4, '2024-09-15', 93, 88, 90);

Question 1: Write an SQL query to count the total number of performance reviews conducted.

-- *Ans*

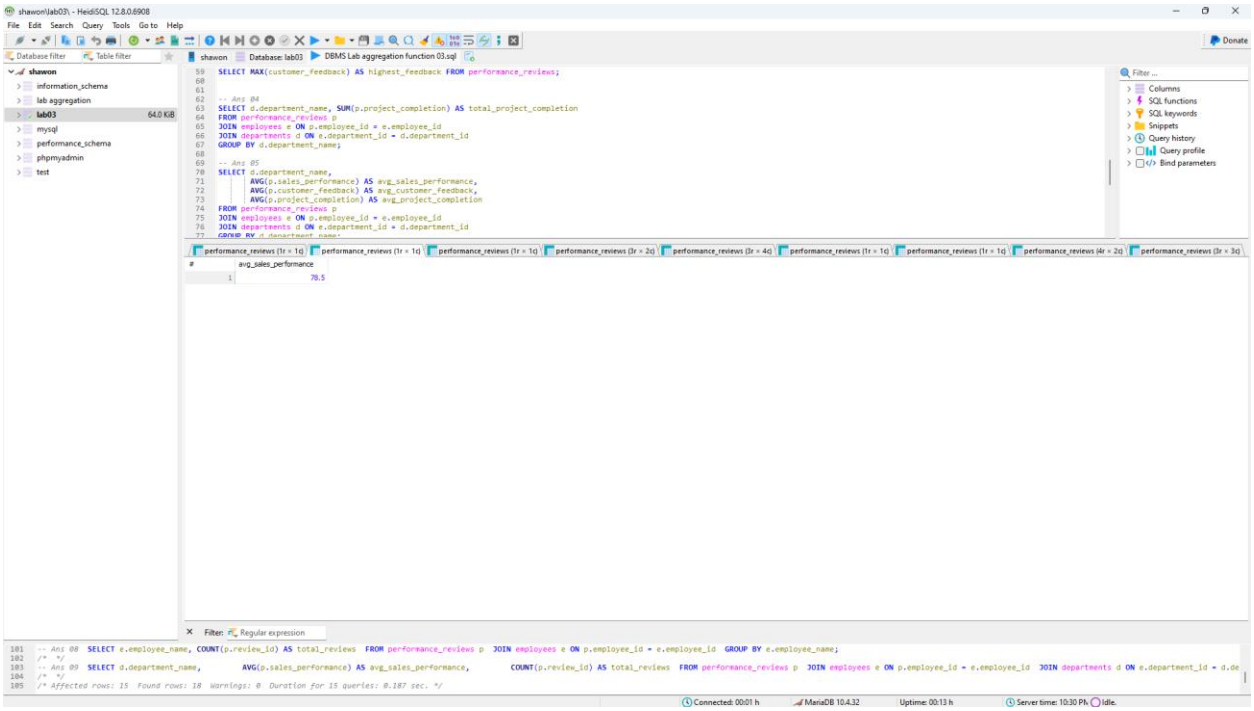
SELECT COUNT(*) **AS** total_reviews **FROM** performance_reviews;



Question 2: Write an SQL query to calculate the average sales performance score of all employees.

-- Ans 02

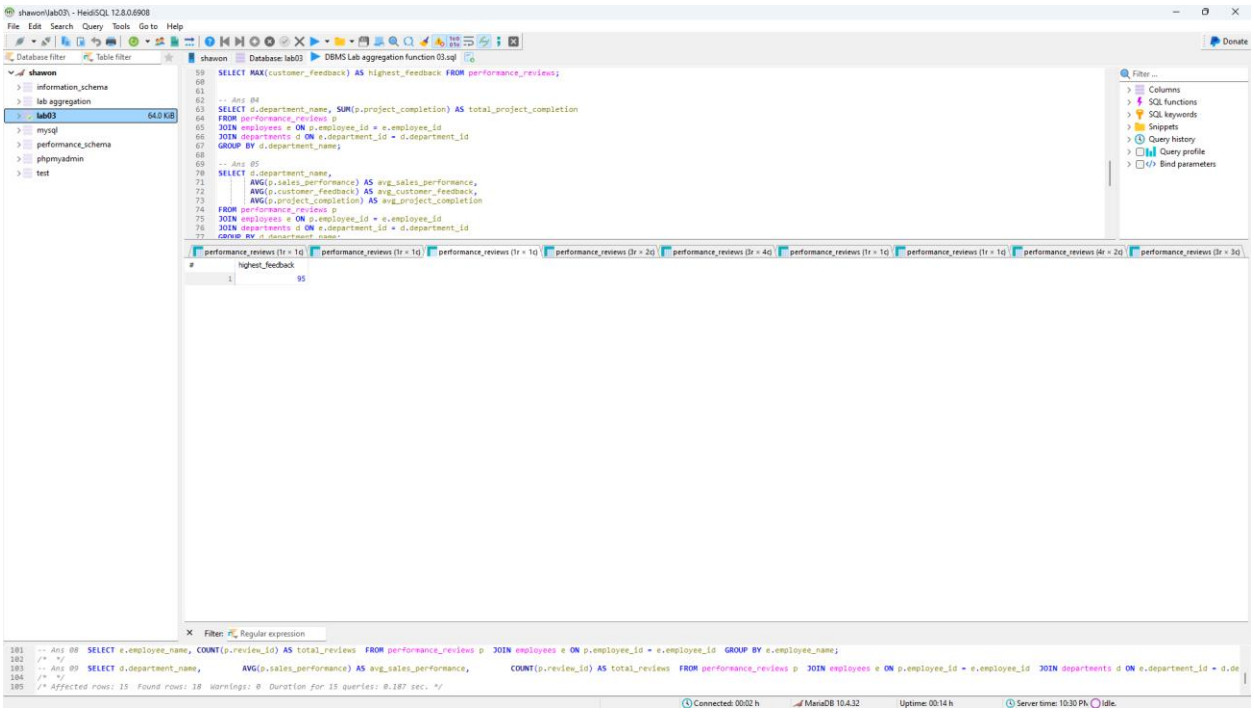
SELECT AVG(sales_performance) **AS** avg_sales_performance **FROM** performance_reviews;



Question 3: Write an SQL query to find the highest customer feedback score received by any employee.

-- Ans 03

SELECT MAX(customer_feedback) **AS** highest_feedback **FROM** performance_reviews;



Question 4: Write an SQL query to find the total project completion score for each department.

-- Ans 04

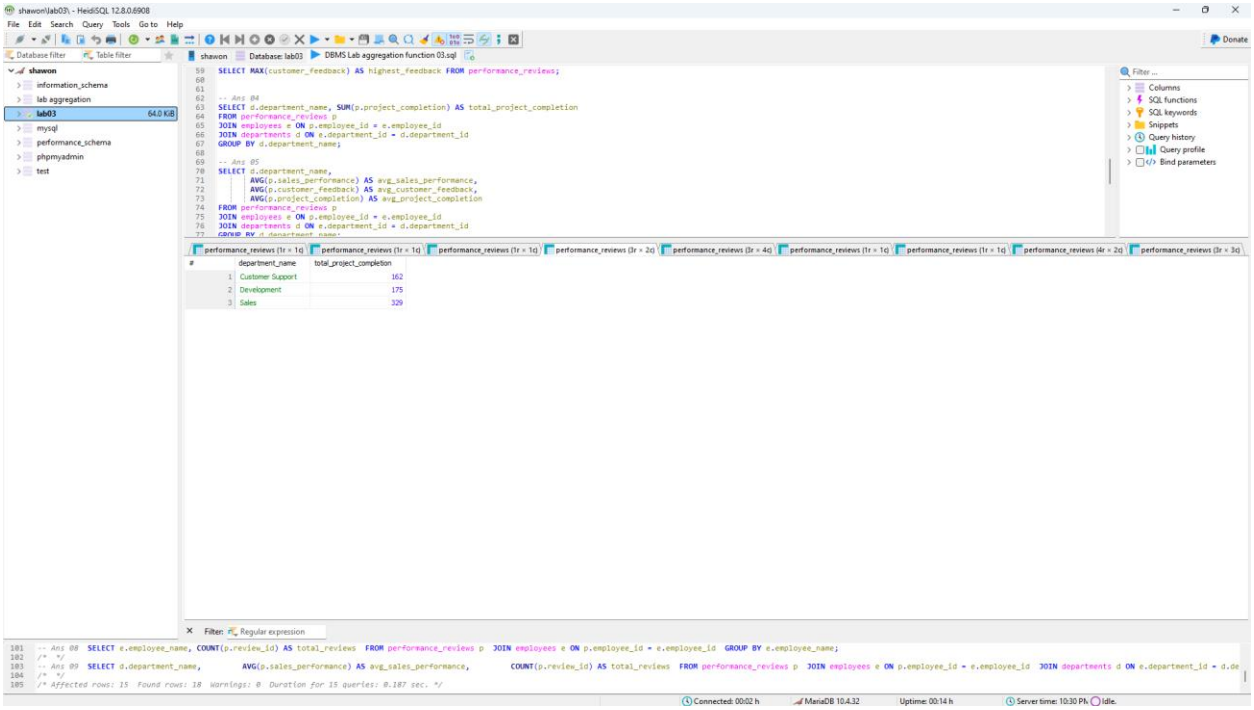
SELECT d.department_name, **SUM**(p.project_completion) **AS** total_project_completion

FROM performance_reviews p

JOIN employees e **ON** p.employee_id = e.employee_id

JOIN departments d **ON** e.department_id = d.department_id

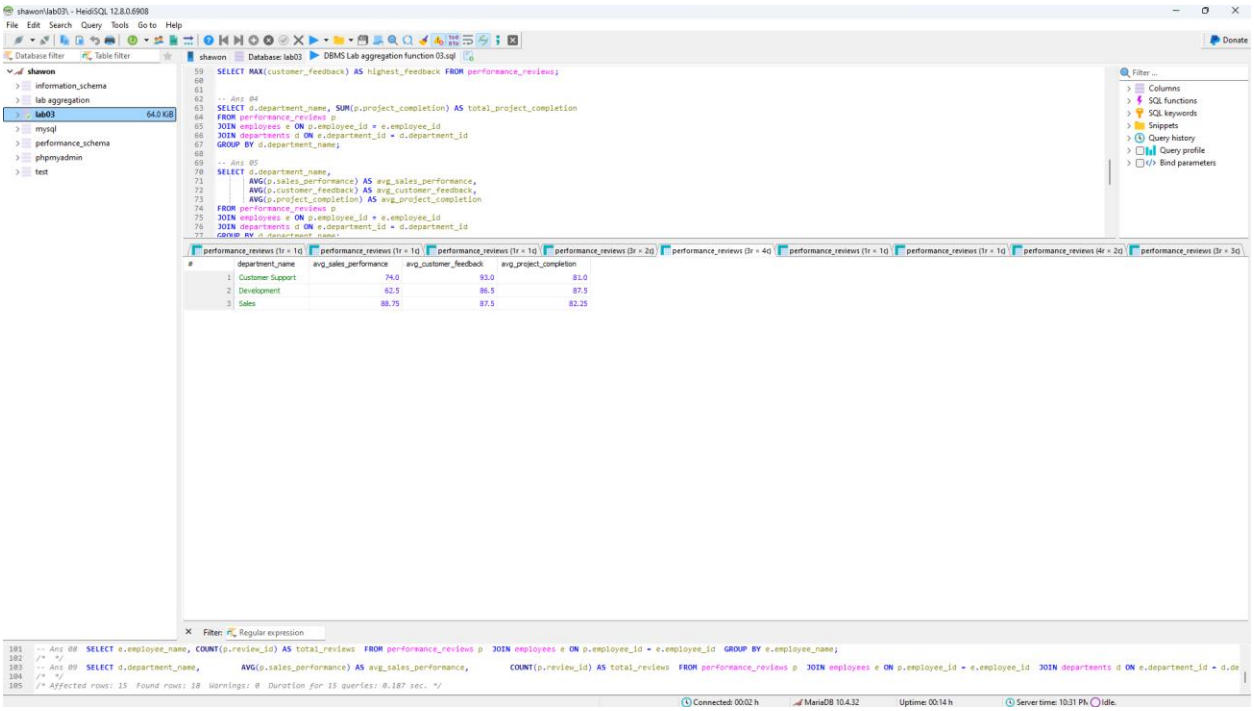
GROUP BY d.department_name;



Question 5: Write an SQL query to find the average sales, customer feedback, and project completion scores for each department.

-- Ans 05

```
SELECT d.department_name,
    AVG(p.sales_performance) AS avg_sales_performance,
    AVG(p.customer_feedback) AS avg_customer_feedback,
    AVG(p.project_completion) AS avg_project_completion
FROM performance_reviews p
JOIN employees e ON p.employee_id = e.employee_id
JOIN departments d ON e.department_id = d.department_id
GROUP BY d.department_name;
```



Question 6: Write an SQL query to find departments with an average sales performance score greater than 80.

-- Ans 06

SELECT d.department_name

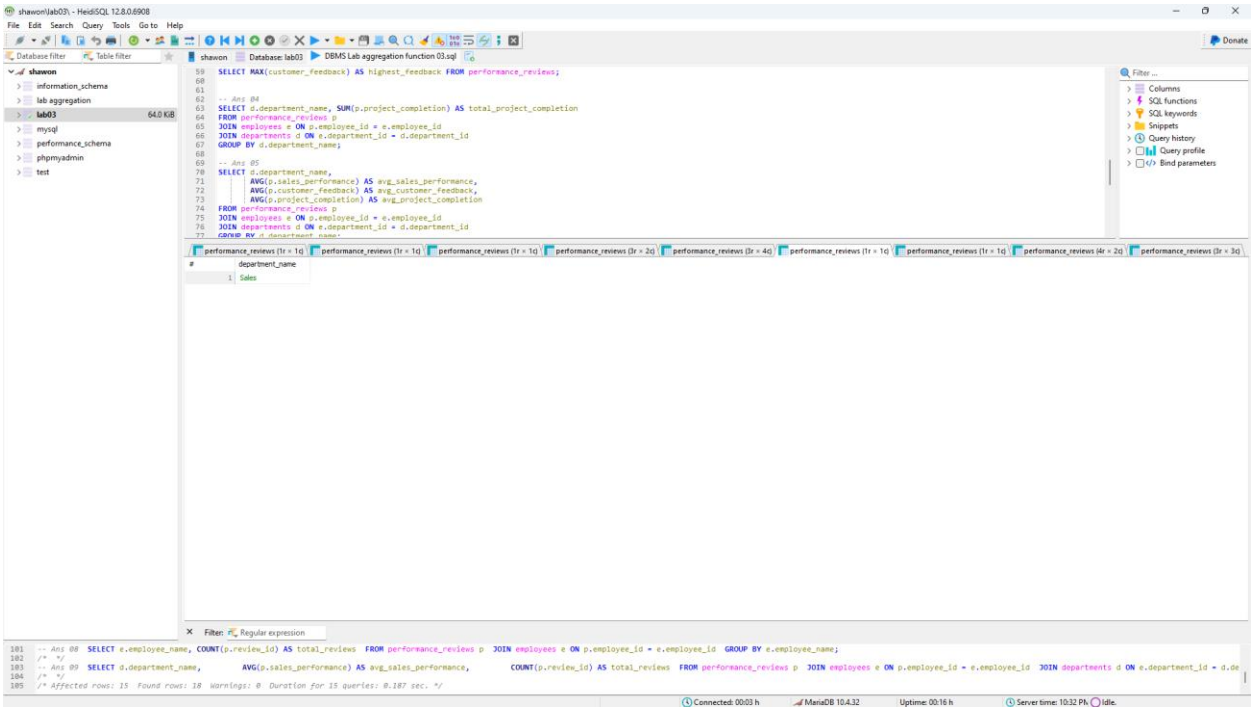
FROM performance_reviews p

JOIN employees e **ON** p.employee_id = e.employee_id

JOIN departments d **ON** e.department_id = d.department_id

GROUP BY d.department_name

HAVING AVG(p.sales_performance) > 80;

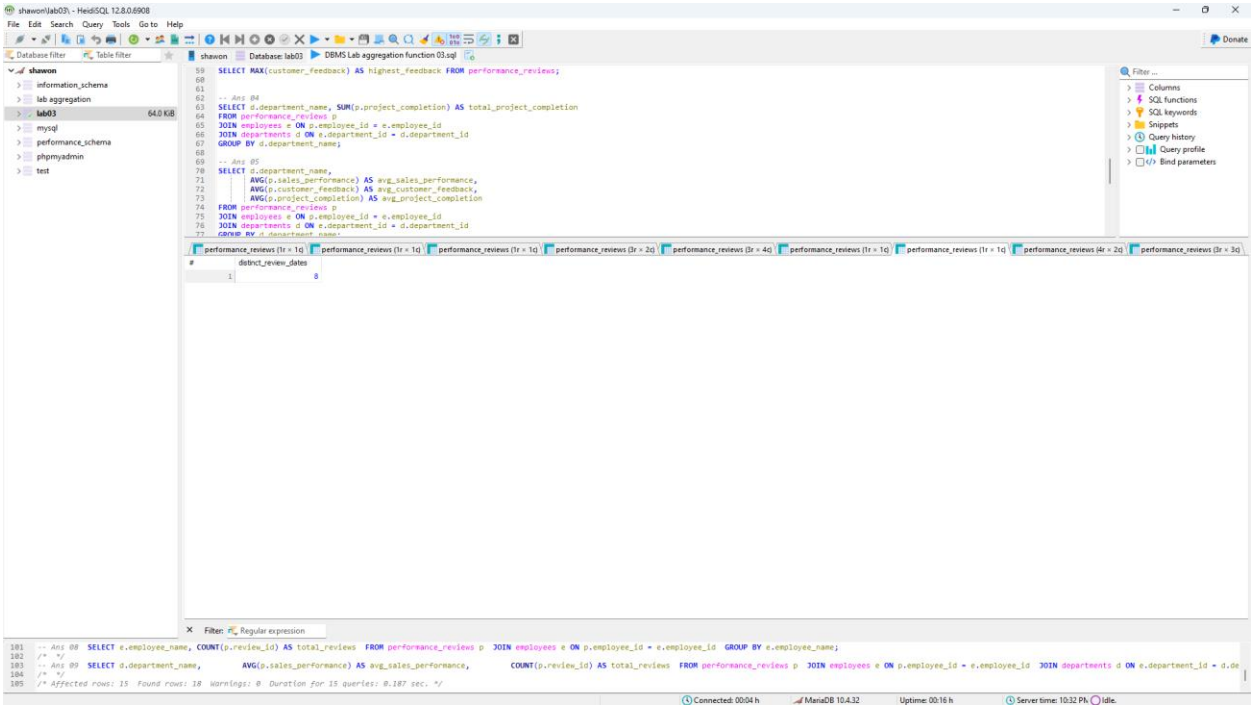


Question 7: Write an SQL query to count the number of distinct review dates.

-- Ans 07

SELECT COUNT(DISTINCT review_date) **AS** distinct_review_dates

FROM performance_reviews;



Question 8: Write an SQL query to list all employee names along with their total number of reviews.

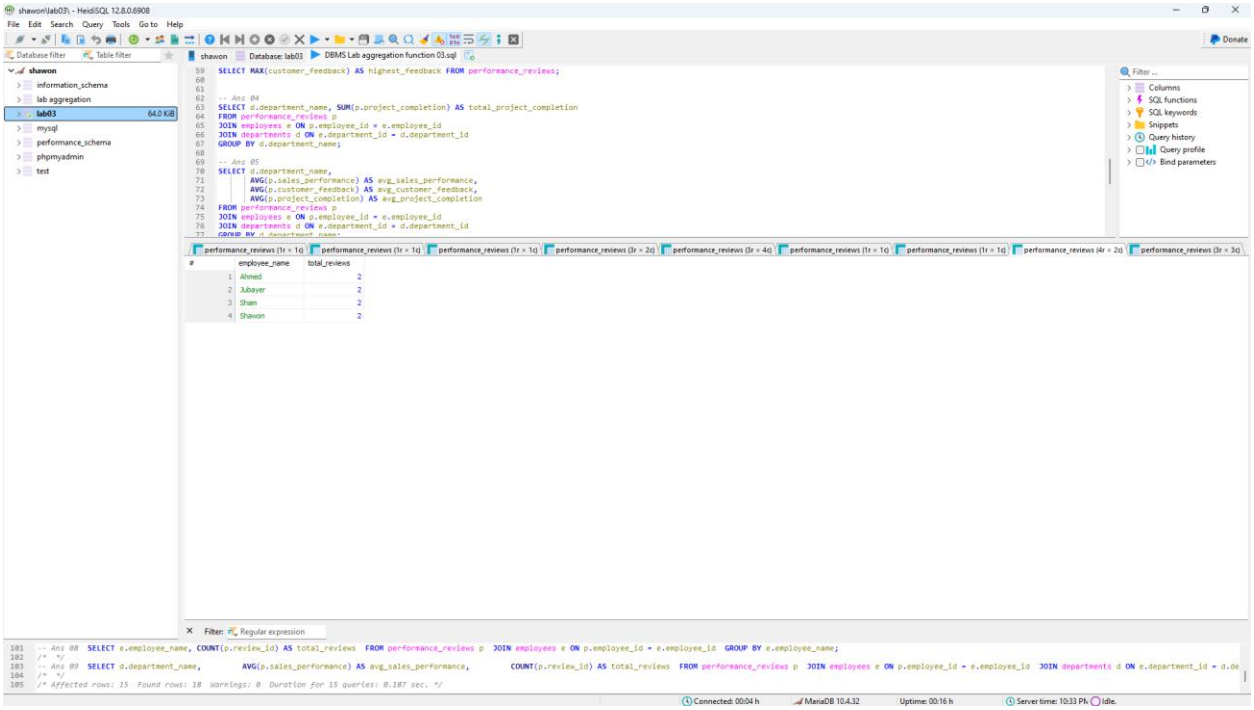
-- *Ans 08*

SELECT e.employee_name, **COUNT**(p.review_id) **AS** total_reviews

FROM performance_reviews p

JOIN employees e **ON** p.employee_id = e.employee_id

GROUP BY e.employee_name;



Question 9: Write an SQL query to find the average sales performance and the total number of reviews for each department.

-- Ans 09

```
SELECT d.department_name,
    AVG(p.sales_performance) AS avg_sales_performance,
    COUNT(p.review_id) AS total_reviews
FROM performance_reviews p
JOIN employees e ON p.employee_id = e.employee_id
JOIN departments d ON e.department_id = d.department_id
GROUP BY d.department_name;
```