

Lab Report

Course Title : DATABASE MANAGEMENT SYSTEM

Course Code : CSEC321

Submitted By

Name : Robaaed Afred Tanik

ID No : 2213081048

Batch : 55

Submitted To

Md. Harun Ar Rashid

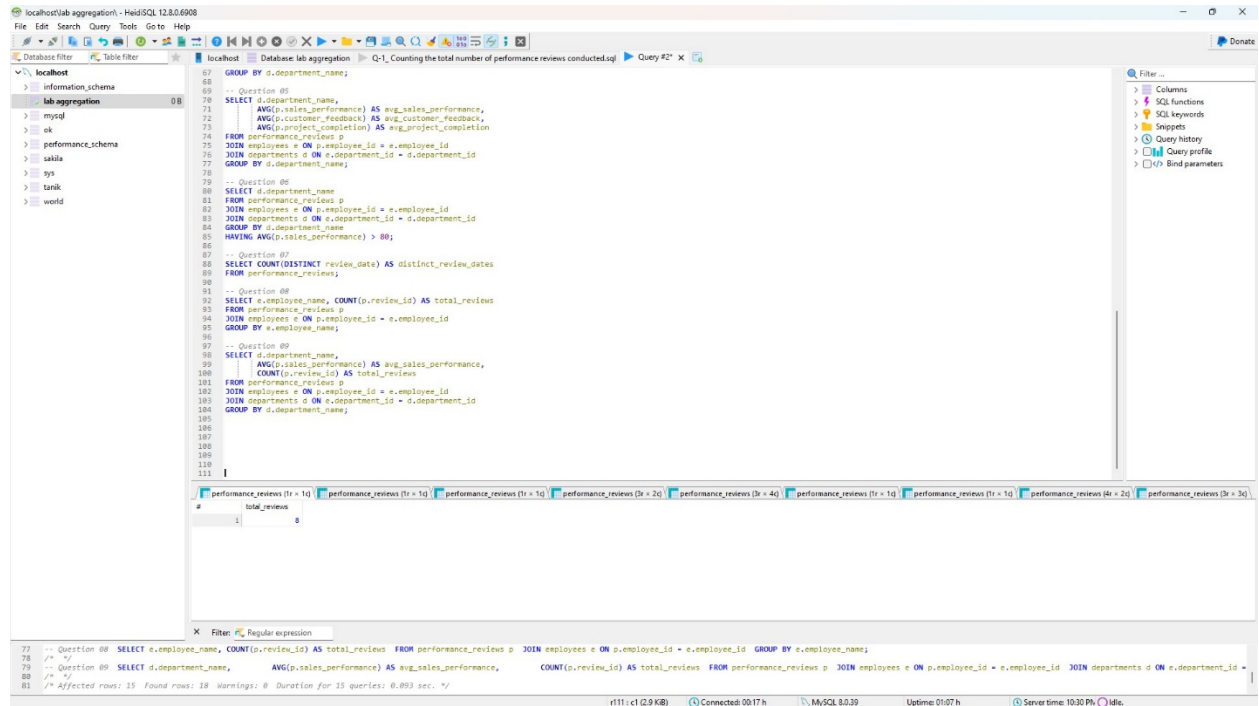
Senior Lecturer, Dept. CSE

Uttara University

Date Of Submission : 16.09.2024

Lab Aggregation Function

Question 01:



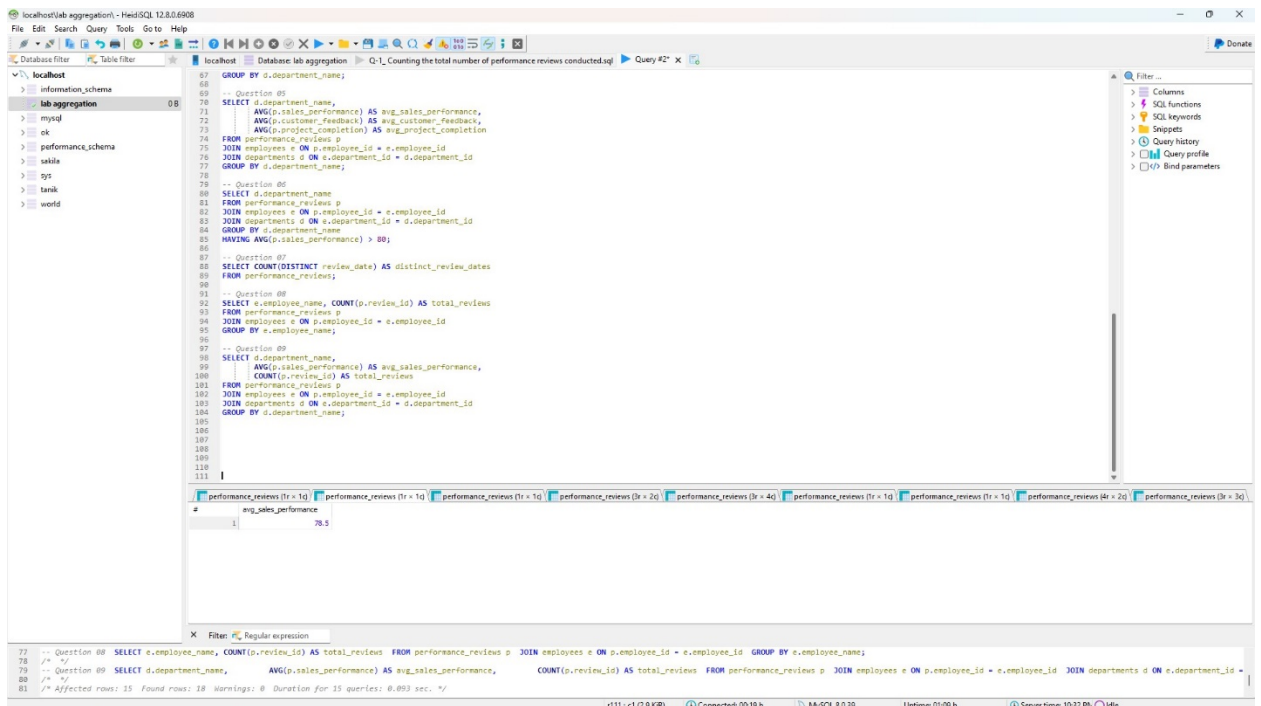
The screenshot shows the HeidiSQL interface with a SQL query for Question 01. The query is as follows:

```
67 -- Question 01
68 -- Counting the total number of performance reviews conducted by department
69
70 SELECT d.department_name,
71        AVG(p.sales_performance) AS avg_sales_performance,
72        AVG(p.customer_feedback) AS avg_customer_feedback,
73        AVG(p.project_completion) AS avg_project_completion
74 FROM performance_reviews p
75 JOIN employees e ON e.employee_id = p.employee_id
76 JOIN departments d ON d.department_id = p.department_id
77 GROUP BY d.department_name;
78
79 -- Question 02
80 -- Counting the total number of performance reviews conducted by department
81
82 SELECT d.department_name
83 FROM performance_reviews p
84 JOIN employees e ON e.employee_id = p.employee_id
85 JOIN departments d ON d.department_id = p.department_id
86 GROUP BY d.department_name
87 HAVING AVG(p.sales_performance) > 80;
88
89 -- Question 03
90 -- Counting the total number of performance reviews conducted by department
91
92 SELECT COUNT(DISTINCT review_date) AS distinct_review_dates
93 FROM performance_reviews;
94
95 -- Question 04
96 -- Counting the total number of performance reviews conducted by department
97
98 SELECT e.employee_name, COUNT(p.review_id) AS total_reviews
99 FROM performance_reviews p
100 JOIN employees e ON e.employee_id = p.employee_id
101 GROUP BY e.employee_name;
102
103 -- Question 05
104 -- Counting the total number of performance reviews conducted by department
105
106 SELECT d.department_name,
107        AVG(p.sales_performance) AS avg_sales_performance,
108        COUNT(p.review_id) AS total_reviews
109 FROM performance_reviews p
110 JOIN employees e ON e.employee_id = p.employee_id
111 JOIN departments d ON d.department_id = p.department_id
112 GROUP BY d.department_name;
```

The result of the query is shown in a table with 2 columns: department_name and total_reviews. The result is:

department_name	total_reviews
1	8

Question 02:



The screenshot shows the HeidiSQL interface with a SQL query for Question 02. The query is as follows:

```
67 -- Question 01
68 -- Counting the total number of performance reviews conducted by department
69
70 SELECT d.department_name,
71        AVG(p.sales_performance) AS avg_sales_performance,
72        AVG(p.customer_feedback) AS avg_customer_feedback,
73        AVG(p.project_completion) AS avg_project_completion
74 FROM performance_reviews p
75 JOIN employees e ON e.employee_id = p.employee_id
76 JOIN departments d ON d.department_id = p.department_id
77 GROUP BY d.department_name;
78
79 -- Question 02
80 -- Counting the total number of performance reviews conducted by department
81
82 SELECT d.department_name
83 FROM performance_reviews p
84 JOIN employees e ON e.employee_id = p.employee_id
85 JOIN departments d ON d.department_id = p.department_id
86 GROUP BY d.department_name
87 HAVING AVG(p.sales_performance) > 80;
88
89 -- Question 03
90 -- Counting the total number of performance reviews conducted by department
91
92 SELECT COUNT(DISTINCT review_date) AS distinct_review_dates
93 FROM performance_reviews;
94
95 -- Question 04
96 -- Counting the total number of performance reviews conducted by department
97
98 SELECT e.employee_name, COUNT(p.review_id) AS total_reviews
99 FROM performance_reviews p
100 JOIN employees e ON e.employee_id = p.employee_id
101 GROUP BY e.employee_name;
102
103 -- Question 05
104 -- Counting the total number of performance reviews conducted by department
105
106 SELECT d.department_name,
107        AVG(p.sales_performance) AS avg_sales_performance,
108        COUNT(p.review_id) AS total_reviews
109 FROM performance_reviews p
110 JOIN employees e ON e.employee_id = p.employee_id
111 JOIN departments d ON d.department_id = p.department_id
112 GROUP BY d.department_name;
```

The result of the query is shown in a table with 2 columns: department_name and total_reviews. The result is:

department_name	total_reviews
1	78.5

Question 03:

HeidiSQL 12.8.0.6908

Database: lab aggregation

Q-1. Counting the total number of performance reviews conducted.sql

```

67 GROUP BY d.department_name;
68
69 -- Question 05
70 SELECT d.department_name,
71        AVG(p.sales_performance) AS avg_sales_performance,
72        AVG(p.customer_feedback) AS avg_customer_feedback,
73        AVG(p.project_completion) AS avg_project_completion
74 FROM performance_reviews p
75 JOIN employees e ON p.employee_id = e.employee_id
76 JOIN departments d ON e.department_id = d.department_id
77 GROUP BY d.department_name;
78
79 -- Question 06
80 SELECT d.department_name
81 FROM performance_reviews p
82 JOIN employees e ON p.employee_id = e.employee_id
83 JOIN departments d ON e.department_id = d.department_id
84 GROUP BY d.department_name
85 HAVING AVG(p.sales_performance) > 80;
86
87 -- Question 07
88 SELECT COUNT(DISTINCT review_date) AS distinct_review_dates
89 FROM performance_reviews;
90
91 -- Question 08
92 SELECT e.employee_name, COUNT(p.review_id) AS total_reviews
93 FROM performance_reviews p
94 JOIN employees e ON p.employee_id = e.employee_id
95 GROUP BY e.employee_name;
96
97 -- Question 09
98 SELECT d.department_name,
99        AVG(p.sales_performance) AS avg_sales_performance,
100        COUNT(p.review_id) AS total_reviews
101 FROM performance_reviews p
102 JOIN employees e ON p.employee_id = e.employee_id
103 JOIN departments d ON e.department_id = d.department_id
104 GROUP BY d.department_name;
105
106
107
108
109
110
111

```

Results:

#	department_name	highest_feedback
1	Sales	99

Filter: Regular expression

77 -- Question 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;
78 /* */
79 -- Question 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;
80 /* */
81 /* Affected rows: 15 Found rows: 8 Warnings: 0 Duration for 15 queries: 0.893 sec. */

Question 04:

HeidiSQL 12.8.0.6908

Database: lab aggregation

Q-1. Counting the total number of performance reviews conducted.sql

```

67 GROUP BY d.department_name;
68
69 -- Question 05
70 SELECT d.department_name,
71        AVG(p.sales_performance) AS avg_sales_performance,
72        AVG(p.customer_feedback) AS avg_customer_feedback,
73        AVG(p.project_completion) AS avg_project_completion
74 FROM performance_reviews p
75 JOIN employees e ON p.employee_id = e.employee_id
76 JOIN departments d ON e.department_id = d.department_id
77 GROUP BY d.department_name;
78
79 -- Question 06
80 SELECT d.department_name
81 FROM performance_reviews p
82 JOIN employees e ON p.employee_id = e.employee_id
83 JOIN departments d ON e.department_id = d.department_id
84 GROUP BY d.department_name
85 HAVING AVG(p.sales_performance) > 80;
86
87 -- Question 07
88 SELECT COUNT(DISTINCT review_date) AS distinct_review_dates
89 FROM performance_reviews;
90
91 -- Question 08
92 SELECT e.employee_name, COUNT(p.review_id) AS total_reviews
93 FROM performance_reviews p
94 JOIN employees e ON p.employee_id = e.employee_id
95 GROUP BY e.employee_name;
96
97 -- Question 09
98 SELECT d.department_name,
99        AVG(p.sales_performance) AS avg_sales_performance,
100        COUNT(p.review_id) AS total_reviews
101 FROM performance_reviews p
102 JOIN employees e ON p.employee_id = e.employee_id
103 JOIN departments d ON e.department_id = d.department_id
104 GROUP BY d.department_name;
105
106
107
108
109
110
111

```

Results:

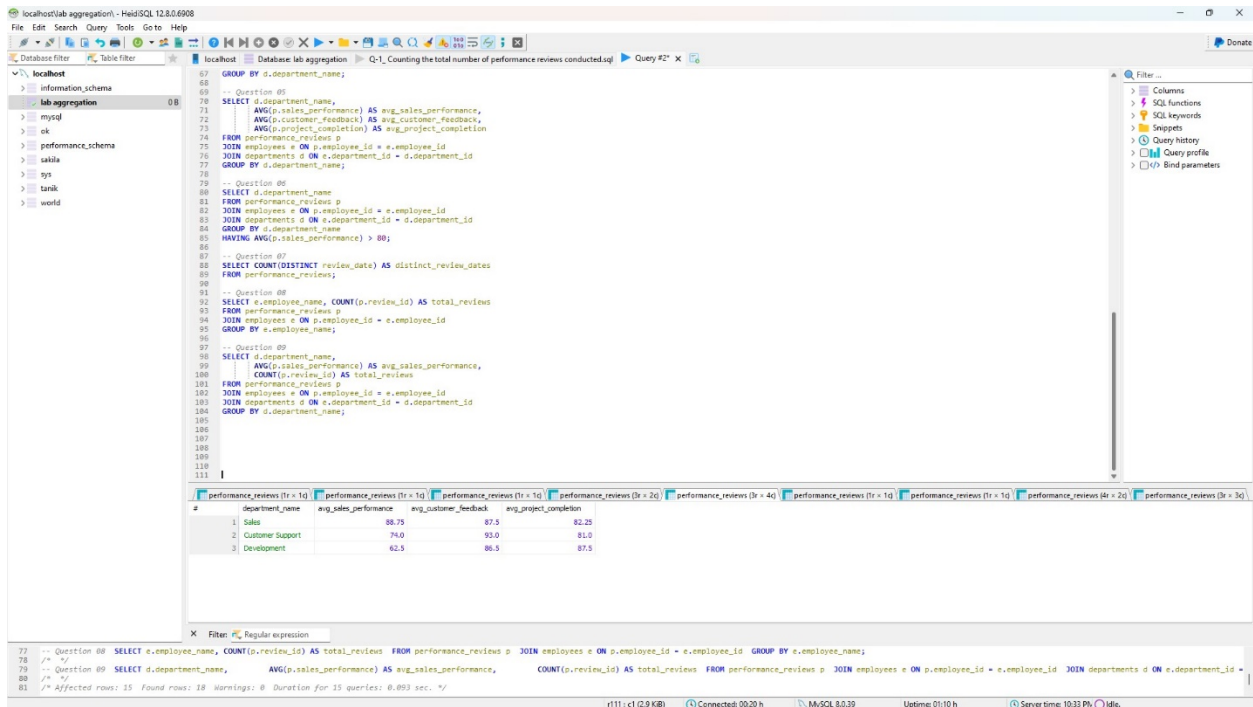
#	department_name	total_project_completion	total_reviews
1	Sales	329	162
2	Customer Support	162	175
3	Development	175	

Filter: Regular expression

77 -- Question 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;
78 /* */
79 -- Question 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;
80 /* */
81 /* Affected rows: 15 Found rows: 8 Warnings: 0 Duration for 15 queries: 0.893 sec. */

111: 1 KB Connected: 00:20 MySQL 8.0.39 Uptime: 01:10 Server time: 10:32 PM

Question 05:

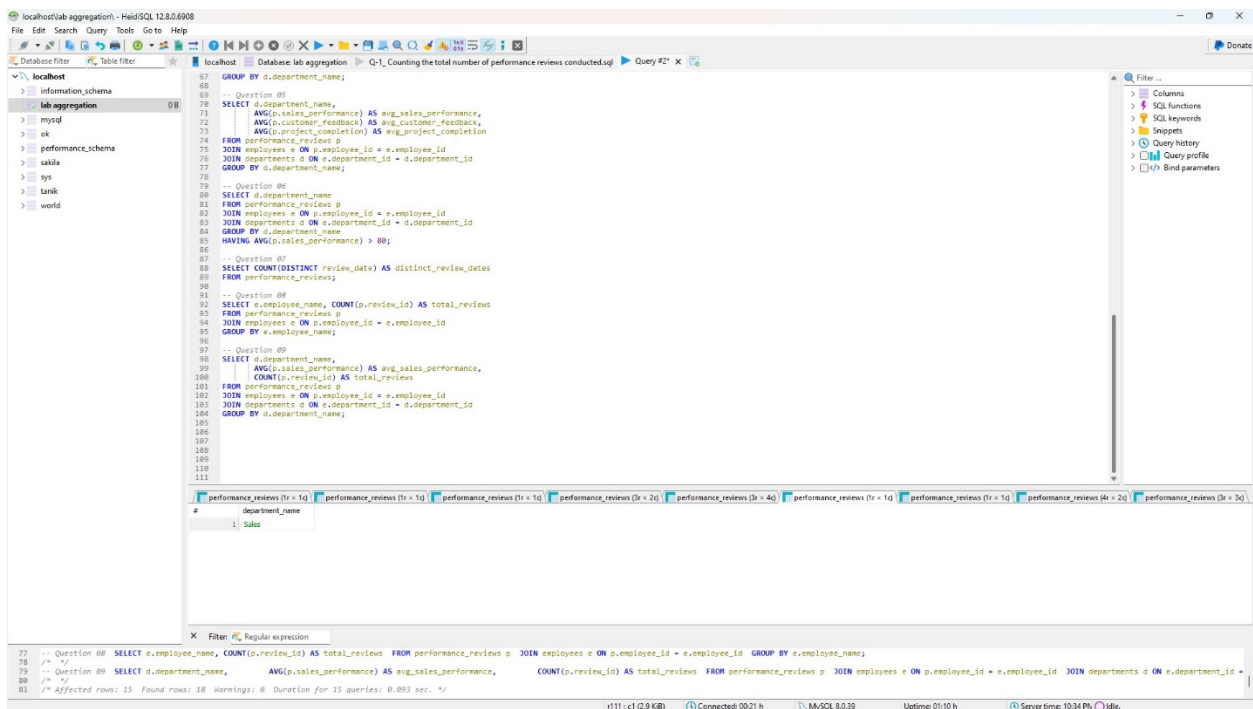


```
-- Question 05
67 GROUP BY d.department_name;
68
69 -- Question 06
70 SELECT d.department_name,
71        AVG(p.sales_performance) AS avg_sales_performance,
72        AVG(p.customer_feedback) AS avg_customer_feedback,
73        AVG(p.project_completion) AS avg_project_completion
74 FROM performance_reviews p
75 JOIN employees e ON p.employee_id = e.employee_id
76 JOIN departments d ON e.department_id = d.department_id
77 GROUP BY d.department_name;
78
79 -- Question 07
80 SELECT d.department_name
81 FROM performance_reviews p
82 JOIN employees e ON p.employee_id = e.employee_id
83 JOIN departments d ON e.department_id = d.department_id
84 GROUP BY d.department_name
85 HAVING AVG(p.sales_performance) > 80;
86
87 -- Question 08
88 SELECT COUNT(DISTINCT review_date) AS distinct_review_dates
89 FROM performance_reviews;
90
91 -- Question 09
92 SELECT e.employee_name, COUNT(p.review_id) AS total_reviews
93 FROM performance_reviews p
94 JOIN employees e ON p.employee_id = e.employee_id
95 GROUP BY e.employee_name;
96
97 -- Question 10
98 SELECT d.department_name,
99        AVG(p.sales_performance) AS avg_sales_performance,
100        COUNT(p.review_id) AS total_reviews
101 FROM performance_reviews p
102 JOIN employees e ON p.employee_id = e.employee_id
103 JOIN departments d ON e.department_id = d.department_id
104 GROUP BY d.department_name;
105
106
107
108
109
110
111
```

department_name	avg_sales_performance	avg_customer_feedback	avg_project_completion
Sales	86.75	87.5	82.25
Customer Support	74.0	93.0	81.0
Development	62.5	86.5	87.5

```
77 -- Question 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;
78 /* */
79 -- Question 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 =
80 /* */
81 /* Affected rows: 15 Found rows: 18 Warnings: 0 Duration for 15 queries: 0.893 sec. */
```

Question 06:



```
-- Question 06
67 GROUP BY d.department_name;
68
69 -- Question 07
70 SELECT d.department_name,
71        AVG(p.sales_performance) AS avg_sales_performance,
72        AVG(p.customer_feedback) AS avg_customer_feedback,
73        AVG(p.project_completion) AS avg_project_completion
74 FROM performance_reviews p
75 JOIN employees e ON p.employee_id = e.employee_id
76 JOIN departments d ON e.department_id = d.department_id
77 GROUP BY d.department_name;
78
79 -- Question 08
80 SELECT d.department_name
81 FROM performance_reviews p
82 JOIN employees e ON p.employee_id = e.employee_id
83 JOIN departments d ON e.department_id = d.department_id
84 GROUP BY d.department_name
85 HAVING AVG(p.sales_performance) > 80;
86
87 -- Question 09
88 SELECT COUNT(DISTINCT review_date) AS distinct_review_dates
89 FROM performance_reviews;
90
91 -- Question 10
92 SELECT e.employee_name, COUNT(p.review_id) AS total_reviews
93 FROM performance_reviews p
94 JOIN employees e ON p.employee_id = e.employee_id
95 GROUP BY e.employee_name;
96
97 -- Question 11
98 SELECT d.department_name,
99        AVG(p.sales_performance) AS avg_sales_performance,
100        COUNT(p.review_id) AS total_reviews
101 FROM performance_reviews p
102 JOIN employees e ON p.employee_id = e.employee_id
103 JOIN departments d ON e.department_id = d.department_id
104 GROUP BY d.department_name;
105
106
107
108
109
110
111
```

department_name
Sales

```
77 -- Question 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;
78 /* */
79 -- Question 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 =
80 /* */
81 /* Affected rows: 15 Found rows: 18 Warnings: 0 Duration for 15 queries: 0.893 sec. */
```

Question 07:

HeidiSQL 12.8.0.6908 interface showing the execution of a SQL query. The query is titled "Q-1. Counting the total number of performance reviews conducted.sql". The query text is as follows:

```
67 GROUP BY d.department_name;
68
69 -- Question 05
70 SELECT d.department_name,
71        AVG(p.sales_performance) AS avg_sales_performance,
72        AVG(p.customer_feedback) AS avg_customer_feedback,
73        AVG(p.project_completion) AS avg_project_completion
74 FROM performance_reviews p
75 JOIN employees e ON p.employee_id = e.employee_id
76 JOIN departments d ON e.department_id = d.department_id
77 GROUP BY d.department_name;
78
79 -- Question 06
80 SELECT d.department_name
81 FROM performance_reviews p
82 JOIN employees e ON p.employee_id = e.employee_id
83 JOIN departments d ON e.department_id = d.department_id
84 GROUP BY d.department_name
85 HAVING AVG(p.sales_performance) > 80;
86
87 -- Question 07
88 SELECT COUNT(DISTINCT review_date) AS distinct_review_dates
89 FROM performance_reviews;
90
91 -- Question 08
92 SELECT e.employee_name, COUNT(p.review_id) AS total_reviews
93 FROM performance_reviews p
94 JOIN employees e ON p.employee_id = e.employee_id
95 GROUP BY e.employee_name;
96
97 -- Question 09
98 SELECT d.department_name,
99        AVG(p.sales_performance) AS avg_sales_performance,
100        COUNT(p.review_id) AS total_reviews
101 FROM performance_reviews p
102 JOIN employees e ON p.employee_id = e.employee_id
103 JOIN departments d ON e.department_id = d.department_id
104 GROUP BY d.department_name;
105
106
107
108
109
110
111
```

The result set shows 4 columns and 3 rows:

distinct_review_dates
1
8

At the bottom, the status bar indicates: r11: c1 (2.9 KB), Connected: 00:21 h, MySQL 8.0.39, Uptime: 01:11 h, Server time: 10:34 PM, Idle.

Question 08:

HeidiSQL 12.8.0.6908 interface showing the execution of a SQL query. The query is titled "Q-1. Counting the total number of performance reviews conducted.sql". The query text is as follows:

```
67 GROUP BY d.department_name;
68
69 -- Question 05
70 SELECT d.department_name,
71        AVG(p.sales_performance) AS avg_sales_performance,
72        AVG(p.customer_feedback) AS avg_customer_feedback,
73        AVG(p.project_completion) AS avg_project_completion
74 FROM performance_reviews p
75 JOIN employees e ON p.employee_id = e.employee_id
76 JOIN departments d ON e.department_id = d.department_id
77 GROUP BY d.department_name;
78
79 -- Question 06
80 SELECT d.department_name
81 FROM performance_reviews p
82 JOIN employees e ON p.employee_id = e.employee_id
83 JOIN departments d ON e.department_id = d.department_id
84 GROUP BY d.department_name
85 HAVING AVG(p.sales_performance) > 80;
86
87 -- Question 07
88 SELECT COUNT(DISTINCT review_date) AS distinct_review_dates
89 FROM performance_reviews;
90
91 -- Question 08
92 SELECT e.employee_name, COUNT(p.review_id) AS total_reviews
93 FROM performance_reviews p
94 JOIN employees e ON p.employee_id = e.employee_id
95 GROUP BY e.employee_name;
96
97 -- Question 09
98 SELECT d.department_name,
99        AVG(p.sales_performance) AS avg_sales_performance,
100        COUNT(p.review_id) AS total_reviews
101 FROM performance_reviews p
102 JOIN employees e ON p.employee_id = e.employee_id
103 JOIN departments d ON e.department_id = d.department_id
104 GROUP BY d.department_name;
105
106
107
108
109
110
111
```

The result set shows 2 columns and 5 rows:

employee_name	total_reviews
Hani Masoud	2
Tamim Rahman	2
B.G.Syam	2
Ali Bine Masoud	2

At the bottom, the status bar indicates: r11: c1 (2.9 KB), Connected: 00:22 h, MySQL 8.0.39, Uptime: 01:11 h, Server time: 10:35 PM, Idle.

Question 09 :

localhost:lab aggregation - HeidiSQL 12.0.0.6908

File Edit Search Query Tools Go to Help

Database filter Table filter

localhost Database: lab aggregation Q-1: Counting the total number of performance reviews conducted.sql Query #2 X

Filter ...

- Columns
- SQL functions
- SQL keywords
- Snippets
- Query history
- Query profile
- Bind parameters

```
67 GROUP BY d.department_name;
68
69 -- Question 05
70 SELECT d.department_name,
71        AVG(p.sales_performance) AS avg_sales_performance,
72        AVG(p.customer_feedback) AS avg_customer_feedback,
73        AVG(p.project_completion) AS avg_project_completion
74 FROM performance_reviews p
75 JOIN employees e ON p.employee_id = e.employee_id
76 JOIN departments d ON e.department_id = d.department_id
77 GROUP BY d.department_name;
78
79 -- Question 06
80 SELECT d.department_name,
81        FROM performance_reviews p
82 JOIN employees e ON p.employee_id = e.employee_id
83 JOIN departments d ON e.department_id = d.department_id
84 GROUP BY d.department_name
85 HAVING AVG(p.sales_performance) > 80;
86
87 -- Question 07
88 SELECT COUNT(DISTINCT review_date) AS distinct_review_dates
89 FROM performance_reviews;
90
91 -- Question 08
92 SELECT e.employee_name, COUNT(p.review_id) AS total_reviews
93 FROM performance_reviews p
94 JOIN employees e ON p.employee_id = e.employee_id
95 GROUP BY e.employee_name;
96
97 -- Question 09
98 SELECT d.department_name,
99        AVG(p.sales_performance) AS avg_sales_performance,
100        COUNT(p.review_id) AS total_reviews
101 FROM performance_reviews p
102 JOIN employees e ON p.employee_id = e.employee_id
103 JOIN departments d ON e.department_id = d.department_id
104 GROUP BY d.department_name;
105
106
107
108
109
110
111
```

#	department_name	avg_sales_performance	total_reviews
1	Sales	88.75	4
2	Customer Support	74.0	2
3	Development	62.5	2

Filter Regular expression

```
77 -- Question 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;
78 /* */
79 -- Question 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 =
80 /* */
81 /* Affected rows: 15 Found rows: 18 Warnings: 0 Duration for 15 queries: 0.093 sec. */
```

r11: c1 (2.9 KB) Connected: 00:22 h MySQL 8.0.39 Uptime: 01:12 h Server time: 10:35 PM Idle.