

SIT-103 DATABASE FUNDAMENTALS

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Task 5.1P BASIC SQL

Write a SQL query to retrieve names (displayed as “Employee Name”) and salary of employees.
[Relevant table: Works]

The screenshot shows the MySQL Workbench interface. In the top-left pane, a query editor displays the following SQL code:

```
1 • create database sit103;
2 • show databases;
3 • use sit103;
4 • show tables;
5 • SELECT employeeName AS "Employee Name", salary
   FROM works;
```

In the bottom-left pane, a results grid shows the output of the query:

Employee Name	salary
Adams	22000
Curry	25000
Hayes	19000
Jones	21000
Lindsay	9000
Smith	22000
Turner	20000
Villiams	18000

On the right side of the interface, there is a vertical toolbar with icons for Result Grid, Form Editor, and Field Types.

Write a SQL query to list name, street, and city of employees in descending order by their names.
[Relevant table: Employee]

tables* data* SQL File 5* | Limit to 1000 rows | Jump to

```

4 • show tables;
5 • SELECT employeeName AS "Employee Name", salary
6     FROM works;
7 • SELECT employeeName, street, city
8     FROM employee
9     ORDER BY employeeName DESC;
10

```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Result Grid | Filter Rows: Export: Wrap Cell Content

Employee Name	salary
Adams	22000
Curry	25000
Hayes	19000
Jones	21000
Lindsay	9000
Smith	22000
Turner	20000
Williams	18000

Result Grid Form Editor Field Types

works 12 x Read Only Context Help Snippets

Action Output

#	Time	Action	Message	Duration / Fetch
121	15:09:19	SELECT employeeName AS "Employee Name", s...	8 row(s) returned	0.000 sec / 0.000 sec
122	15:11:25	SELECT employeeName, street, city	Error Code: 1146. Table 'sit103.employee' doesn't exist	0.000 sec
123	15:11:27	SELECT employeeName, street, city	Error Code: 1146. Table 'sit103.employee' doesn't exist	0.000 sec
124	15:11:59	SELECT employeeName AS "Employee Name", s...	8 row(s) returned	0.000 sec / 0.000 sec
125	15:12:40	SELECT employeeName, street, city	Error Code: 1146. Table 'sit103.employee' doesn't exist	0.000 sec
126	15:13:08	SELECT employeeName AS "Employee Name", s...	8 row(s) returned	0.000 sec / 0.000 sec

Write a SQL query to get a list of unique streets from the Employee table. [Relevant table: Employee]

MySQL Workbench Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator: SERVER STATUS, CLIENT CONNECTIONS, USERS AND PRIVILEGES, STATUS AND SYSTEM VARIABLES, DATA EXPORT, DATA IMPORT/RESTORE

INSTANCE: STARTUP / SHUTDOWN, SERVER LOGS, OPTIONS FILE

PERFORMANCE: DASHBOARD, PERFORMANCE REPORTS, PERFORMANCE SCHEMA SETUP

Administration Schemas Employee1 7 x

Employee1 7 x Output

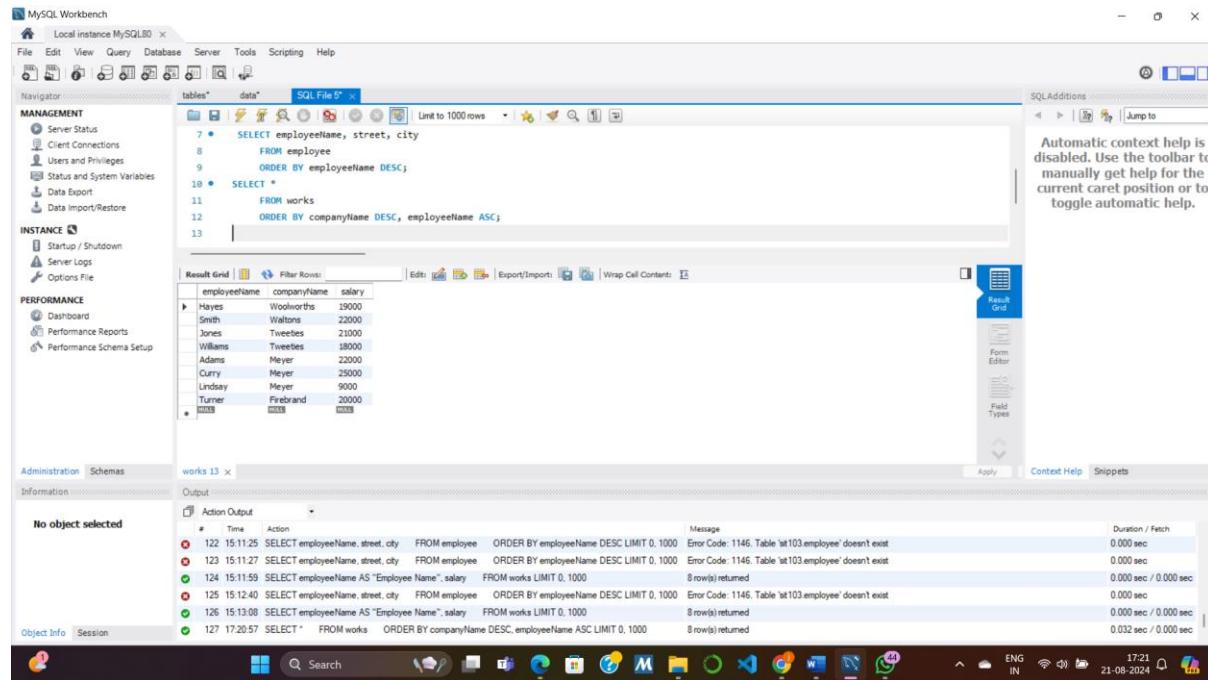
No object selected

Action Output

#	Time	Action	Message	Duration / Fetch
113	14:49:13	create database sit103	Error Code: 1007. Can't create database 'sit103'; database exists	0.000 sec
114	14:49:17	rename table employee to employee1	0 row(s) affected	0.031 sec
115	14:50:15	create database sit103	Error Code: 1007. Can't create database 'sit103'; database exists	0.000 sec
116	14:50:17	select * from employee1 LIMIT 0, 1000	8 row(s) returned	0.000 sec / 0.000 sec
117	14:53:52	SELECT employeeName, street, city FROM Employee1 ORDER BY employeeName DESC LIMIT 0, 1000	8 row(s) returned	0.000 sec / 0.000 sec
118	15:00:14	SELECT DISTINCT street FROM Employee1 LIMIT 0, 1000	6 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

Write a SQL query to list all records in the works table in descending order of company names and within a company in ascending order by employee name. [Relevant table: Works]



```

MySQL Workbench
File Edit View Query Database Server Tools Scripting Help
Local instance MySQL80 ×
tables* data* SQL File 5* ×
SELECT employeeName, street, city
FROM employee
ORDER BY employeeName DESC;
SELECT *
FROM works
ORDER BY companyName DESC, employeeName ASC;

```

employeeName	companyName	salary
Hayes	Woolworths	19000
Gill	Walton	22000
Jones	Tweeters	21000
Williams	Tweeters	18000
Adams	Meyer	22000
Curry	Meyer	25000
Lindsay	Meyer	9000
Turner	Frebrand	20000
	NULL	NULL

Administration Schemas works 13 ×

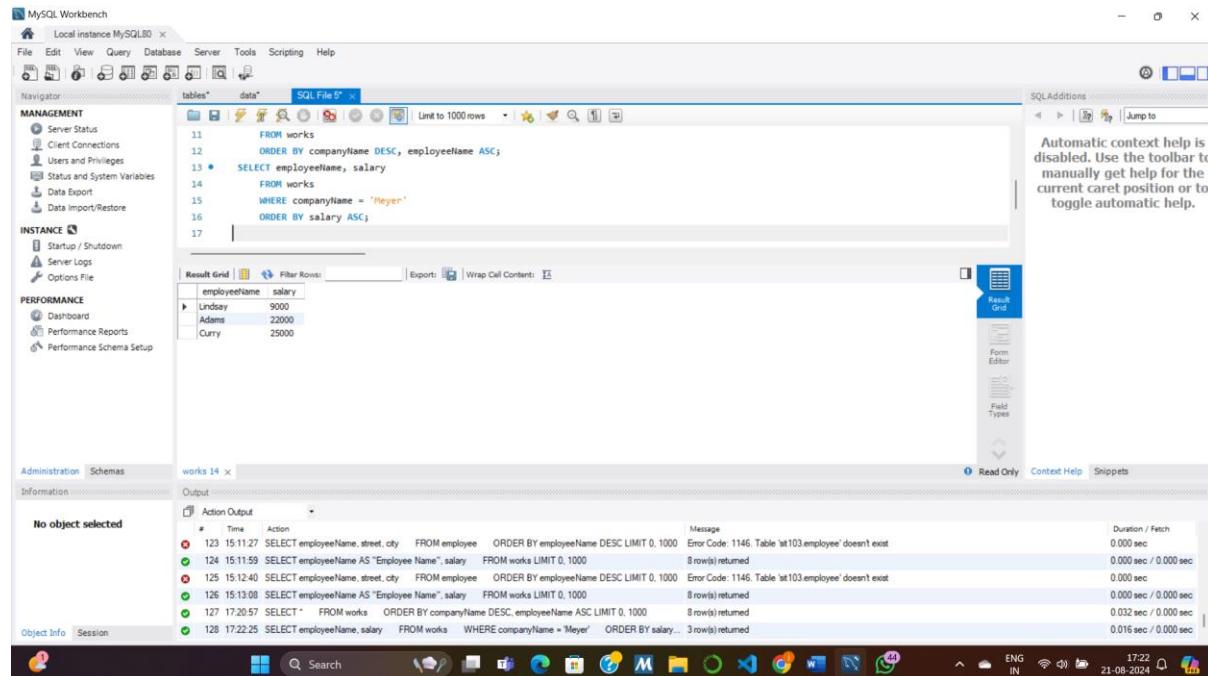
No object selected

Action Output

#	Time	Action	Message	Duration / Fetch
122	15:11:25	SELECT employeeName, street, city FROM employee ORDER BY employeeName DESC LIMIT 0, 1000	Error Code: 1146. Table 'at103.employee' doesn't exist	0.000 sec
123	15:11:27	SELECT `employeeName` AS "Employee Name", `salary` FROM works LIMIT 0, 1000	Error Code: 1146. Table 'at103.employee' doesn't exist	0.000 sec
124	15:11:59	SELECT `employeeName` AS "Employee Name", `salary` FROM works ORDER BY `employeeName` DESC LIMIT 0, 1000	8 row(s) returned	0.000 sec / 0.000 sec
125	15:12:40	SELECT `employeeName` AS "Employee Name", `salary` FROM works ORDER BY `employeeName` DESC LIMIT 0, 1000	Error Code: 1146. Table 'at103.employee' doesn't exist	0.000 sec
126	15:13:08	SELECT `employeeName` AS "Employee Name", `salary` FROM works LIMIT 0, 1000	8 row(s) returned	0.000 sec / 0.000 sec
127	17:20:57	SELECT * FROM works ORDER BY companyName DESC, employeeName ASC LIMIT 0, 1000	8 row(s) returned	0.032 sec / 0.000 sec

Object Info Session

Write a SQL query to list name and salary of all employees who work in Meyer and sort the records in ascending order by their incomes. [Relevant table: Works]



```

MySQL Workbench
File Edit View Query Database Server Tools Scripting Help
Local instance MySQL80 ×
tables* data* SQL File 5* ×
SELECT employeeName, salary
FROM works
WHERE companyName = 'Meyer'
ORDER BY salary ASC;

```

employeeName	salary
Lindsay	9000
Adams	22000
Curry	25000

Administration Schemas works 14 ×

No object selected

Action Output

#	Time	Action	Message	Duration / Fetch
123	15:11:27	SELECT `employeeName` AS "Employee Name", `salary` FROM works ORDER BY `employeeName` DESC LIMIT 0, 1000	Error Code: 1146. Table 'at103.employee' doesn't exist	0.000 sec
124	15:11:59	SELECT `employeeName` AS "Employee Name", `salary` FROM works LIMIT 0, 1000	8 row(s) returned	0.000 sec / 0.000 sec
125	15:12:40	SELECT `employeeName` AS "Employee Name", `salary` FROM works ORDER BY `employeeName` DESC LIMIT 0, 1000	Error Code: 1146. Table 'at103.employee' doesn't exist	0.000 sec
126	15:13:08	SELECT `employeeName` AS "Employee Name", `salary` FROM works LIMIT 0, 1000	8 row(s) returned	0.000 sec / 0.000 sec
127	17:20:57	SELECT * FROM works ORDER BY companyName DESC, employeeName ASC LIMIT 0, 1000	8 row(s) returned	0.032 sec / 0.000 sec
128	17:22:25	SELECT `employeeName`, `salary` FROM works WHERE companyName = 'Meyer' ORDER BY salary...	3 row(s) returned	0.016 sec / 0.000 sec

Object Info Session

Assuming that the salary in the Works table is annual salary, write a SQL query to retrieve names (displayed as "Employee Name") and monthly salary as "Monthly Salary" of employees. [Relevant table: Works]

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator tables* data* SQL File 5* x

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

tables* data* SQL File 5* x

```

13 •   SELECT employeeName, salary
14     FROM works
15       WHERE companyName = 'Meyer'
16       ORDER BY salary ASC;
17 •   SELECT employeeName AS "Employee Name", salary / 12 AS "Monthly Salary"
18     FROM works;
  
```

Result Grid | Filter Rows: Export: Wrap Cell Content: Result Grid Form Editor Field Types

Name	Monthly Salary
Adams	1833.3333
Curry	2083.3333
Hayes	1583.3333
Jones	1750.0000
Lindsay	750.0000
Smith	1833.3333
Turner	1666.6667
Williams	1500.0000

Administration Schemas Result 15 x

Information Output

No object selected

Action Output

#	Time	Action	Message	Duration / Fetch
124	15:11:59	SELECT employeeName AS "Employee Name", salary FROM works LIMIT 0, 1000	8 row(s) returned	0.000 sec / 0.000 sec
125	15:12:40	SELECT employeeName, street, city FROM employee ORDER BY employeeName DESC LIMIT 0, 1000	Error Code: 1146. Table 'at103.employee' doesn't exist	0.000 sec
126	15:13:08	SELECT employeeName AS "Employee Name", salary FROM works LIMIT 0, 1000	8 row(s) returned	0.000 sec / 0.000 sec
127	17:20:57	SELECT * FROM works ORDER BY companyName DESC, employeeName ASC LIMIT 0, 1000	8 row(s) returned	0.032 sec / 0.000 sec
128	17:22:25	SELECT employeeName, salary FROM works WHERE companyName = 'Meyer' ORDER BY salary...	3 row(s) returned	0.016 sec / 0.000 sec
129	17:23:10	SELECT employeeName AS "Employee Name", salary / 12 AS "Monthly Salary" FROM works LIMIT 0, 10...	8 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

ENG IN 17:23 21-08-2024

Write a SQL query to list names and salaries of all employees who work in Meyer and earn more than 20000. [Relevant table: Works]

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator tables* data* SQL File 5* x

MANAGEMENT

- Server Status
- Client Connections
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- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

tables* data* SQL File 5* x

```

16     ORDER BY salary ASC;
17 •   SELECT employeeName AS "Employee Name", salary / 12 AS "Monthly Salary"
18     FROM works;
19 •   SELECT employeeName, salary
20     FROM works
21       WHERE companyName = 'Meyer' AND salary > 20000;
  
```

Result Grid | Filter Rows: Export: Wrap Cell Content: Result Grid Form Editor Field Types

employeeName	salary
Adams	22000
Curry	25000

Administration Schemas works 16 x

Information Output

No object selected

Action Output

#	Time	Action	Message	Duration / Fetch
125	15:12:40	SELECT employeeName, street, city FROM employee ORDER BY employeeName DESC LIMIT 0, 1000	Error Code: 1146. Table 'at103.employee' doesn't exist	0.000 sec
126	15:13:08	SELECT employeeName AS "Employee Name", salary FROM works LIMIT 0, 1000	8 row(s) returned	0.000 sec / 0.000 sec
127	17:20:57	SELECT * FROM works ORDER BY companyName DESC, employeeName ASC LIMIT 0, 1000	8 row(s) returned	0.032 sec / 0.000 sec
128	17:22:25	SELECT employeeName, salary FROM works WHERE companyName = 'Meyer' ORDER BY salary...	3 row(s) returned	0.016 sec / 0.000 sec
129	17:23:10	SELECT employeeName AS "Employee Name", salary / 12 AS "Monthly Salary" FROM works LIMIT 0, 10...	8 row(s) returned	0.000 sec / 0.000 sec
130	17:23:44	SELECT employeeName, salary FROM works WHERE companyName = 'Meyer' AND salary > 20000 L...	2 row(s) returned	0.016 sec / 0.000 sec

Object Info Session

ENG IN 17:23 21-08-2024

Write a SQL query to list names and companies of the employees who earn in the range of 20000 to 25000 (inclusive). [Relevant table: Works]

MySQL Workbench - Local instance MySQL80

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

Administration Schemas works 17 x

Information

Action Output

#	Time	Action	Message	Duration / Fetch
126	15:13:08	SELECT employeeName AS "Employee Name", salary FROM works LIMIT 0, 1000	8 row(s) returned	0.000 sec / 0.000 sec
127	17:20:57	SELECT * FROM works ORDER BY companyName DESC, employeeName ASC LIMIT 0, 1000	8 row(s) returned	0.032 sec / 0.000 sec
128	17:22:25	SELECT employeeName, salary FROM works WHERE companyName = 'Meyer' ORDER BY salary...	3 row(s) returned	0.016 sec / 0.000 sec
129	17:23:10	SELECT employeeName AS "Employee Name", salary / 12 AS "Monthly Salary" FROM works LIMIT 0, 10...	8 row(s) returned	0.000 sec / 0.000 sec
130	17:23:44	SELECT employeeName, salary FROM works WHERE companyName = 'Meyer' AND salary > 20000 L...	2 row(s) returned	0.016 sec / 0.000 sec
131	17:24:23	SELECT employeeName, companyName FROM works WHERE salary BETWEEN 20000 AND 25000...	5 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

17:24 21-08-2024 ENG IN

Write a SQL query to list names of employees whose managers have “ll” (double ls) in their names.
[Relevant table: Manages]

MySQL Workbench - Local instance MySQL80

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

Administration Schemas manages 19 x

Information

Action Output

#	Time	Action	Message	Duration / Fetch
128	17:22:25	SELECT employeeName, companyName FROM works WHERE companyName = 'Meyer' ORDER BY salary...	3 row(s) returned	0.016 sec / 0.000 sec
129	17:23:10	SELECT employeeName AS "Employee Name", salary / 12 AS "Monthly Salary" FROM works LIMIT 0, 10...	8 row(s) returned	0.000 sec / 0.000 sec
130	17:23:44	SELECT employeeName, salary FROM works WHERE companyName = 'Meyer' AND salary > 20000 L...	2 row(s) returned	0.016 sec / 0.000 sec
131	17:24:23	SELECT employeeName, companyName FROM works WHERE salary BETWEEN 20000 AND 25000...	5 row(s) returned	0.000 sec / 0.000 sec
132	17:25:00	SELECT employeeName FROM manages WHERE managerName LIKE '%ll%' LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec
133	17:25:19	SELECT employeeName FROM manages WHERE managerName LIKE '%ll%' LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

17:25 21-08-2024 ENG IN

Write a SQL query to list company names and the average salary of their employees. [Relevant table: Works]

The screenshot shows the MySQL Workbench interface with the following details:

- Navigator:** Shows the database structure.
- INSTANCE:** Shows the server status and logs.
- PERFORMANCE:** Shows the performance schema setup.
- SQL Editor:** Contains the following SQL code:


```

25 •  SELECT employeeName
       FROM manages
      WHERE managerName LIKE '%11%';
26
27
28 •  SELECT companyName, AVG(salary) AS "Average Salary"
       FROM works
      GROUP BY companyName;
29
30
31
      
```
- Result Grid:** Displays the results of the query:

companyName	Average Salary
Meyer	18666.6667
Woolworths	19000.0000
Tweeters	19500.0000
Waltons	22000.0000
Firebrand	20000.0000
- Output:** Shows the execution history of the session, including the execution of the current query.
- System Bar:** Shows the system tray and taskbar.

Write a SQL query to list the name of the companies with average salary of employees more than or equal to 20000. [Relevant table: Works]

The screenshot shows the MySQL Workbench interface with the following details:

- Navigator:** Shows the database structure.
- INSTANCE:** Shows the server status and logs.
- PERFORMANCE:** Shows the performance schema setup.
- SQL Editor:** Contains the following SQL code:


```

28 •  SELECT companyName, AVG(salary) AS "Average Salary"
       FROM works
      WHERE salary BETWEEN 20000 AND 25000;
29
30
31 •  SELECT companyName, AVG(salary) AS "Average Salary"
       FROM works
      GROUP BY companyName;
32
33
34
      
```
- Result Grid:** Displays the results of the query:

companyName	Average Salary
Meyer	18666.6667
Woolworths	19000.0000
Tweeters	19500.0000
Waltons	22000.0000
Firebrand	20000.0000
- Output:** Shows the execution history of the session, including the execution of the current query.
- System Bar:** Shows the system tray and taskbar.

Write a SQL query to select details of the employees who works in companies located in Rye. [Relevant tables: Works and Company; Hint: use a subquery]

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator tables* data* SQL File 5* Limit to 1000 rows

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

Result Grid | Filter Rows | Edit | Export/Import | Wrap Cell Content: |

```

38 •  SELECT *
39   FROM works
40   WHERE companyName IN
41   (
42     (SELECT companyName
43      FROM company
44      WHERE city = 'Rye')
45

```

employeeName companyName salary

Adams	Meyer	22000
Curry	Meyer	25000
Lindsay	Meyer	9000
Smith	Walters	22000
Wong		22000

Result Grid Form Editor Field Types

SQLAdditions < > Jump to

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Administration Schemas works 23 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
133	17:25:19	SELECT employeeName FROM managers WHERE managerName LIKE "%ll%" LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec
134	17:26:03	SELECT companyName, AVG(salary) AS "Average Salary" FROM works GROUP BY companyName	5 row(s) returned	0.000 sec / 0.000 sec
135	17:27:01	Write a SQL query to list the name of the companies with average salary of employees more than or equal to 20...	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your MySQL se...	0.015 sec
136	17:27:38	SELECT companyName, AVG(salary) AS "Average Salary" FROM works GROUP BY companyName	5 row(s) returned	0.000 sec / 0.000 sec
137	17:28:51	SELECT companyName FROM works GROUP BY companyName HAVING AVG(salary) >= 20000...	2 row(s) returned	0.000 sec / 0.000 sec
138	17:29:34	SELECT * FROM works WHERE companyName IN (SELECT companyName FROM company)	4 row(s) returned	0.016 sec / 0.000 sec

Object Info Session

17:29 21-08-2024 ENG IN

Write a SQL query find the number of rows in the Manages table. [Relevant tables: Manages; Hint: use COUNT()]

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator tables* data* SQL File 5* Limit to 1000 rows

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges
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- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

Result Grid | Filter Rows | Export | Wrap Cell Content: |

```

40   WHERE companyName IN
41   (
42     (SELECT companyName
43       FROM company
44       WHERE city = 'Rye')
45   •  SELECT COUNT(*) AS "Number of Rows"
46     FROM manages
47

```

Number of Rows

8

Result Grid Form Editor Field Types

SQLAdditions < > Jump to

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Administration Schemas Result 24 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
134	17:26:03	SELECT companyName, AVG(salary) AS "Average Salary" FROM works GROUP BY companyName	5 row(s) returned	0.000 sec / 0.000 sec
135	17:27:01	Write a SQL query to list the name of the companies with average salary of employees more than or equal to 20...	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your MySQL se...	0.015 sec
136	17:27:38	SELECT companyName, AVG(salary) AS "Average Salary" FROM works GROUP BY companyName	5 row(s) returned	0.000 sec / 0.000 sec
137	17:28:51	SELECT companyName FROM works GROUP BY companyName HAVING AVG(salary) >= 20000...	2 row(s) returned	0.000 sec / 0.000 sec
138	17:29:34	SELECT * FROM works WHERE companyName IN (SELECT companyName FROM company)	4 row(s) returned	0.016 sec / 0.000 sec
139	17:33:18	SELECT COUNT() AS "Number of Rows" FROM manages LIMIT 0, 1000	1 row(s) returned	0.032 sec / 0.000 sec

Object Info Session

17:33 21-08-2024 ENG IN

Write a SQL query to find the name and company of the employee earning the highest salary. [Relevant tables: Works; Hint: use a subquery using max() to find the highest salary.]

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator tables* data* SQL File 5* Limit to 1000 rows Jump to

MANAGEMENT

- Server Status
- Client Connections
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INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

Administration Schemas works 25 x

No object selected

Action Output

#	Time	Action	Message	Duration / Fetch
135	17:27:01	Write a SQL query to list the name of the companies with average salary of employees more than or equal to 20...	Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your MySQL se...	0.015 sec
136	17:27:38	SELECT companyName, AVG(salary) AS "Average Salary" FROM works GROUP BY companyName	5 row(s) returned	0.000 sec / 0.000 sec
137	17:28:51	SELECT companyName FROM works GROUP BY companyName HAVING AVG(salary) >= 20000	2 row(s) returned	0.000 sec / 0.000 sec
138	17:29:34	SELECT * FROM works WHERE companyName IN (SELECT companyName FROM com...)	4 row(s) returned	0.016 sec / 0.000 sec
139	17:33:18	SELECT COUNT(*) AS "Number of Rows" FROM manages LIMIT 0, 1000	1 row(s) returned	0.032 sec / 0.000 sec
140	17:34:07	SELECT employeeName, companyName FROM works WHERE salary = (SELECT MAX(salary) FROM ...)	1 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

17:38 ENG IN 21-08-2024