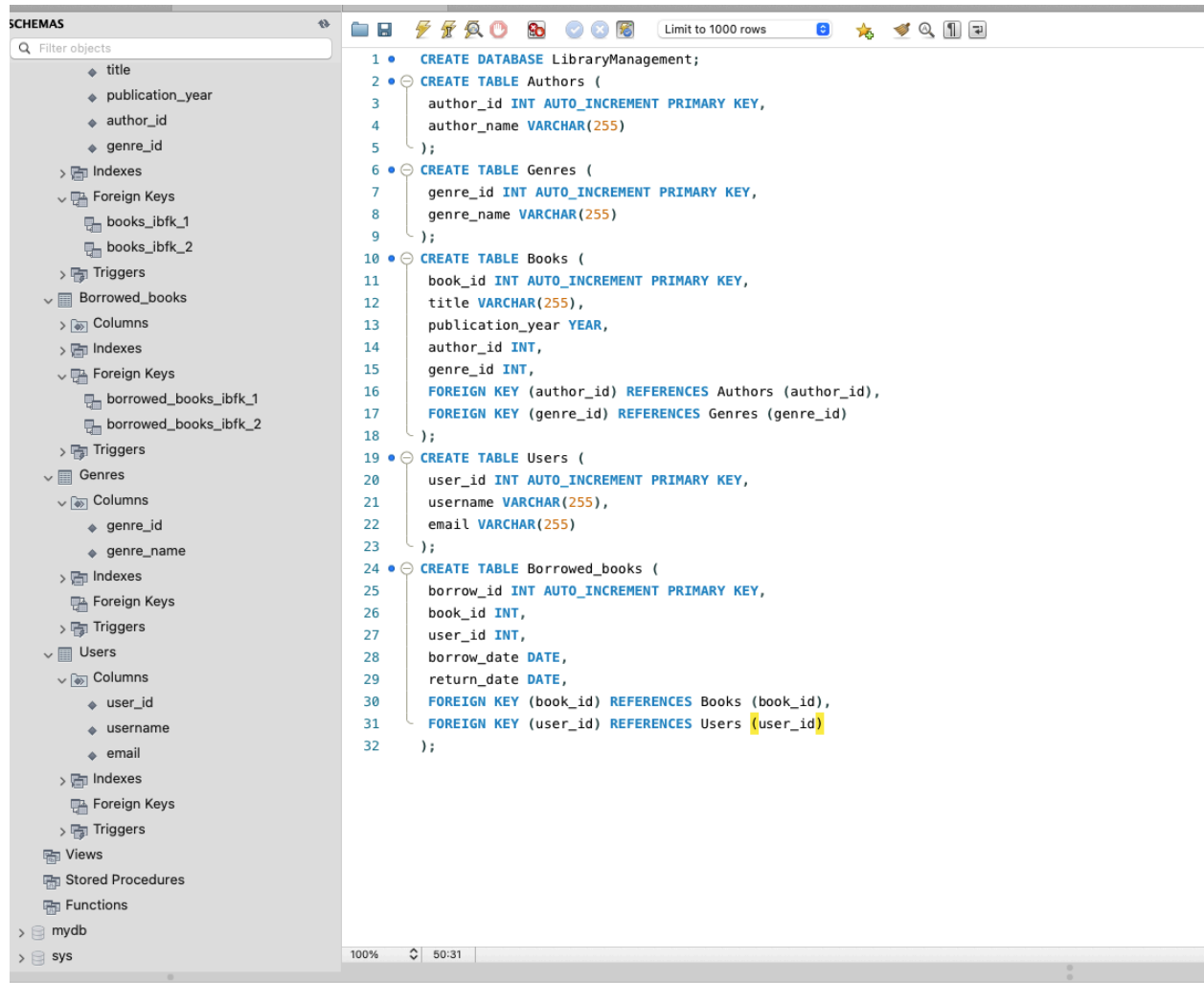


1.

The screenshot displays a database management interface with a left-hand sidebar and a main query editor. The sidebar, titled 'SCHEMAS', shows a tree view of the 'LibraryManagement' database. Under 'Tables', the 'Authors' table is selected, showing its columns: 'author\_id' and 'author\_name'. Other tables listed include 'Genres', 'Books', 'Users', 'Borrowed\_books', and 'Genres'. The main query editor, titled 'Query 5', contains the following SQL code:

```
1 • CREATE DATABASE LibraryManagement;
2 • CREATE TABLE Authors (
3     author_id INT AUTO_INCREMENT PRIMARY KEY,
4     author_name VARCHAR(255)
5 );
6 • CREATE TABLE Genres (
7     genre_id INT AUTO_INCREMENT PRIMARY KEY,
8     genre_name VARCHAR(255)
9 );
10 • CREATE TABLE Books (
11     book_id INT AUTO_INCREMENT PRIMARY KEY,
12     title VARCHAR(255),
13     publication_year YEAR,
14     author_id INT,
15     genre_id INT,
16     FOREIGN KEY (author_id) REFERENCES Authors (author_id),
17     FOREIGN KEY (genre_id) REFERENCES Genres (genre_id)
18 );
19 • CREATE TABLE Users (
20     user_id INT AUTO_INCREMENT PRIMARY KEY,
21     username VARCHAR(255),
22     email VARCHAR(255)
23 );
24 • CREATE TABLE Borrowed_books (
25     borrow_id INT AUTO_INCREMENT PRIMARY KEY,
26     book_id INT,
27     user_id INT,
28     borrow_date DATE,
29     return_date DATE,
30     FOREIGN KEY (book_id) REFERENCES Books (book_id),
31     FOREIGN KEY (user_id) REFERENCES Users (user_id)
32 );
```

The interface also includes a top bar with 'Administration' and 'Schemas' tabs, a search bar for 'Filter objects', and a status bar at the bottom indicating 'Query Completed'.



```
CREATE DATABASE LibraryManagement;

CREATE TABLE Authors (
  author_id INT AUTO_INCREMENT PRIMARY KEY,
  author_name VARCHAR(255)
);

CREATE TABLE Genres (
  genre_id INT AUTO_INCREMENT PRIMARY KEY,
  genre_name VARCHAR(255)
);

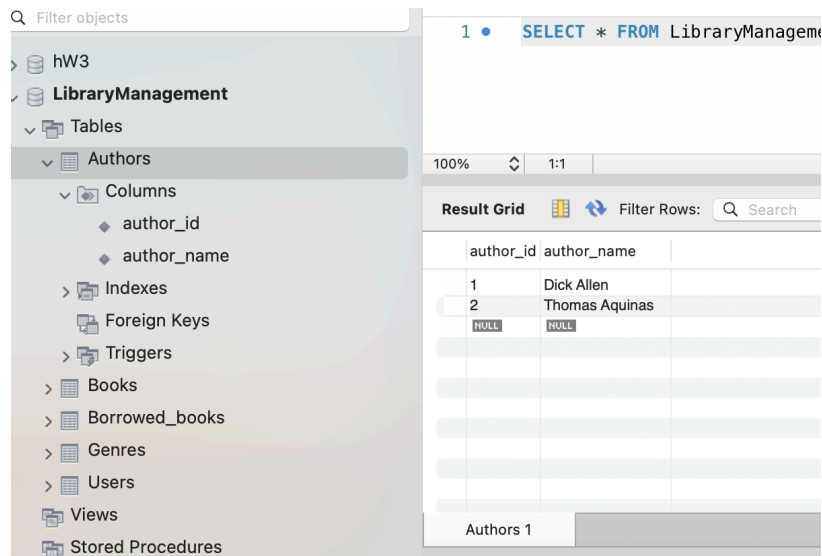
CREATE TABLE Books (
  book_id INT AUTO_INCREMENT PRIMARY KEY,
  title VARCHAR(255),
  publication_year YEAR,
  author_id INT,
```

```
genre_id INT,  
FOREIGN KEY (author_id) REFERENCES Authors (author_id),  
FOREIGN KEY (genre_id) REFERENCES Genres (genre_id)  
);  
CREATE TABLE Users (  
  user_id INT AUTO_INCREMENT PRIMARY KEY,  
  username VARCHAR(255),  
  email VARCHAR(255)  
);  
CREATE TABLE Borrowed_books (  
  borrow_id INT AUTO_INCREMENT PRIMARY KEY,  
  book_id INT,  
  user_id INT,  
  borrow_date DATE,  
  return_date DATE,  
  FOREIGN KEY (book_id) REFERENCES Books (book_id),  
  FOREIGN KEY (user_id) REFERENCES Users (user_id)  
);
```

2.

## Table Author

```
INSERT INTO authors (author_id, author_name) VALUES  
(1, 'Dick Allen'),  
(2, 'Thomas Aquinas');
```

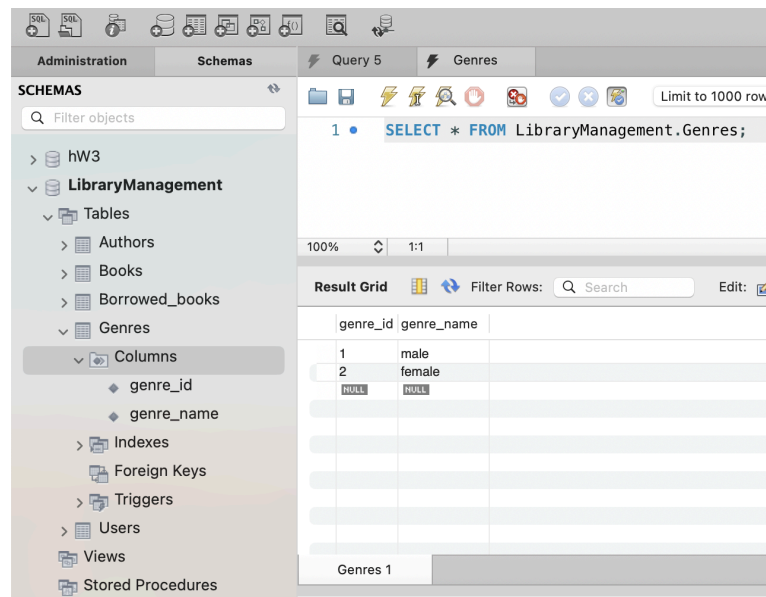


## Table Genres

INSERT INTO Genres (genre\_id, genre\_name) VALUES

(1, 'male'),

(2, 'female');



## Table Books

INSERT INTO Books (book\_id, title, publication\_year, author\_id, genre\_id) VALUES

(1, 'Defoes Britain', 2010, 2, 1),

(2, 'Tale of a Criminal Mind Gone Good', 2012, 1, 1);

Administration Schemas Query 5 Genres Books

Limit to 1000 rows

1 • `SELECT * FROM LibraryManagement.Books;`

100% 1:1

Result Grid Filter Rows: Search Edit: Export/Import:

| book_id | title                             | publication_year | author_id | genre_id |
|---------|-----------------------------------|------------------|-----------|----------|
| 1       | Defoes Britain                    | 2010             | 2         | 1        |
| 2       | Tale of a Criminal Mind Gone Good | 2012             | 1         | 1        |
| NULL    | NULL                              | NULL             | NULL      | NULL     |

Books 1

Action Output

|     | Time      | Action           | Response          |
|-----|-----------|------------------|-------------------|
| 236 | 17:36:... | SELECT * FROM... | 4 row(s) returned |
| 237 | 17:37:... | SELECT * FROM... | 0 row(s) returned |

## Table Users

INSERT INTO Users (user\_id, username, email) VALUES

(1, 'Ketrin', 'ktihonova@gmail.com'),

(2, 'Olga', 'olyalya@gmail.com');

Administration Schemas Query 5 Users

Limit to 1000

1 • `SELECT * FROM LibraryManagement.Users;`

100% 1:1

Result Grid Filter Rows: Search Edit:

| user_id | username | email               |
|---------|----------|---------------------|
| 1       | Ketrin   | ktihonova@gmail.com |
| 2       | Olga     | olyalya@gmail.com   |
| NULL    | NULL     | NULL                |

Users 1

## Table Borrowed\_books

INSERT INTO Borrowed\_books (borrow\_id, book\_id, user\_id, borrow\_date, return\_date)

VALUES

```
(1, 1, 2, '2022-09-12', '2023-10-12'),
(2, 2, 1, '2019-12-23', '2020-01-11');
```

[illegible]

3.

```
Limit to 1000 rows
1 • select orders.id as orders_id, orders.employee_id, orders.date,
2 orders.shipper_id,
3 customers.id as customers_id, customers.name, customers.contact, customers.address, customers.city,
4 customers.postal_code, customers.country,
5 shippers.name as shippers_name, shippers.phone as shippers_phone,
6 employees.last_name as employees_last_name, employees.first_name as employees_first_name, employees.birthdate as employees_birthdate,
7 employees.photo as employees_photo, employees.notes as employees_notes,
8 order_details.quantity as orderDetails_quantity,
9 products.name as product_name, products.id as product_id, products.unit as product_unit, products.price as product_price,
10 suppliers.name as suppliers_name, suppliers.contact as suppliers_contact, suppliers.address as suppliers_address, suppliers.city as suppliers_city,
11 suppliers.postal_code as suppliers_code, suppliers.country as suppliers_counrty, suppliers.phone as suppliers_phone,
12 categories.name as categories_name, categories.description as categories_des
13 from orders
14 inner join customers
15 On customers.id = orders.customer_id
16 inner join shippers
17 On shippers.id = orders.shipper_id
18 inner join employees
19 On employees.employee_id = orders.employee_id
20 inner join order_details
21 On order_details.order_id = orders.id
22 inner join products
23 On products.id = order_details.product_id
24 inner join suppliers
25 On suppliers.id = products.supplier_id
26 inner join categories
27 On categories.id = products.category_id;
28
```

```
select orders.id as orders_id, orders.employee_id, orders.date,
orders.shipper_id,
customers.id as customers_id, customers.name, customers.contact, customers.address,
customers.city,
customers.postal_code, customers.country,
shippers.name as shippers_name, shippers.phone as shippers_phone,
employees.last_name as employees_last_name, employees.first_name as
employees_first_name, employees.birthdate as employees_birthdate,
employees.photo as employees_photo, employees.notes as employees_notes,
order_details.quantity as orderDetails_quantity,
products.name as product_name, products.id as product_id, products.unit as product_unit,
products.price as product_price,
suppliers.name as suppliers_name, suppliers.contact as suppliers_contact, suppliers.address
as suppliers_address, suppliers.city as suppliers_city,
suppliers.postal_code as suppliers_code, suppliers.country as suppliers_counrty,
suppliers.phone as suppliers_phone,
categories.name as categories_name, categories.description as categories_des
from orders
inner join customers
On customers.id = orders.customer_id
inner join shippers
```

On shippers.id = orders.shipper\_id

inner join employees

On employees.employee\_id = orders.employee\_id

inner join order\_details

On order\_details.order\_id = orders.id

inner join products

On products.id = order\_details.product\_id

inner join suppliers

On suppliers.id = products.supplier\_id

inner join categories

On categories.id = products.category\_id;

| orders_id | employee_id | date     | shipper_id | customers_id | name        | contact      | address  | city     | postal_code | country          | shippers_name  | shippers_phon | employees_last_n | employees_first_na | employees_birthd | employees_phon | employees_notes         | orc |
|-----------|-------------|----------|------------|--------------|-------------|--------------|----------|----------|-------------|------------------|----------------|---------------|------------------|--------------------|------------------|----------------|-------------------------|-----|
| 10365     | 3           | 1996.. 2 | 3          | Antoni...    | Antonio...  | Matader...   | Mex...   | 05023    | Mexico      | United Package   | (503) 555-3199 | Leverling     | Janet            |                    | 1963-08-30       | EmpID3.pic     | Janet has a BS degr...  | 24  |
| 10383     | 8           | 1996.. 3 | 4          | Aroun...     | Thomas...   | 120 Han...   | Lon...   | WA1 1DP  | UK          | Federal Shipping | (503) 555-9931 | Callahan      | Laura            |                    | 1958-01-09       | EmpID8.pic     | Laura received a BA...  | 20  |
| 10355     | 6           | 1996.. 1 | 4          | Aroun...     | Thomas...   | 120 Han...   | Lon...   | WA1 1DP  | UK          | Speedy Express   | (503) 555-9831 | Suyama        | Michael          |                    | 1963-07-02       | EmpID6.pic     | Michael is a graduat... | 25  |
| 10385     | 8           | 1996.. 3 | 4          | Aroun...     | Thomas...   | 120 Han...   | Lon...   | WA1 1DP  | UK          | Federal Shipping | (503) 555-9931 | Callahan      | Laura            |                    | 1958-01-09       | EmpID8.pic     | Laura received a BA...  | 15  |
| 10355     | 6           | 1996.. 1 | 4          | Aroun...     | Thomas...   | 120 Han...   | Lon...   | WA1 1DP  | UK          | Speedy Express   | (503) 555-9831 | Suyama        | Michael          |                    | 1963-07-02       | EmpID6.pic     | Michael is a graduat... | 25  |
| 10383     | 8           | 1996.. 3 | 4          | Aroun...     | Thomas...   | 120 Han...   | Lon...   | WA1 1DP  | UK          | Federal Shipping | (503) 555-9931 | Callahan      | Laura            |                    | 1958-01-09       | EmpID8.pic     | Laura received a BA...  | 20  |
| 10384     | 3           | 1996.. 3 | 5          | Berglu...    | Christin... | Bergvu...    | Lulea    | S-958 22 | Sweden      | Federal Shipping | (503) 555-9931 | Leverling     | Janet            |                    | 1963-08-30       | EmpID3.pic     | Janet has a BS degr...  | 15  |
| 10280     | 2           | 1996.. 1 | 5          | Berglu...    | Christin... | Bergvu...    | Lulea    | S-958 22 | Sweden      | Federal Shipping | (503) 555-9931 | Leverling     | Janet            |                    | 1963-08-30       | EmpID3.pic     | Janet has a BS degr...  | 28  |
| 10280     | 2           | 1996.. 1 | 5          | Berglu...    | Christin... | Bergvu...    | Lulea    | S-958 22 | Sweden      | Speedy Express   | (503) 555-9831 | Fuller        | Andrew           |                    | 1952-02-19       | EmpID2.pic     | Andrew received his...  | 30  |
| 10278     | 8           | 1996.. 2 | 5          | Berglu...    | Christin... | Bergvu...    | Lulea    | S-958 22 | Sweden      | United Package   | (503) 555-3199 | Callahan      | Laura            |                    | 1958-01-09       | EmpID8.pic     | Laura received a BA...  | 25  |
| 10278     | 8           | 1996.. 2 | 5          | Berglu...    | Christin... | Bergvu...    | Lulea    | S-958 22 | Sweden      | United Package   | (503) 555-3199 | Callahan      | Laura            |                    | 1958-01-09       | EmpID8.pic     | Laura received a BA...  | 15  |
| 10278     | 8           | 1996.. 2 | 5          | Berglu...    | Christin... | Bergvu...    | Lulea    | S-958 22 | Sweden      | United Package   | (503) 555-3199 | Callahan      | Laura            |                    | 1958-01-09       | EmpID8.pic     | Laura received a BA...  | 8   |
| 10280     | 2           | 1996.. 1 | 5          | Berglu...    | Christin... | Bergvu...    | Lulea    | S-958 22 | Sweden      | Speedy Express   | (503) 555-9831 | Fuller        | Andrew           |                    | 1952-02-19       | EmpID2.pic     | Andrew received his...  | 20  |
| 10278     | 8           | 1996.. 2 | 5          | Berglu...    | Christin... | Bergvu...    | Lulea    | S-958 22 | Sweden      | United Package   | (503) 555-3199 | Callahan      | Laura            |                    | 1958-01-09       | EmpID8.pic     | Laura received a BA...  | 16  |
| 10280     | 2           | 1996.. 1 | 5          | Berglu...    | Christin... | Bergvu...    | Lulea    | S-958 22 | Sweden      | Speedy Express   | (503) 555-9831 | Fuller        | Andrew           |                    | 1952-02-19       | EmpID2.pic     | Andrew received his...  | 12  |
| 10360     | 4           | 1996.. 3 | 7          | Blond...     | Frederi...  | 24, plac...  | Stras... | 67000    | France      | Federal Shipping | (503) 555-9931 | Peacock       | Margaret         |                    | 1958-09-19       | EmpID4.pic     | Margaret holds a BA...  | 28  |
| 10360     | 4           | 1996.. 3 | 7          | Blond...     | Frederi...  | 24, plac...  | Stras... | 67000    | France      | Federal Shipping | (503) 555-9931 | Peacock       | Margaret         |                    | 1958-09-19       | EmpID4.pic     | Margaret holds a BA...  | 35  |
| 10360     | 4           | 1996.. 3 | 7          | Blond...     | Frederi...  | 24, plac...  | Stras... | 67000    | France      | Federal Shipping | (503) 555-9931 | Peacock       | Margaret         |                    | 1958-09-19       | EmpID4.pic     | Margaret holds a BA...  | 10  |
| 10360     | 4           | 1996.. 3 | 7          | Blond...     | Frederi...  | 24, plac...  | Stras... | 67000    | France      | Federal Shipping | (503) 555-9931 | Peacock       | Margaret         |                    | 1958-09-19       | EmpID4.pic     | Margaret holds a BA...  | 35  |
| 10360     | 4           | 1996.. 3 | 7          | Blond...     | Frederi...  | 24, plac...  | Stras... | 67000    | France      | Federal Shipping | (503) 555-9931 | Peacock       | Margaret         |                    | 1958-09-19       | EmpID4.pic     | Margaret holds a BA...  | 30  |
| 10297     | 5           | 1996.. 2 | 7          | Blond...     | Frederi...  | 24, plac...  | Stras... | 67000    | France      | United Package   | (503) 555-3199 | Buchanan      | Steven           |                    | 1955-03-04       | EmpID5.pic     | Steven Buchanan gr...   | 20  |
| 10265     | 2           | 1996.. 1 | 7          | Blond...     | Frederi...  | 24, plac...  | Stras... | 67000    | France      | Speedy Express   | (503) 555-9831 | Fuller        | Andrew           |                    | 1952-02-19       | EmpID2.pic     | Andrew received his...  | 20  |
| 10297     | 5           | 1996.. 2 | 7          | Blond...     | Frederi...  | 24, plac...  | Stras... | 67000    | France      | United Package   | (503) 555-3199 | Buchanan      | Steven           |                    | 1955-03-04       | EmpID5.pic     | Steven Buchanan gr...   | 60  |
| 10265     | 2           | 1996.. 1 | 7          | Blond...     | Frederi...  | 24, plac...  | Stras... | 67000    | France      | Speedy Express   | (503) 555-9831 | Fuller        | Andrew           |                    | 1952-02-19       | EmpID2.pic     | Andrew received his...  | 30  |
| 10326     | 4           | 1996.. 2 | 8          | Bolido...    | Martin...   | C/ Araqu...  | Mad...   | 28023    | Spain       | United Package   | (503) 555-3199 | Peacock       | Margaret         |                    | 1958-09-19       | EmpID4.pic     | Margaret holds a BA...  | 50  |
| 10326     | 4           | 1996.. 2 | 8          | Bolido...    | Martin...   | C/ Araqu...  | Mad...   | 28023    | Spain       | United Package   | (503) 555-3199 | Peacock       | Margaret         |                    | 1958-09-19       | EmpID4.pic     | Margaret holds a BA...  | 16  |
| 10362     | 3           | 1996.. 1 | 9          | Bon app      | Laurenc...  | 12, rue d... | Mar...   | 13008    | France      | Speedy Express   | (503) 555-9831 | Leverling     | Janet            |                    | 1963-08-30       | EmpID3.pic     | Janet has a BS degr...  | 24  |
| 10331     | 9           | 1996.. 1 | 9          | Bon app      | Laurenc...  | 12, rue d... | Mar...   | 13008    | France      | Speedy Express   | (503) 555-9831 | Dodsworth     | Anne             |                    | 1969-07-02       | EmpID9.pic     | Anne has a BA degr...   | 15  |
| 10362     | 3           | 1996.. 1 | 9          | Bon app      | Laurenc...  | 12, rue d... | Mar...   | 13008    | France      | Speedy Express   | (503) 555-9831 | Leverling     | Janet            |                    | 1963-08-30       | EmpID3.pic     | Janet has a BS degr...  | 20  |
| 10340     | 1           | 1996.. 3 | 9          | Bon app      | Laurenc...  | 12, rue d... | Mar...   | 13008    | France      | Federal Shipping | (503) 555-9931 | Davolio       | Nancy            |                    | 1968-12-08       | EmpID1.pic     | Education includes...   | 40  |
| 10340     | 1           | 1996.. 3 | 9          | Bon app      | Laurenc...  | 12, rue d... | Mar...   | 13008    | France      | Federal Shipping | (503) 555-9931 | Davolio       | Nancy            |                    | 1968-12-08       | EmpID1.pic     | Education includes...   | 12  |
| 10362     | 3           | 1996.. 1 | 9          | Bon app      | Laurenc...  | 12, rue d... | Mar...   | 13008    | France      | Speedy Express   | (503) 555-9831 | Leverling     | Janet            |                    | 1963-08-30       | EmpID3.pic     | Janet has a BS degr...  | 50  |
| 10340     | 1           | 1996.. 3 | 9          | Bon app      | Laurenc...  | 12, rue d... | Mar...   | 13008    | France      | Federal Shipping | (503) 555-9931 | Davolio       | Nancy            |                    | 1968-12-08       | EmpID1.pic     | Education includes...   | 20  |
| 10431     | 4           | 1997.. 2 | 10         | Botto...     | Elizabet... | 23 Tsaw...   | Tsa...   | T2F 6M4  | Canada      | United Package   | (503) 555-3199 | Peacock       | Margaret         |                    | 1958-09-19       | EmpID4.pic     | Margaret holds a BA...  | 50  |
| 10389     | 4           | 1996.. 2 | 10         | Botto...     | Elizabet... | 23 Tsaw...   | Tsa...   | T2F 6M4  | Canada      | United Package   | (503) 555-3199 | Peacock       | Margaret         |                    | 1958-09-19       | EmpID4.pic     | Margaret holds a BA...  | 30  |
| 10389     | 4           | 1996.. 2 | 10         | Botto...     | Elizabet... | 23 Tsaw...   | Tsa...   | T2F 6M4  | Canada      | United Package   | (503) 555-3199 | Peacock       | Margaret         |                    | 1958-09-19       | EmpID4.pic     | Margaret holds a BA...  | 20  |
| 10389     | 4           | 1996.. 2 | 10         | Botto...     | Elizabet... | 23 Tsaw...   | Tsa...   | T2F 6M4  | Canada      | United Package   | (503) 555-3199 | Peacock       | Margaret         |                    | 1958-09-19       | EmpID4.pic     | Margaret holds a BA...  | 15  |
| 10389     | 4           | 1996.. 2 | 10         | Botto...     | Elizabet... | 23 Tsaw...   | Tsa...   | T2F 6M4  | Canada      | United Package   | (503) 555-3199 | Peacock       | Margaret         |                    | 1958-09-19       | EmpID4.pic     | Margaret holds a BA...  | 16  |
| 10289     | 7           | 1996.. 3 | 11         | Bs Be...     | Victoria... | Fauntler...  | Lon...   | EC2 5NT  | UK          | Federal Shipping | (503) 555-9931 | King          | Robert           |                    | 1960-05-29       | EmpID7.pic     | Robert King served l... | 9   |
| 10289     | 7           | 1996.. 3 | 11         | Bs Be...     | Victoria... | Fauntler...  | Lon...   | EC2 5NT  | UK          | Federal Shipping | (503) 555-9931 | King          | Robert           |                    | 1960-05-29       | EmpID7.pic     | Robert King served l... | 30  |
| 10259     | 4           | 1996.. 3 | 13         | Centr...     | Francis...  | Sierras...   | Mex...   | 05022    | Mexico      | Federal Shipping | (503) 555-9931 | Peacock       | Margaret         |                    | 1958-09-19       | EmpID4.pic     | Margaret holds a BA...  | 1   |
| 10259     | 4           | 1996.. 3 | 13         | Centr...     | Francis...  | Sierras...   | Mex...   | 05022    | Mexico      | Federal Shipping | (503) 555-9931 | Peacock       | Margaret         |                    | 1958-09-19       | EmpID4.pic     | Margaret holds a BA...  | 10  |
| 10370     | 6           | 1996.. 2 | 14         | Chop...      | Yang W...   | Hauptstr...  | Bern     | 3012     | Switze...   | United Package   | (503) 555-3199 | Suyama        | Michael          |                    | 1963-07-02       | EmpID6.pic     | Michael is a graduat... | 20  |
| 10370     | 6           | 1996.. 2 | 14         | Chop...      | Yang W...   | Hauptstr...  | Bern     | 3012     | Switze...   | United Package   | (503) 555-3199 | Suyama        | Michael          |                    | 1963-07-02       | EmpID6.pic     | Michael is a graduat... | 30  |
| 10370     | 6           | 1996.. 2 | 14         | Chop...      | Yang W...   | Hauptstr...  | Bern     | 3012     | Switze...   | United Package   | (503) 555-3199 | Suyama        | Michael          |                    | 1963-07-02       | EmpID6.pic     | Michael is a graduat... | 15  |
| 10254     | 5           | 1996.. 2 | 14         | Chop...      | Yang W...   | Hauptstr...  | Bern     | 3012     | Switze...   | United Package   | (503) 555-3199 | Buchanan      | Steven           |                    | 1955-03-04       | EmpID5.pic     | Steven Buchanan gr...   | 21  |
| 10254     | 5           | 1996.. 2 | 14         | Chop...      | Yang W...   | Hauptstr...  | Bern     | 3012     | Switze...   | United Package   | (503) 555-3199 | Buchanan      | Steven           |                    | 1955-03-04       | EmpID5.pic     | Steven Buchanan gr...   | 21  |
| 10254     | 5           | 1996.. 2 | 14         | Chop...      | Yang W...   | Hauptstr...  | Bern     | 3012     | Switze...   | United Package   | (503) 555-3199 | Buchanan      | Steven           |                    | 1955-03-04       | EmpID5.pic     | Steven Buchanan gr...   | 15  |



## 4.1

100% 1:25

### Result Grid

Count

518

```
Select Count(*)
From(
select orders.id as orders_id, orders.employee_id, orders.date,
orders.shipper_id,
customers.id as customers_id, customers.name, customers.contact, customers.address,
customers.city,
customers.postal_code, customers.country,
shippers.name as shippers_name, shippers.phone as shippers_phone,
employees.last_name as employees_last_name, employees.first_name as
employees_first_name, employees.birthdate as employees_birthdate,
employees.photo as employees_photo, employees.notes as employees_notes,
order_details.quantity as orderDetails_quantity,
products.name as product_name, products.id as product_id, products.unit as product_unit,
products.price as product_price,
suppliers.name as suppliers_name, suppliers.contact as suppliers_contact, suppliers.address
as suppliers_address, suppliers.city as suppliers_city,
suppliers.postal_code as suppliers_code, suppliers.country as suppliers_counrty,
suppliers.phone as suppliers_phone,
categories.name as categories_name, categories.description as categories_des
from orders
inner join customers
On customers.id = orders.customer_id
inner join shippers
On shippers.id = orders.shipper_id
inner join employees
On employees.employee_id = orders.employee_id
inner join order_details
On order_details.order_id = orders.id
inner join products
On products.id = order_details.product_id
inner join suppliers
On suppliers.id = products.supplier_id
inner join categories
On categories.id = products.category_id
) as count;
```

## 4.3

```

orders
Limit to 1000 rows

1
2 • select orders.id as orders_id, orders.employee_id, orders.date,
3   orders.shipper_id,
4   customers.id as customers_id, customers.name, customers.contact, customers.address, customers.city,
5   customers.postal_code, customers.country,
6   shippers.name as shippers_name, shippers.phone as shippers_phone,
7   employees.last_name as employees_last_name, employees.first_name as employees_first_name, employees.birthdate as employees_birthdate,
8   employees.photo as employees_photo, employees.notes as employees_notes,
9   order_details.quantity as order_details_quantity,
10  products.name as product_name, products.id as product_id, products.unit as product_unit, products.price as product_price,
11  suppliers.name as suppliers_name, suppliers.contact as suppliers_contact, suppliers.address as suppliers_address, suppliers.city as suppliers_city,
12  suppliers.postal_code as suppliers_code, suppliers.country as suppliers_country, suppliers.phone as suppliers_phone,
13  categories.name as categories_name, categories.description as categories_des
14 from orders
15 inner join customers
16 On customers.id = orders.customer_id
17 inner join shippers
18 On shippers.id = orders.shipper_id
19 inner join employees
20 On employees.employee_id = orders.employee_id
21 inner join order_details
22 On order_details.order_id = orders.id
23 inner join products
24 On products.id = order_details.product_id
25 inner join suppliers
26 On suppliers.id = products.supplier_id
27 inner join categories
28 On categories.id = products.category_id
29 WHERE orders.employee_id > 3 AND orders.employee_id <= 10;
30

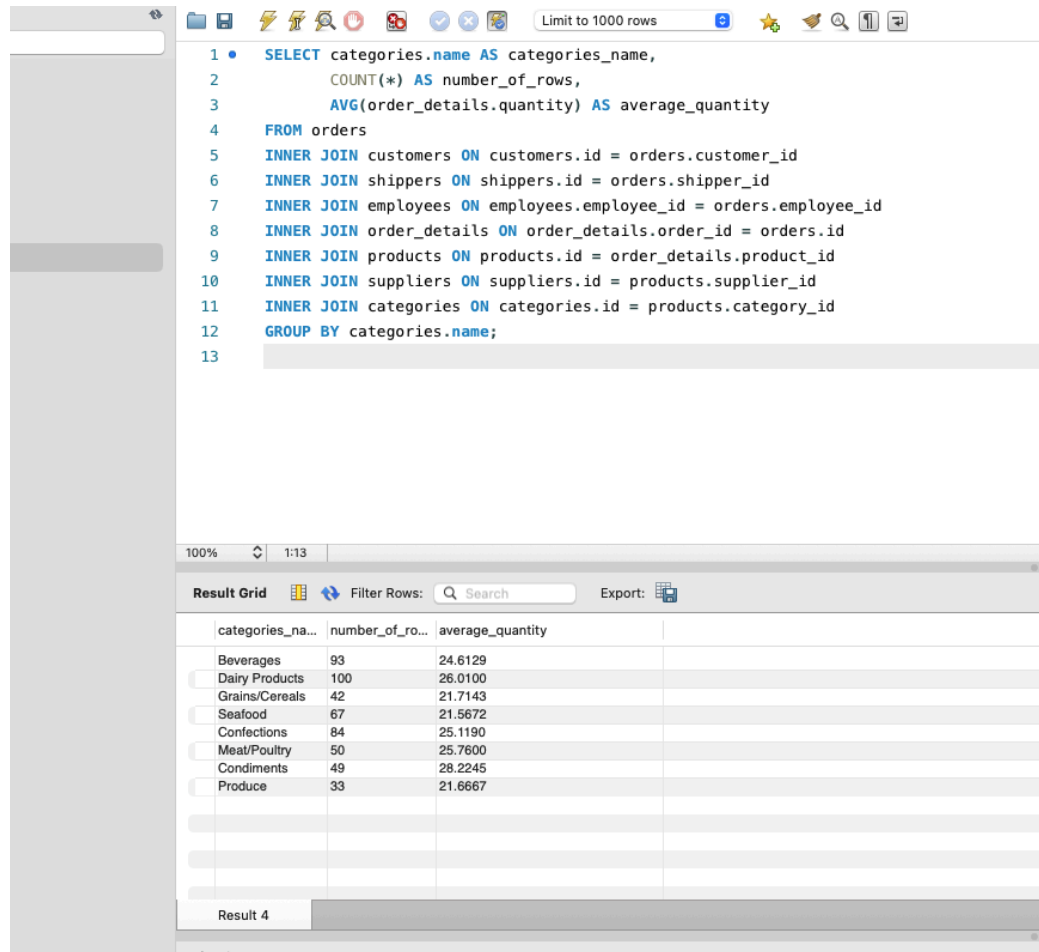
```

| orders_id | employee_id | date    | shipper_id | customers_id | name      | contact     | address      | city    | postal_code | country   | shippers_name    | shippers_phon  | employees_last_n | employees_first |
|-----------|-------------|---------|------------|--------------|-----------|-------------|--------------|---------|-------------|-----------|------------------|----------------|------------------|-----------------|
| 10308     | 7           | 1996... | 3          | 2            | Ana Tr... | Ana Tru...  | Avda. de...  | Mex...  | 05021       | Mexico    | Federal Shipping | (503) 555-9931 | King             | Robert          |
| 10308     | 7           | 1996... | 3          | 2            | Ana Tr... | Ana Tru...  | Avda. de...  | Mex...  | 05021       | Mexico    | Federal Shipping | (503) 555-9931 | King             | Robert          |
| 10383     | 8           | 1996... | 3          | 4            | Aroun...  | Thomas...   | 120 Han...   | Lon...  | WA1 1DP     | UK        | Federal Shipping | (503) 555-9931 | Callahan         | Laura           |
| 10383     | 8           | 1996... | 3          | 4            | Aroun...  | Thomas...   | 120 Han...   | Lon...  | WA1 1DP     | UK        | Federal Shipping | (503) 555-9931 | Callahan         | Laura           |
| 10355     | 6           | 1996... | 1          | 4            | Aroun...  | Thomas...   | 120 Han...   | Lon...  | WA1 1DP     | UK        | Speedy Express   | (503) 555-9831 | Suyama           | Michael         |
| 10383     | 8           | 1996... | 3          | 4            | Aroun...  | Thomas...   | 120 Han...   | Lon...  | WA1 1DP     | UK        | Federal Shipping | (503) 555-9931 | Callahan         | Laura           |
| 10355     | 6           | 1996... | 1          | 4            | Aroun...  | Thomas...   | 120 Han...   | Lon...  | WA1 1DP     | UK        | Speedy Express   | (503) 555-9831 | Suyama           | Michael         |
| 10278     | 8           | 1996... | 2          | 5            | Berglu... | Christin... | Berguvs...   | Lulea   | S-958 22    | Sweden    | United Package   | (503) 555-3199 | Callahan         | Laura           |
| 10278     | 8           | 1996... | 2          | 5            | Berglu... | Christin... | Berguvs...   | Lulea   | S-958 22    | Sweden    | United Package   | (503) 555-3199 | Callahan         | Laura           |
| 10278     | 8           | 1996... | 2          | 5            | Berglu... | Christin... | Berguvs...   | Lulea   | S-958 22    | Sweden    | United Package   | (503) 555-3199 | Callahan         | Laura           |
| 10278     | 8           | 1996... | 2          | 5            | Berglu... | Christin... | Berguvs...   | Lulea   | S-958 22    | Sweden    | United Package   | (503) 555-3199 | Callahan         | Laura           |
| 10360     | 4           | 1996... | 3          | 7            | Blond...  | Frederi...  | 24, plac...  | Stra... | 67000       | France    | Federal Shipping | (503) 555-9931 | Peacock          | Margaret        |
| 10360     | 4           | 1996... | 3          | 7            | Blond...  | Frederi...  | 24, plac...  | Stra... | 67000       | France    | Federal Shipping | (503) 555-9931 | Peacock          | Margaret        |
| 10360     | 4           | 1996... | 3          | 7            | Blond...  | Frederi...  | 24, plac...  | Stra... | 67000       | France    | Federal Shipping | (503) 555-9931 | Peacock          | Margaret        |
| 10297     | 5           | 1996... | 2          | 7            | Blond...  | Frederi...  | 24, plac...  | Stra... | 67000       | France    | United Package   | (503) 555-3199 | Buchanan         | Steven          |
| 10360     | 4           | 1996... | 3          | 7            | Blond...  | Frederi...  | 24, plac...  | Stra... | 67000       | France    | Federal Shipping | (503) 555-9931 | Peacock          | Margaret        |
| 10360     | 4           | 1996... | 3          | 7            | Blond...  | Frederi...  | 24, plac...  | Stra... | 67000       | France    | Federal Shipping | (503) 555-9931 | Peacock          | Margaret        |
| 10297     | 5           | 1996... | 2          | 7            | Blond...  | Frederi...  | 24, plac...  | Stra... | 67000       | France    | United Package   | (503) 555-3199 | Buchanan         | Steven          |
| 10326     | 4           | 1996... | 2          | 8            | Boldo...  | Martin...   | C/ Araqu...  | Mad...  | 28023       | Spain     | United Package   | (503) 555-3199 | Peacock          | Margaret        |
| 10326     | 4           | 1996... | 2          | 8            | Boldo...  | Martin...   | C/ Araqu...  | Mad...  | 28023       | Spain     | United Package   | (503) 555-3199 | Peacock          | Margaret        |
| 10331     | 9           | 1996... | 1          | 9            | Bon app   | Laurenc...  | 12, rue d... | Mar...  | 13008       | France    | Speedy Express   | (503) 555-9831 | Dodsworth        | Anne            |
| 10389     | 4           | 1996... | 2          | 10           | Botto...  | Elizabet... | 23 Tsaw...   | Tsa...  | T2F 8M4     | Canada    | United Package   | (503) 555-3199 | Peacock          | Margaret        |
| 10431     | 4           | 1997... | 2          | 10           | Botto...  | Elizabet... | 23 Tsaw...   | Tsa...  | T2F 8M4     | Canada    | United Package   | (503) 555-3199 | Peacock          | Margaret        |
| 10411     | 9           | 1997... | 3          | 10           | Botto...  | Elizabet... | 23 Tsaw...   | Tsa...  | T2F 8M4     | Canada    | Federal Shipping | (503) 555-9931 | Dodsworth        | Anne            |
| 10431     | 4           | 1997... | 2          | 10           | Botto...  | Elizabet... | 23 Tsaw...   | Tsa...  | T2F 8M4     | Canada    | United Package   | (503) 555-3199 | Peacock          | Margaret        |
| 10389     | 4           | 1996... | 2          | 10           | Botto...  | Elizabet... | 23 Tsaw...   | Tsa...  | T2F 8M4     | Canada    | United Package   | (503) 555-3199 | Peacock          | Margaret        |
| 10389     | 4           | 1996... | 2          | 10           | Botto...  | Elizabet... | 23 Tsaw...   | Tsa...  | T2F 8M4     | Canada    | United Package   | (503) 555-3199 | Peacock          | Margaret        |
| 10411     | 9           | 1997... | 3          | 10           | Botto...  | Elizabet... | 23 Tsaw...   | Tsa...  | T2F 8M4     | Canada    | Federal Shipping | (503) 555-9931 | Dodsworth        | Anne            |
| 10389     | 4           | 1996... | 2          | 10           | Botto...  | Elizabet... | 23 Tsaw...   | Tsa...  | T2F 8M4     | Canada    | United Package   | (503) 555-3199 | Peacock          | Margaret        |
| 10431     | 4           | 1997... | 2          | 10           | Botto...  | Elizabet... | 23 Tsaw...   | Tsa...  | T2F 8M4     | Canada    | United Package   | (503) 555-3199 | Peacock          | Margaret        |
| 10411     | 9           | 1997... | 3          | 10           | Botto...  | Elizabet... | 23 Tsaw...   | Tsa...  | T2F 8M4     | Canada    | Federal Shipping | (503) 555-9931 | Dodsworth        | Anne            |
| 10289     | 7           | 1996... | 3          | 11           | Bs Be...  | Victoria... | Fauntler...  | Lon...  | EC2 5NT     | UK        | Federal Shipping | (503) 555-9931 | King             | Robert          |
| 10289     | 7           | 1996... | 3          | 11           | Bs Be...  | Victoria... | Fauntler...  | Lon...  | EC2 5NT     | UK        | Federal Shipping | (503) 555-9931 | King             | Robert          |
| 10259     | 4           | 1996... | 3          | 13           | Centr...  | Francis...  | Sierras...   | Mex...  | 05022       | Mexico    | Federal Shipping | (503) 555-9931 | Peacock          | Margaret        |
| 10259     | 4           | 1996... | 3          | 13           | Centr...  | Francis...  | Sierras...   | Mex...  | 05022       | Mexico    | Federal Shipping | (503) 555-9931 | Peacock          | Margaret        |
| 10254     | 5           | 1996... | 2          | 14           | Chop...   | Yang W...   | Hauptstr...  | Bern    | 3012        | Switze... | United Package   | (503) 555-3199 | Buchanan         | Steven          |
| 10370     | 6           | 1996... | 2          | 14           | Chop...   | Yang W...   | Hauptstr...  | Bern    | 3012        | Switze... | United Package   | (503) 555-3199 | Suyama           | Michael         |
| 10254     | 5           | 1996... | 2          | 14           | Chop...   | Yang W...   | Hauptstr...  | Bern    | 3012        | Switze... | United Package   | (503) 555-3199 | Buchanan         | Steven          |
| 10370     | 6           | 1996... | 2          | 14           | Chop...   | Yang W...   | Hauptstr...  | Bern    | 3012        | Switze... | United Package   | (503) 555-3199 | Suyama           | Michael         |
| 10254     | 5           | 1996... | 2          | 14           | Chop...   | Yang W...   | Hauptstr...  | Bern    | 3012        | Switze... | United Package   | (503) 555-3199 | Buchanan         | Steven          |
| 10370     | 6           | 1996... | 2          | 14           | Chop...   | Yang W...   | Hauptstr...  | Bern    | 3012        | Switze... | United Package   | (503) 555-3199 | Suyama           | Michael         |
| 10290     | 8           | 1996... | 1          | 15           | Come...   | Pedro A...  | Av. dos...   | Sao...  | 05432-043   | Brazil    | Speedy Express   | (503) 555-9831 | Callahan         | Laura           |
| 10290     | 8           | 1996... | 1          | 15           | Come...   | Pedro A...  | Av. dos...   | Sao...  | 05432-043   | Brazil    | Speedy Express   | (503) 555-9831 | Callahan         | Laura           |
| 10290     | 8           | 1996... | 1          | 15           | Come...   | Pedro A...  | Av. dos...   | Sao...  | 05432-043   | Brazil    | Speedy Express   | (503) 555-9831 | Callahan         | Laura           |
| 10290     | 8           | 1996... | 1          | 15           | Come...   | Pedro A...  | Av. dos...   | Sao...  | 05432-043   | Brazil    | Speedy Express   | (503) 555-9831 | Callahan         | Laura           |
| 10435     | 8           | 1997... | 2          | 16           | Conso...  | Elizabet... | Berkeley...  | Lon...  | WX1 6LT     | UK        | United Package   | (503) 555-3199 | Callahan         | Laura           |
| 10435     | 8           | 1997... | 2          | 16           | Conso...  | Elizabet... | Berkeley...  | Lon...  | WX1 6LT     | UK        | United Package   | (503) 555-3199 | Callahan         | Laura           |
| 10435     | 8           | 1997... | 2          | 16           | Conso...  | Elizabet... | Berkeley...  | Lon...  | WX1 6LT     | UK        | United Package   | (503) 555-3199 | Callahan         | Laura           |
| 10363     | 4           | 1996... | 3          | 17           | Drach...  | Sven Ol...  | Waisew...    | Aac...  | 52066       | Germa...  | Federal Shipping | (503) 555-9931 | Peacock          | Margaret        |
| 10363     | 4           | 1996... | 3          | 17           | Drach...  | Sven Ol...  | Waisew...    | Aac...  | 52066       | Germa...  | Federal Shipping | (503) 555-9931 | Peacock          | Margaret        |
| 10363     | 4           | 1996... | 3          | 17           | Drach...  | Sven Ol...  | Waisew...    | Aac...  | 52066       | Germa...  | Federal Shipping | (503) 555-9931 | Peacock          | Margaret        |
| 10363     | 4           | 1996... | 3          | 17           | Drach...  | Sven Ol...  | Waisew...    | Aac...  | 52066       | Germa...  | Federal Shipping | (503) 555-9931 | Peacock          | Margaret        |

```
Select orders.id as orders_id, orders.employee_id, orders.date,
orders.shipper_id,
customers.id as customers_id, customers.name, customers.contact, customers.address,
customers.city,
customers.postal_code, customers.country,
shippers.name as shippers_name, shippers.phone as shippers_phone,
employees.last_name as employees_last_name, employees.first_name as
employees_first_name, employees.birthdate as employees_birthdate,
employees.photo as employees_photo, employees.notes as employees_notes,
order_details.quantity as orderDetails_quantity,
products.name as product_name, products.id as product_id, products.unit as product_unit,
products.price as product_price,
suppliers.name as suppliers_name, suppliers.contact as suppliers_contact, suppliers.address
as suppliers_address, suppliers.city as suppliers_city,
suppliers.postal_code as suppliers_code, suppliers.country as suppliers_counrty,
suppliers.phone as suppliers_phone,
categories.name as categories_name, categories.description as categories_des
from orders
inner join customers
On customers.id = orders.customer_id
inner join shippers
On shippers.id = orders.shipper_id
inner join employees
On employees.employee_id = orders.employee_id
inner join order_details
On order_details.order_id = orders.id
inner join products
On products.id = order_details.product_id
inner join suppliers
On suppliers.id = products.supplier_id
inner join categories
On categories.id = products.category_id
WHERE orders.employee_id > 3 AND orders.employee_id <= 10;
```

4.4

```
SELECT categories.name AS categories_name,  
       COUNT(*) AS number_of_rows,  
       AVG(order_details.quantity) AS average_quantity  
FROM orders  
INNER JOIN customers ON customers.id = orders.customer_id  
INNER JOIN shippers ON shippers.id = orders.shipper_id  
INNER JOIN employees ON employees.employee_id = orders.employee_id  
INNER JOIN order_details ON order_details.order_id = orders.id  
INNER JOIN products ON products.id = order_details.product_id  
INNER JOIN suppliers ON suppliers.id = products.supplier_id  
INNER JOIN categories ON categories.id = products.category_id  
GROUP BY categories.name;
```



The screenshot shows a SQL IDE interface. The top toolbar includes icons for file operations, execution, and a 'Limit to 1000 rows' dropdown. The SQL editor contains the query from the previous block. Below the editor, the 'Result Grid' is displayed with a search bar and an 'Export' button. The results table has three columns: 'categories\_na...', 'number\_of\_ro...', and 'average\_quantity'. It lists eight categories with their respective row counts and average quantities.

| categories_na... | number_of_ro... | average_quantity |
|------------------|-----------------|------------------|
| Beverages        | 93              | 24.6129          |
| Dairy Products   | 100             | 26.0100          |
| Grains/Cereals   | 42              | 21.7143          |
| Seafood          | 67              | 21.5672          |
| Confections      | 84              | 25.1190          |
| Meat/Poultry     | 50              | 25.7600          |
| Condiments       | 49              | 28.2245          |
| Produce          | 33              | 21.6667          |

4.5 SELECT categories.name AS categories\_name,  
 COUNT(\*) AS number\_of\_rows,

```
select orders.id as orders_id, orders.employee_id, orders.date,
orders.shipper_id,
customers.id as customers_id, customers.name, customers.contact, customers.address,
customers.city,
```

customers.postal\_code, customers.country,  
shippers.name as shippers\_name, shippers.phone as shippers\_phone,  
employees.last\_name as employees\_last\_name, employees.first\_name as  
employees\_first\_name, employees.birthdate as employees\_birthdate,  
employees.photo as employees\_photo, employees.notes as employees\_notes,  
order\_details.quantity as orderDetails\_quantity,  
products.name as product\_name, products.id as product\_id, products.unit as product\_unit,  
products.price as product\_price,  
suppliers.name as suppliers\_name, suppliers.contact as suppliers\_contact, suppliers.address  
as suppliers\_address, suppliers.city as suppliers\_city,  
suppliers.postal\_code as suppliers\_code, suppliers.country as suppliers\_counrty,  
suppliers.phone as suppliers\_phone,  
categories.name as categories\_name, categories.description as categories\_des  
from orders  
left join customers On customers.id = orders.customer\_id  
left join shippers On shippers.id = orders.shipper\_id  
left join employees On employees.employee\_id = orders.employee\_id  
left join order\_details On order\_details.order\_id = orders.id  
left join products On products.id = order\_details.product\_id  
left join suppliers On suppliers.id = products.supplier\_id  
left join categories On categories.id = products.category\_id;

The screenshot shows a database IDE with a SQL query editor and a results grid. The query is as follows:

```

1 • SELECT categories.name AS categories_name,
2     COUNT(*) AS number_of_rows,
3     AVG(order_details.quantity) AS average_quantity
4 FROM orders
5 INNER JOIN customers ON customers.id = orders.customer_id
6 INNER JOIN shippers ON shippers.id = orders.shipper_id
7 INNER JOIN employees ON employees.employee_id = orders.employee_id
8 INNER JOIN order_details ON order_details.order_id = orders.id
9 INNER JOIN products ON products.id = order_details.product_id
10 INNER JOIN suppliers ON suppliers.id = products.supplier_id
11 INNER JOIN categories ON categories.id = products.category_id
12 WHERE order_details.quantity < 21
13 GROUP BY categories.name;
14
15

```

The results grid shows the following data:

| categories_na... | number_of_ro... | average_quantity |
|------------------|-----------------|------------------|
| Dairy Products   | 53              | 11.7358          |
| Beverages        | 52              | 12.7885          |
| Grains/Cereals   | 26              | 11.3077          |
| Confections      | 45              | 11.4889          |
| Seafood          | 42              | 12.1429          |
| Meat/Poultry     | 29              | 13.4138          |
| Condiments       | 27              | 12.9630          |
| Produce          | 21              | 13.2381          |

## 4.6

```

SELECT categories.name AS categories_name,
       COUNT(*) AS number_of_rows,
       AVG(order_details.quantity) AS average_quantity
FROM orders
INNER JOIN customers ON customers.id = orders.customer_id
INNER JOIN shippers ON shippers.id = orders.shipper_id

```



INNER JOIN employees ON employees.employee\_id = orders.employee\_id

INNER JOIN order\_details ON order\_details.order\_id = orders.id

INNER JOIN products ON products.id = order\_details.product\_id

INNER JOIN suppliers ON suppliers.id = products.supplier\_id

INNER JOIN categories ON categories.id = products.category\_id

Where order\_details.quantity < 21

GROUP BY categories.name

Order by number\_of\_rows Desc;

The screenshot shows a SQL IDE interface with a query editor and a results grid. The query editor contains the following SQL code:

```
1 • SELECT categories.name AS categories_name,  
2       COUNT(*) AS number_of_rows,  
3       AVG(order_details.quantity) AS average_quantity  
4 FROM orders  
5 INNER JOIN customers ON customers.id = orders.customer_id  
6 INNER JOIN shippers ON shippers.id = orders.shipper_id  
7 INNER JOIN employees ON employees.employee_id = orders.employee_id  
8 INNER JOIN order_details ON order_details.order_id = orders.id  
9 INNER JOIN products ON products.id = order_details.product_id  
10 INNER JOIN suppliers ON suppliers.id = products.supplier_id  
11 INNER JOIN categories ON categories.id = products.category_id  
12 Where order_details.quantity < 21  
13 GROUP BY categories.name  
14 Order by number_of_rows Desc;  
15
```

The results grid displays the following data:

| categories_na... | number_of_ro... | average_quantity |
|------------------|-----------------|------------------|
| Dairy Products   | 53              | 11.7358          |
| Beverages        | 52              | 12.7885          |
| Confections      | 45              | 11.4889          |
| Seafood          | 42              | 12.1429          |
| Meat/Poultry     | 29              | 13.4138          |
| Condiments       | 27              | 12.9630          |
| Grains/Cereals   | 26              | 11.3077          |
| Produce          | 21              | 13.2381          |

## 4.7

The screenshot shows a database management tool interface. The top toolbar includes icons for file operations, search, and execution. Below the toolbar, there are tabs for 'orders', 'order\_details', 'order\_details', 'categories', and 'categories'. The main area displays a SQL query:

```

1 • SELECT categories.name AS categories_name,
2       COUNT(*) AS number_of_rows,
3       AVG(order_details.quantity) AS average_quantity
4 FROM orders
5 INNER JOIN customers ON customers.id = orders.customer_id
6 INNER JOIN shippers ON shippers.id = orders.shipper_id
7 INNER JOIN employees ON employees.employee_id = orders.employee_id
8 INNER JOIN order_details ON order_details.order_id = orders.id
9 INNER JOIN products ON products.id = order_details.product_id
10 INNER JOIN suppliers ON suppliers.id = products.supplier_id
11 INNER JOIN categories ON categories.id = products.category_id
12 GROUP BY categories.name
13 LIMIT 4 OFFSET 1;

```

Below the query, the 'Result Grid' is visible, showing the following data:

| categories_na... | number_of_ro... | average_quantity |
|------------------|-----------------|------------------|
| Dairy Products   | 100             | 26.0100          |
| Grains/Cereals   | 42              | 21.7143          |
| Seafood          | 67              | 21.5672          |
| Confections      | 84              | 25.1190          |

The bottom of the interface shows a 'Result 9' label.

```

SELECT categories.name AS categories_name,
       COUNT(*) AS number_of_rows,
       AVG(order_details.quantity) AS average_quantity
FROM orders
INNER JOIN customers ON customers.id = orders.customer_id
INNER JOIN shippers ON shippers.id = orders.shipper_id
INNER JOIN employees ON employees.employee_id = orders.employee_id
INNER JOIN order_details ON order_details.order_id = orders.id
INNER JOIN products ON products.id = order_details.product_id
INNER JOIN suppliers ON suppliers.id = products.supplier_id
INNER JOIN categories ON categories.id = products.category_id
GROUP BY categories.name

```

LIMIT 4 OFFSET 1;