

1.

The screenshot displays a database management interface with a left-hand sidebar and a main query editor.

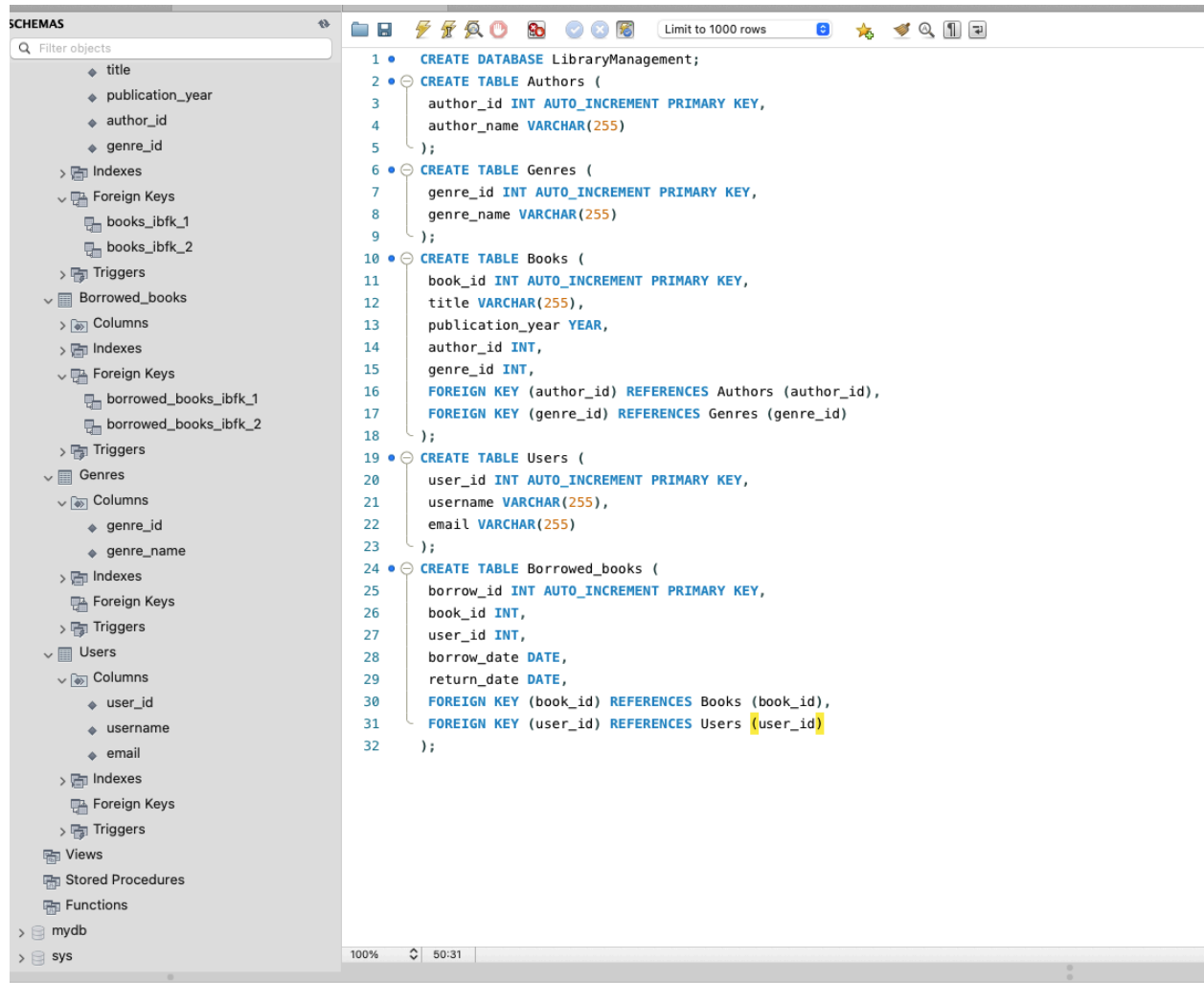
Left Sidebar (SCHEMAS):

- LibraryManagement
 - Tables
 - Authors (selected)
 - Columns
 - author_id
 - author_name
 - Indexes
 - Foreign Keys
 - Triggers
 - Books
 - Columns
 - book_id
 - title
 - publication_year
 - author_id
 - genre_id
 - Indexes
 - Foreign Keys
 - books_ibfk_1
 - books_ibfk_2
 - Triggers
 - Borrowed_books
 - Columns
 - Indexes
 - Foreign Keys
 - borrowed_books_ibfk_1
 - borrowed_books_ibfk_2
 - Triggers
 - Genres
 - Columns
 - genre_id
 - genre_name
 - Indexes
 - Foreign Keys
 - Triggers
 - Users

Main Query Editor (Query 5):

```
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 );
```

Bottom Status Bar: 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');
```

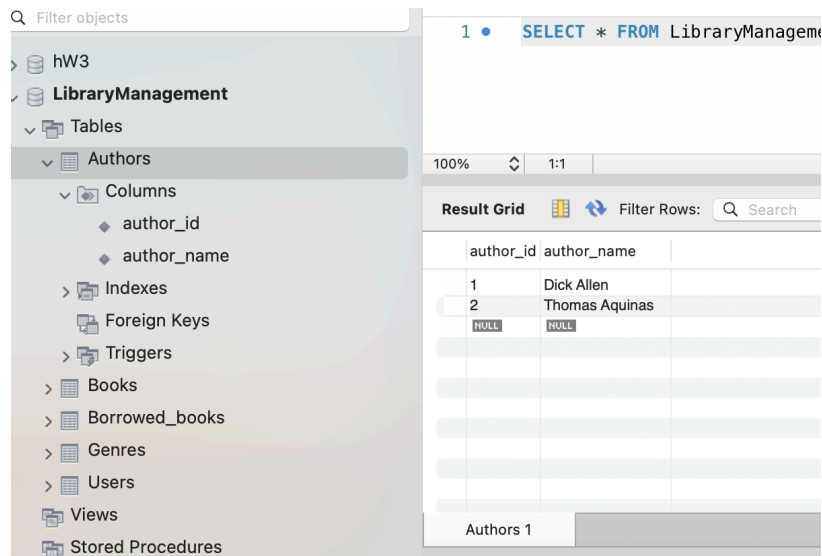


Table Genres

INSERT INTO Genres (genre_id, genre_name) VALUES

(1, 'male'),

(2, 'female');

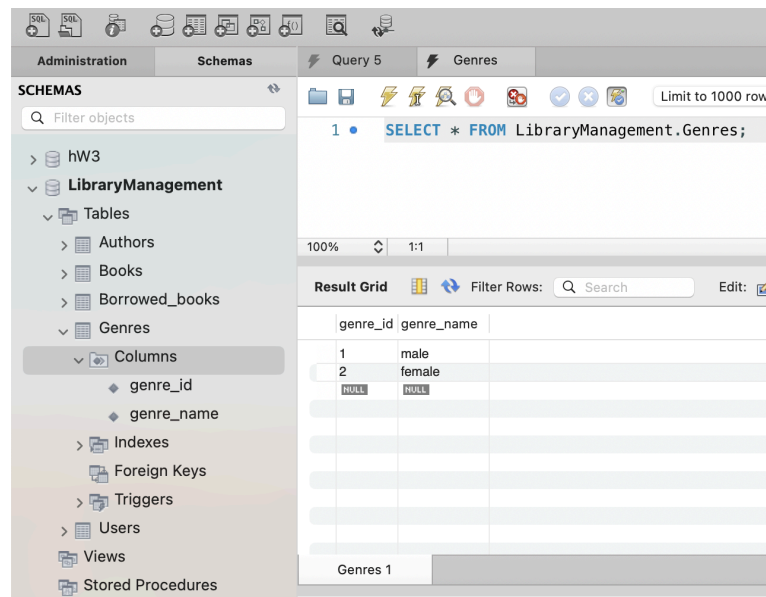


Table Books

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);

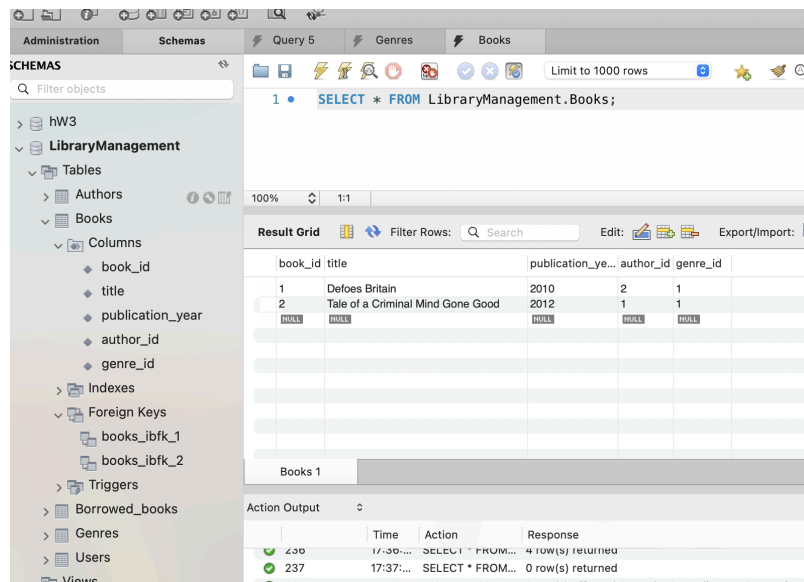


Table Users

INSERT INTO Users (user_id, username, email) VALUES

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

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

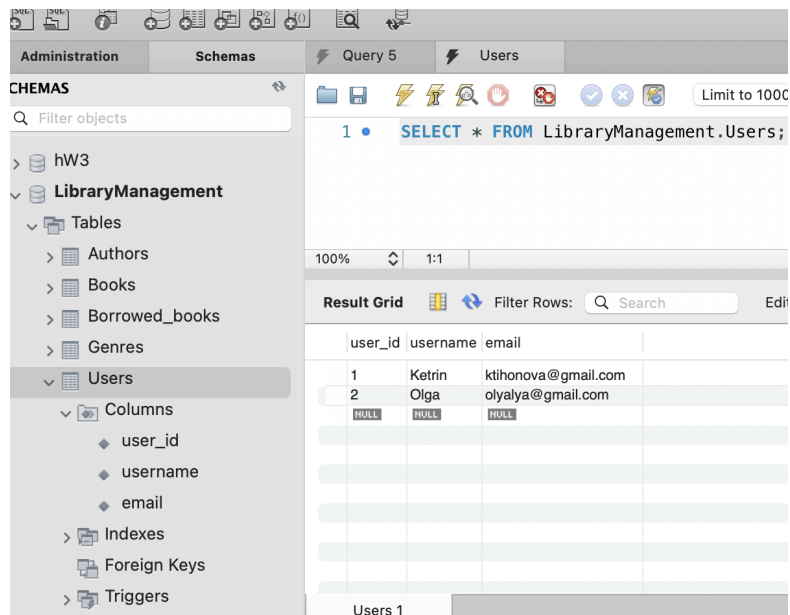


Table Borrowed_books

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_pho...	employees_last_...	employees_first_na...	employees_birthd...	employees_pho...	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...	Str...	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...	Str...	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...	Str...	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...	Str...	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...	Str...	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...	Str...	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...	Str...	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...	Str...	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...	Str...	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

Filter Rows:

Export:

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

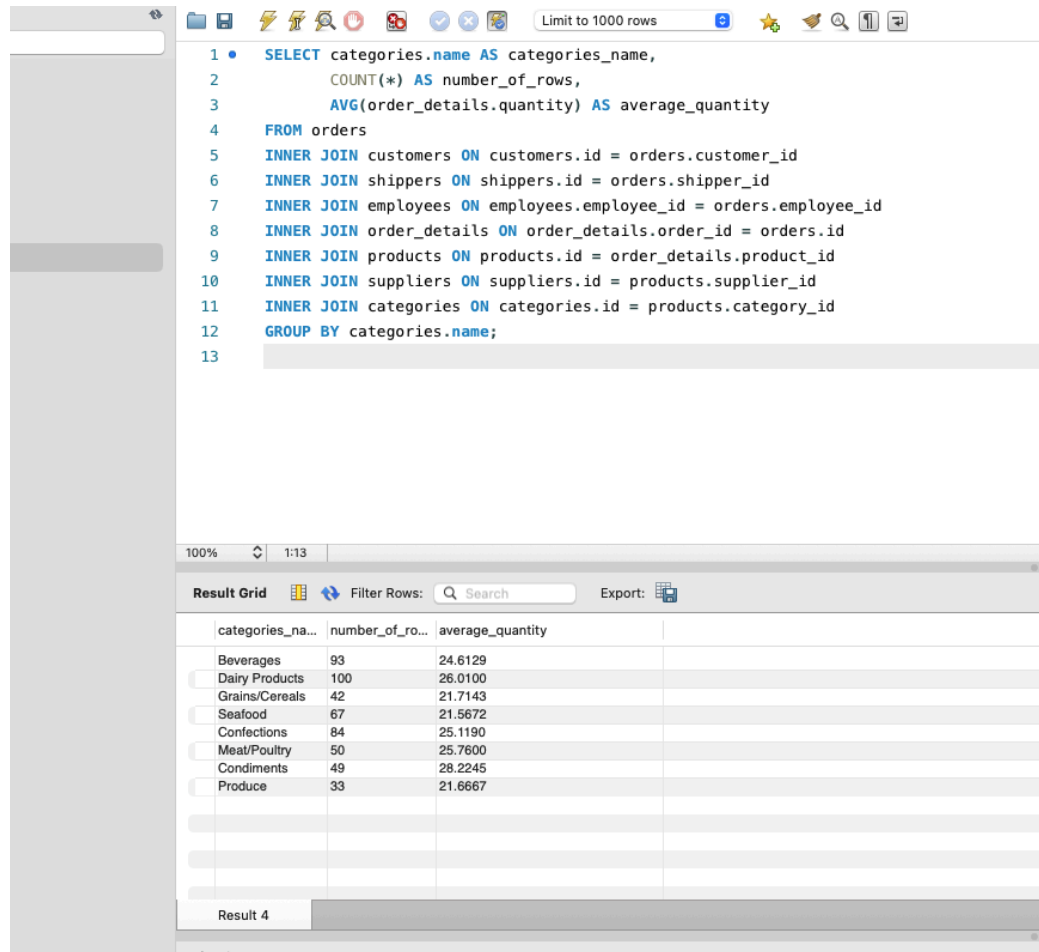
```

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 section 4.4. Below the editor, the 'Result Grid' is displayed with columns 'categories_na...', 'number_of_ro...', and 'average_quantity'. The results show data for various product categories.

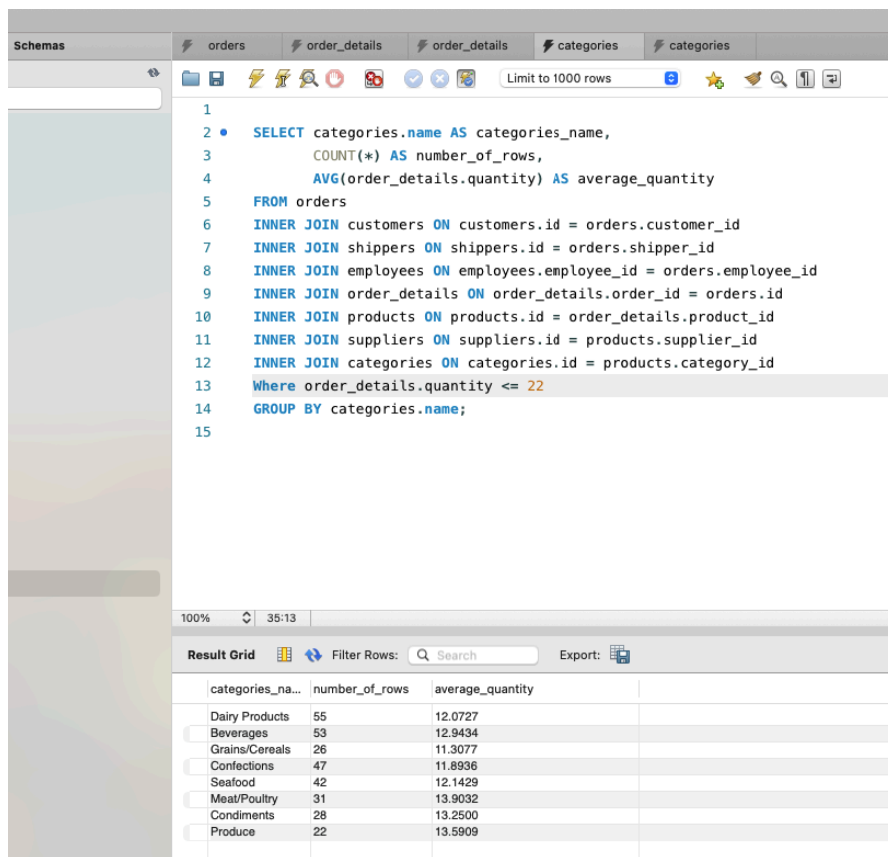
categories_na...	number_of_ro...	average_quantity
Beverages	93	24.6129
Dairy Products	100	26.0100
Grains/Cereals	42	21.7143
Seafood	67	21.5672
Confections	84	25.1190
Meat/Poultry	50	25.7600
Condiments	49	28.2245
Produce	33	21.6667

4.5 SELECT categories.name AS categories_name,

```

COUNT(*) AS number_of_rows,
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 <= 22
GROUP BY categories.name;

```



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

```

1
2 • SELECT categories.name AS categories_name,
3       COUNT(*) AS number_of_rows,
4       AVG(order_details.quantity) AS average_quantity
5 FROM orders
6 INNER JOIN customers ON customers.id = orders.customer_id
7 INNER JOIN shippers ON shippers.id = orders.shipper_id
8 INNER JOIN employees ON employees.employee_id = orders.employee_id
9 INNER JOIN order_details ON order_details.order_id = orders.id
10 INNER JOIN products ON products.id = order_details.product_id
11 INNER JOIN suppliers ON suppliers.id = products.supplier_id
12 INNER JOIN categories ON categories.id = products.category_id
13 Where order_details.quantity <= 22
14 GROUP BY categories.name;
15

```

The results grid shows the following data:

categories_na...	number_of_rows	average_quantity
Dairy Products	55	12.0727
Beverages	53	12.9434
Grains/Cereals	26	11.3077
Confections	47	11.8996
Seafood	42	12.1429
Meat/Poultry	31	13.9032
Condiments	28	13.2500
Produce	22	13.5909

4.2 при використанні left join кількість рядків не змінюється. Тому що всі значення присутні в колонках

The screenshot shows a database management interface with a SQL editor and a results grid. The SQL query is a complex join statement involving multiple tables: orders, customers, shippers, employees, order_details, products, suppliers, and categories. The results grid displays a table with columns for order details, customer information, shipper details, employee details, and product/supplier information. The action output at the bottom shows successful execution of the query.

```

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_country, suppliers.phone as suppliers_phone,
12  categories.name as categories_name, categories.description as categories_des
13  from orders
14  left join customers On customers.id = orders.customer_id
15  left join shippers On shippers.id = orders.shipper_id
16  left join employees On employees.employee_id = orders.employee_id
17  left join order_details On order_details.order_id = orders.id
18  left join products On products.id = order_details.product_id
19  left join suppliers On suppliers.id = products.supplier_id
20  left join categories On categories.id = products.category_id;
21
22

```

orders_id	employee_id	date	shipper_id	customers_id	name	contact	address	city	postal_code	country	shippers_name	shippers_pho...	employees_last_...	employees_first_na...	employees_birthe...
10248	5	1996-07-04	3	90	Wilma...	Matt K...	Keskusk...	Hel...	21240	Finland	Federal Shipping	(503) 555-9931	Buchanan	Steven	1955-03-04
10249	6	1996-07-05	1	81	Tradic...	Anabel...	Av. Ines...	Sao...	05634-030	Brazil	Speedy Express	(503) 555-9831	Suyama	Michael	1963-07-02
10250	4	1996-07-08	2	34	Hanan...	Mario P...	Rua do...	Rio...	05454-876	Brazil	United Package	(503) 555-3199	Peacock	Margaret	1958-09-19
10250	4	1996-07-08	2	34	Hanan...	Mario P...	Rua do...	Rio...	05454-876	Brazil	United Package	(503) 555-3199	Peacock	Margaret	1958-09-19
10251	3	1996-07-08	1	84	Victual...	Mary S...	2, rue du...	Lyon	69004	France	Speedy Express	(503) 555-9831	Leverling	Janet	1963-08-30
10251	3	1996-07-08	1	84	Victual...	Mary S...	2, rue du...	Lyon	69004	France	Speedy Express	(503) 555-9831	Leverling	Janet	1963-08-30
10251	3	1996-07-08	1	84	Victual...	Mary S...	2, rue du...	Lyon	69004	France	Speedy Express	(503) 555-9831	Leverling	Janet	1963-08-30
10251	3	1996-07-08	1	84	Victual...	Mary S...	2, rue du...	Lyon	69004	France	Speedy Express	(503) 555-9831	Leverling	Janet	1963-08-30
10251	3	1996-07-08	1	84	Victual...	Mary S...	2, rue du...	Lyon	69004	France	Speedy Express	(503) 555-9831	Leverling	Janet	1963-08-30

Result 35

Action Output

	Time	Response
403	16:45:...	si 518 row(s) returned
404	16:45:...	si 518 row(s) returned
405	16:51:23	S 8 row(s) returned
406	17:43:21	si 518 row(s) returned
407	17:43:...	si 518 row(s) returned

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 management tool interface. At the top, there are tabs for 'orders', 'order_details', and 'order_details'. Below the tabs is a toolbar with various icons and a 'Limit to 1000 rows' dropdown. 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 Where order_details.quantity < 21  
13 GROUP BY categories.name;  
14  
15
```

Below the query editor, there is a 'Result Grid' section. It includes a 'Filter Rows:' search bar and an 'Export:' button. The result grid displays 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;
```


4.7

The screenshot shows a database management tool interface. The top panel displays a SQL query with line numbers 1 through 13. The query is a SELECT statement that joins several tables (orders, customers, shippers, employees, order_details, products, suppliers, categories) and calculates the count of rows and the average quantity for each category. The bottom panel shows the 'Result Grid' with 4 rows of data, including category names, row counts, and average quantities. The interface also includes a 'Schemas' pane on the left and a 'Limit to 1000 rows' option at the top right.

```

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;

```

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

Result 9

```

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;