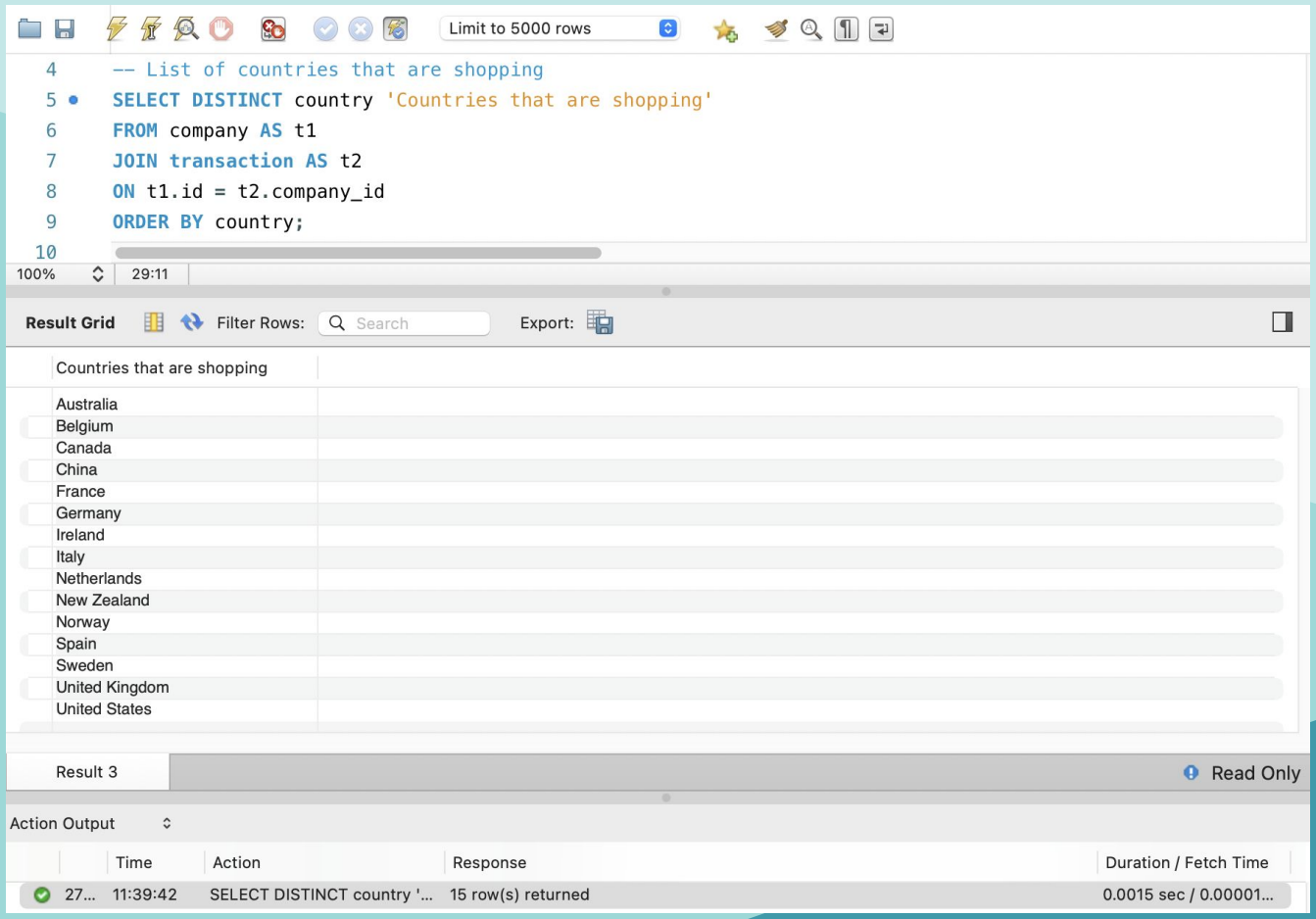
Basic Queries

https://github.com/leocareer



```
-- List of countries that are shopping
SELECT DISTINCT country 'Countries that are shopping'
FROM company AS t1
JOIN transaction AS t2
ON t1.id = t2.company_id
ORDER BY country;
```

Limit to 5000 rows

100% 29:11

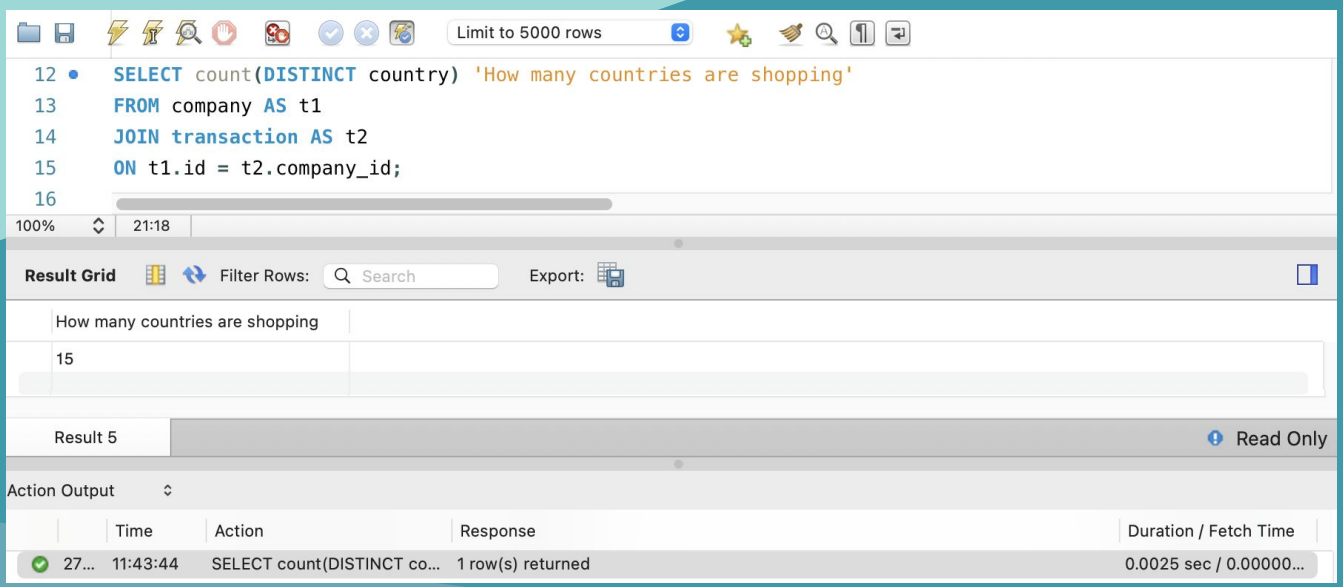
Result Grid Filter Rows: Search Export:

Countries that are shopping
Australia
Belgium
Canada
China
France
Germany
Ireland
Italy
Netherlands
New Zealand
Norway
Spain
Sweden
United Kingdom
United States

Result 3 Read Only

Action Output

	Time	Action	Response	Duration / Fetch Time
27...	11:39:42	SELECT DISTINCT country '...	15 row(s) returned	0.0015 sec / 0.00001...



```
SELECT count(DISTINCT country) 'How many countries are shopping'
FROM company AS t1
JOIN transaction AS t2
ON t1.id = t2.company_id;
```

Limit to 5000 rows

100% 21:18

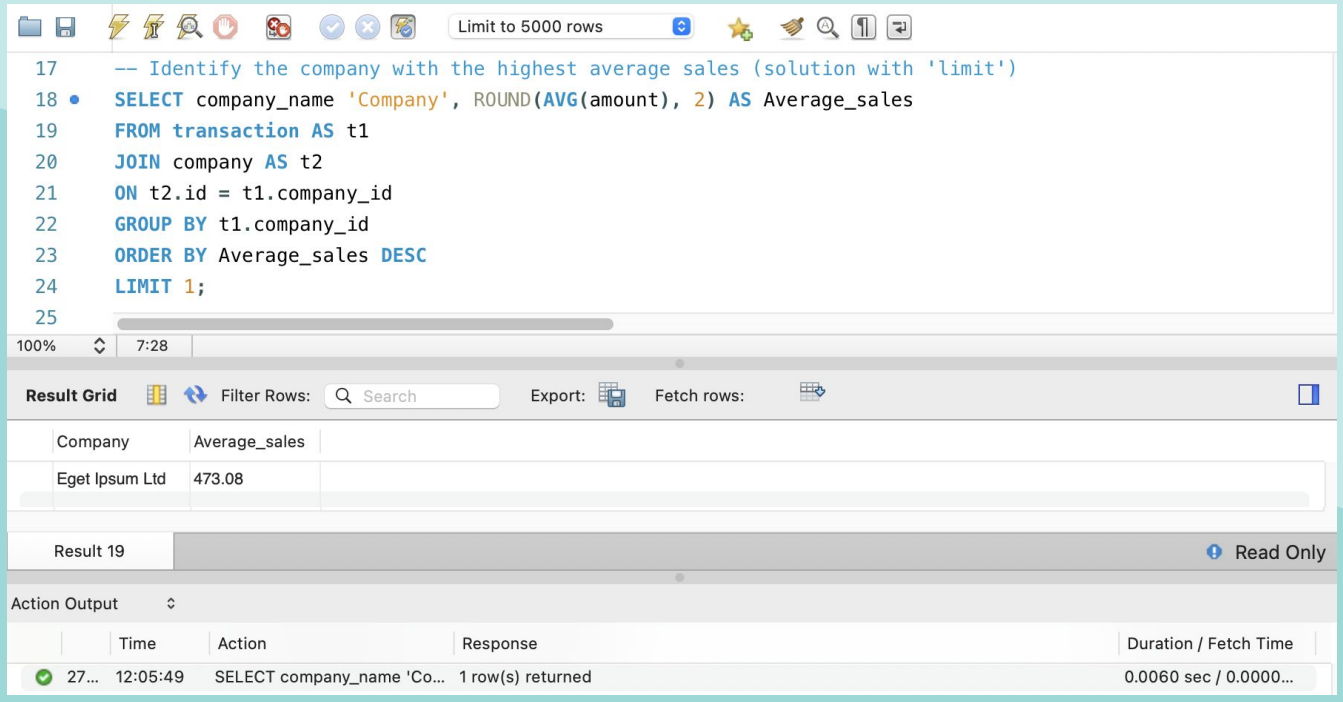
Result Grid Filter Rows: Search Export:

How many countries are shopping
15

Result 5 Read Only

Action Output

	Time	Action	Response	Duration / Fetch Time
27...	11:43:44	SELECT count(DISTINCT co...	1 row(s) returned	0.0025 sec / 0.00000...



Using LIMIT in SQL isn't always a good idea because:

1. Performance issues: With large datasets, the query often selects all rows, sorts them, and then trims the result to the specified limit. This can slow down execution for big tables.
2. Inaccurate results: LIMIT can hide important rows, especially without proper sorting, leading to random or non-representative samples.
3. Unpredictable behavior: Without an explicit ORDER BY clause, rows may be returned in a random order, producing unpredictable results.

While LIMIT is useful, it should be used carefully, considering these limitations.

Basic Queries

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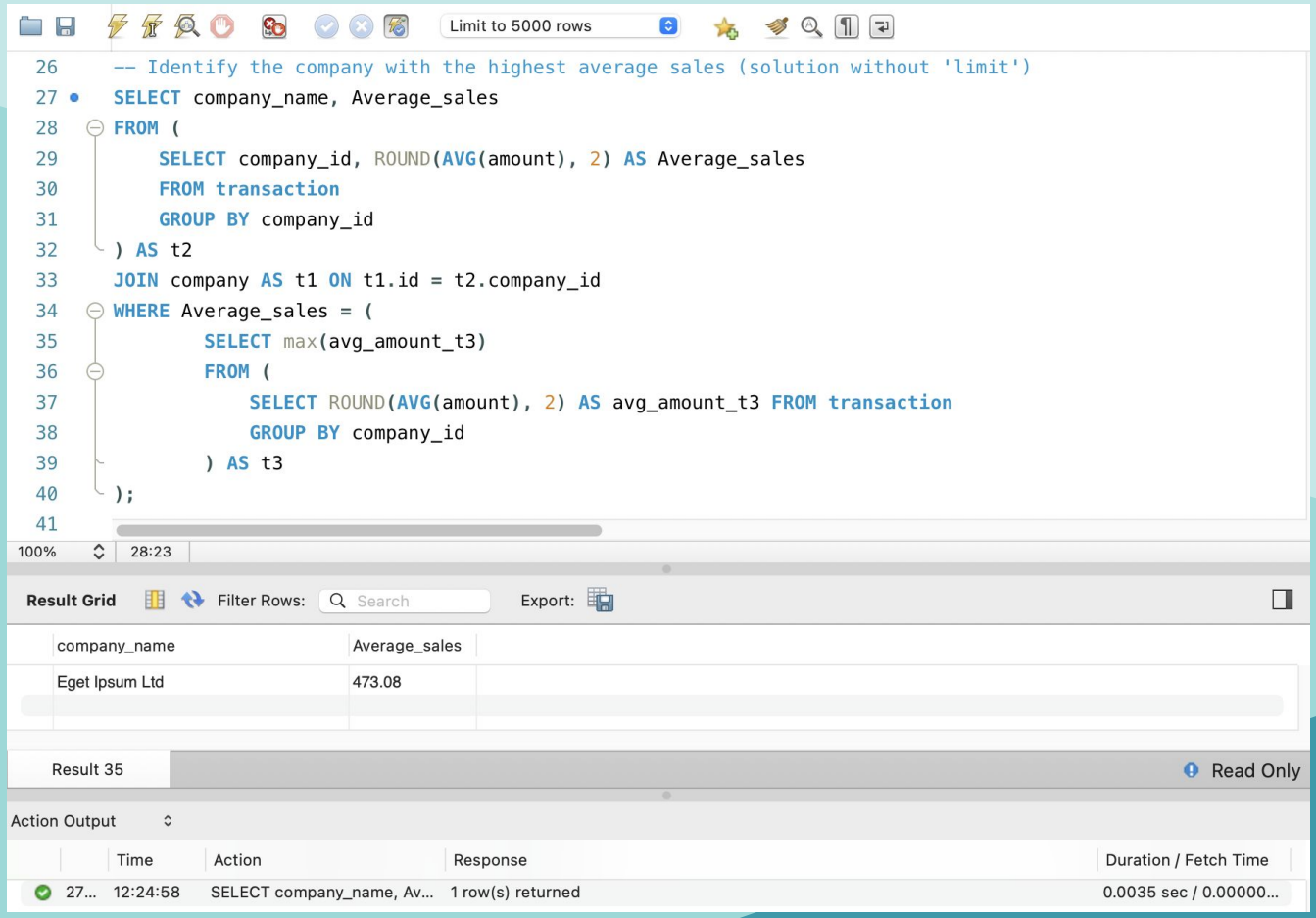


```sql
-- Identify the company with the highest average sales (solution without 'limit')
SELECT company_name, Average_sales
FROM (
    SELECT company_id, ROUND(AVG(amount), 2) AS Average_sales
    FROM transaction
    GROUP BY company_id
) AS t2
JOIN company AS t1 ON t1.id = t2.company_id
WHERE Average_sales = (
        SELECT max(avg_amount_t3)
        FROM (
            SELECT ROUND(AVG(amount), 2) AS avg_amount_t3 FROM transaction
            GROUP BY company_id
        ) AS t3
);
```

Limit to 5000 rows

100% 28:23

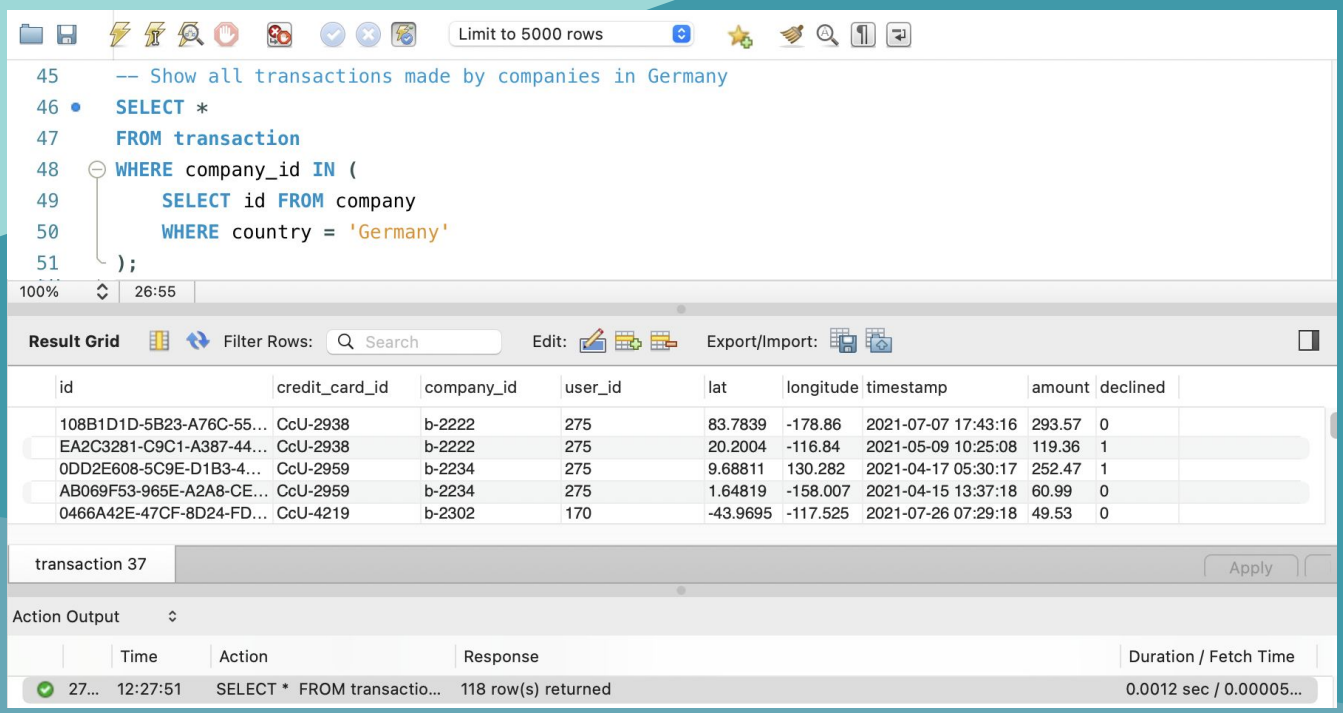
Result Grid Filter Rows: Search Export:

company_name	Average_sales
Eget Ipsum Ltd	473.08

Result 35 Read Only

Action Output

	Time	Action	Response	Duration / Fetch Time
27...	12:24:58	SELECT company_name, Av...	1 row(s) returned	0.0035 sec / 0.00000...



```sql
-- Show all transactions made by companies in Germany
SELECT *
FROM transaction
WHERE company_id IN (
    SELECT id FROM company
    WHERE country = 'Germany'
);
```

Limit to 5000 rows

100% 26:55

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

id	credit_card_id	company_id	user_id	lat	longitude	timestamp	amount	declined
108B1D1D-5B23-A76C-55...	CcU-2938	b-2222	275	83.7839	-178.86	2021-07-07 17:43:16	293.57	0
EA2C3281-C9C1-A387-44...	CcU-2938	b-2222	275	20.2004	-116.84	2021-05-09 10:25:08	119.36	1
0DD2E608-5C9E-D1B3-4...	CcU-2959	b-2234	275	9.68811	130.282	2021-04-17 05:30:17	252.47	1
AB069F53-965E-A2A8-CE...	CcU-2959	b-2234	275	1.64819	-158.007	2021-04-15 13:37:18	60.99	0
0466A42E-47CF-8D24-FD...	CcU-4219	b-2302	170	-43.9695	-117.525	2021-07-26 07:29:18	49.53	0

transaction 37 Apply

Action Output

	Time	Action	Response	Duration / Fetch Time
27...	12:27:51	SELECT * FROM transactio...	118 row(s) returned	0.0012 sec / 0.00005...

Basic Queries

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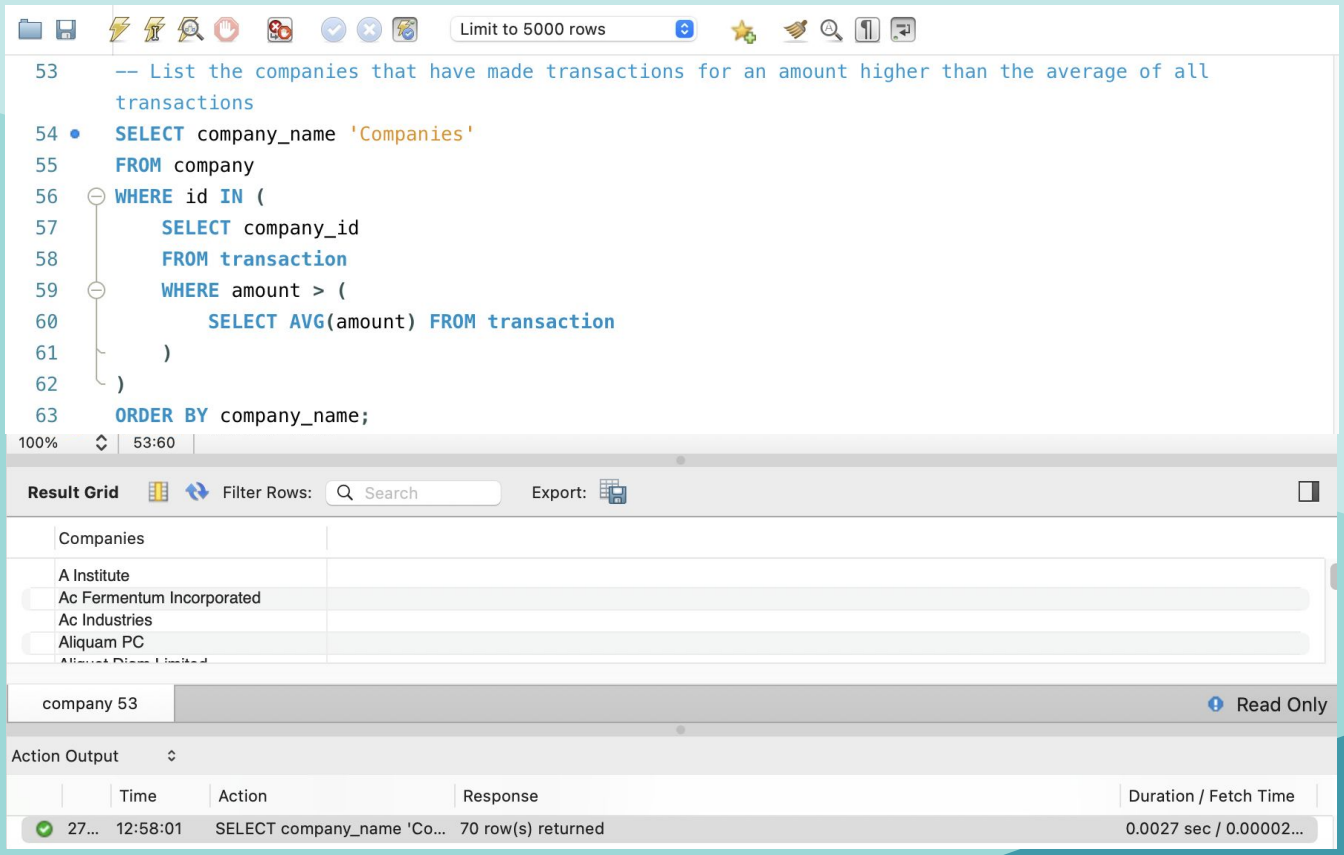


```
-- List the companies that have made transactions for an amount higher than the average of all
transactions
SELECT company_name 'Companies'
FROM company
WHERE id IN (
    SELECT company_id
    FROM transaction
    WHERE amount > (
        SELECT AVG(amount) FROM transaction
    )
)
ORDER BY company_name;
```

Limit to 5000 rows

100% 53:60

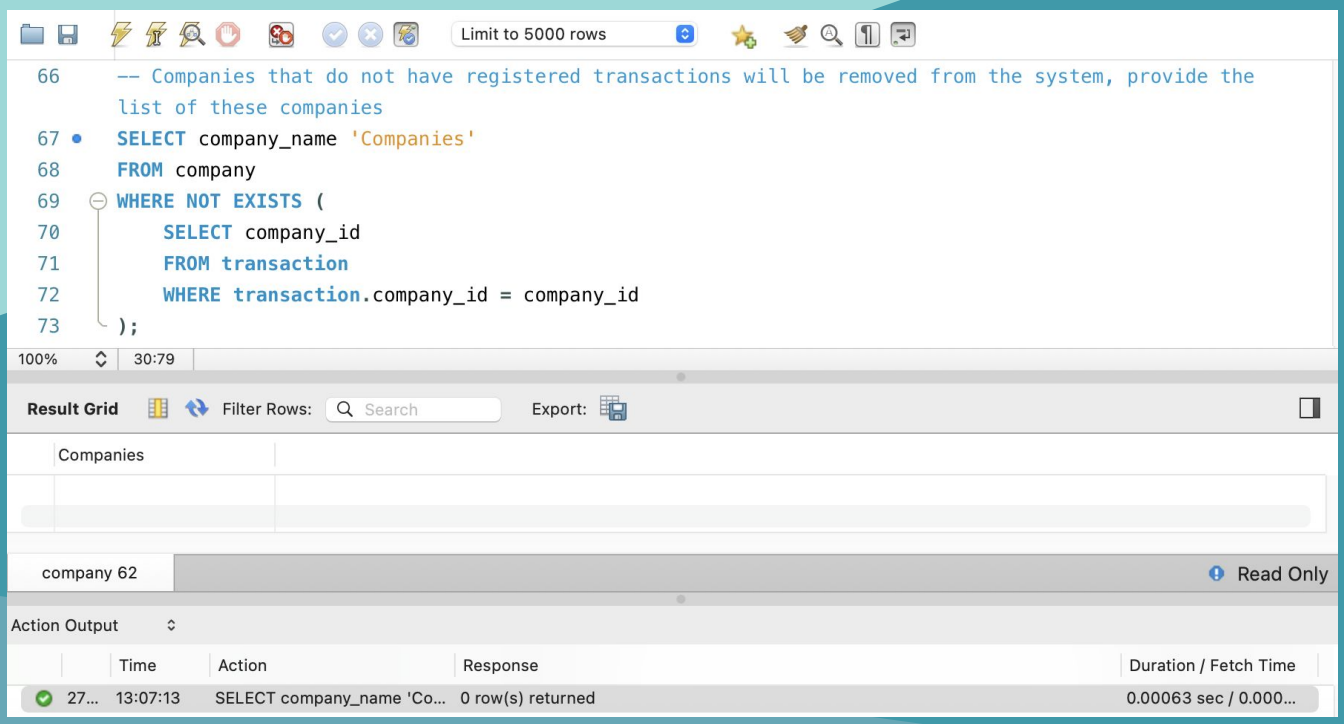
Result Grid Filter Rows: Search Export:

Companies
A Institute
Ac Fermentum Incorporated
Ac Industries
Aliquam PC

company 53 Read Only

Action Output

	Time	Action	Response	Duration / Fetch Time
27...	12:58:01	SELECT company_name 'Co...	70 row(s) returned	0.0027 sec / 0.00002...



```
-- Companies that do not have registered transactions will be removed from the system, provide the
list of these companies
SELECT company_name 'Companies'
FROM company
WHERE NOT EXISTS (
    SELECT company_id
    FROM transaction
    WHERE transaction.company_id = company_id
);
```

Limit to 5000 rows

100% 30:79

Result Grid Filter Rows: Search Export:

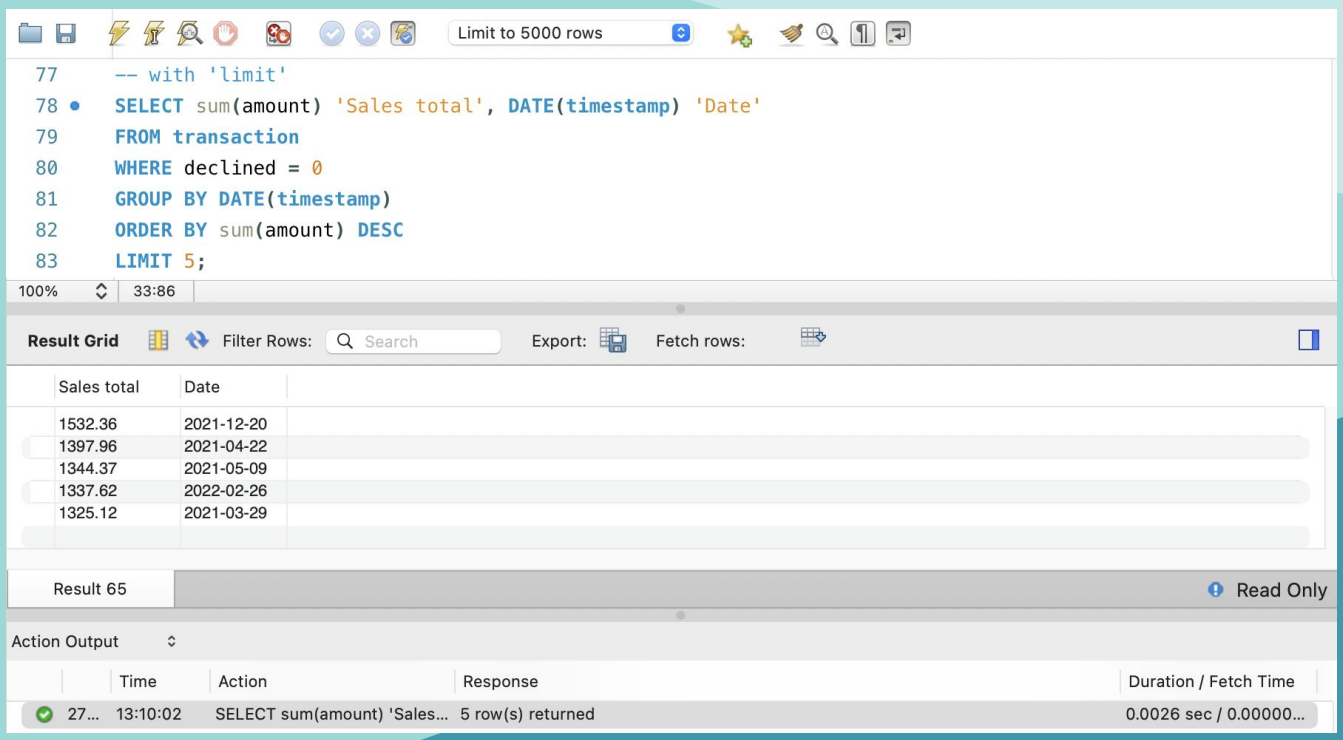
Companies

company 62 Read Only

Action Output

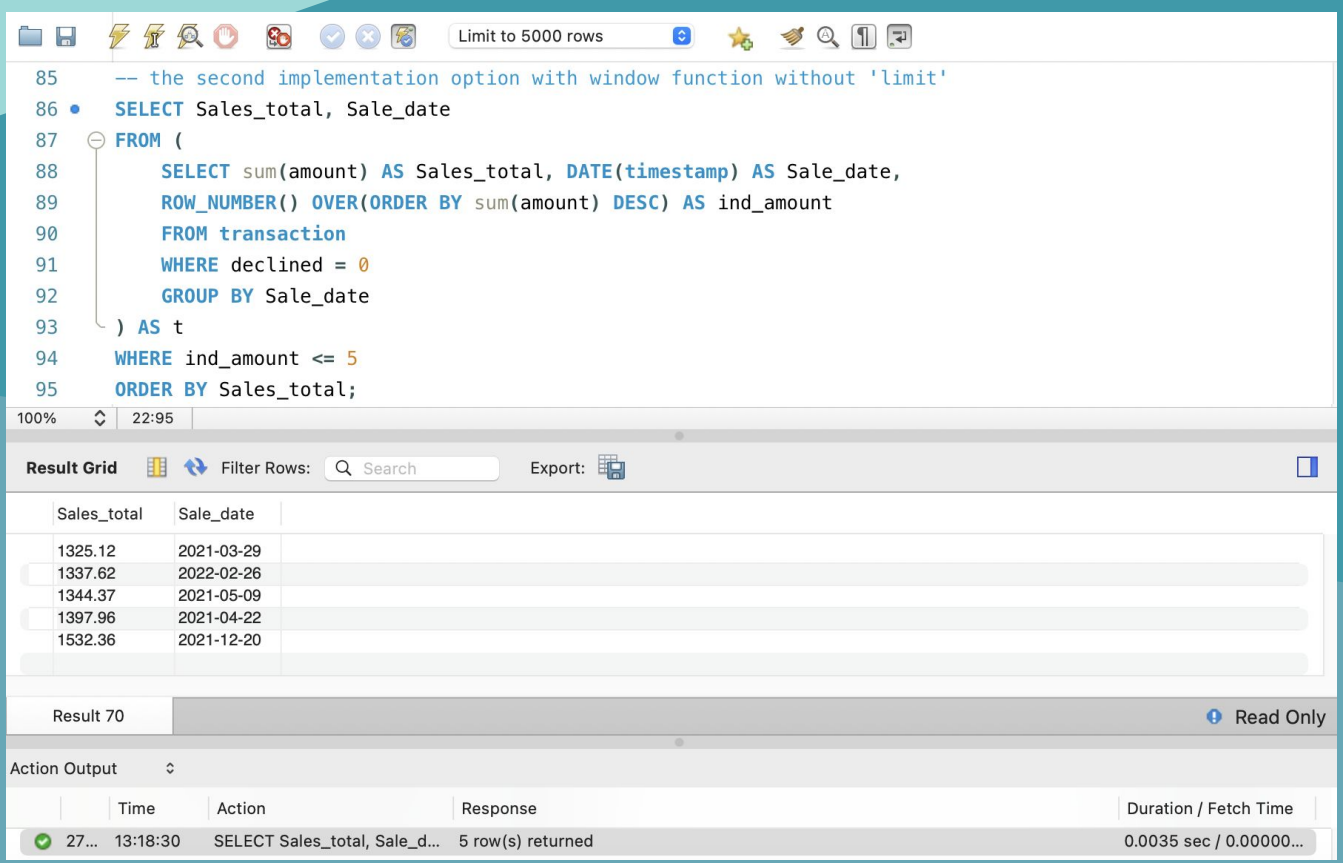
	Time	Action	Response	Duration / Fetch Time
27...	13:07:13	SELECT company_name 'Co...	0 row(s) returned	0.00063 sec / 0.000...

The five days that generated the largest amount of revenue for the company from sales. It shows the date of each transaction along with the sales total.



```
-- with 'limit'
SELECT sum(amount) 'Sales total', DATE(timestamp) 'Date'
FROM transaction
WHERE declined = 0
GROUP BY DATE(timestamp)
ORDER BY sum(amount) DESC
LIMIT 5;
```

Sales total	Date
1532.36	2021-12-20
1397.96	2021-04-22
1344.37	2021-05-09
1337.62	2022-02-26
1325.12	2021-03-29



```
-- the second implementation option with window function without 'limit'
SELECT Sales_total, Sale_date
FROM (
    SELECT sum(amount) AS Sales_total, DATE(timestamp) AS Sale_date,
    ROW_NUMBER() OVER(ORDER BY sum(amount) DESC) AS ind_amount
    FROM transaction
    WHERE declined = 0
    GROUP BY Sale_date
) AS t
WHERE ind_amount <= 5
ORDER BY Sales_total;
```

Sales_total	Sale_date
1325.12	2021-03-29
1337.62	2022-02-26
1344.37	2021-05-09
1397.96	2021-04-22
1532.36	2021-12-20

Basic Queries

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```sql
-- What is the average sales per country? It presents the results sorted from highest to lowest average.
SELECT country 'Countries', ROUND(AVG(amount), 2) AS Average_sales
FROM transactions.company AS t1
JOIN transactions.transaction AS t2
ON t1.id = t2.company_id
WHERE declined = 0
GROUP BY country
ORDER BY Average_sales DESC;
```

Result Grid

Countries	Average_sales
United States	287.53
Ireland	285.83
Sweden	276.67
United Kingdom	271.77
Canada	261.94
Belgium	255.22

Result 93 — Read Only

Action Output

Time	Action	Response	Duration / Fetch Time
28... 13:53:47	SELECT country 'Countries',...	15 row(s) returned	0.0045 sec / 0.00001...

The list of all transactions carried out by companies that are located in the same country as 'Non Institute' company:

```sql
-- with join
SELECT *
FROM transaction AS t1
JOIN company AS t2
ON t2.id = t1.company_id
WHERE country = (
    SELECT country FROM company
    WHERE company_name LIKE 'Non Institute'
)
AND company_name <> 'Non Institute'
ORDER BY company_name;
```

Result Grid

id	credit_card_id	company_id	user_id	lat	longitude	timestamp	amount	declined	id	company_r
2A5A3001-104F-1D1F-78...	CcU-3169	b-2354	272	-67.2525	-142.557	2022-02-27 18:35:15	30.76	0	b-2354	Ac Libero In
9679E769-32DC-2591-B8...	CcU-3169	b-2354	272	47.6643	130.202	2021-06-28 11:22:10	186.34	1	b-2354	Ac Libero In
6D69D98A-F18A-99BD-B...	CcU-3204	b-2374	272	-52.3724	70.1522	2021-05-26 02:33:06	144.33	1	b-2374	Amet Faucit
E5078B1B-9591-E204-CC...	CcU-3204	b-2374	272	69.5434	98.8783	2021-09-06 01:29:42	220.85	0	b-2374	Amet Faucit
1479B3D2-B7BA-C7BB-4...	CcU-2994	b-2326	133	66.2672	172.399	2021-08-09 00:58:07	309.45	0	b-2326	Enim Condi
152598C2-029D-D684-4B...	CcU-2994	b-2326	126	-67.0189	-141.672	2021-07-05 03:10:00	395.43	0	b-2326	Enim Condi

Result 79 — Read Only

Action Output

Time	Action	Response	Duration / Fetch Time
27... 13:28:08	SELECT * FROM transaction...	70 row(s) returned	0.0021 sec / 0.00005...

Basic Queries

https://github.com/leocareer

```sql
-- with only subqueries
SELECT *
FROM transaction
WHERE company_id IN (
    SELECT id FROM company
    WHERE country = (
        SELECT country FROM company
        WHERE company_name LIKE 'Non Institute'
        )
    AND company_name <> 'Non Institute'
);
```

Result Grid

id	credit_card_id	company_id	user_id	lat	longitude	timestamp	amount	declined
2B928E1C-EC14-A760-0A...	CcU-2980	b-2246	275	-41.0496	161.685	2021-08-10 08:14:49	383.73	0
ACD2011A-A2B1-C365-41...	CcU-2980	b-2246	275	-54.4792	-82.7974	2022-03-05 20:41:20	60.07	1
4334349E-CEB0-3D68-A4...	CcU-3092	b-2310	275	-20.4859	150.87	2021-05-03 22:37:23	458.74	0

Action Output

	Time	Action	Response	Duration / Fetch Time
27...	13:39:10	SELECT * FROM transaction...	70 row(s) returned	0.0014 sec / 0.00007...

```sql
-- It presents the name, telephone, country, date and amount of those companies that made transactions
with a value between 100 and 200 euros and on any of these dates: April 29, 2021, July 20, 2021 and
March 13, 2022. Sort the results from highest to lowest amount.
SELECT company_name, phone, country, DATE(timestamp) 'date', amount
FROM company AS t1
JOIN transaction AS t2
ON t1.id = t2.company_id
WHERE DATE(timestamp) IN ('2021-04-29','2021-07-20','2022-03-13')
AND amount BETWEEN 100 AND 200
ORDER BY amount DESC;
```

Result Grid

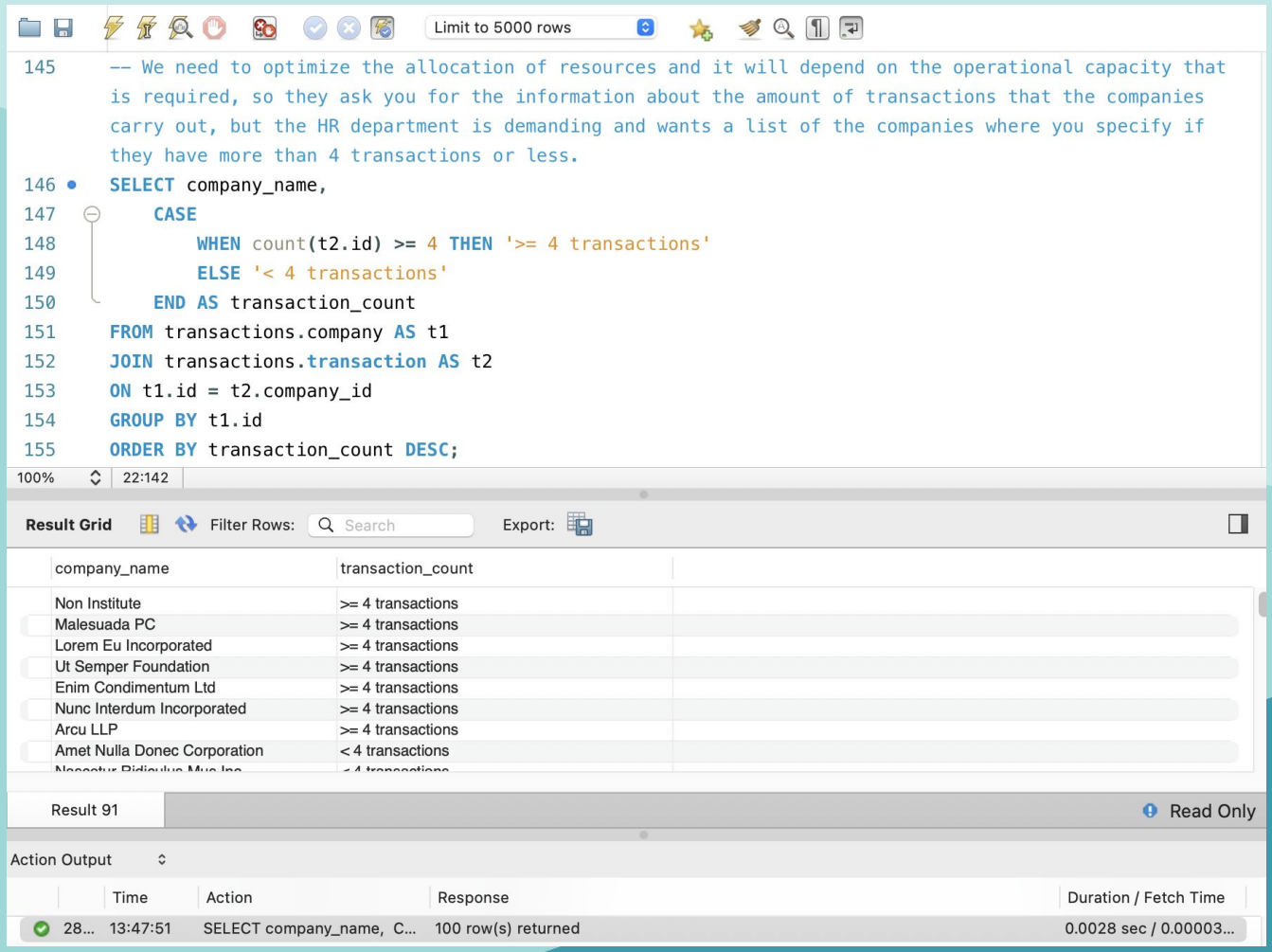
company_name	phone	country	date	amount
Interdum Feugiat Sed Associates	04 88 40 32 52	United Kingdom	2021-07-20	164.86
Nunc Interdum Incorporated	05 18 15 48 13	Germany	2022-03-13	164.32
Enim Condimentum Ltd	09 55 51 66 25	United Kingdom	2021-04-29	149.89
Lorem Eu Incorporated	01 83 66 62 07	Canada	2021-07-20	133.39
Nunc Interdum Incorporated	05 18 15 48 13	Germany	2021-04-29	111.51

Action Output

	Time	Action	Response	Duration / Fetch Time
27...	13:43:01	SELECT company_name, ph...	5 row(s) returned	0.0019 sec / 0.00001...

Basic Queries

https://github.com/leocareer



```
-- We need to optimize the allocation of resources and it will depend on the operational capacity that
is required, so they ask you for the information about the amount of transactions that the companies
carry out, but the HR department is demanding and wants a list of the companies where you specify if
they have more than 4 transactions or less.
SELECT company_name,
    CASE
        WHEN count(t2.id) >= 4 THEN '>= 4 transactions'
        ELSE '< 4 transactions'
    END AS transaction_count
FROM transactions.company AS t1
JOIN transactions.transaction AS t2
ON t1.id = t2.company_id
GROUP BY t1.id
ORDER BY transaction_count DESC;
```

Limit to 5000 rows

100% 22:142

Result Grid Filter Rows: Search Export:

company_name	transaction_count
Non Institute	>= 4 transactions
Malesuada PC	>= 4 transactions
Lorem Eu Incorporated	>= 4 transactions
Ut Semper Foundation	>= 4 transactions
Enim Condimentum Ltd	>= 4 transactions
Nunc Interdum Incorporated	>= 4 transactions
Arcu LLP	>= 4 transactions
Amet Nulla Donec Corporation	< 4 transactions

Result 91 Read Only

Action Output

	Time	Action	Response	Duration / Fetch Time
28...	13:47:51	SELECT company_name, C...	100 row(s) returned	0.0028 sec / 0.00003...