

BOOTCAMP

DATA ANALITICS

2025 - 2026

SPRINT 2: BASES DE DATOS RELACIONADAS E INTRODUCCIÓN A SQL

NIVEL 1. EJERCICIO 1

Muestra las principales características del esquema creado y explica las diferentes tablas y variables que existen

- La descripción de la tabla "transaction"

Query 1 x

Limit to 1000 rows

```
1 -- Mostrar las características principales del esquema y explicar las diferentes tablas y variables que existen
2 • USE transactions;
3 • DESCRIBE transaction;
4
```

Result Grid

	Field	Type	Null	Key	Default	Extra
▶	id	varchar(255)	NO	PRI	NULL	
	credit_card_id	varchar(15)	YES		NULL	
	company_id	varchar(20)	YES	MUL	NULL	
	user_id	int	YES		NULL	
	lat	float	YES		NULL	
	longitude	float	YES		NULL	
	timestamp	timestamp	YES		NULL	
	amount	decimal(10,2)	YES		NULL	
	declined	tinyint(1)	YES		NULL	

Result 1 x

Output

Action Output

#	Time	Action	Message
✓ 1	10:42:56	USE transactions	0 row(s) affected
✓ 2	10:42:56	DESCRIBE transaction	9 row(s) returned

NIVEL 1. EJERCICIO 1

Mostrar las características principales del esquema y explicar las diferentes tables y variables que existen

- La descripción de la tabla "company"

The screenshot shows a database query tool interface. At the top, a tab labeled "Query 1" is active. Below it is a toolbar with various icons and a "Limit to 1000 rows" dropdown. The SQL editor contains the following code:

```
1  -- Mostrar las características principales del esquema y explicar las diferentes tables y variables que existen
2  •  USE transactions;
3  •  DESCRIBE company;
4
```

Below the editor is a "Result Grid" section. It includes a "Filter Rows:" input field, an "Export:" button, and a "Wrap Cell Content:" checkbox. The grid displays the following data:

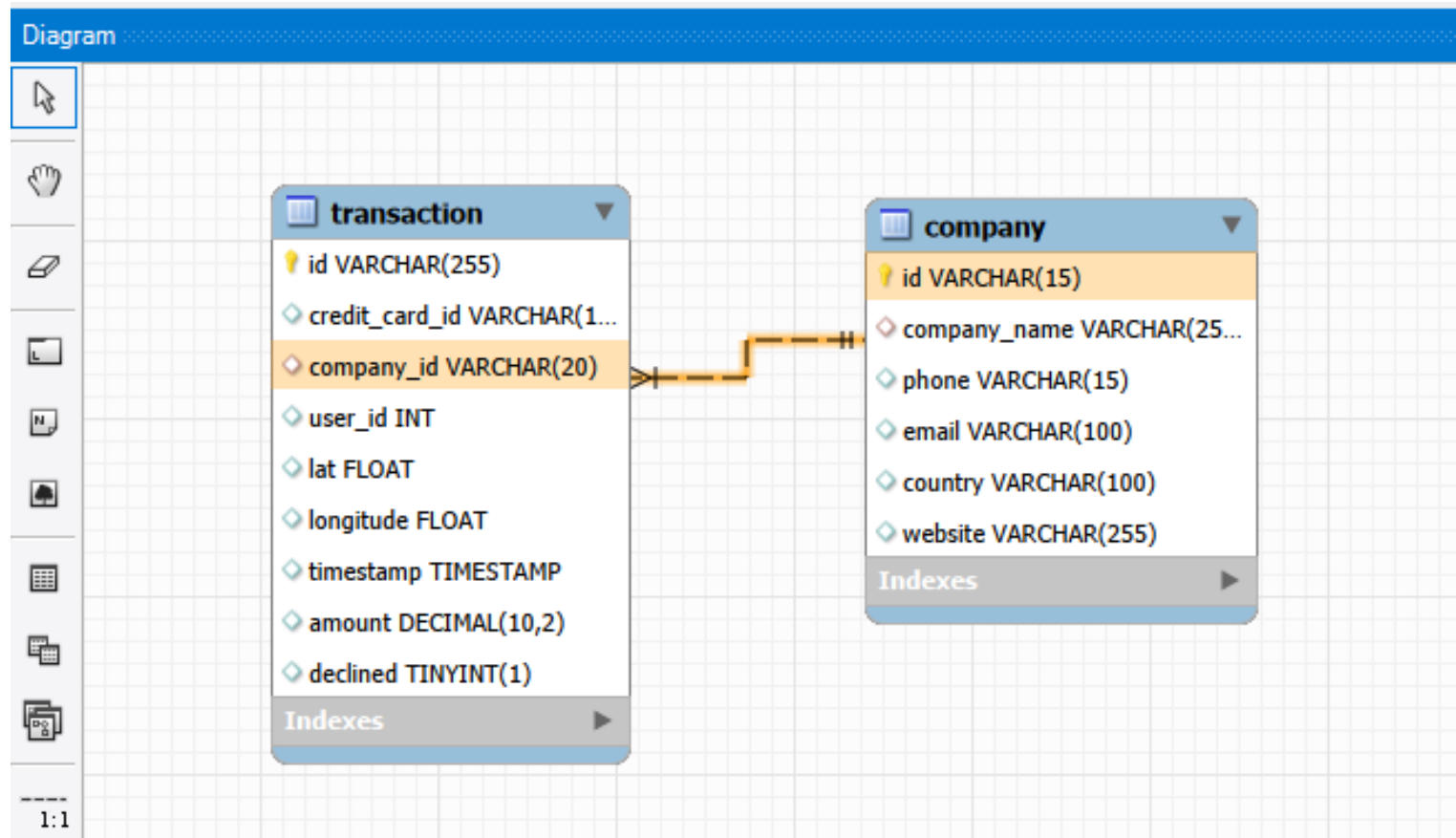
	Field	Type	Null	Key	Default	Extra
▶	id	varchar(15)	NO	PRI	NULL	
	company_name	varchar(255)	YES		NULL	
	phone	varchar(15)	YES		NULL	
	email	varchar(100)	YES		NULL	
	country	varchar(100)	YES		NULL	
	website	varchar(255)	YES		NULL	

On the right side of the grid, there are three buttons: "Result Grid", "Form Editor", and "Field Types".

Below the grid is a "Result 2" tab, which is marked as "Read Only". It shows an "Output" section with a dropdown menu set to "Action Output". The output table is as follows:

#	Time	Action	Message	Duration / Fetch
✓ 1	10:42:56	USE transactions	0 row(s) affected	0.000 sec
✓ 2	10:42:56	DESCRIBE transaction	9 row(s) returned	0.000 sec / 0.000 sec
✓ 3	10:59:29	DESCRIBE company	6 row(s) returned	0.016 sec / 0.000 sec

Un diagrama que ilustre la relación entre las distintas tablas y variables



El diagrama muestra que variable "*company_id*" en la tabla "*transaction*" es el FOREIGN KEY y refiere la variable "*id*" de la tabla "*company*"

NIVEL 1. EJERCICIO 2

Utilizando JOIN realizarás las siguientes consultas:

- Listado de los países que están generando ventas.

The screenshot shows a database query tool interface. The top toolbar includes icons for file operations, query execution, and a 'Limit to 1000 rows' dropdown. The SQL editor contains the following query:

```
1 -- Lista de los países que están generando ventas
2 • USE transactions;
3
4 • SELECT DISTINCT company.country
5 FROM transaction
6 LEFT JOIN company
7 ON company.id=transaction.company_id;
```

Below the editor, the 'Result Grid' tab is active, displaying a table with the following data:

country
Germany
Australia
United States
New Zealand
Norway
United Kingdom
Italy
Belgium
Sweden
Ireland
China
Canada
France
Netherlands
Spain

On the right side, a vertical toolbar contains icons for 'Result Grid', 'Form Editor', 'Field Types', 'Query Stats', and 'Execution Plan'. The bottom status bar shows 'Result 15' and 'Read Only'. The 'Output' section at the bottom displays the following information:

#	Time	Action	Message	Duration / Fetch
✓ 1	12:14:43	SELECT DISTINCT company.country FROM transaction LEFT J...	15 row(s) returned	0.125 sec / 0.000 sec

NIVEL 1. EJERCICIO 2

Utilizando JOIN realizarás las siguientes consultas:

- Desde cuántos países se generan las ventas.

The screenshot shows a database query editor interface. The top toolbar includes icons for file operations, execution, and a 'Limit to 1000 rows' dropdown. The SQL editor contains the following query:

```
1  -- Desde cuántos países se generan las ventas
2  •  USE transactions;
3
4  •  SELECT COUNT(DISTINCT company.country) AS cantidad_de_países
5  FROM transaction
6  LEFT JOIN company
7  ON company.id=transaction.company_id;
```

Below the editor, the 'Result Grid' tab is active, displaying a single row of results:

cantidad_de_países
15

On the right side, there are buttons for 'Result Grid' and 'Form Editor'. Below the result grid, a tab labeled 'Result 16' is visible, with a 'Read Only' status indicator.

The 'Output' section at the bottom shows the execution log:

#	Time	Action	Message	Duration / Fetch
✓ 1	12:18:34	SELECT COUNT(DISTINCT company.country) AS cantidad_de_...	1 row(s) returned	0.125 sec / 0.000 sec

NIVEL 1. EJERCICIO 2

Utilizando JOIN realizarás las siguientes consultas:

- Identifica a la compañía con la mayor media de ventas.

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 following query:

```
1  -- La compañía con la mayor media de ventas
2  •  USE transactions;
3
4  •  SELECT company.company_name
5  FROM company
6  LEFT JOIN transaction
7  ON company.id=transaction.company_id
8  GROUP BY company.company_name
9  ORDER BY AVG(transaction.amount) DESC
10 LIMIT 1;
```

Below the editor, the 'Result Grid' tab is active, displaying the query results:

company_name
Ac Fermentum Incorporated

On the right side, there are buttons for 'Result Grid' and 'Form Editor'. Below the result grid, the 'Output' section shows 'Result 11' and a 'Read Only' status. The 'Action Output' section at the bottom provides a log of the execution:

#	Time	Action	Message	Duration / Fetch
✓ 1	13:27:30	SELECT company.company_name FROM company LEFT JOIN tr...	1 row(s) returned	0.406 sec / 0.000 sec

NIVEL 1. EJERCICIO 3

Utilizando sólo subconsultas (sin utilizar JOIN):

- Muestra todas las transacciones realizadas por empresas de Alemania.

The screenshot shows a database query editor interface. The top toolbar includes icons for file operations, execution, and a 'Limit to 1000 rows' dropdown. The SQL editor contains the following query:

```
1  -- Todas las transacciones realizadas por empresas de Alemania
2  •  USE transactions;
3
4  •  SELECT t.id
5  FROM transaction AS t
6  WHERE EXISTS (SELECT *
7                FROM company AS c
8                WHERE t.company_id=c.id AND c.country = 'Germany');
```

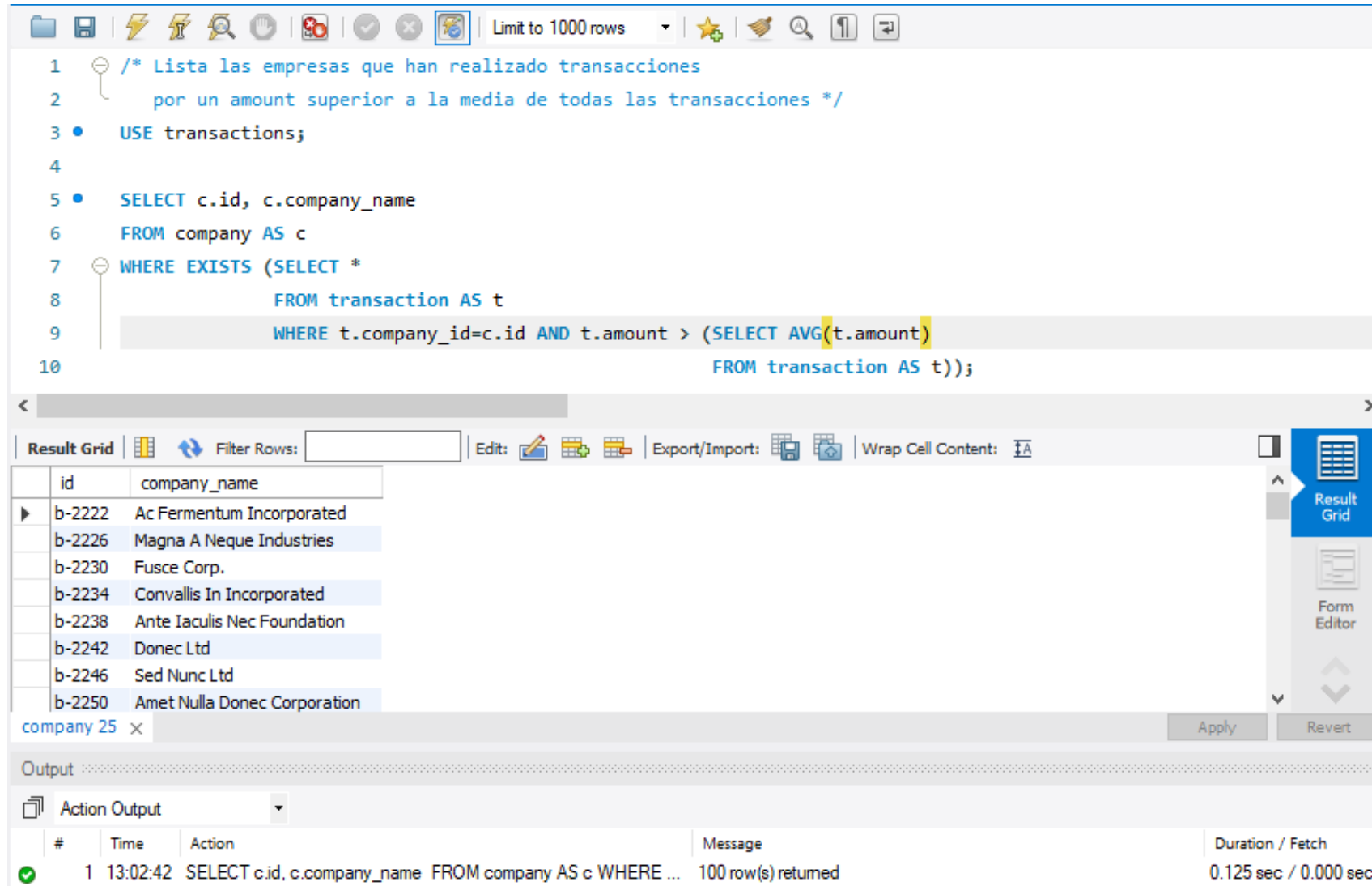
Below the query editor is the 'Result Grid' section, which displays a table with one column, 'id', and ten rows of UUID-like strings. The table has a scrollbar on the right. To the right of the table are buttons for 'Result Grid', 'Form Editor', and 'Apply/Revert'.

At the bottom, the 'Output' section shows a table with columns: #, Time, Action, Message, and Duration / Fetch. The first row indicates that the query was executed successfully at 12:50:42, returning 1000 rows in 0.000 seconds.

#	Time	Action	Message	Duration / Fetch
1	12:50:42	SELECT t.id FROM transaction AS t WHERE EXISTS (SELECT ...	1000 row(s) returned	0.000 sec / 0.000 sec

Utilizando sólo subconsultas (sin utilizar JOIN):

- Lista las empresas que han realizado transacciones por un amount superior a la media de todas las transacciones.



The screenshot shows a database query editor interface. The top toolbar includes icons for file operations, a search icon, and a 'Limit to 1000 rows' dropdown. The SQL query is as follows:

```
1  /* Lista las empresas que han realizado transacciones
2     por un amount superior a la media de todas las transacciones */
3  •  USE transactions;
4
5  •  SELECT c.id, c.company_name
6     FROM company AS c
7  WHERE EXISTS (SELECT *
8                 FROM transaction AS t
9                 WHERE t.company_id=c.id AND t.amount > (SELECT AVG(t.amount)
10                                                            FROM transaction AS t));
```

Below the query editor is the 'Result Grid' section, which displays the results of the query. The grid has two columns: 'id' and 'company_name'. The results are as follows:

id	company_name
b-2222	Ac Fermentum Incorporated
b-2226	Magna A Neque Industries
b-2230	Fusce Corp.
b-2234	Convallis In Incorporated
b-2238	Ante Iaculis Nec Foundation
b-2242	Donec Ltd
b-2246	Sed Nunc Ltd
b-2250	Amet Nulla Donec Corporation

At the bottom of the interface is the 'Output' section, which shows the 'Action Output' for the query. The output table has columns for '#', 'Time', 'Action', 'Message', and 'Duration / Fetch'. The first row shows a successful execution of the query.

#	Time	Action	Message	Duration / Fetch
1	13:02:42	SELECT c.id, c.company_name FROM company AS c WHERE ...	100 row(s) returned	0.125 sec / 0.000 sec

NIVEL 1. EJERCICIO 3

Utilizando sólo subconsultas (sin utilizar JOIN):

- Eliminarán del sistema las empresas que carecen de transacciones registradas, entrega el listado de estas empresas.

The screenshot shows a database management interface with a SQL editor and a results pane. The SQL editor contains the following query:

```
1  -- Lista de las empresas que no tienen transacciones registradas
2  •  USE transactions;
3
4  •  SELECT c.id, c.company_name
5     FROM company AS c
6  WHERE NOT EXISTS (SELECT *
7                     FROM transaction AS t
8                     WHERE t.company_id=c.id);
```

The results pane shows a table with two columns: `id` and `company_name`. The first row contains `NULL` for both columns.

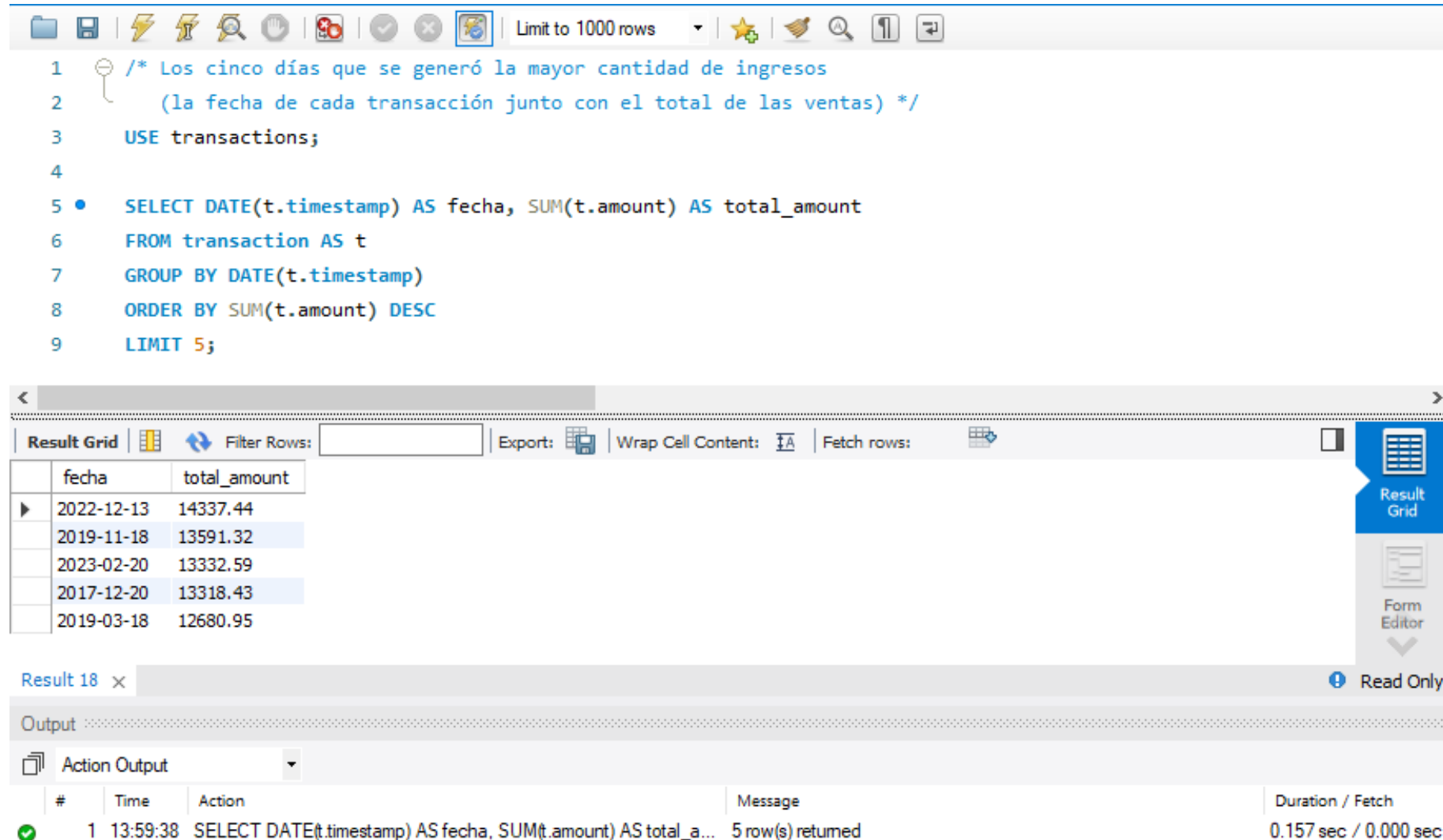
id	company_name
NULL	NULL

The bottom pane shows the output of the query, indicating that 0 rows were returned.

#	Time	Action	Message	Duration / Fetch
1	13:44:59	SELECT c.id, c.company_name FROM company AS c WHERE ...	0 row(s) returned	0.000 sec / 0.000 sec

NIVEL 2. EJERCICIO 1

Identifica los cinco días que se generó la mayor cantidad de ingresos en la empresa por ventas. Muestra la fecha de cada transacción junto con el total de las ventas.



```
1  /* Los cinco días que se generó la mayor cantidad de ingresos
2     (la fecha de cada transacción junto con el total de las ventas) */
3  USE transactions;
4
5  • SELECT DATE(t.timestamp) AS fecha, SUM(t.amount) AS total_amount
6     FROM transaction AS t
7     GROUP BY DATE(t.timestamp)
8     ORDER BY SUM(t.amount) DESC
9     LIMIT 5;
```

fecha	total_amount
2022-12-13	14337.44
2019-11-18	13591.32
2023-02-20	13332.59
2017-12-20	13318.43
2019-03-18	12680.95

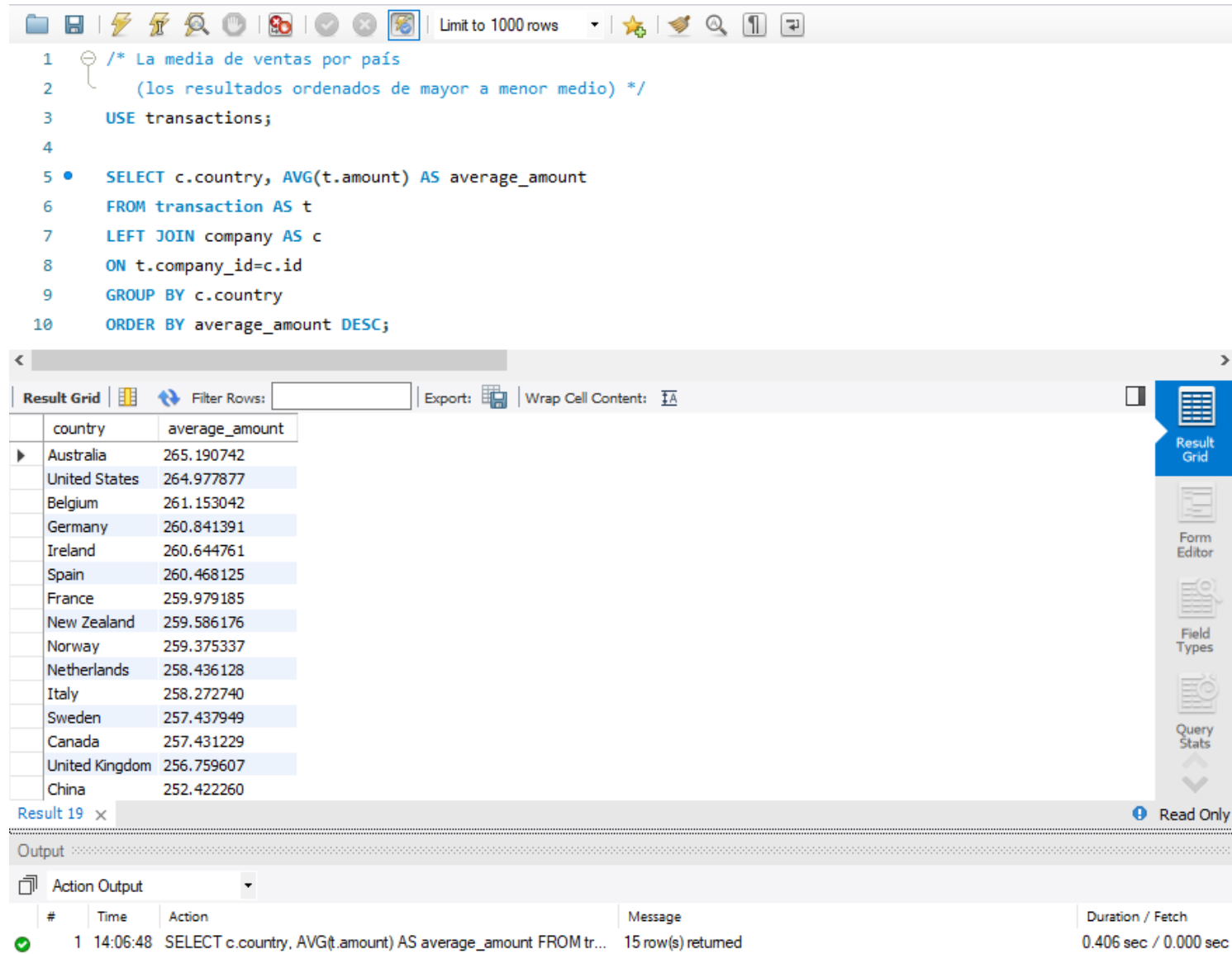
Result 18 x Read Only

Output

Action Output

#	Time	Action	Message	Duration / Fetch
✓ 1	13:59:38	SELECT DATE(t.timestamp) AS fecha, SUM(t.amount) AS total_a...	5 row(s) returned	0.157 sec / 0.000 sec

¿Cuál es la media de ventas por país? Presenta los resultados ordenados de mayor a menor medio.



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 following query:

```

1  /* La media de ventas por país
2  (los resultados ordenados de mayor a menor medio) */
3  USE transactions;
4
5  • SELECT c.country, AVG(t.amount) AS average_amount
6  FROM transaction AS t
7  LEFT JOIN company AS c
8  ON t.company_id=c.id
9  GROUP BY c.country
10 ORDER BY average_amount DESC;

```

Below the editor is the 'Result Grid' tab, which displays the query results in a table. The table has two columns: 'country' and 'average_amount'. The results are ordered from highest to lowest average amount.

country	average_amount
Australia	265.190742
United States	264.977877
Belgium	261.153042
Germany	260.841391
Ireland	260.644761
Spain	260.468125
France	259.979185
New Zealand	259.586176
Norway	259.375337
Netherlands	258.436128
Italy	258.272740
Sweden	257.437949
Canada	257.431229
United Kingdom	256.759607
China	252.422260

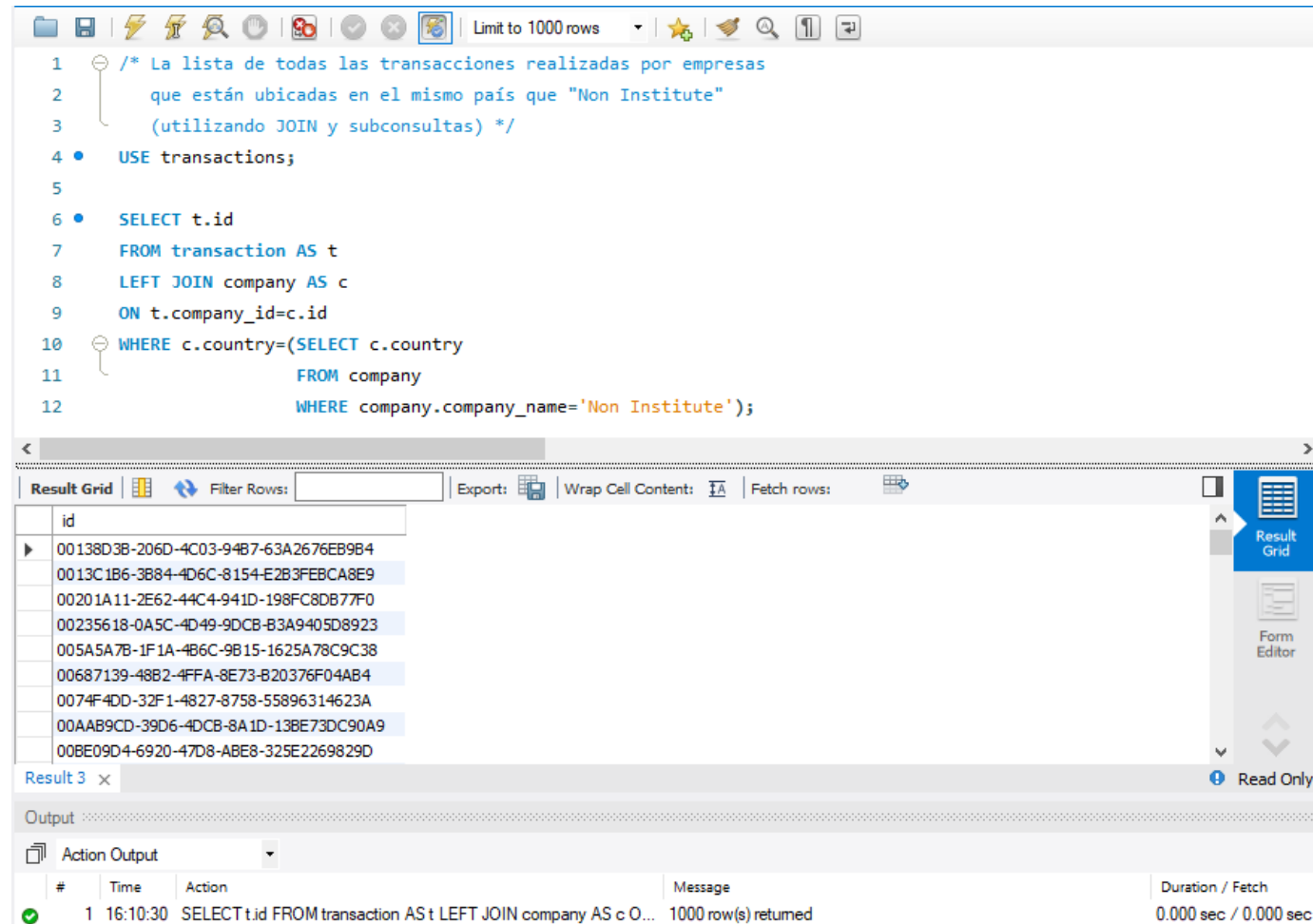
On the right side of the interface, there is a vertical toolbar with icons for 'Result Grid', 'Form Editor', 'Field Types', and 'Query Stats'. Below the result grid, there is a 'Read Only' indicator and an 'Output' section. The 'Output' section shows the execution log:

#	Time	Action	Message	Duration / Fetch
1	14:06:48	SELECT c.country, AVG(t.amount) AS average_amount FROM tr...	15 row(s) returned	0.406 sec / 0.000 sec

NIVEL 2. EJERCICIO 3

En tu empresa, se plantea un nuevo proyecto para lanzar algunas campañas publicitarias para hacer competencia a la compañía “Non Institute”. Para ello, te piden la lista de todas las transacciones realizadas por empresas que están ubicadas en el mismo país que esta compañía.

- Muestra el listado aplicando JOIN y subconsultas.



The screenshot shows a database query editor interface. The top toolbar includes icons for file operations, a 'Limit to 1000 rows' dropdown, and other utility icons. The SQL editor contains the following query:

```
1 /* La lista de todas las transacciones realizadas por empresas
2    que están ubicadas en el mismo país que "Non Institute"
3    (utilizando JOIN y subconsultas) */
4 • USE transactions;
5
6 • SELECT t.id
7 FROM transaction AS t
8 LEFT JOIN company AS c
9 ON t.company_id=c.id
10 WHERE c.country=(SELECT c.country
11                  FROM company
12                  WHERE company.company_name='Non Institute');
```

Below the query editor is the 'Result Grid' section, which displays the results of the query. The results are shown in a table with one column, 'id', and ten rows of UUIDs. The table is titled 'Result 3' and has a 'Read Only' status. The bottom section of the interface shows the 'Output' area, which includes an 'Action Output' table with columns for '#', 'Time', 'Action', 'Message', and 'Duration / Fetch'.

#	Time	Action	Message	Duration / Fetch
1	16:10:30	SELECT t.id FROM transaction AS t LEFT JOIN company AS c O...	1000 row(s) returned	0.000 sec / 0.000 sec

NIVEL 2. EJERCICIO 3

En tu empresa, se plantea un nuevo proyecto para lanzar algunas campañas publicitarias para hacer competencia a la compañía “Non Institute”. Para ello, te piden la lista de todas las transacciones realizadas por empresas que están ubicadas en el mismo país que esta compañía.

- Muestra el listado aplicando solo subconsultas.

The screenshot shows a SQL IDE interface. The top toolbar includes icons for file operations, execution, and settings, along with a 'Limit to 1000 rows' dropdown. The SQL editor contains the following query:

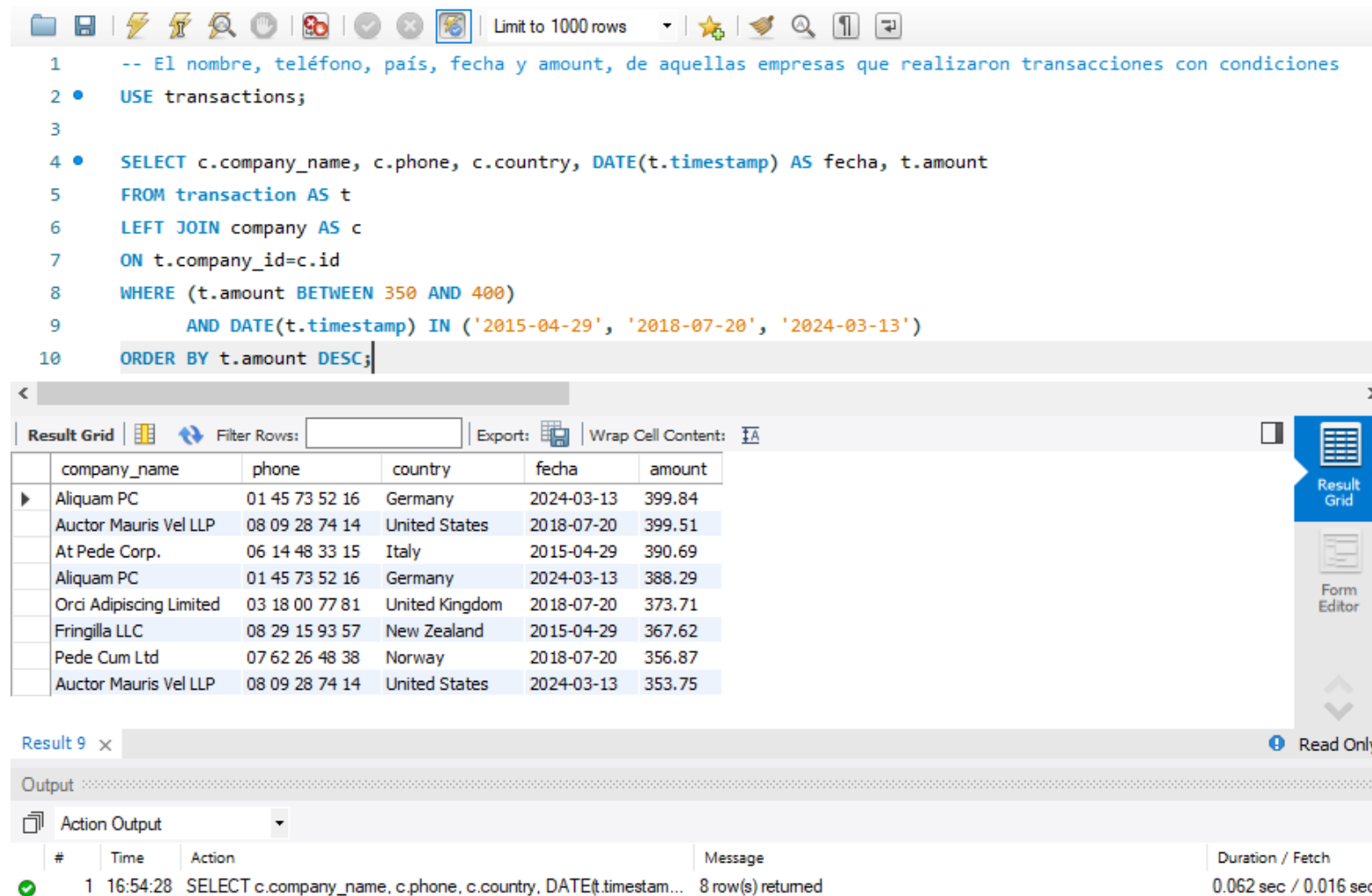
```
1  /* La lista de todas las transacciones realizadas por empresas
2     que están ubicadas en el mismo país que "Non Institute"
3     (utilizando sólo subconsultas) */
4  •  USE transactions;
5
6  •  SELECT t.id
7     FROM transaction AS t
8  WHERE EXISTS (SELECT *
9                 FROM company AS c
10                WHERE t.company_id=c.id AND c.country=(SELECT company.countryS
11                                                         FROM company
12                                                         WHERE company.company_name='Non Institute'));
```

Below the editor, the 'Result Grid' tab is active, displaying a table with one column, 'id', and ten rows of UUID-like strings. The bottom section shows the 'Output' pane with 'Action Output' selected, displaying a single log entry:

#	Time	Action	Message	Duration / Fetch
1	16:23:23	SELECT t.id FROM transaction AS t WHERE EXISTS (SELECT *...	1000 row(s) returned	0.000 sec / 0.000 sec

NIVEL 3. EJERCICIO 1

Presenta el nombre, teléfono, país, fecha y amount, de aquellas empresas que realizaron transacciones con un valor comprendido entre 350 y 400 euros y en alguna de estas fechas: 29 de abril de 2015, 20 de julio de 2018 y 13 de marzo de 2024. Ordena los resultados de mayor a menor cantidad.



The screenshot shows a SQL IDE interface. At the top, there is a toolbar with various icons and a dropdown menu set to "Limit to 1000 rows". Below the toolbar, a SQL query is entered in a text area. The query is as follows:

```
1  -- El nombre, teléfono, país, fecha y amount, de aquellas empresas que realizaron transacciones con condiciones
2  •  USE transactions;
3
4  •  SELECT c.company_name, c.phone, c.country, DATE(t.timestamp) AS fecha, t.amount
5  FROM transaction AS t
6  LEFT JOIN company AS c
7  ON t.company_id=c.id
8  WHERE (t.amount BETWEEN 350 AND 400)
9        AND DATE(t.timestamp) IN ('2015-04-29', '2018-07-20', '2024-03-13')
10 ORDER BY t.amount DESC;
```

Below the query editor, the "Result Grid" is displayed, showing 8 rows of data. The columns are: company_name, phone, country, fecha, and amount. The data is sorted by amount in descending order.

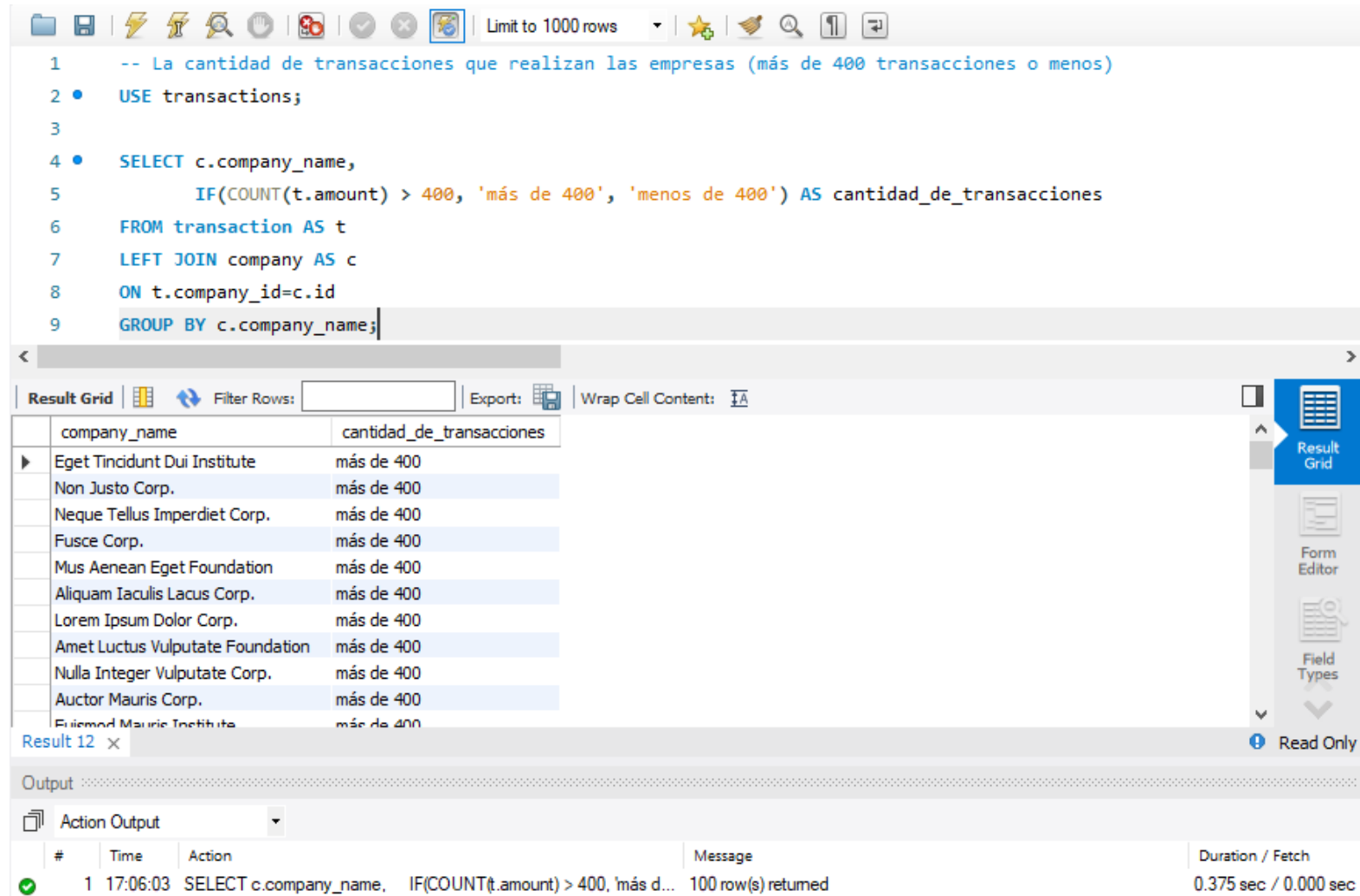
	company_name	phone	country	fecha	amount
▶	Aliquam PC	01 45 73 52 16	Germany	2024-03-13	399.84
	Auctor Mauris Vel LLP	08 09 28 74 14	United States	2018-07-20	399.51
	At Pedes Corp.	06 14 48 33 15	Italy	2015-04-29	390.69
	Aliquam PC	01 45 73 52 16	Germany	2024-03-13	388.29
	Orci Adipiscing Limited	03 18 00 77 81	United Kingdom	2018-07-20	373.71
	Fringilla LLC	08 29 15 93 57	New Zealand	2015-04-29	367.62
	Pede Cum Ltd	07 62 26 48 38	Norway	2018-07-20	356.87
	Auctor Mauris Vel LLP	08 09 28 74 14	United States	2024-03-13	353.75

Below the result grid, there is a "Result 9" tab and a "Read Only" indicator. At the bottom, there is an "Output" section with a dropdown menu set to "Action Output". The output shows a single message:

#	Time	Action	Message	Duration / Fetch
✓ 1	16:54:28	SELECT c.company_name, c.phone, c.country, DATE(t.timestamp)	8 row(s) returned	0.062 sec / 0.016 sec

NIVEL 3. EJERCICIO 2

Necesitamos optimizar la asignación de los recursos y dependerá de la capacidad operativa que se requiera, por lo que te piden la información sobre la cantidad de transacciones que realizan las empresas, pero el departamento de recursos humanos es exigente y quiere un listado de las empresas en las que especifiques si tienen más de 400 transacciones o menos.



The screenshot shows a database query editor interface. The top toolbar includes icons for file operations, execution, and a 'Limit to 1000 rows' dropdown. The SQL editor contains the following query:

```
1  -- La cantidad de transacciones que realizan las empresas (más de 400 transacciones o menos)
2  •  USE transactions;
3
4  •  SELECT c.company_name,
5         IF(COUNT(t.amount) > 400, 'más de 400', 'menos de 400') AS cantidad_de_transacciones
6  FROM transaction AS t
7  LEFT JOIN company AS c
8  ON t.company_id=c.id
9  GROUP BY c.company_name;
```

Below the query editor is the 'Result Grid' section, which displays the query results in a table. The table has two columns: 'company_name' and 'cantidad_de_transacciones'. The results show 10 companies, all with the value 'más de 400' in the second column.

company_name	cantidad_de_transacciones
Eget Tincidunt Dui Institute	más de 400
Non Justo Corp.	más de 400
Neque Tellus Imperdiet Corp.	más de 400
Fusce Corp.	más de 400
Mus Aenean Eget Foundation	más de 400
Aliquam Taculis Lacus Corp.	más de 400
Lorem Ipsum Dolor Corp.	más de 400
Amet Luctus Vulputate Foundation	más de 400
Nulla Integer Vulputate Corp.	más de 400
Auctor Mauris Corp.	más de 400
Euismod Mauris Institute	más de 400

At the bottom of the interface is the 'Output' section, which shows the execution log. The log indicates that the query was executed at 17:06:03 and returned 100 rows in 0.375 seconds.

#	Time	Action	Message	Duration / Fetch
1	17:06:03	SELECT c.company_name, IF(COUNT(t.amount) > 400, 'más d...	100 row(s) returned	0.375 sec / 0.000 sec