

# Tarea S2.01. Nociones básicas SQL

## Nivel 1

### Ejercicio 1

A partir de los documentos adjuntos (estructura\_datos y datos\_introducir), importa las dos tablas. Muestra las principales características del esquema creado y explica las diferentes tablas y variables que existen. Asegúrate de incluir un diagrama que ilustre la relación entre las distintas tablas y variables.

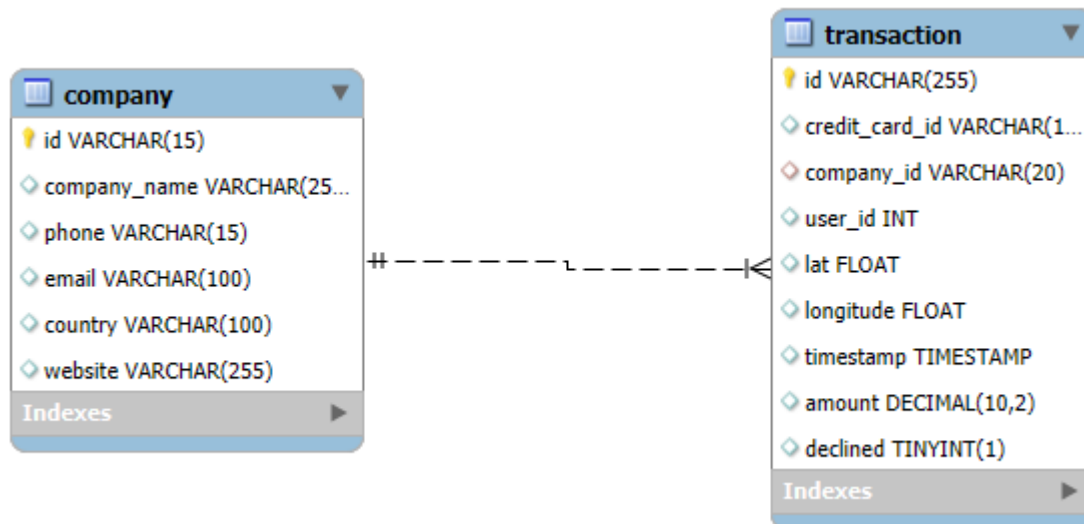


diagrama entidad relación

En este diagrama se puede visualizar y consultar las transacciones comerciales realizadas por diversas compañías. Cada transacción ( que se puede identificar como venta) incluye la siguiente información:

- **Fecha y hora**
- **Ubicación geográfica**
- **Monto económico**
- **Resultado de la transacción (aceptada o rechazada)**

Con una relación de 1 :N de la tabla company a la tabla transaction

## Ejercicio 2

Utilizando JOIN realizarás las siguientes consultas:

- Listado de los países que están generando ventas.

The screenshot shows a database management tool interface. On the left, the 'SCHEMAS' panel displays a tree view of the database structure, including tables like 'transaction' and 'company'. The 'transaction' table is selected, and its columns are listed: id, credit\_card\_id, company\_id, user\_id, lat, longitude, timestamp, amount, and declined.

The main query editor displays the following SQL query:

```
#Listado de los países que están generando ventas.
SELECT DISTINCT company.id, country
FROM company
JOIN transaction
ON company.id = transaction.company_id
WHERE amount > 0;
```

The 'Result Grid' shows the results of the query, listing the company ID and country for transactions where the amount is greater than 0. The results are as follows:

id	country
b-2458	Netherlands
b-2370	Sweden
b-2390	Ireland
b-2230	United States
b-2266	Sweden
b-2598	Belgium
b-2546	Sweden
b-2526	Canada
b-2558	Sweden
b-2550	Germany
b-2590	Belgium
b-2426	Norway
b-2330	France
b-2454	Italy

The 'Output' panel shows the execution log, including the time and message for each query. The final query (22) returned 100 rows.

- Desde cuántos países se generan las ventas.

**SCHEMAS**

Filter objects

- Indexes
- Foreign Keys
- Triggers
- transaction
  - Columns
    - id
    - credit\_card\_id
    - company\_id
    - user\_id
    - lat
    - longitude
    - timestamp
    - amount
    - declined
  - Indexes
  - Foreign Keys
  - Triggers

Views

Administration Schemas

Information

**Table: transaction**

**Columns:**

Column	DataType
id	varchar(255) PK
credit_card_id	varchar(15)
company_id	varchar(20)
user_id	int
lat	float
longitude	float
timestamp	timestamp
amount	decimal(10,2)
declined	tinyint(1)

Object Info Session

```

31
32 #2 Desde cuántos países se generan las ventas.
33 • SELECT COUNT(DISTINCT country)
34 FROM company
35 JOIN transaction
36 ON company.id = transaction.company_id
37 WHERE amount > 0;
  
```

Result Grid

COUNT(DISTINCT country)
15

Result 9

Output

#	Time	Action	Message
20	17:59:30	SELECT company.id, company_name, phone, timestamp, amount FROM company JOIN transaction ON co...	0 row(s) returned
21	10:27:53	SELECT * FROM transaction where declined = 1	237 row(s) returned
22	10:39:16	SELECT DISTINCT company.id, country FROM company JOIN transaction ON company.id = transaction.c...	100 row(s) returned
23	10:41:27	SELECT COUNT(DISTINCT country) FROM company JOIN transaction ON company.id = transaction.comp...	1 row(s) returned

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

**SCHEMAS**

Filter objects

- Indexes
- Foreign Keys
- Triggers
- transaction
  - Columns
    - id
    - credit\_card\_id
    - company\_id
    - user\_id
    - lat
    - longitude
    - timestamp
    - amount
    - declined
  - Indexes
  - Foreign Keys
  - Triggers

Views

Administration Schemas

Information

**Table: transaction**

**Columns:**

Column	DataType
id	varchar(255) PK
credit_card_id	varchar(15)
company_id	varchar(20)
user_id	int
lat	float
longitude	float
timestamp	timestamp
amount	decimal(10,2)
declined	tinyint(1)

Object Info Session

```

52 ORDER BY media_Ventas DESC;
53
54 #3 Identifica a la compañía con la mayor media de ventas.
55 • SELECT company.id, company_name, AVG(amount) as media_Ventas
56 FROM company
57 JOIN transaction
58 ON company.id = transaction.company_id
59 Group by company_id, company_name
60 ORDER BY media_Ventas DESC
61 LIMIT 1;
  
```

Result Grid

id	company_name	media_Ventas
b-2222	Ac Fermentum Incorporated	284.867160

Result 10

Output

#	Time	Action	Message
21	10:27:53	SELECT * FROM transaction where declined = 1	237 row(s) returned
22	10:39:16	SELECT DISTINCT company.id, country FROM company JOIN transaction ON company.id = transaction.c...	100 row(s) returned
23	10:41:27	SELECT COUNT(DISTINCT country) FROM company JOIN transaction ON company.id = transaction.comp...	1 row(s) returned
24	10:45:08	SELECT company.id, company_name, AVG(amount) as media_Ventas FROM company JOIN transaction O...	1 row(s) returned

## Ejercicio 3

Utilizando sólo subconsultas (sin utilizar JOIN):

- Muestra todas las transacciones realizadas por empresas de Alemania.

The screenshot shows a database management tool interface. On the left, a tree view displays the database schema, including tables like 'transaction' and 'company'. The 'transaction' table is selected, and its columns are listed: id, credit\_card\_id, company\_id, user\_id, lat, longitude, timestamp, amount, and declined. The main area displays a SQL query:

```
#1
SELECT *
FROM transaction
WHERE company_id IN (SELECT id
                     FROM company
                     WHERE country = "Germany");
```

Below the query, the 'Result Grid' shows a list of transactions for German companies. The columns are: id, credit\_card\_id, company\_id, user\_id, lat, longitude, timestamp, amount, and declined. The results show 11 rows of transaction data.

Below the result grid, the 'Output' section shows the execution progress of the query, including the number of rows returned for each step.

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

The screenshot shows a database management tool interface. On the left, a tree view displays the database schema, including tables like 'transaction' and 'company'. The 'company' table is selected, and its columns are listed: id, credit\_card\_id, company\_id, user\_id, lat, longitude, timestamp, amount, and declined. The main area displays a SQL query:

```
#2
SELECT *
FROM company
WHERE id IN (SELECT company_id
            FROM transaction
            WHERE amount > (
                SELECT AVG(amount)
                FROM transaction));
```

Below the query, the 'Result Grid' shows a list of companies that have transactions with an amount greater than the average. The columns are: id, company\_name, phone, email, country, and website. The results show 16 rows of company data.

Below the result grid, the 'Output' section shows the execution progress of the query, including the number of rows returned for each step.

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

**SCHEMAS**

Filter objects

- email
- country
- website
- Indexes
- Foreign Keys
- Triggers
- transaction
  - Columns
    - id
    - credit\_card\_id
    - company\_id
    - user\_id
    - lat
    - longitude
    - timestamp
    - amount
    - declined

Administration Schemas

Information

Column: **company\_id**

Collation: utf8mb4\_0900\_ai\_ci

Definition: **company\_id** varchar(20)

```

166 SELECT *
167 FROM company
168 WHERE id NOT IN (SELECT DISTINCT company_id
169                 FROM transaction);
170
171
172 SELECT *
173 FROM company
174 LEFT JOIN transaction
175 ON company.id = transaction.company_id
  
```

Result Grid

id	company_name	phone	email	country	website
NULL	NULL	NULL	NULL	NULL	NULL

company 19 x

Output

Action Output

#	Time	Action	Message
32	11:16:49	SELECT * FROM company WHERE id NOT IN (SELECT DISTINCT company_id FROM transaction)	0 row(s) returned
33	11:17:37	SELECT * FROM company LEFT JOIN transaction ON company.id = transaction.company_id WHERE t.id ...	Error Code: 1054. Unknown column 't.id' in 'where clause'
34	11:17:46	SELECT * FROM company LEFT JOIN transaction ON company.id = transaction.company_id WHERE tran...	0 row(s) returned
35	11:18:41	SELECT * FROM company WHERE id NOT IN (SELECT DISTINCT company_id FROM transaction)	0 row(s) returned

Object Info Session

# 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.

**SCHEMAS**

Filter objects

- email
- country
- website
- Indexes
- Foreign Keys
- Triggers
- transaction
  - Columns
    - id
    - credit\_card\_id
    - company\_id
    - user\_id
    - lat
    - longitude
    - timestamp
    - amount
    - declined

Administration Schemas

Information

Column: **company\_id**

Collation: utf8mb4\_0900\_ai\_ci

Definition: **company\_id** varchar(20)

```

4 #Muestra la fecha de cada transacción junto con el total de las ventas.
5
6 SELECT company_id, timestamp, SUM(amount) as total_ventas
7 FROM transaction
8 GROUP BY company_id, timestamp
9 ORDER BY total_ventas DESC
10 LIMIT 5;
11
  
```

Result Grid

company_id	timestamp	total_ventas
b-2438	2021-04-06 14:25:26	876.66
b-2542	2021-12-19 02:11:08	858.60
b-2542	2021-12-19 01:52:10	858.60
b-2338	2016-06-07 19:37:51	858.55
b-2606	2018-06-22 01:15:43	845.91

Result 5 x

Output

Action Output

#	Time	Action	Message
33	11:17:37	SELECT * FROM company LEFT JOIN transaction ON company.id = transaction.company_id WHERE t.id ...	Error Code: 1054. Unknown column 't.id' in 'where clause'
34	11:17:46	SELECT * FROM company LEFT JOIN transaction ON company.id = transaction.company_id WHERE tran...	0 row(s) returned
35	11:18:41	SELECT * FROM company WHERE id NOT IN (SELECT DISTINCT company_id FROM transaction)	0 row(s) returned
36	11:20:56	SELECT company_id, timestamp, SUM(amount) as total_ventas FROM transaction GROUP BY company_id, timestamp	5 row(s) returned

Object Info Session

## Ejercicio 2

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

The screenshot shows a database management tool interface. On the left, a 'SCHEMAS' pane displays a tree view of database objects, including 'transaction' and 'company' tables. The 'transaction' table is selected, showing columns like 'id', 'credit\_card\_id', 'company\_id', 'user\_id', 'lat', 'longitude', 'timestamp', 'amount', and 'declined'. The 'company' table is also visible, showing columns like 'id', 'country', 'website', 'email', and 'phone'. The main pane displays a SQL query:

```
28
29 #¿Cuál es la media de ventas por país? Presenta los resultados ordenados de mayor a menor medio.
30
31 • SELECT country, AVG(amount) as media_ventas
32 FROM company
33 JOIN transaction
34 ON company.id = transaction.company_id
35 GROUP BY country
36 ORDER BY media_ventas DESC;
37
38 #En tu empresa, se plantea un nuevo proyecto para lanzar algunas campañas publicitarias para hacer
```

Below the query, the 'Result Grid' shows the results of the query:

country	media_ventas
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	258.426178

At the bottom, the 'Output' pane shows the execution log:

#	Time	Action	Message
34	11:17:46	SELECT * FROM company LEFT JOIN transaction ON company.id = transaction.company_id WHERE tran...	0 row(s) returned
35	11:18:41	SELECT * FROM company WHERE id NOT IN (SELECT DISTINCT company_id FROM transaction)	0 row(s) returned
36	11:20:56	SELECT company_id, timestamp, SUM(amount) as total_ventas FROM transaction GROUP BY company_i...	5 row(s) returned
37	11:22:11	SELECT country, AVG(amount) as media_ventas FROM company JOIN transaction ON company.id = trans...	15 row(s) returned

## 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.

Muestra el listado aplicando solo subconsultas.

## haciendo conteo de transacciones

The screenshot shows a database management tool interface. On the left, the 'SCHEMAS' panel displays a tree view of the database structure, including tables like 'transaction' and 'company'. The 'transaction' table is selected, and its columns are listed: id, credit\_card\_id, company\_id, user\_id, lat, longitude, timestamp, amount, and declined. The 'company' table is also visible. The main query editor displays the following SQL query:

```
48
49 • SELECT transaction.company_id, company_name, count(*) as transacciones
50 FROM company
51 JOIN transaction
52 ON company.id = transaction.company_id
53 WHERE company.country = (SELECT country
54 FROM company
55 WHERE company_name = "Non Institute")
56 GROUP BY transaction.company_id, company_name;
57
58
```

The 'Result Grid' shows the results of the query:

company_id	company_name	transacciones
b-2246	Sed Nunc Ltd	1541
b-2310	Non Magna LLC	1489
b-2326	Enim Conditum Ltd	1550
b-2354	Ac Libero Inc.	1513
b-2374	Amet Faucibus Ut Foundation	1494
b-2430	Interdum Feugiat Sed Associates	1542
b-2522	Viverra Donec Foundation	1537
b-2574	Orci Adipiscing Limited	1567
b-2618	Non Institute	1543

The 'Output' panel shows the execution log:

#	Time	Action	Message
38	11:25:32	SELECT transaction.company_id, company_name, count(*) as transacciones FROM company JOIN transa...	9 row(s) returned
39	11:25:52	SELECT transaction.company_id, company_name, count(*) as transacciones FROM company JOIN transa...	9 row(s) returned
40	11:26:26	SELECT transaction.id, company_name, transaction.amount, transaction.timestamp FROM transa...	13776 row(s) returned
41	11:27:14	SELECT transaction.company_id, company_name, count(*) as transacciones FROM company JOIN transa...	9 row(s) returned

## mostrando todas las transacciones

The screenshot shows the same database management tool interface. The 'SCHEMAS' panel is the same. The main query editor displays the following SQL query:

```
72 WHERE company_name = "Non Institute")
73 GROUP BY company_id;
74
75 • SELECT transaction.id, company_name, transaction.amount, transaction.timestamp
76 FROM transaction
77 JOIN company ON transaction.company_id = company.id
78 WHERE company.country = (SELECT country
79 FROM company
80 WHERE company_name = 'Non Institute')
81 ORDER BY transaction.timestamp DESC;
82
```

The 'Result Grid' shows the results of the query:

id	company_name	amount	timestamp
DD000334-AFFF-4DC5-8378-54204B70569A	Enim Conditum Ltd	485.81	2024-12-31 15:10:31
275A99C1-1B59-491F-85BE-E99CC122A120	Non Magna LLC	539.45	2024-12-31 12:55:18
00F94C0B-AC1A-4BC6-AC21-486475CE838A	Ac Libero Inc.	248.19	2024-12-31 08:03:47
A4653920-06AD-43F0-82EE-F942CF8C7177	Amet Faucibus Ut Foundation	477.83	2024-12-31 01:50:51
973F22B0-E107-4EC5-8A40-015EF3602CED	Amet Faucibus Ut Foundation	342.82	2024-12-31 01:41:35
6480E80F-6947-4789-9B0B-AEC2D84EE5F3	Amet Faucibus Ut Foundation	92.91	2024-12-30 23:32:45
976A9F88-A35D-4E54-91E1-8AA0D7F84C6D	Viverra Donec Foundation	53.31	2024-12-30 18:52:40
89B32258-3CCB-41CA-8F46-92155EF27EF4	Viverra Donec Foundation	130.59	2024-12-30 18:49:37
36B465E3-9466-40ED-AC22-A02676F69EEA	Enim Conditum Ltd	127.09	2024-12-30 18:47:44

The 'Output' panel shows the execution log:

#	Time	Action	Message
39	11:25:52	SELECT transaction.company_id, company_name, count(*) as transacciones FROM company JOIN transa...	9 row(s) returned
40	11:26:26	SELECT transaction.id, company_name, transaction.amount, transaction.timestamp FROM transa...	13776 row(s) returned
41	11:27:14	SELECT transaction.company_id, company_name, count(*) as transacciones FROM company JOIN transa...	9 row(s) returned
42	11:28:18	SELECT transaction.id, company_name, transaction.amount, transaction.timestamp FROM transa...	13776 row(s) returned

# Nivel 3

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 database management tool interface. On the left is a 'SCHEMAS' pane with a tree view of database objects. The 'Columns' section is expanded, showing a list of columns including 'company\_id'. Below this, the 'Column: company\_id' is selected, showing its 'Collation: utf8mb4\_0900\_ai\_ci' and 'Definition: company\_id varchar(20)'. The main area displays a SQL query in a text editor. The query is as follows:

```
4 -- En alguna de estas fechas: 29 de abril de 2015, 20 de julio de 2018 y 13 de marzo de 2024.
5 -- Ordena los resultados de mayor a menor cantidad.
6
7 SELECT company.id, company_name, phone, timestamp, amount
8 FROM company
9 JOIN transaction
10 ON company.id = transaction.company_id
11 WHERE amount BETWEEN 350 AND 400
12 AND DATE(transaction.timestamp) IN ("2015-04-29", "2018-07-20", "2024-07-02")
13 ORDER BY amount DESC;
14
```

Below the query editor is a 'Result Grid' showing the results of the query. The grid has columns for 'id', 'company\_name', 'phone', 'timestamp', and 'amount'. The results are as follows:

id	company_name	phone	timestamp	amount
b-2294	Auctor Mauris Vel LLP	08 09 28 74 14	2018-07-20 13:57:29	399.51
b-2262	Gravida Sagittis LLP	03 81 28 33 97	2024-07-02 13:10:08	391.30
b-2402	At Pede Corp.	06 14 48 33 15	2015-04-29 15:35:40	390.69
b-2574	Orci Adipiscing Limited	03 18 00 77 81	2018-07-20 01:20:14	373.71
b-2286	Fringilla LLC	08 29 15 93 57	2015-04-29 06:18:25	367.62
b-2442	Aliquam Erat Volutpat LLP	06 01 63 57 66	2024-07-02 00:45:13	364.34
b-2410	Sed Id Limited	07 28 18 18 13	2024-07-02 17:11:41	363.71
b-2566	Aliquam PC	01 45 73 52 16	2024-07-02 22:51:26	358.10
b-2426	Pede Cum Ltd	07 62 26 48 38	2018-07-20 14:57:32	356.87

At the bottom of the interface is an 'Output' pane showing the execution of the query. It displays a message: '1 11:37:02 SELECT company.id, company\_name, phone, timestamp, amount FROM company JOIN transaction ON com... 10 row(s) returned'.

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.



Filter objects

- email
- country
- website
- Indexes
- Foreign Keys
- Triggers
- transaction
  - Columns
    - id
    - credit\_card\_id
    - company\_id
    - user\_id
    - lat
    - longitude
    - timestamp
    - amount
    - declined
- Indexes

Administration Schemas

Information

Column: **company\_id**

Collation: utf8mb4\_0900\_ai\_ci

Definition:

**company\_id** varchar(20)

```

41 GROUP BY company_id;
42
43 • SELECT company_id, company_name, COUNT(*) as numTransacciones
44 FROM transaction
45 JOIN company
46 ON company.id = transaction.company_id
47 GROUP BY company_id, company_name
48 HAVING numTransacciones <= 400; -- no entiendo si es mas de 400 o menos en la solicitud.
49                                     #un listado de las empresas
50                                     #en las que especifiques si tienen más de 400 transacciones o menos".
51 • SELECT company_id, company_name, COUNT(*) as numTransacciones

```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: [\[A\]](#)

company_id	company_name	numTransacciones
b-2286	Fringilla LLC	397
b-2362	Lorem Eu Incorporated	380
b-2470	Nec Luctus LLC	399

Result 9 x

Output

Action Output

#	Time	Action	Message
✓ 1	11:37:02	SELECT company_id, company_name, phone, timestamp, amount FROM company JOIN transaction ON com...	10 row(s) returned
✓ 2	11:40:57	SELECT company_id, company_name, COUNT(*) as numTransacciones FROM transaction JOIN company ...	3 row(s) returned
✓ 3	11:41:30	SELECT company_id, company_name, COUNT(*) as numTransacciones FROM transaction JOIN company ...	97 row(s) returned
✓ 4	11:41:52	SELECT company_id, company_name, COUNT(*) as numTransacciones FROM transaction JOIN company ...	3 row(s) returned