

Nivel I

Ejercicio 1

A partir dels documents adjunts (estructura_dades i dades_introduir), importa les dues taules. Mostra les característiques principals de l'esquema creat i explica les diferents taules i variables que existeixen. Assegura't d'incloure un diagrama que il·lustri la relació entre les diferents taules i variables.

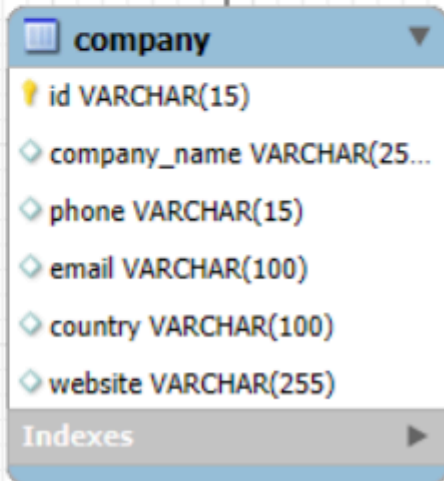
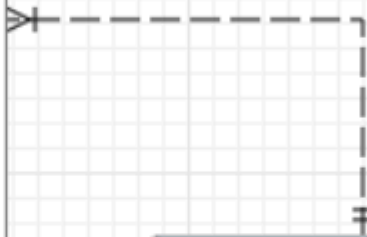
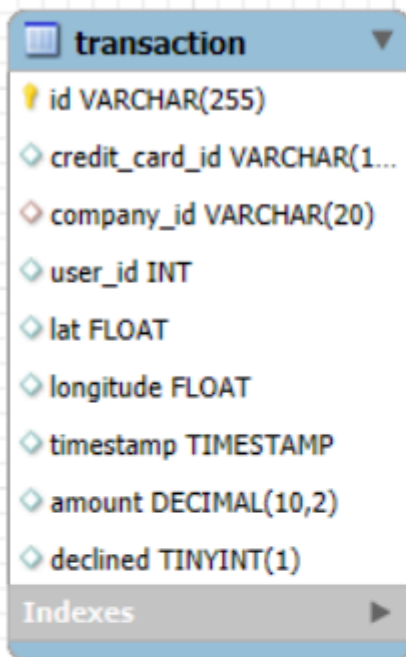
Entendemos que la tabla transactions es la tabla de hechos, donde se registran todos los movimientos que pueden tener las diferentes empresas. Es por eso que la relación es de 1 a N (Company -> Transaction).

La PK de company es la columna *id*, que se convierte en la FK de la tabla transaction siendo la columna *company_id*.

Table	Column	Type	Default Value	Nullable	Character Set	Collation	Privileges
company	company_name	varchar(255)		YES	utf8mb4	utf8mb4_0900_...	select,insert,update,references
company	country	varchar(100)		YES	utf8mb4	utf8mb4_0900_...	select,insert,update,references
company	email	varchar(100)		YES	utf8mb4	utf8mb4_0900_...	select,insert,update,references
company	id	varchar(15)		NO	utf8mb4	utf8mb4_0900_...	select,insert,update,references
company	phone	varchar(15)		YES	utf8mb4	utf8mb4_0900_...	select,insert,update,references
company	website	varchar(255)		YES	utf8mb4	utf8mb4_0900_...	select,insert,update,references
transaction	amount	decimal(10,2)		YES			select,insert,update,references
transaction	company_id	varchar(20)		YES	utf8mb4	utf8mb4_0900_...	select,insert,update,references
transaction	credit_card_id	varchar(15)		YES	utf8mb4	utf8mb4_0900_...	select,insert,update,references
transaction	declined	tinyint(1)		YES			select,insert,update,references
transaction	id	varchar(255)		NO	utf8mb4	utf8mb4_0900_...	select,insert,update,references
transaction	lat	float		YES			select,insert,update,references
transaction	longitude	float		YES			select,insert,update,references
transaction	timestamp	timestamp		YES			select,insert,update,references
transaction	user_id	int		YES			select,insert,update,references

Name	Engine	Version	Row Format	Rows	Avg Row Length	Data Length	Max Data Length	Index Length	Data Free	Auto Incre...	Create Time	Update Time
company	InnoDB	10	Dynamic	100	163	16.0 KB	0.0 bytes	0.0 bytes	0.0 bytes	0	2025-01-21 16:37:09	2025-01-21 16:39:17
transaction	InnoDB	10	Dynamic	587	139	80.0 KB	0.0 bytes	64.0 KB	0.0 bytes	0	2025-01-21 16:37:09	2025-01-21 16:39:18

características de las tablas y columnas



Ejercicio 2

Utilitzant JOIN realitzaràs les següents consultes:

- Llistat dels països que estan fent compres.

Para este ejercicio realizo un select distinct para que solo cuente una vez cada país y no me de duplicados.

`SELECT DISTINCT country from company;`

The screenshot displays a database management system interface. At the top, a SQL query is entered in a text area: `SELECT DISTINCT country from company;`. Below the query editor, a 'Result Grid' is shown, displaying a list of countries: Germany, Australia, United States, New Zealand, Norway, United Kingdom, Italy, Belgium, Sweden, Ireland, China, Canada, France, Netherlands, and Spain. The interface includes standard database tool icons for filtering, exporting, and wrapping cell content. At the bottom, an 'Action Output' panel shows the execution details: the query was run at 12:55:16, and it returned 15 rows.

#	Time	Action	Message
1	12:55:16	SELECT DISTINCT country from company LIMIT 0, 1000	15 row(s) returned

- Des de quants països es realitzen les compres.

Mostrar el contejo distintivo de los países, llamando a la columna resultante “cantidad_paises”.

```
SELECT COUNT(DISTINCT country) AS cantidad_paises from company;
```

7 • `SELECT COUNT(DISTINCT country) AS cantidad_paises from company;`

8

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

	cantidad_paises
▶	15

Result 29 x

Output

Action Output

#	Time	Action	Message
1	12:56:28	SELECT COUNT(DISTINCT country) AS cantidad_paises from company LIMIT 0, 1000	1 row(s) returned

- Identifica la compañía con la mediana más grande de ventas.

Selección de los campos : nombre de la compañía, la media de las ventas, redondeado a dos decimales y renombrado como “media”.

Uní las dos tablas mediante el campo company_id e id.

Filtro para omitir las operaciones no realizadas, por lo que no las contamos como ventas.

Agrupé por el nombre de la compañía, ordené por la media descendente y limité a 1 el resultado.

```
SELECT company_name, ROUND(AVG(amount),2) AS media FROM transactions.transaction
```

```
JOIN company ON transaction.company_id = company.id
```

```
WHERE declined = 0
```

```
GROUP BY company_name
```

```
ORDER BY media desc
```

```
LIMIT 1;
```

```
9 • SELECT company_name, ROUND(AVG(amount),2) AS media FROM transactions.transaction
10     JOIN company ON transaction.company_id = company.id
11     WHERE declined = 0
12     GROUP BY company_name
13     ORDER BY media desc
14     LIMIT 1;
15
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:	Fetch rows:
company_name	media				
Eget Ipsum Ltd	481.86				

- Exercici 3

Utilitzant només subconsultes (sense utilitzar JOIN):

- Mostra totes les transaccions realitzades per empreses d'Alemanya.

Muestro todos los datos de la tabla de transacciones.

Filtro para que me devuelva las empresas que tienen el mismo país que en la subquery ejecuta como "Germany".

Select * from transaction

WHERE company_id IN (

SELECT id

from company

WHERE country = 'Germany'

);

```
20 • Select * from transaction
21 WHERE company_id IN (
22     SELECT id
23     from company
24     WHERE country = 'Germany'
25 );
```

Result Grid										Filter Rows:		Edit:		Export/Import:		Wrap Cell Content: ⌂		
	id	credit_card_id	company_id	user_id	lat	longitude	timestamp	amount	declined									
▶	108B1D1D-5B23-A76C-55EF-C568E49A05DD	CcU-2938	b-2222	275	83.7839	-178.86	2021-07-07 17:43:16	293.57	0									
	EA2C3281-C9C1-A387-44F8-729FB4B51C76	CcU-2938	b-2222	275	20.2004	-116.84	2021-05-09 10:25:08	119.36	1									
	0DD2E608-5C9E-D1B3-4999-B99F43AD735A	CcU-2959	b-2234	275	9.68811	130.282	2021-04-17 05:30:17	252.47	1									
	AB069F53-965E-A2A8-CE06-CA8C4FD92501	CcU-2959	b-2234	275	1.64819	-158.007	2021-04-15 13:37:18	60.99	0									
	0466A42E-47CF-8D24-FD01-C0B689713128	CcU-4219	b-2302	170	-43.9695	-117.525	2021-07-26 07:29:18	49.53	0									
	0A476ED9-0C13-1962-F87B-D3563924B539	CcU-4359	b-2302	221	-56.4901	114.801	2022-02-26 20:33:54	430.49	0									
	122DC333-E19F-D629-DCD8-9C54CF1EB89A	CcU-4366	b-2302	221	29.6372	-166.173	2021-06-09 06:04:14	172.01	0									
	135267BA-2E7D-957C-C42C-6450A2B3ED54	CcU-4520	b-2302	210	20.6724	14.9732	2021-12-29 20:38:23	17.97	0									
	14CAE5B5-8FB1-3E4A-4C85-0EA4167534F4	CcU-4849	b-2302	189	-53.6202	93.0533	2021-12-31 00:29:42	388.04	0									
	158A3ACB-541C-DBCC-65BD-6373CC67BF1C	CcU-4849	b-2302	183	42.5424	-170.347	2022-03-08 05:02:19	240.29	0									
	162C7E78-2B6B-7971-A1E4-D2124E732451	CcU-4527	b-2302	210	-69.1381	58.0017	2021-04-11 05:59:18	231.26	0									
	1717FD6B-ADAD-7082-A748-9112BE892CCC	CcU-4219	b-2302	172	69.4892	-138.411	2021-12-29 16:18:54	249.91	0									
	17E3A788-8EF1-5766-5C30-A1F8078003A	CcU-4345	b-2302	222	57.8477	-114.778	2021-08-17 05:37:08	407.84	0									
transaction 31 ✕																		
Output																		
Action Output																		
#	Time	Action						Message										
✓ 1	13:02:07	Select * from transaction WHERE company_id IN (SELECT id						from company WHERE country = 'Germany') LIMIT 0, 1000										
										118 row(s) returned								

- Llista les empreses que han realitzat transaccions per un amount superior a la mitjana de totes les transaccions.

Selección distintiva del nombre de la compañía. En from selecciono las dos tablas ya que realizaré la unión de las mismas con el filtro where.

Además filtro para que la el total de la venta sea mayor que la media de las ventas, calculado en la subconsulta.

`SELECT distinct company_name`

`FROM company, transaction`

`WHERE transaction.company_id = company.id AND amount >(`

`SELECT AVG(amount)`

`FROM transaction`

`);`

```

27 • SELECT distinct company_name
28 FROM company, transaction
29 WHERE transaction.company_id = company.id AND amount >(
30     SELECT AVG(amount)
31     FROM transaction
32 );
33
34

```

Result Grid

company_name
▶ Lorem Eu Incorporated
Non Institute
Ut Semper Foundation
Lacus Quisque Associates
Elit Etiam Laoreet Associates
Nunc Interdum Incorporated
Magna Incorporated
Sapien Nunc Pulvinar LLP
Ac Fermentum Incorporated
Nunc Sit Incorporated
Enim Condimentum Ltd
Lorem Ipsum Dolor Corp.
Tempor Nunc Commodo Com

Result 33 x

Output

Action Output

#	Time	Action	Message
▶ 1	13:06:30	SELECT distinct company_name FROM company, transaction WHERE transaction.company_id = company.id AND amount >(SELECT AVG(amount) F...	70 row(s) returned
▶ 2	13:09:50	SELECT distinct company_name FROM company, transaction WHERE transaction.company_id = company.id AND amount >(SELECT AVG(amount) F...	70 row(s) returned

- Eliminarian del sistema les empreses que no tenen transaccions registrades, entrega el llistat d'aquestes empreses.

Selección del id de la compañía, donde ese mismo id no esté en la tabla de transacciones de la subconsulta, que nos devuelve cada id una sola vez.

SELECT id

FROM company

WHERE id NOT IN (

SELECT DISTINCT company_id

FROM transaction

);

