

Nivel 1

- Ejercicio 1

Tu tarea es diseñar y crear una tabla llamada "credit_card" que almacene detalles cruciales sobre las tarjetas de crédito. La nueva tabla debe ser capaz de identificar de forma única cada tarjeta y establecer una relación adecuada con las otras dos tablas ("transaction" y "company"). Después de crear la tabla será necesario que ingreses la información del documento denominado "datos_introducir_credit". Recuerda mostrar el diagrama y realizar una breve descripción del mismo.

- Tengo que eliminar la tabla credit_card para tener los pantallazos que faltan
- Para esto, antes tengo que eliminar la foreign_key que relaciona credit_card con transaction. este es el código:

```
alter table transaction  
drop foreign key transaction_ibfk_2;
```

- Luego elimino la tabla credit_card. Script abajo:

```
drop table credit_card
```

- Vuelvo a crear la tabla credit_card dentro de database transactions

```
use transactions;
```

```
CREATE TABLE credit_card (  
    id VARCHAR(15) PRIMARY KEY,  
    iban VARCHAR(40),  
    pan VARCHAR(20) UNIQUE,  
    pin CHAR(10),  
    cvv CHAR(5),  
    expiring_date VARCHAR (10)
```

```
);
```

The screenshot shows the MySQL Workbench interface with the following details:

- Navigator:** Shows the schema structure under the 'transactions' database, including tables like company, credit_card, data_user, and transaction.
- SQL Editor:** Contains the following SQL script:

```
2  
3  -- Nivel 1  
4  -- Ejercicio 1  
5  use transactions;  
6  
7  CREATE TABLE credit_card (  
8      id VARCHAR(15) PRIMARY KEY,  
9      iban VARCHAR(40),  
10     pan VARCHAR(20) UNIQUE,  
11     pin CHAR(10),  
12     cvv CHAR(5),  
13     expiring_date VARCHAR (10)  
14 );  
15  
16  /*alter table transaction  
17  drop foreign key transaction_ibfk_2;  
18  
19  drop table credit_card*/  
20  
21  -- Insertamos datos de credit_card
```
- Output:** Shows the execution log with the following entries:

#	Time	Action	Message	Duration / Fetch
10	11:43:20	alter table transaction drop foreign key transaction_ibfk_2;	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.172 sec
11	11:43:38	drop table credit_card -- Insertamos datos de credit_card	INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) ... Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to your ...	0.000 sec
12	11:44:02	drop table credit_card	0 row(s) affected	0.047 sec
13	11:45:11	use transactions	0 row(s) affected	0.000 sec
14	11:45:17	CREATE TABLE credit_card (id VARCHAR(15) PRIMARY KEY, iban VARCHAR(40), pan ...	0 row(s) affected	0.063 sec

-- Insertamos datos de credit_card

```
INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date)
VALUES ('CcU-2938', 'TR301950312213576817638661', '5424465566813633', '3257', '984', '10/30/22');
INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date)
VALUES ('CcU-2945', 'DO26854763748537475216568689', '5142423821948828', '9080', '887', '08/24/23');
*
*
*
INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date)
VALUES ('CcU-4842', 'SA2156708581957118818229', '3774 636724 83250', '4655', '750', '11/11/24');
INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date)
VALUES ('CcU-4849', 'SE2813123487163628531121', '5223363813491514', '9992', '779', '03/21/25');
INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date)
VALUES ('CcU-4856', 'TR373872558313545667124286', '349528235713651', '9086', '974', '05/19/23');
```

The screenshot shows the MySQL Workbench interface with the following details:

- File Menu:** File, Edit, View, Query, Database, Server, Tools, Scripting, Help.
- Toolbar:** Standard MySQL icons for connection, schema, table, view, stored procedure, function, and help.
- Schemas:** Navigator pane showing the database structure. It includes the `dataanalytics` schema and the `transactions` schema which contains tables like `company`, `credit_card`, `data_user`, and `transaction`.
- Script Editor:** The script `b_sprint03_niveles 1_2` is open, containing the SQL code provided above.
- Results:** The results pane displays the execution log for 275 rows affected. The log includes the following columns:
 - #
 - Time
 - Action
 - Message
 - Duration / FetchEach row corresponds to an `INSERT` statement for a `credit_card` record, showing the card details and the timestamp of the insertion.

-- Intento modificar la tabla transaction para añadir el id de la table credit_card como Foreign Key con este script:

```
ALTER TABLE transaction
```

```
ADD FOREIGN KEY (credit_card_id) REFERENCES credit_card(id);
```

-- No me permite hacerlo. No da: Error Code: 1452. Cannot add or update a child row: a foreign key constraint fails (`transactions`.`#sql-15a0_e4`, CONSTRAINT `transaction_ibfk_2` FOREIGN KEY (`credit_card_id`) REFERENCES `credit_card` (`id`))

Parece que hay registros de tabla transaction que no están en la tabla credit_card que he vuelto a crear

-- Primero verifico si es esto es lo que está pasando

```
select distinct credit_card_id  
from `transaction`  
where credit_card_id not in (select id from credit_card);
```

Sí hay un registro que no está en credit_card, ya que fue creada nuevamente. Es el registro:

CcU-9999

The screenshot shows the MySQL Workbench interface. In the top navigation bar, the 'dataanalytics' database is selected. The main area displays a script window with the following content:

```
-- Intento modificar la tabla transaction para añadirle el id de la table credit_card como Foreign Key con este script  
ALTER TABLE transaction  
ADD FOREIGN KEY (credit_card_id) REFERENCES credit_card(id);  
  
-- No me permite hacerlo porque hay registros de tabla transaction que no estan en la tabla credit_card que he vuelto a crear  
-- Primero verifico que esto es lo que está pasando  
select distinct credit_card_id  
from `transaction`  
where credit_card_id not in (select id from credit_card);
```

Below the script window is a results grid showing the output of the last query:

credit_card_id
CcU-9999

At the bottom of the interface, there is a log window titled 'transaction 3' showing the execution history:

#	Time	Action	Message	Duration / Fetch
272	11:56:51	INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcU-4835', 'PT34...', '1 row(s) affected')		0.000 sec
273	11:56:51	INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcU-4842', 'SA21...', '1 row(s) affected')		0.000 sec
274	11:56:51	INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcU-4849', 'SE28...', '1 row(s) affected')		0.016 sec
275	11:56:51	INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcU-4856', 'TR37...', '1 row(s) affected')		0.000 sec
276	12:01:45	ALTER TABLE transaction ADD FOREIGN KEY (credit_card_id) REFERENCES credit_card(id)	Error Code: 1452. Cannot add or update a child row: a foreign key constraint fails ('transactions`.`#sql-15a0_e4`, CONSTRAINT `transaction_ibfk_2` FOREIGN KEY (`credit_card_id`) REFERENCES `credit_card` (`id`))	0.063 sec
277	12:09:53	SELECT DISTINCT credit_card_id FROM `transaction` WHERE credit_card_id NOT IN (SELECT...	1 row(s) returned	0.016 sec / 0.000 sec

Tengo que agregar este registro a la tabla credit_card, antes de poder relacionarla nuevamente con la tabla transaction

Esto implica que tengo que adelantar lo que nos piden hacer en un ejercicio 3 del Nivel 1

```
insert into credit_card (id)
values ('CcU-9999');
```

The screenshot shows the MySQL Workbench interface. In the top-left, the 'Navigator' pane shows the database schema with the 'transactions' database selected. In the center, a query editor window titled 'lb_sprint03_niveles1_2*' contains the following SQL code:

```
313     where credit_card_id not in (select id from credit_card);
314
315     -- Tengo que agregar este registro a la tabla credit_card, para poder relacionarla nuevamente con la tabla transaction
316     -- Esto implica que tengo que adelantar lo que nos piden hacer en un ejercicio 3 del Nivel 1
317 •     insert into credit_card (id)
318         values ('CcU-9999');
319
320 •     select * from credit_card
321         where id = 'CcU-9999';
322
```

Below the query editor is a 'Result Grid' showing the output of the last query:

id	iban	pan	pin	cvv	expiring_date
CcU-9999	NULL	NULL	NULL	NULL	NULL

On the right side of the interface, there is a 'Logs' panel showing the execution history:

Action	Time	Action	Message	Duration / Fetch
275	11:56:51	INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcU-9856')	1 row(s) affected	0.000 sec
276	12:01:45	ALTER TABLE transaction ADD FOREIGN KEY (credit_card_id) REFERENCES credit_card(id)	Error Code: 1452. Cannot add or update a child row: a foreign key constraint fails ('transactions'.`transaction`, CONSTRAINT `FK_credit_card` FOREIGN KEY (`credit_card_id`) REFERENCES `credit_card` (`id`))	0.063 sec
277	12:09:53	SELECT DISTINCT credit_card_id FROM `transaction` WHERE credit_card_id NOT IN (SELECT id FROM credit_card)	1 row(s) returned	0.016 sec / 0.000 sec
278	13:00:16	insert into credit_card (id) values ('CcU-9999')	1 row(s) affected	0.094 sec
279	13:08:22	select * from credit_card where id = 'CcU-9999'	1 row(s) returned	0.031 sec / 0.000 sec

Ahora puedo modificar la tabla transaction para añadirle el id de la tabla credit_card como Foreign Key

```
alter table transaction
add foreign key (credit_card_id) references credit_card(id);
```

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Navigator: lb_sprint03_niveles1_2_modified* transactions.transaction transactions.credit_card transactions.transaction transactions.transaction

File Edit View Query Database Server Tools Scripting Help

SCHEMAS: sakila sales_trad sys transactions

Tables: company credit_card data_user transaction

Views: Stored Procedures Functions

transaction

Administration Schemas

Information

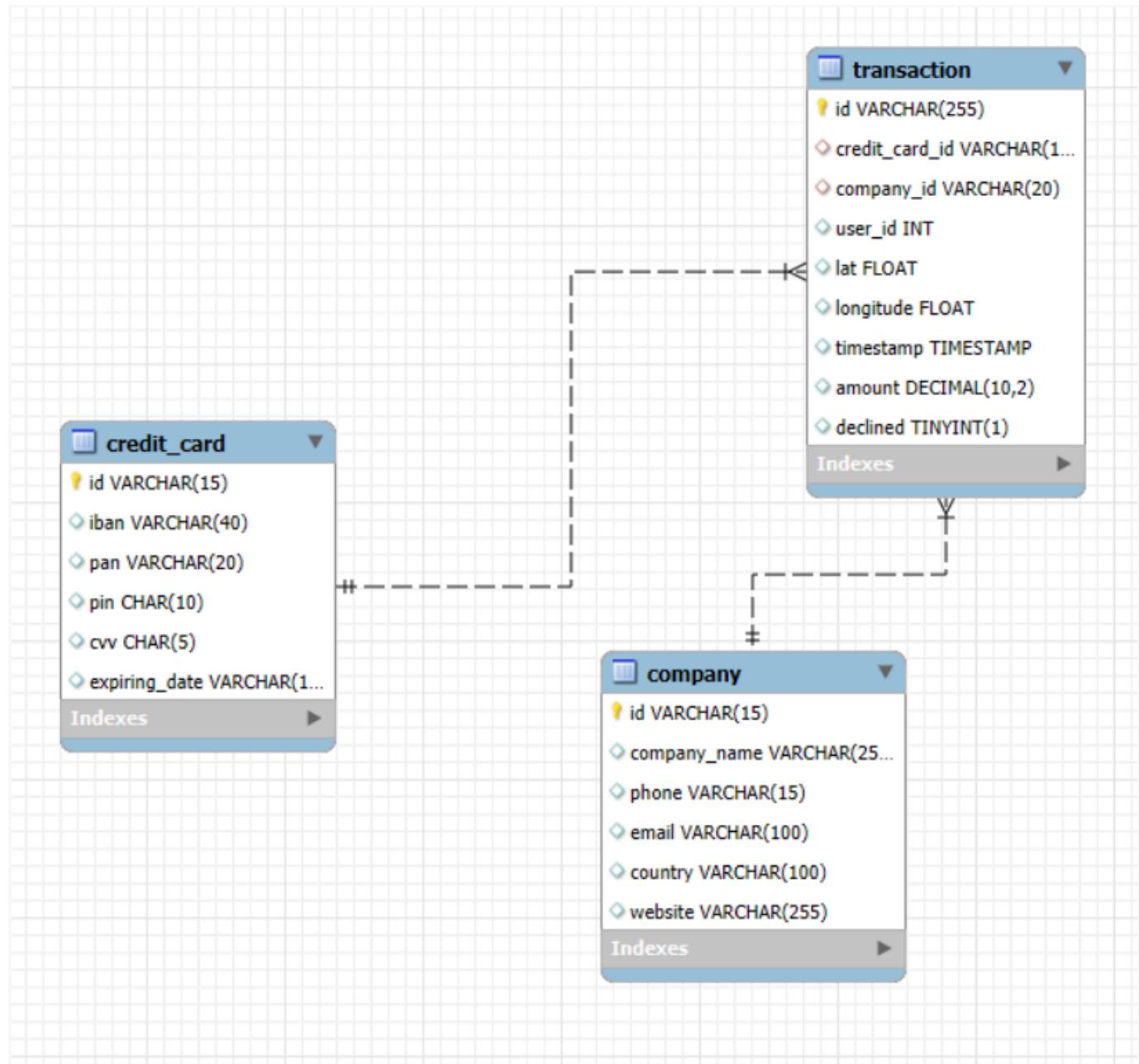
Table: transaction

Columns:

- 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)

308
309 -- No me permite hacerlo. Da error 1452. Parece que hay registros de tabla transaction que no estan en la tabla credit_card que he vuelto a crear
310 -- Primero verifico si es esto es lo que está pasando. Y si hay un registro que no tiene credit_card: es el CcU-9999
311 • select distinct credit_card_id
312 from `transaction`
313 where credit_card_id not in (select id from credit_card);
314
315 -- Tengo que agregar este registro a la tabla cfcredit_card, para poder relacionarla nuevamente con la tabla transaction
316 -- Esto implica que tengo que adelantar lo que nos piden hacer en un ejercicio 3 del Nivel 1
317 • insert into credit_card (id)
318 values ('CcU-9999');
319
320 • select * from credit_card
321 where id = 'CcU-9999';
322
323 -- Ahora puedo modificar la tabla transaction para añadirle el id de la tabla credit_card como Foreign Key
324 • alter table transaction
325 add foreign key (credit_card_id) references credit_card(id);
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Y este es el diagrama entidad relación:



- Ejercicio 2

El departament de Recursos Humans ha identificat un error en el número de compte de l'usuari amb ID CcU-2938. La informació que ha de mostrar-se per a aquest registre és: R323456312213576817699999. Recorda mostrar que el canvi es va realitzar.

```
299  
300      -- Este es el iban erroneo (antes del cambio):  
301 •  select * from credit_card  
302      where id = 'CcU-2938';  
303      |
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

id	iban	pan	pin	cvv	expiring_date
CcU-2938	TR301950312213576817638661	5424465566813633	3257	984	10/30/22
NULL	NULL	NULL	NULL	NULL	NULL

```
304  
305      -- Modifico el iban para que sea igual a R323456312213576817699999  
306 •  update credit_card  
307      set iban = 'R323456312213576817699999'  
308      WHERE id = 'CcU-2938';  
309  
310      -- Este es el iban correcto tras el cambio  
311 •  select * from credit_card  
312      where id = 'CcU-2938';
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell C

	id	iban	pan	pin	cvv	expiring_date
▶	CcU-2938	R323456312213576817699999	5424465566813633	3257	984	10/30/22
*	NULL	NULL	NULL	NULL	NULL	NULL

- Ejercicio 3

En la tabla "transaction" ingresa un nuevo usuario con la siguiente información:

Id	108B1D1D-5B23-A76C-55EF-C568E49A99DD
credit_card_id	CcU-9999
company_id	b-9999
user_id	9999
lato	829.999
longitud	-117.999
amunt	111.11
declined	0

-- Inicialmente, este script no funciona porque tengo que agregar la info del nuevo usuario tanto en tabla company como en tabla credit_card

```
insert into transaction (id, credit_card_id, company_id, user_id, lat, longitude, amount, declined)
values ('108B1D1D-5B23-A76C-55EF-C568E49A99DD', 'CcU-9999', 'b-9999', 9999, 829.999, -117.999,
111.11, 0);
```

-- Primero tengo que registrar a la nueva compañía b-9999 en la tabla company

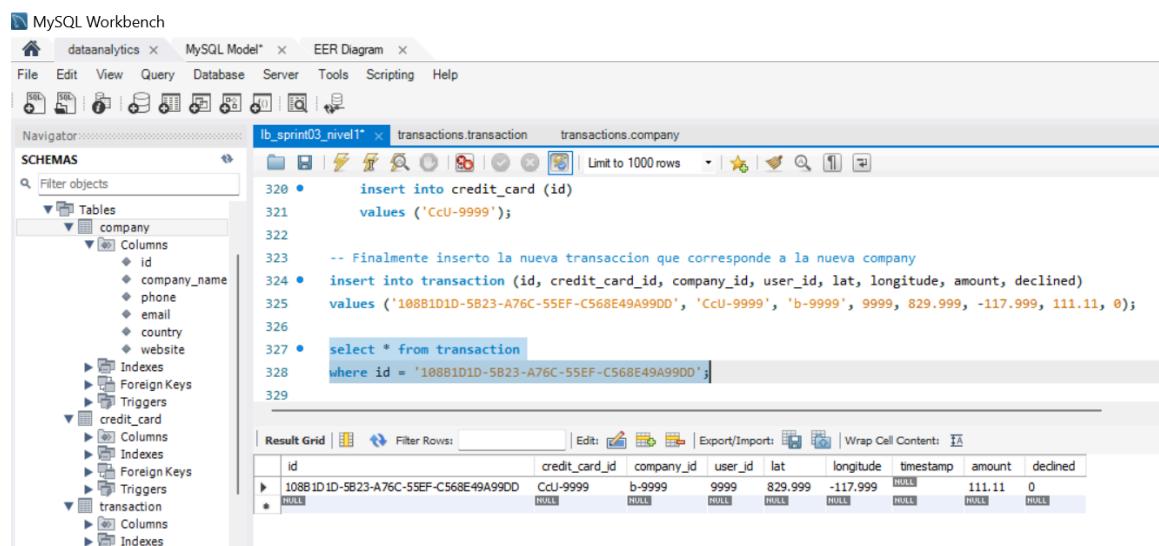
```
insert into company (id)  
values ('b-9999');
```

-- Luego registro la tarjeta de crédito en la tabla credit_card

```
insert into credit_card (id)  
values ('CcU-9999');
```

-- Finalmente inserto la nueva transaccion que corresponde a la nueva company

```
insert into transaction (id, credit_card_id, company_id, user_id, lat, longitude, amount, declined)
values ('108B1D1D-5B23-A76C-55EF-C568E49A99DD', 'CcU-9999', 'b-9999', 9999, 829.999, -117.999,
111.11, 0);
```



- Ejercicio 4

Desde recursos humanos te solicitan eliminar la columna "pan" de la tabla credit_card. Recuerda mostrar el cambio realizado.

```
alter table credit_card  
drop column pan;
```

The screenshot shows the MySQL Workbench interface. The left sidebar displays the database schema with tables like company, credit_card, and transaction. The central area has a SQL editor window containing the following code:

```
327 •   select * from transaction  
328     where id = '108B1D1D-5B23-A76C-55EF-C568E49A99DD';  
329  
330     -- Ejercicio 4  
331     -- Eliminar la columna "pan" de la tabla credit_card  
332 •   alter table credit_card  
333     drop column pan;  
334  
335 •   select * from credit_card;  
336
```

Below the SQL editor is a Result Grid showing the following data:

	id	iban	pin	cvv	expiring_date
▶	CcU-2938	R323456312213576817699999	3257	984	10/30/22
	CcU-2945	DO26854763748537475216568689	9080	887	08/24/23
	CcU-2952	BG45IVQL52710525608255	4598	438	06/29/21
	CcU-2959	CR7242477244335841535	3583	667	02/24/23
	CcU-2966	BG72LKTQ15627628377363	4900	130	10/29/24
	CcU-2973	PT87806228135092429456346	8760	887	01/30/25
	CcU-2980	DE39241881883086277136	5075	596	07/24/22
	CcU-2987	GE89681434837748781813	2298	797	10/31/23
	CcU-2994	BH62714428368066765294	7545	595	02/28/22
	CcU-3001	CY49087426654774581266832110	9562	867	09/16/22

Nivel 2

Ejercicio 1

Elimina de la tabla transacción el registro con ID 02C6201E-D90A-1859-B4EE-88D2986D3B02 de la base de datos.

```
delete from transaction  
where id = '02C6201E-D90A-1859-B4EE-88D2986D3B02';
```

The screenshot shows the MySQL Workbench interface. The title bar says "MySQL Workbench". The menu bar includes File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. Below the menu is a toolbar with various icons. The left sidebar is the Navigator, showing the schema tree. The main area is titled "lb_sprint03_nivel1*" and contains a query editor with the following SQL script:

```
333 drop column pan;
334
335 -- Nivel 2
336 -- Elimina de la tabla transacción el registro con ID 02C6201E-D90A-1859-B4EE-88D2986D3B02 de la base de datos.
337 • delete from transaction
338 where id = '02C6201E-D90A-1859-B4EE-88D2986D3B02';
339
340 • select * from transaction
341 where id = '02C6201E-D90A-1859-B4EE-88D2986D3B02';
342
```

At the bottom, there's a "Result Grid" tab and a table preview with columns: id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, and declined. The table preview shows one row with all values as NULL.

Ejercicio 2

La sección de marketing desea tener acceso a información específica para realizar análisis y estrategias efectivas. Se ha solicitado crear una vista que proporcione detalles clave sobre las compañías y sus transacciones. Será necesaria que crees una vista llamada VistaMarketing que contenga la siguiente información: Nombre de la compañía. Teléfono de contacto. País de residencia. Media de compra realizado por cada compañía. Presenta la vista creada, ordenando los datos de mayor a menor promedio de compra.

```
create or replace view VistaMarketing as
select company_name, phone, country, round(avg(amount),2) as average
from company as c
inner join transaction
on company_id = c.id
where declined = 0
group by company_name, country, phone
order by average desc;

select * from vistamarketing;
```

The screenshot shows the MySQL Workbench interface. The top menu bar includes File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. The left sidebar has sections for Schemas, Administration, and Information. The main area shows a query editor titled 'lb_sprint03_nivel1*' containing the SQL code for creating the 'VistaMarketing' view. The code defines the view to select company_name, phone, country, and the average amount from the 'company' and 'transaction' tables, grouping by company_name, country, and phone, and ordering by average in descending order. Below the query editor is a 'Result Grid' table with columns: company_name, phone, country, and average. The table displays data for various companies, including Eget Ipsum Ltd, Sed Id Limited, Neque Tellus Incorporated, Nunc Sit Incorporated, Non Magna LLC, Maecenas Malesuada Fringilla Inc., Erat LLP, Tortor Nunc Commodo Company, and Utene Eu Arnulf Id. The average values range from 444.16 to 481.86.

company_name	phone	country	average
Eget Ipsum Ltd	03 67 44 56 72	United States	481.86
Sed Id Limited	07 28 18 18 13	United States	477.51
Neque Tellus Incorporated	04 43 18 34 19	Ireland	477.10
Nunc Sit Incorporated	07 28 42 63 63	Norway	461.83
Non Magna LLC	06 71 73 13 17	United Kingdom	458.74
Maecenas Malesuada Fringilla Inc.	09 38 53 76 61	Netherlands	451.29
Erat LLP	03 18 88 77 79	Netherlands	448.44
Tortor Nunc Commodo Company	05 35 92 77 16	United States	447.11
Utene Eu Arnulf Id	08 47 56 71 57	Italy	444.16

Ejercicio 3

Filtra la vista VistaMarketing para mostrar sólo las compañías que tienen su país de residencia en "Germany"

```
select * from vistamarketing  
where country = 'Germany';
```

The screenshot shows the MySQL Workbench interface. The top menu bar includes File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. Below the menu is a toolbar with various icons. The left sidebar, titled 'Navigator', shows the database schema. Under the 'schemas' section, 'transactions' is expanded, showing 'Tables' (company, credit_card, transaction) and 'Views' (vistamarketing). The 'vistamarketing' view is selected, displaying columns: company_name, phone, country, and average. The main area contains a SQL editor window titled 'lb_sprint03_nivel1*' with the following code:

```
350  select company_name, phone, country, round(avg(amount),2) as average  
351  from company as c  
352  inner join transaction  
353  on company_id = c.id  
354  where declined = 0  
355  group by company_name, country, phone  
356  order by average desc;  
357  
358 •  select * from vistamarketing  
359  where country = 'Germany';  
360
```

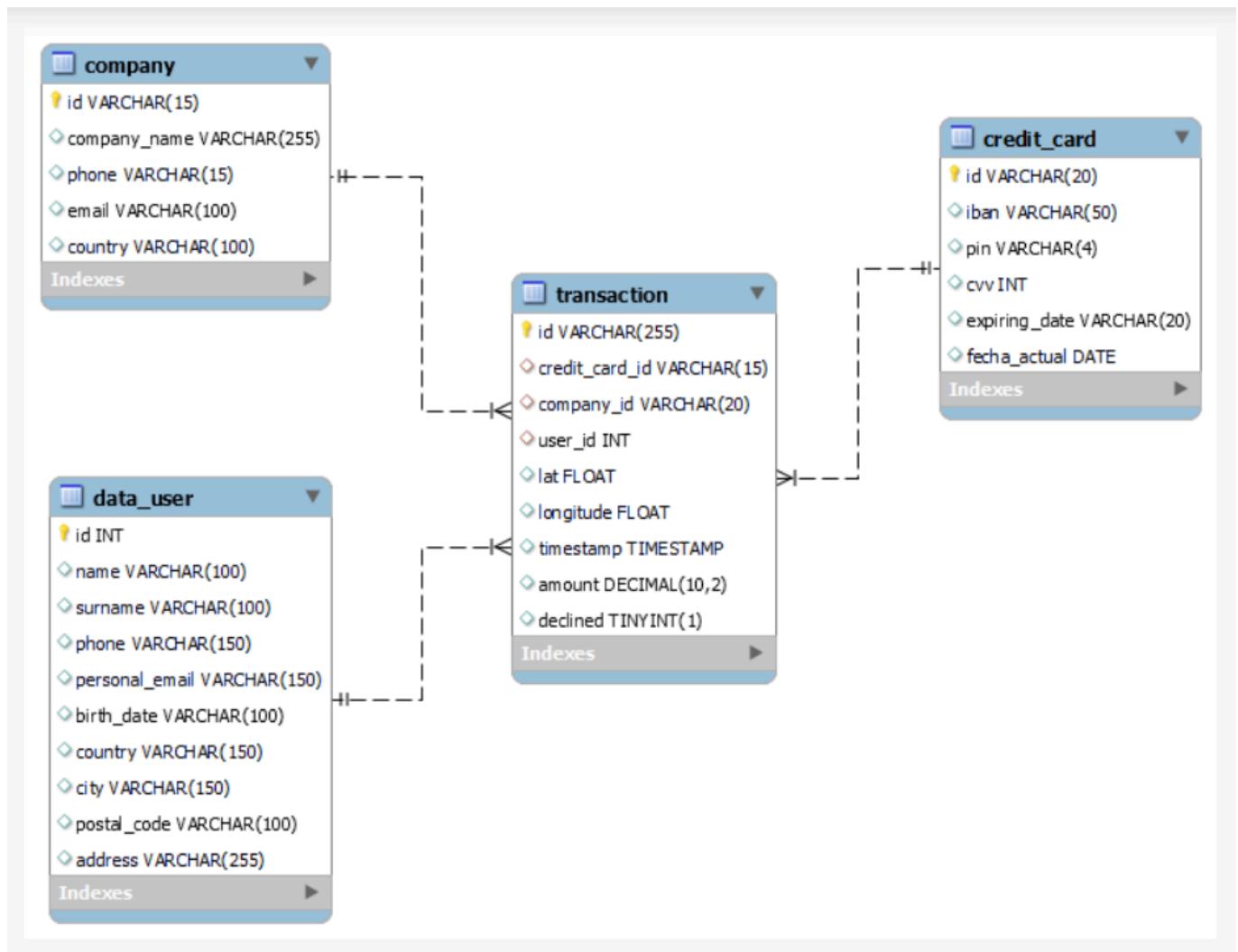
Below the SQL editor is a 'Result Grid' table with the following data:

company_name	phone	country	average
Ac Industries	09 34 65 40 60	Germany	396.15
Auctor Mauris Corp.	05 62 87 14 41	Germany	308.99
Ac Fermentum Incorporated	06 85 56 52 33	Germany	293.57
Aliquam PC	01 45 73 52 16	Germany	280.34
Rutrum Non Inc.	02 66 31 61 09	Germany	266.90
Nunc Interdum Incorporated	05 18 15 48 13	Germany	242.95
Convallis In Incorporated	06 66 57 29 50	Germany	60.99
Augue Foundation	06 88 43 15 63	Germany	15.05

Nivel 3

Ejercicio 1

La próxima semana tendrás una nueva reunión con los gerentes de marketing. Un compañero de tu equipo realizó modificaciones en la base de datos, pero no recuerda cómo las realizó. Te pide que le ayudes a dejar los comandos ejecutados para obtener el siguiente diagrama:



Recordatorio;

En esta actividad, es necesario que describas el "paso a paso" de las tareas realizadas. Es importante realizar descripciones sencillas, simples y fáciles de comprender. Para realizar esta actividad deberás trabajar con los archivos denominados "estructura_datos_user" y "datos_introducir_user"

Primero, voy a modificar la tabla credit_card

Campos de tabla credit_card ANTES de la modificación

```
301  
302      -- Muestro campos de tabla credit_card  
303 •  show columns from credit_card;  
304  
305
```

	Field	Type	Null	Key	Default	Extra
▶	id	varchar(15)	NO	PRI	NULL	
	iban	varchar(40)	YES		NULL	
	pin	char(10)	YES		NULL	
	cvv	char(5)	YES		NULL	
	expiring_date	varchar(10)	YES		NULL	

Modifico campos id, iban, expiring_date de la tabla credit_card.

```
alter table credit_card  
modify id varchar(20),  
modify iban varchar(50),  
modify expiring_date varchar(20);
```

Modifico campos pin, cvv de la tabla credit_card.

```
alter table credit_card  
modify pin varchar(4),  
modify cvv int;
```

Agrego campo fecha_actual a la tabla credit_card:

```
alter table credit_card add column fecha_actual date;  
show columns from credit_card;
```

Campos de tabla credit_card DESPUES de las modificaciones:

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Navigator: lb_sprint03_nivel1* lb_sprint03_nivel3*

SCHEMAS: sakila, sys, transactions (Tables: company, credit_card, transaction, user), Views, vistamarketing, Stored Procedures, Functions, world.

```

305 -- Modifico campos id, iban, expiring_date de la tabla credit_card.
306 • alter table credit_card
307 modify id varchar(20),
308 modify iban varchar(50),
309 modify expiring_date varchar(20);
310
311 -- Modifico campos pin, cvv de la tabla credit_card.
312 • alter table credit_card
313 modify pin varchar(4),
314 modify cvv int;
315
316 • show columns from credit_card;
317
318 -- Agrego campo fecha_actual a la tabla credit_card
319 • alter table credit_card add column fecha_actual date;
320
321 • show columns from credit_card;
322

```

Administration Schemas Information

No object selected

Field	Type	Null	Key	Default	Extra
id	varchar(20)	NO	PRI	NULL	
iban	varchar(50)	YES		NULL	
pin	varchar(4)	YES		NULL	
cvv	int	YES		NULL	
expiring_date	varchar(20)	YES		NULL	
fecha_actual	date	YES		NULL	

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

Result 5

Eliminar el campo website de tabla company.

Tabla company ANTES de la eliminación del campo website:

```

318 -- Elimino el campo website de la tabla company
319 • show columns from company;
320

```

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

	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	

Tabla company **DESPUES** de la eliminacion del campo website:

```
alter table company  
drop column website;
```

The screenshot shows the MySQL Workbench interface with the 'Result Grid' tab selected. The table structure for 'company' is displayed with the following columns:

	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	

Estructura de la tabla users

Primero, creo el index idx_user_id en la tabla transaction

```
CREATE INDEX idx_user_id ON transaction(user_id);
```

Creo la tabla users con el script del archivo estructura_datos_user.sql.

```
CREATE TABLE IF NOT EXISTS user (  
    id INT PRIMARY KEY,  
    name VARCHAR(100),  
    surname VARCHAR(100),  
    phone VARCHAR(150),  
    email VARCHAR(150),  
    birth_date VARCHAR(100),  
    country VARCHAR(150),  
    city VARCHAR(150),  
    postal_code VARCHAR(100),  
    address VARCHAR(255),  
    FOREIGN KEY(id) REFERENCES transaction(user_id)  
);
```

Inserto datos del archivo en la tabla user y compruebo que se hayan insertado

The screenshot shows the MySQL Workbench interface. In the top navigation bar, the database 'dataanalytics' is selected. The left sidebar shows the schema structure with 'Tables' expanded, revealing 'company', 'credit_card', 'transaction', and 'user'. The main query editor contains the following SQL code:

```
36     birth_date VARCHAR(100),
37     country VARCHAR(150),
38     city VARCHAR(150),
39     postal_code VARCHAR(100),
40     address VARCHAR(255),
41     FOREIGN KEY(id) REFERENCES transaction(user_id)
42   );
43
44 -- inserto datos en la tabla user y compruebo que se hayan insertado
45
46 • select * from user;
47
48
49 -- Veo que tiene relacion de varios a uno con tabla transaction: varios usuarios a una sola transaccion.
```

The 'Result Grid' tab is active, displaying the results of the 'select * from user;' query. The table has the following columns: id, name, surname, phone, email, birth_date, country, city, postal_code, and address. The data is as follows:

	id	name	surname	phone	email	birth_date	country	city	postal_code	address
1	Zeus	Gamble	1-282-581-0551	interdum.enim@protonmail.edu	Nov 17, 1985	United States	Lowell	73544	348-7818 Sagittis St.	
2	Garrett	Mcconnell	(718) 257-2412	integer.vitae.nibh@protonmail.org	Aug 23, 1992	United States	Des Moines	59464	903 Sit Ave	
3	Caran	Harrison	(522) 598-1365	interdum.feugiat@aol.org	Apr 29, 1998	United States	Columbus	56518	736-2063 Tellus St.	
4	Howard	Stafford	1-411-740-3269	omare.eget@cloud.edu	Feb 18, 1989	United States	Kailua	77417	Ap #545-2244 Erat. Rd.	
5	Hayfa	Pierce	1-554-541-2077	et.malesuada.fames@hotmail.org	Sep 26, 1998	United States	Sandy	31564	341-2821 Ultricies Av.	
6	Joel	Tyson	(718) 288-8020	gravida.nunc.sed@yahoo.ca	Oct 15, 1989	United States	Nashville	96838	888-799 Amet Street	
7	Rafael	Timone	(817) 689-0478	enei@vitfnk.ca	Dec 4, 1981	United States	Hillshorn	29874	8627 Malesuada Rd.	

The 'Output' tab shows the log of actions taken:

#	Time	Action	Message	Duration / Fetch
303	17:05:06	select * from users	Error Code: 1146. Table 'transactions.users' doesn't exist	0.000 sec
304	17:05:19	select * from user	275 row(s) returned	0.015 sec / 0.000 sec
305	17:10:15	select * from user	275 row(s) returned	0.000 sec / 0.000 sec

Renombro la tabla user como data_user

```
alter table user rename to data_user;
```

Ahora tengo que cambiar el nombre del campo email a personal_email en la tabla data_user

Campos de data_user ANTES de modificar nombre de campo email

MySQL Workbench

The screenshot shows the MySQL Workbench interface with the 'dataanalytics' database selected. The left sidebar displays the schema tree, showing the 'transactions' schema expanded to reveal 'Tables' like 'company', 'credit_card', 'data_user', and 'transaction', as well as 'Views' like 'vistamarketing'. The main area contains an SQL editor with the following code:

```
40     address VARCHAR(255),
41     FOREIGN KEY(id) REFERENCES transaction(user_id)
42   );
43
44   -- inserto datos en la tabla user y compruebo que se hayan insertado
45 •   select * from user;
46
47   -- Renombro la tabla user como data_user
48 •   alter table user rename to data_user;
49
50 •   show columns from data_user;
```

Below the SQL editor is a 'Result Grid' showing the columns of the 'data_user' table:

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	
name	varchar(100)	YES		NULL	
surname	varchar(100)	YES		NULL	
phone	varchar(150)	YES		NULL	
email	varchar(150)	YES		NULL	
birth_date	varchar(100)	YES		NULL	
country	varchar(150)	YES		NULL	
city	varchar(150)	YES		NULL	
postal_code	varchar(100)	YES		NULL	
address	varchar(255)	YES		NULL	

Renombro campo email como personal_email en la tabla data_user

```
alter table data_user rename column email to personal_email;
```

Campos de data_user DESPUES de modificar nombre de campo email

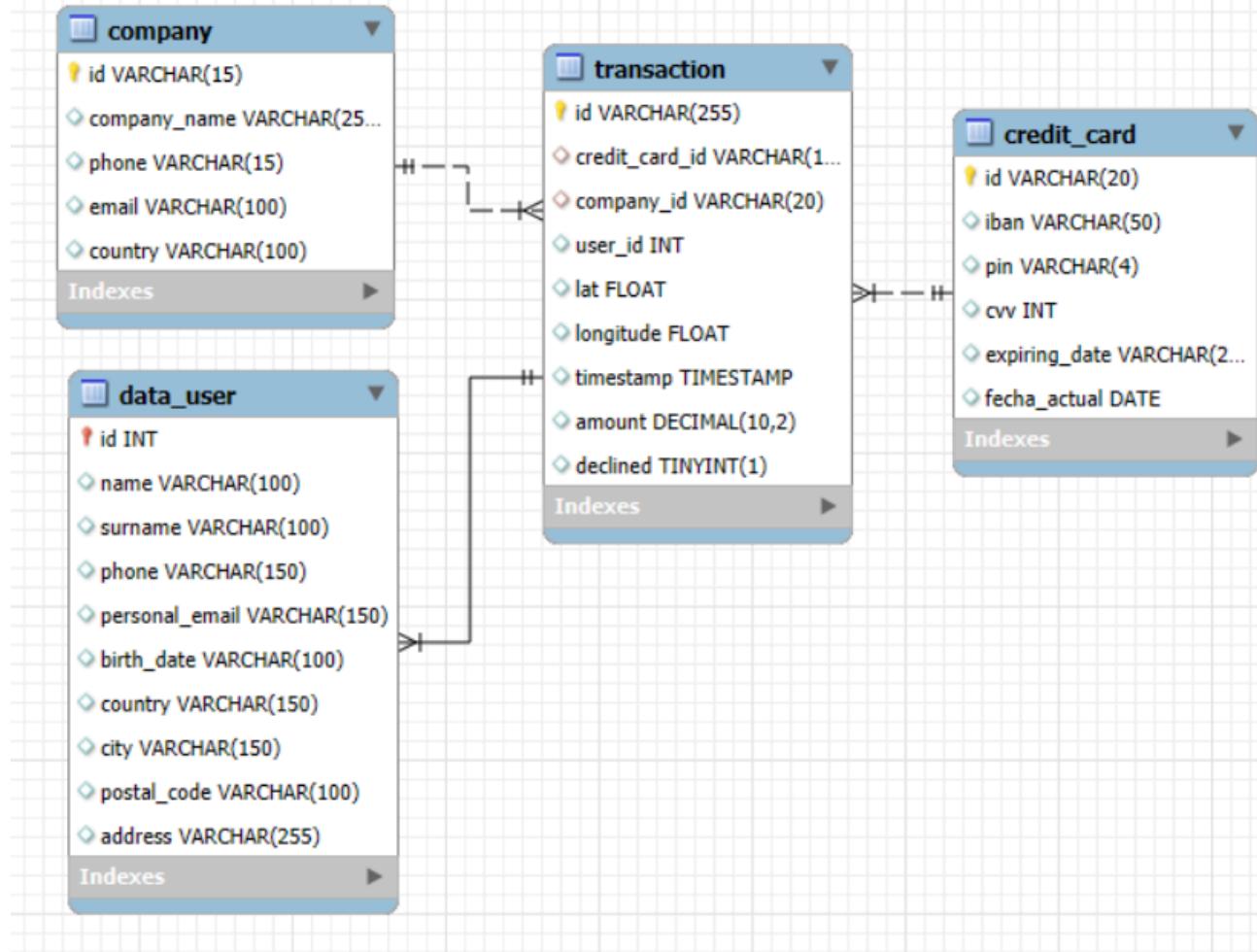
The screenshot shows the MySQL Workbench interface. The left sidebar displays the database schema with the 'transactions' schema expanded, showing tables like company, credit_card, data_user, and transaction, as well as views like vistamarketing. The main area has two tabs: 'SQL File 7*' and 'SQL File 4*'. The SQL File 7* tab contains the following code:

```
45 •    select * from user;
46
47      -- Renombro la tabla user como data_user
48 •    alter table user rename to data_user;
49
50 •    show columns from data_user;
51
52      -- Renombro campo email como personal_email en la tabla data_user y compruebo que el cambio se ha realizado
53 •    alter table data_user rename column email to personal_email;
54
55 •    show columns from data_user;
```

Below the SQL tab is a 'Result Grid' tab, which displays the structure of the 'data_user' table:

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	
name	varchar(100)	YES		NULL	
surname	varchar(100)	YES		NULL	
phone	varchar(150)	YES		NULL	
personal_email	varchar(150)	YES		NULL	
birth_date	varchar(100)	YES		NULL	
country	varchar(150)	YES		NULL	
city	varchar(150)	YES		NULL	
postal_code	varchar(100)	YES		NULL	
address	varchar(255)	YES		NULL	

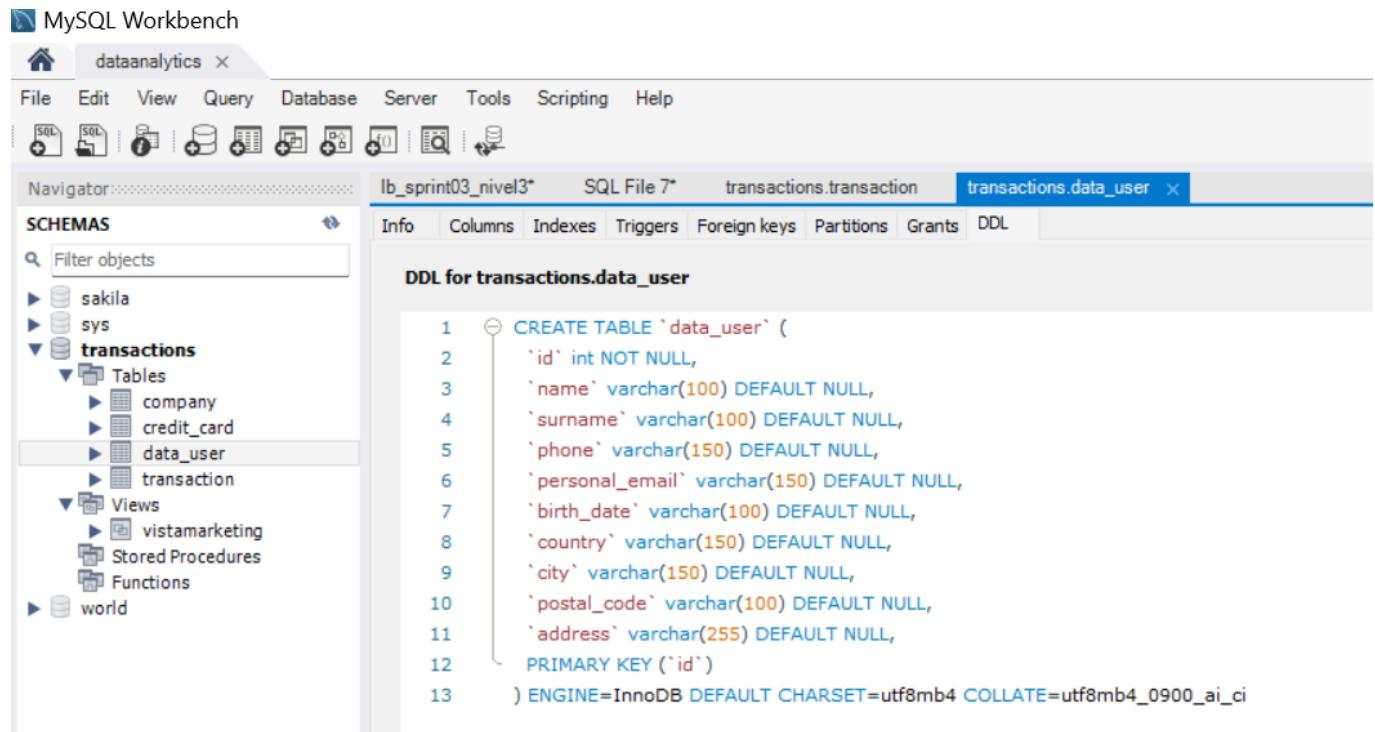
Veo el diagrama entidad relación de las tablas . Es incorrecto. La relación entre la tabla data_user y transaction no puede ser de varias a una. Una sola transacción no puede tener varios usuarios. Tenemos que eliminar la foreign key que está en la tabla data_user.



-- Tenemos que eliminar foreign key de la tabla data_user. Es incorrecta.

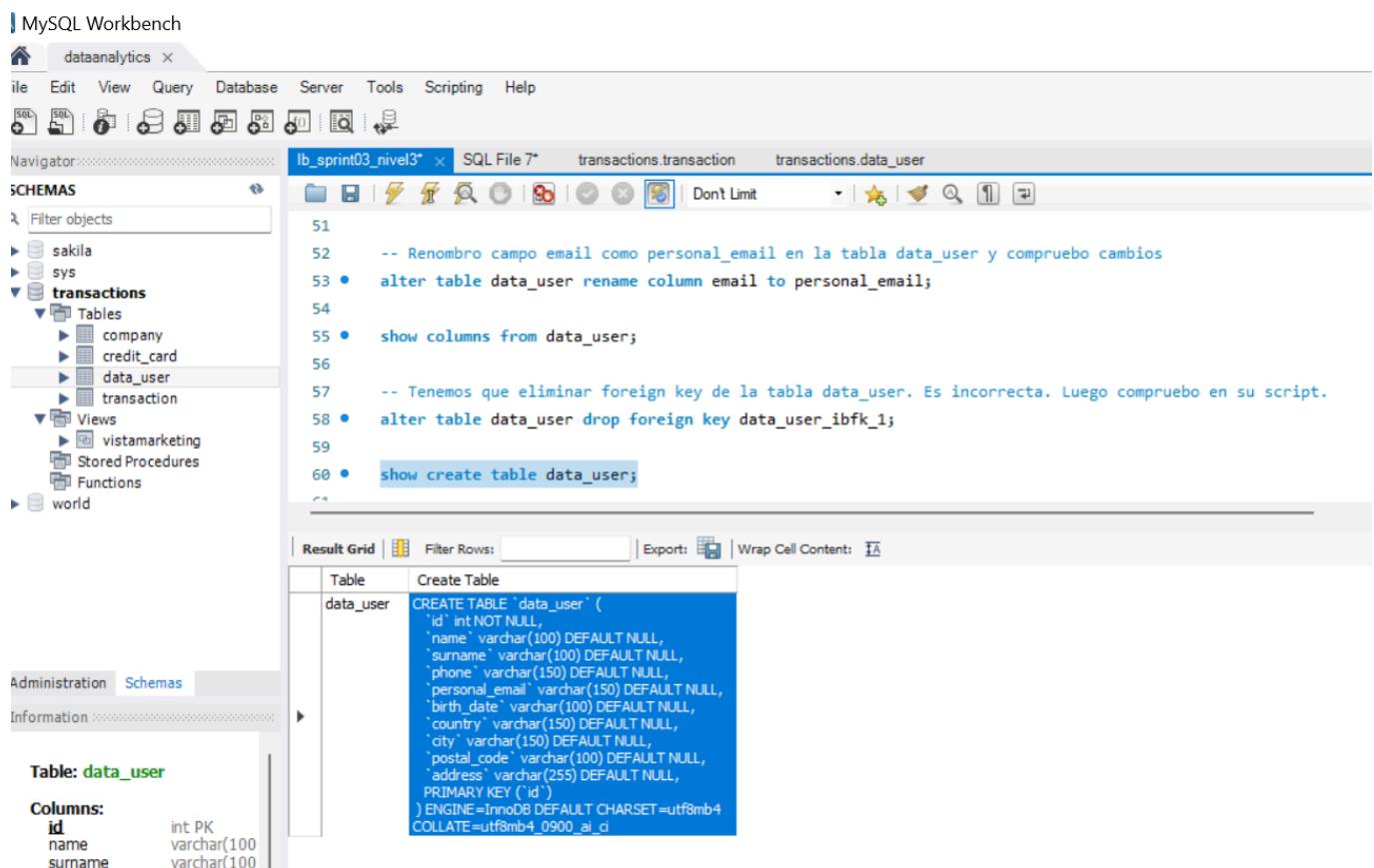
```
alter table data_user drop foreign key data_user_ibfk_1;
```

Luego compruebo en el script de la tabla data_user que efectivamente se eliminó esta foreign key.



The screenshot shows the MySQL Workbench interface with the database 'dataanalytics' selected. In the Navigator pane, under the 'schemas' section, the 'transactions' schema is expanded, and its 'Tables' section contains 'company', 'credit_card', 'data_user', and 'transaction'. The 'data_user' table is selected. The main pane displays the DDL for the 'data_user' table:

```
1 CREATE TABLE `data_user` (
2     `id` int NOT NULL,
3     `name` varchar(100) DEFAULT NULL,
4     `surname` varchar(100) DEFAULT NULL,
5     `phone` varchar(150) DEFAULT NULL,
6     `personal_email` varchar(150) DEFAULT NULL,
7     `birth_date` varchar(100) DEFAULT NULL,
8     `country` varchar(150) DEFAULT NULL,
9     `city` varchar(150) DEFAULT NULL,
10    `postal_code` varchar(100) DEFAULT NULL,
11    `address` varchar(255) DEFAULT NULL,
12    PRIMARY KEY (`id`)
13 ) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
```



The screenshot shows the MySQL Workbench interface with the database 'dataanalytics' selected. In the Navigator pane, under the 'schemas' section, the 'transactions' schema is expanded, and its 'Tables' section contains 'company', 'credit_card', 'data_user', and 'transaction'. The 'data_user' table is selected. The main pane displays a SQL script:

```
51
52 -- Renombro campo email como personal_email en la tabla data_user y compruebo cambios
53 • alter table data_user rename column email to personal_email;
54
55 • show columns from data_user;
56
57 -- Tenemos que eliminar foreign key de la tabla data_user. Es incorrecta. Luego compruebo en su script.
58 • alter table data_user drop foreign key data_user_ibfk_1;
59
60 • show create table data_user;
```

Below the script, the 'Result Grid' shows the DDL for the 'data_user' table:

Table	Create Table
data_user	CREATE TABLE `data_user` (`id` int NOT NULL, `name` varchar(100) DEFAULT NULL, `surname` varchar(100) DEFAULT NULL, `phone` varchar(150) DEFAULT NULL, `personal_email` varchar(150) DEFAULT NULL, `birth_date` varchar(100) DEFAULT NULL, `country` varchar(150) DEFAULT NULL, `city` varchar(150) DEFAULT NULL, `postal_code` varchar(100) DEFAULT NULL, `address` varchar(255) DEFAULT NULL, PRIMARY KEY (`id`)) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci

Voy a crear la foreign key que relaciona a data_user con transaction en transaction

Modifico la table transaction para añadirle el id de la tabla data_user como Foreign Key

```
alter table transaction  
add constraint fk_user_id  
foreign key (user_id) references data_user(id);
```

Mensaje de error:

Error Code: 1452. Cannot add or update a child row: a foreign key constraint fails

```
(`transactions`.`#sql-15a0_6e`, CONSTRAINT `fk_user_id` FOREIGN KEY (`user_id`) REFERENCES `data_user` (`id`))
```

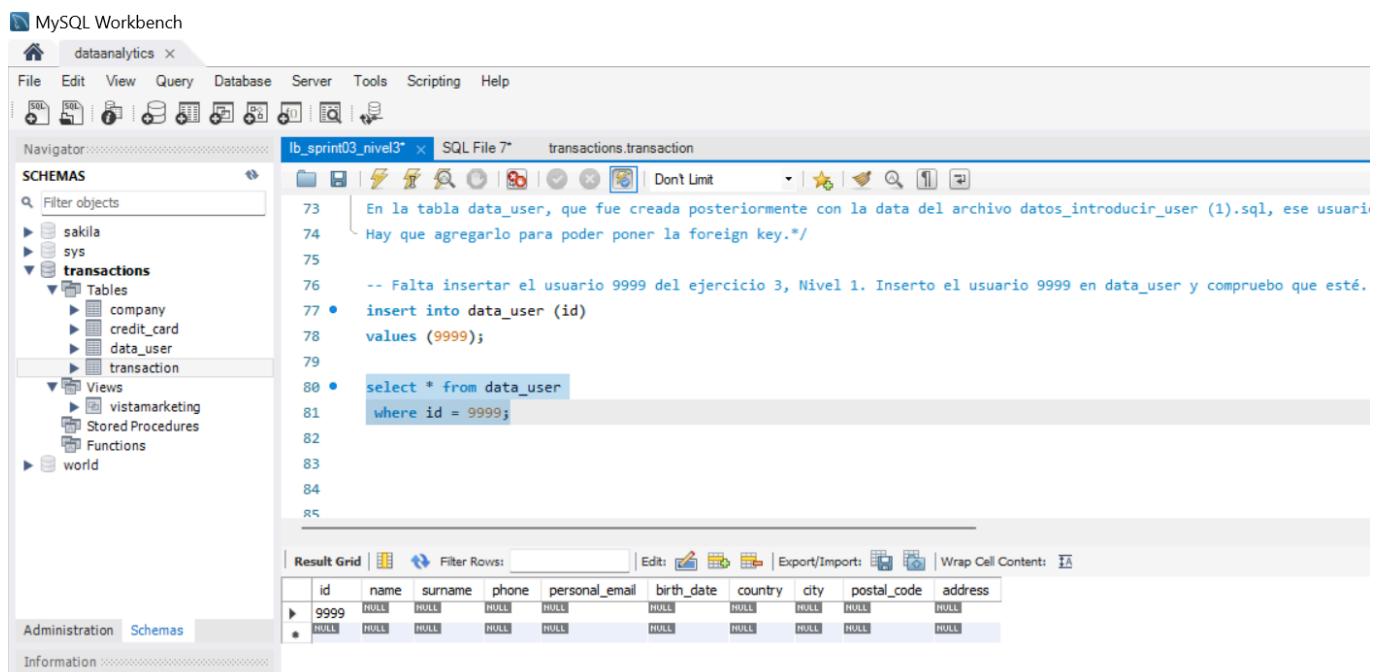
No se puede agregar la clave foránea porque algunos valores en la columna `user_id` de la tabla `transaction` no coinciden con ningún valor en la columna `id` de la tabla `data_user`.

Esto se debe a que hay valores en el campo user_id de la tabla transaction que no coinciden con el id de la tabla data_user. En la tabla transaction existe el usuario 9999 que agregamos en un ejercicio anterior. En la tabla data_user, que fue creada posteriormente con la data del archivo datos_introducir_user (1).sql, ese usuario no está. Hay que agregarlo para poder poner la foreign key en la tabla transaction.

Insertamos el usuario 9999 del ejercicio 3, Nivel 1. Inserto el usuario 9999 en data_user y compruebo que esté.

```
insert into data_user (id)  
values (9999);
```

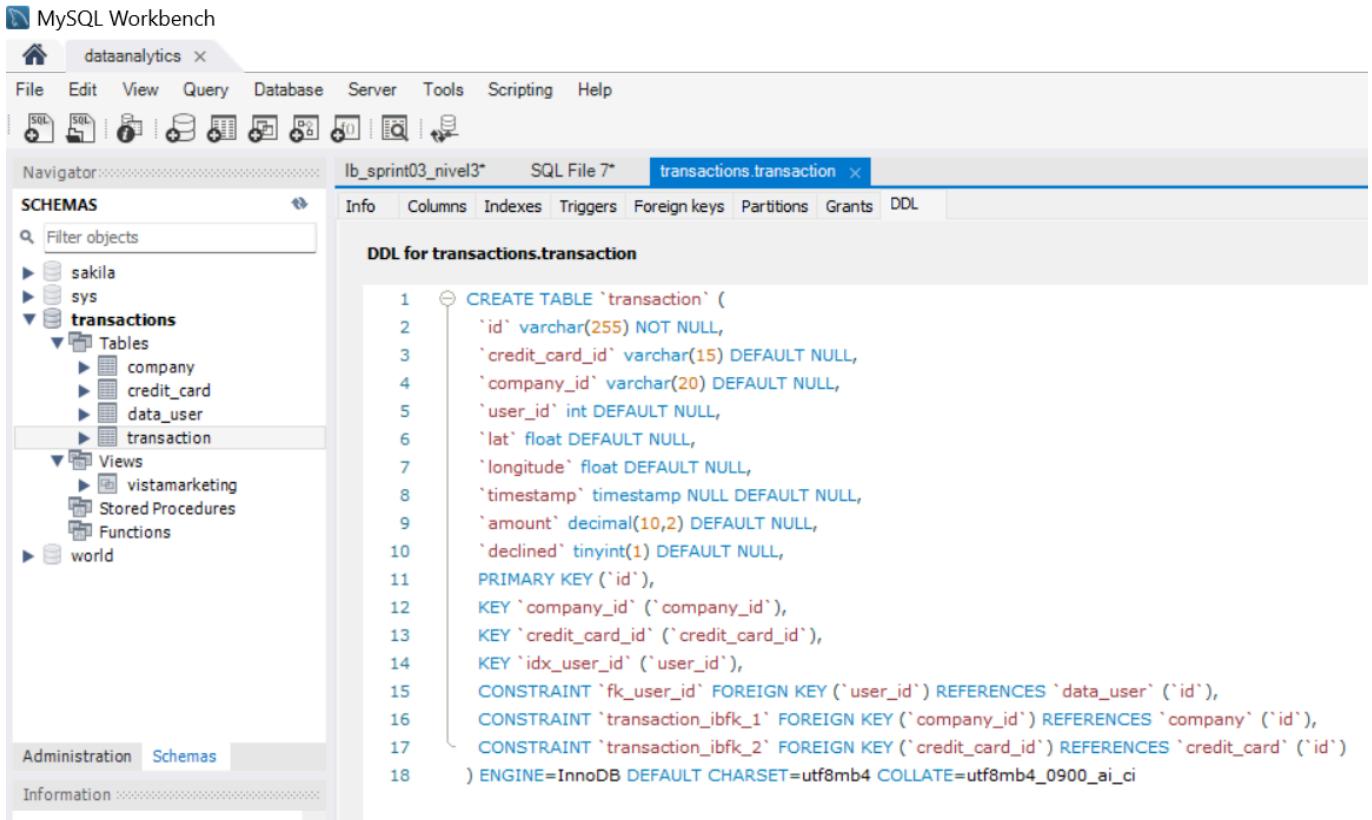
```
select * from data_user  
where id = 9999;
```



Modifico la table transaction para añadirle el id de la tabla data_user como Foreign Key

```
alter table transaction  
add constraint fk_user_id  
foreign key (user_id) references data_user(id);
```

Reviso en el script y si se ha creado.

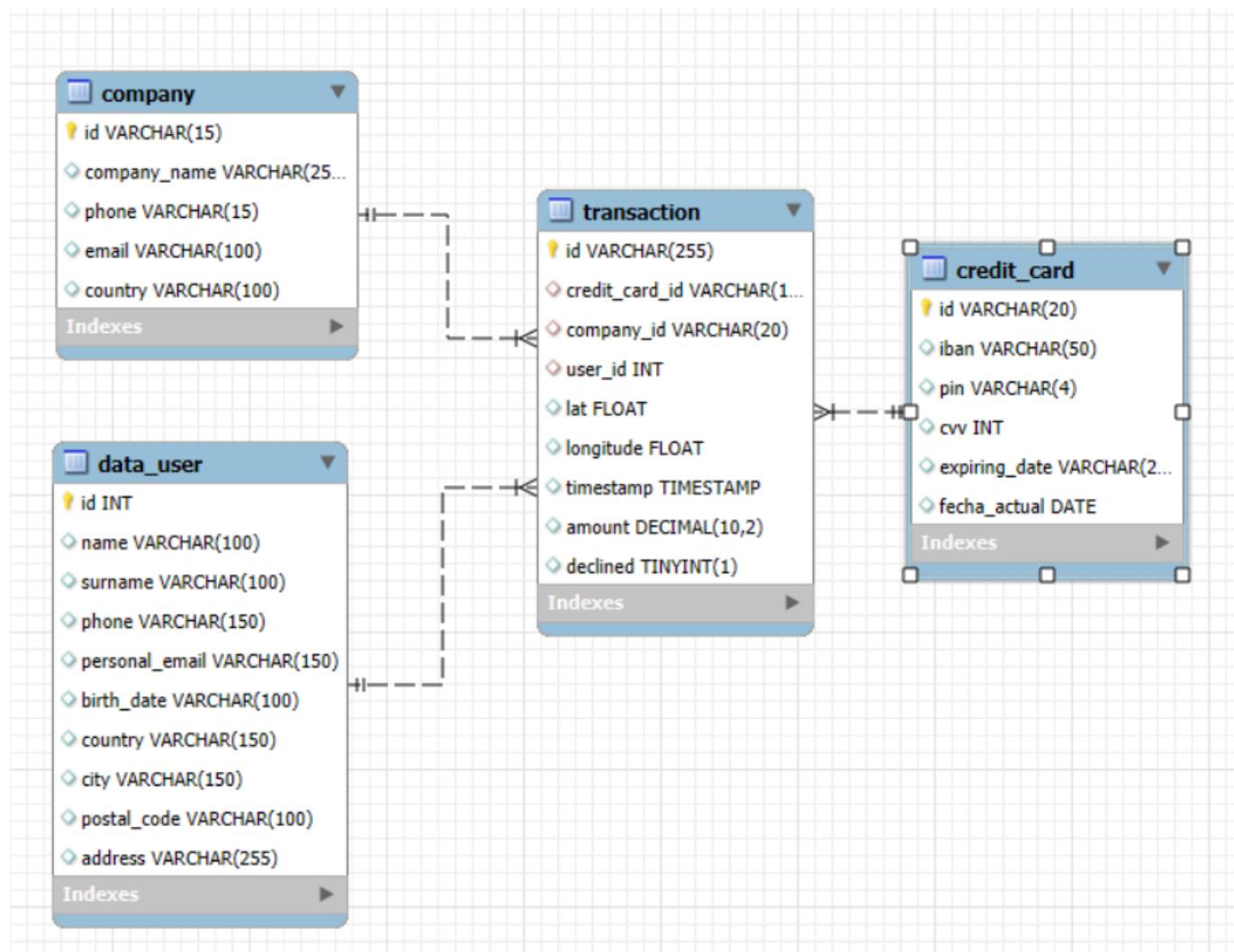


The screenshot shows the MySQL Workbench interface with the following details:

- File Menu:** File, Edit, View, Query, Database, Server, Tools, Scripting, Help.
- Toolbars:** Standard MySQL Workbench toolbar.
- Navigator:** Shows the database schema. Under the 'schemas' section, 'transactions' is expanded, showing 'Tables' (company, credit_card, data_user, transaction), 'Views' (vistamarketing), and 'Stored Procedures/Functions'. Other databases like 'sakila' and 'sys' are also listed.
- SQL Editor:** The tab 'transactions transaction' is selected. The DDL code for the table is displayed:

```
CREATE TABLE `transaction` (  
    `id` varchar(255) NOT NULL,  
    `credit_card_id` varchar(15) DEFAULT NULL,  
    `company_id` varchar(20) DEFAULT NULL,  
    `user_id` int DEFAULT NULL,  
    `lat` float DEFAULT NULL,  
    `longitude` float DEFAULT NULL,  
    `timestamp` timestamp NULL DEFAULT NULL,  
    `amount` decimal(10,2) DEFAULT NULL,  
    `declined` tinyint(1) DEFAULT NULL,  
    PRIMARY KEY (`id`),  
    KEY `company_id` (`company_id`),  
    KEY `credit_card_id` (`credit_card_id`),  
    KEY `idx_user_id` (`user_id`),  
    CONSTRAINT `fk_user_id` FOREIGN KEY (`user_id`) REFERENCES `data_user` (`id`),  
    CONSTRAINT `transaction_ibfk_1` FOREIGN KEY (`company_id`) REFERENCES `company` (`id`),  
    CONSTRAINT `transaction_ibfk_2` FOREIGN KEY (`credit_card_id`) REFERENCES `credit_card` (`id`)  
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
```
- Bottom Navigation:** Administration, Schemas, Information.

Voy a ver el diagrama entidad relación para comprobar que todo esté OK



Ejercicio 2

La empresa también te solicita crear una vista llamada "InformeTecnico" que contenga la siguiente información:

- ID de la transacción
- Nombre del usuario/a
- Apellido del usuario/a
- IBAN de la tarjeta de crédito usada.
- Nombre de la compañía de la transacción realizada.
- Asegúrate de incluir información relevante de ambas tablas y utiliza alias para cambiar de nombre columnas según sea necesario.

Muestra los resultados de la vista, ordena los resultados de forma descendente en función de la variable ID de transacción.

```
create view informetecnico as
select t.id as transaction_id, du.name , du.surname, cc.iban, c.company_name
from transaction as t
join company as c
on c.id = t.company_id
join data_user as du
on du.id = t.user_id
join credit_card as cc
on cc.id = t.credit_card_id
order by t.id desc;
```