Descripció

En aquest sprint se simula una situació empresarial en la qual hauràs de realitzar diverses manipulacions a les taules d'una base de dades. A més, treballaràs amb índexs i vistes per optimitzar consultes i organitzar la informació.

Continuaràs treballant amb la base de dades que conté informació d'un marketplace, un entorn similar a Amazon on diverses empreses venen els seus productes a través d'un canal en línia. En aquesta activitat, començaràs a treballar amb dades relacionades amb targetes de crèdit.

Afegeix les taules al model segons correspongui:

- Nivell 1: Taula "credit_card"
- Nivell 3 : Taula "user"

Important

Totes les transformacions i importacions que se't demanen en aquesta tasca s'han de realitzar **utilitzant codi SQL. NO ES PERMET fer els canvis fent servir el Wizard.**

Nivell 1

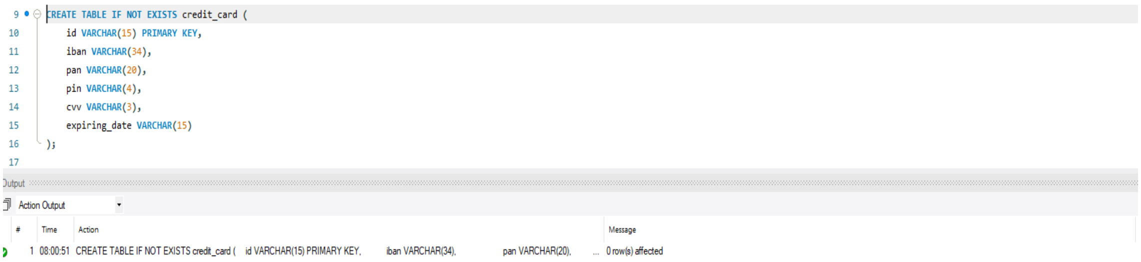
Exercici 1

La teva tasca és dissenyar i crear una taula anomenada "credit_card" que emmagatzemi detalls crucials sobre les targetes de crèdit. La nova taula ha de ser capaç d'identificar de manera única cada targeta i establir una relació adequada amb les altres dues taules ("transaction" i "company"). Després de crear la taula serà necessari que ingressis la informació del document denominat "dades_introduir_credit". Recorda mostrar el diagrama i realitzar una breu descripció d'aquest.

A partir de la BBDD **"transactions"** creada en l'Sprint 2, amb les dues taules ja creades **"company"i "transaction**" afegirem a aquest, a una nova taula anomenada "**credit_card".**

La taula que creem tindrà les següents variables: **id** (VARCHAR (15),PK), **iban** (VARCHAR (34)), **pan** (VARCHAR (20)),**pin** (VARCHAR(4)), **cvv** (VARCHAR(3)), **expiring_date** (VARCHAR (15)).

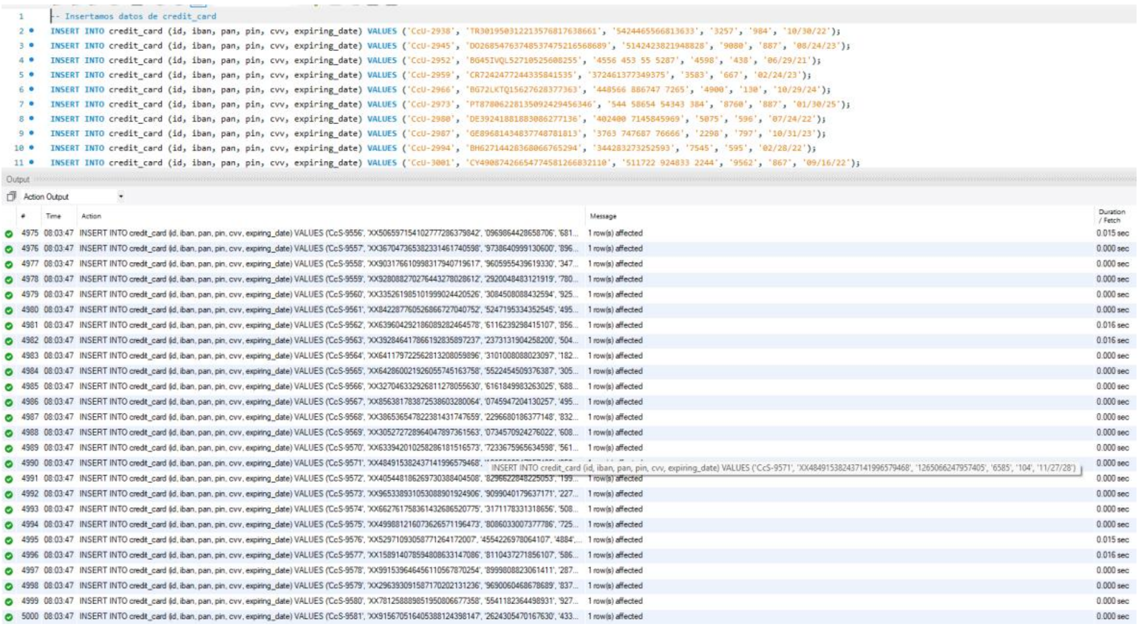
Creem la taula:



```
CREATE TABLE IF NOT EXISTS credit_card (
    id VARCHAR(15) PRIMARY KEY,
    iban VARCHAR(34),
    pan VARCHAR(20),
    pin VARCHAR(4),
    cvv VARCHAR(3),
    expiring_date VARCHAR(15)
);
```

```
Output
Action Output
#   Time      Action                                                                                              Message
1   08:00:51  CREATE TABLE IF NOT EXISTS credit_card (   id VARCHAR(15) PRIMARY KEY,   iban VARCHAR(34),   pan VARCHAR(20),  ...  0 row(s) affected
```

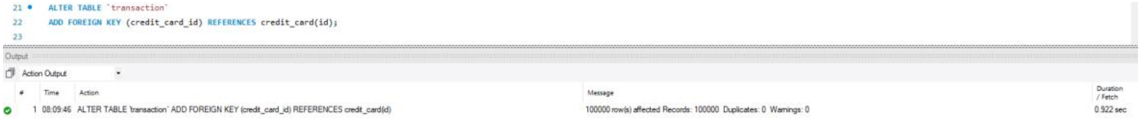
Introduïm les dades a la taula:



```
-- 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-2952', 'BG45IVQL52710525608255', '4556 453 55 5287', '4598', '438', '06/29/21');
INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcU-2959', 'CR7242477244335841535', '372461377349375', '3583', '667', '02/24/23');
INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcU-2966', 'BG72LKTQ15627628377363', '448566 886747 7265', '4900', '130', '10/29/24');
INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcU-2973', 'PT87806228135092429456346', '544 58654 54343 384', '8760', '887', '01/30/25');
INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcU-2980', 'DE39241881883086277136', '402400 7145845969', '5075', '596', '07/24/22');
INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcU-2987', 'GE89681434837748781813', '3763 747687 76666', '2298', '797', '10/31/23');
INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcU-2994', 'BH62714428368066765294', '344283273252593', '7545', '595', '02/28/22');
INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcU-3001', 'CY49087426654774581266832110', '511722 924833 2244', '9562', '867', '09/16/22');
```

```
Output
Action Output
#     Time      Action                                                                                                                                                Message             Duration / Fetch
4975  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9556', 'XX506597154102777286379842', '0969864428658706', '681...   1 row(s) affected   0.015 sec
4976  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9557', 'XX367047365382331461740598', '9738640999130600', '896...   1 row(s) affected   0.000 sec
4977  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9558', 'XX903176610998317940719617', '9605955439619330', '347...   1 row(s) affected   0.000 sec
4978  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9559', 'XX928088270276443278028612', '2920048483121919', '780...   1 row(s) affected   0.000 sec
4979  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9560', 'XX335261985101999024420526', '3084508088432594', '925...   1 row(s) affected   0.000 sec
4980  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9561', 'XX842287760526866727040752', '5247195334352545', '495...   1 row(s) affected   0.000 sec
4981  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9562', 'XX639604292186089282464578', '6116239298415107', '856...   1 row(s) affected   0.016 sec
4982  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9563', 'XX392846417866192835897237', '2373131904258200', '504...   1 row(s) affected   0.016 sec
4983  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9564', 'XX641179722562813208059896', '3101008088023097', '182...   1 row(s) affected   0.000 sec
4984  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9565', 'XX642860021926055745163758', '5522454509376387', '305...   1 row(s) affected   0.000 sec
4985  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9566', 'XX327046332926811278055630', '6161849983263025', '688...   1 row(s) affected   0.000 sec
4986  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9567', 'XX856381783872538603280064', '0745947204130257', '495...   1 row(s) affected   0.000 sec
4987  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9568', 'XX386536547822381431747659', '2296680186377148', '832...   1 row(s) affected   0.000 sec
4988  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9569', 'XX305272728964047897361563', '0734570924276022', '608...   1 row(s) affected   0.000 sec
4989  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9570', 'XX633942010258286181516573', '7233675965634598', '561...   1 row(s) affected   0.000 sec
4990  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9571', 'XX484915382437141996579468',                                               0.000 sec
                INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9571', 'XX484915382437141996579468', '1265066247957405', '6585', '104', '11/27/28')
4991  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9572', 'XX405448186269730388404508', '8296622848225053', '199...   1 row(s) affected   0.000 sec
4992  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9573', 'XX965338931053088901924906', '9099040179637171', '227...   1 row(s) affected   0.000 sec
4993  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9574', 'XX662761758361432686520775', '3171178331318656', '508...   1 row(s) affected   0.000 sec
4994  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9575', 'XX499881216073626571196473', '8086033007377786', '725...   1 row(s) affected   0.000 sec
4995  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9576', 'XX52971093058771264172007', '4554226978064107', '4884',...  1 row(s) affected   0.015 sec
4996  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9577', 'XX158914078594808633147086', '8110437271856107', '586...   1 row(s) affected   0.016 sec
4997  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9578', 'XX991539646456110567870254', '8999808823061411', '287...   1 row(s) affected   0.000 sec
4998  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9579', 'XX296393091587170202131236', '9690060468678689', '837...   1 row(s) affected   0.000 sec
4999  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9580', 'XX781258889851950806677358', '5541182364498931', '927...   1 row(s) affected   0.000 sec
5000  08:03:47  INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('CcS-9581', 'XX915670516405388124398147', '2624305470167630', '433...   1 row(s) affected   0.000 sec
```

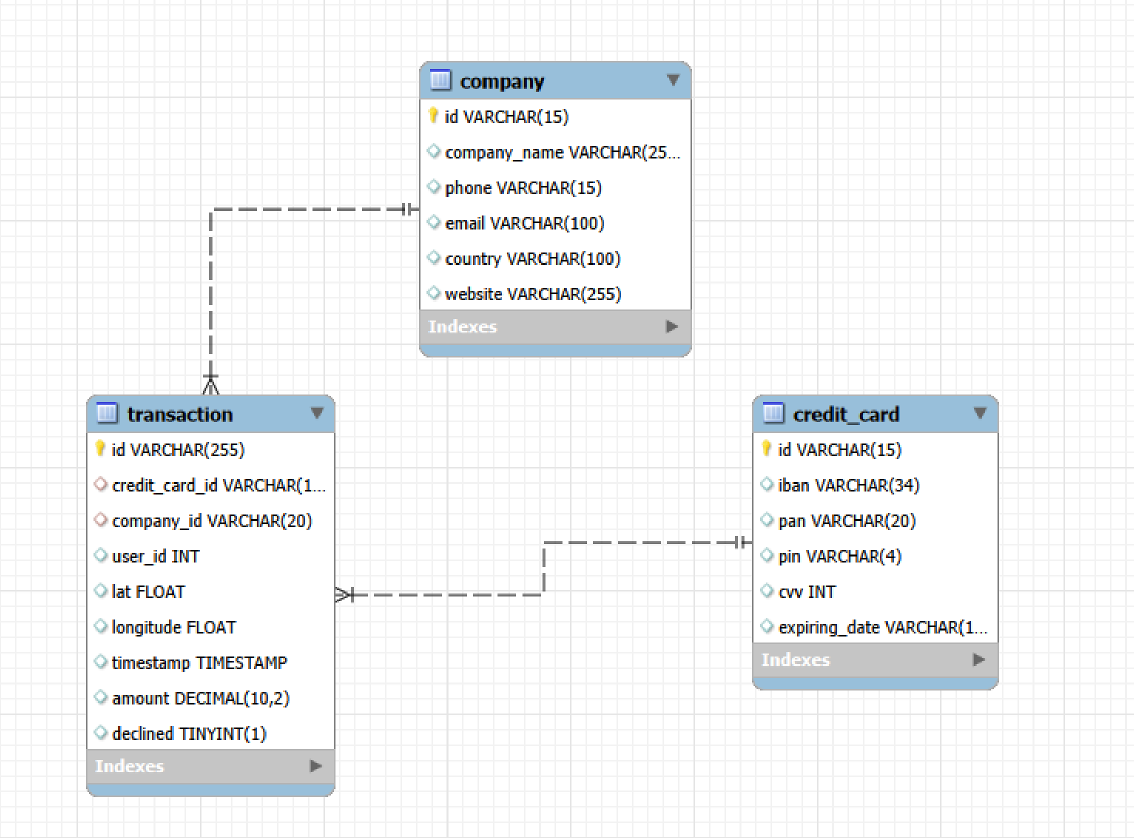
Agreguem una FK després de la creació de la taula "**credit"card**" a la variable "**credit_card_id**" de la taula "**transaction**" cap la vairable "**id**", que és PK de la taula "**credit_card**".



```
ALTER TABLE `transaction`
ADD FOREIGN KEY (credit_card_id) REFERENCES credit_card(id);
```

```
Output
Action Output
#   Time      Action                                                                                Message                                                                Duration / Fetch
1   08:09:46  ALTER TABLE `transaction` ADD FOREIGN KEY (credit_card_id) REFERENCES credit_card(id)   100000 row(s) affected Records: 100000  Duplicates: 0  Warnings: 0   0.922 sec
```

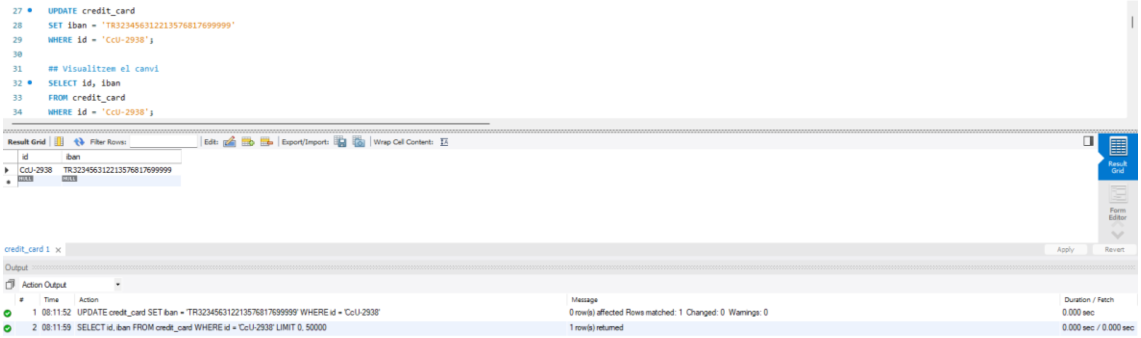
El diagrama resultant de la BBDD que queda és el següent, on amb la creació de la taula “**credit_card**”, podem veure que té una relació 1:N amb la taula “**transaction**”, és a dir que un targeta de credit tindrà N transaccions, i cada transacció serà d’una targeta de crèdit.



Exercici 2

El departament de Recursos Humans ha identificat un error en el número de compte associat a la targeta de crèdit amb ID CcU-2938. La informació que ha de mostrar-se per a aquest registre és: TR323456312213576817699999. Recorda mostrar que el canvi es va realitzar.

Fem un Update del camp iban, filtrant pel camp id que volem canviar.



```
UPDATE credit_card
SET iban = 'TR323456312213576817699999'
WHERE id = 'CcU-2938';

## Visualitzem el canvi
SELECT id, iban
FROM credit_card
WHERE id = 'CcU-2938';
```

id	iban
CcU-2938	TR323456312213576817699999
NULL	NULL

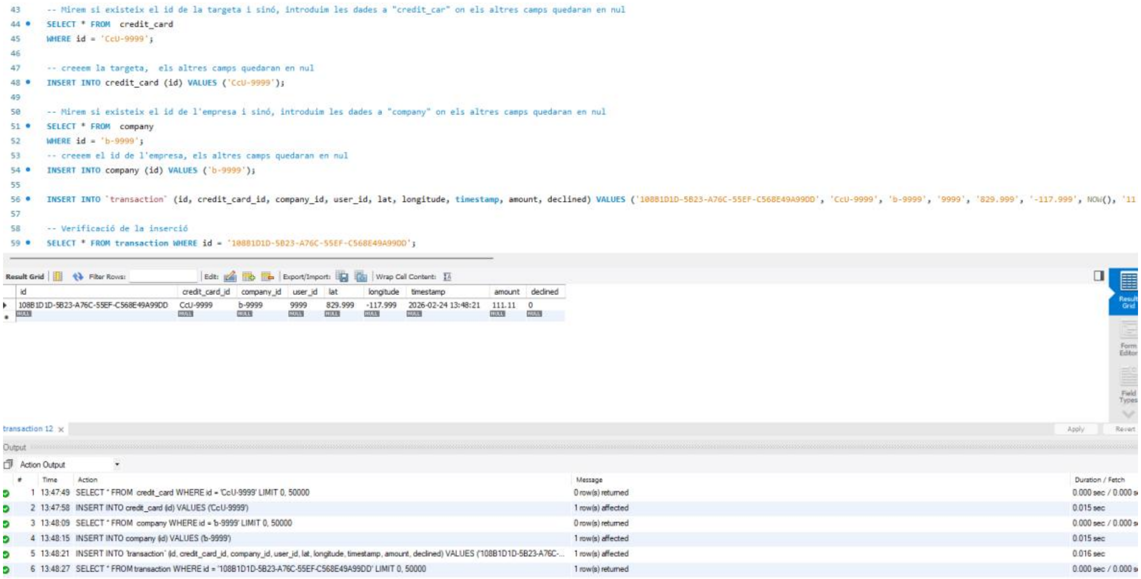
```
#  Time      Action                                                                         Message                                                      Duration / Fetch
1  08:11:52  UPDATE credit_card SET iban = 'TR323456312213576817699999' WHERE id = 'CcU-2938'  0 row(s) affected Rows matched: 1  Changed: 0  Warnings: 0  0.000 sec
2  08:11:59  SELECT id, iban FROM credit_card WHERE id = 'CcU-2938' LIMIT 0, 50000              1 row(s) returned                                            0.000 sec / 0.000 sec
```

Exercici 3

En la taula "transaction" ingressa una nova transacció amb la següent informació:

Id	108B1D1D-5B23-A76C-55EF-C568E49A99DD
credit_card_id	CcU-9999
company_id	b-9999
user_id	9999
lat	829.999
longitude	-117.999
amount	111.11
declined	0

Introduïrem les dades de la nova transacció en la taula “**transaction**” fent un INSERT INTO, però abans hem d’introduïr el número de targeta “**credit card id**” en la taula “**credit_card**”, i el **company_id** en la taula “**company**” (hem mirat abans fent un SELECT aviam si hi eren o no) , ja que són dades que són PK en les dues taules, i que en la taula “transaction” són FK, i sense que aquestes estiguin en les taules, no se’ns permet introduir la nova transacció en la taula “**transaction**”



```
-- Mirem si existeix el id de la targeta i sinó, introduim les dades a "credit_car" on els altres camps quedaran en nul
SELECT * FROM  credit_card
WHERE id = 'CcU-9999';

-- creeem la targeta,  els altres camps quedaran en nul
INSERT INTO credit_card (id) VALUES ('CcU-9999');

-- Mirem si existeix el id de l'empresa i sinó, introduim les dades a "company" on els altres camps quedaran en nul
SELECT * FROM  company
WHERE id = 'b-9999';
-- creeem el id de l'empresa, els altres camps quedaran en nul
INSERT INTO company (id) VALUES ('b-9999');

INSERT INTO `transaction` (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('108B1D1D-5B23-A76C-55EF-C568E49A99DD', 'CcU-9999', 'b-9999', '9999', '829.999', '-117.999', NOW(), '11

-- Verificació de la inserció
SELECT * FROM transaction WHERE id = '108B1D1D-5B23-A76C-55EF-C568E49A99DD';
```

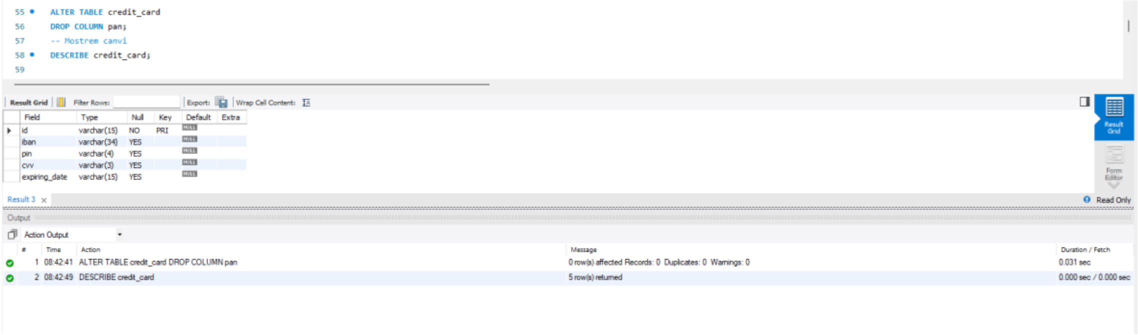
id	credit_card_id	company_id	user_id	lat	longitude	timestamp	amount	declined
108B1D1D-5B23-A76C-55EF-C568E49A99DD	CcU-9999	b-9999	9999	829.999	-117.999	2026-02-24 13:48:21	111.11	0
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

```
#  Time      Action                                                                                                                   Message             Duration / Fetch
1  13:47:49  SELECT * FROM  credit_card WHERE id = 'CcU-9999' LIMIT 0, 50000                                                          0 row(s) returned   0.000 sec / 0.000 s
2  13:47:58  INSERT INTO credit_card (id) VALUES ('CcU-9999')                                                                         1 row(s) affected   0.015 sec
3  13:48:09  SELECT * FROM  company WHERE id = 'b-9999' LIMIT 0, 50000                                                                0 row(s) returned   0.000 sec / 0.000 s
4  13:48:15  INSERT INTO company (id) VALUES ('b-9999')                                                                               1 row(s) affected   0.015 sec
5  13:48:21  INSERT INTO `transaction` (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('108B1D1D-5B23-A76C-...   1 row(s) affected   0.016 sec
6  13:48:27  SELECT * FROM transaction WHERE id = '108B1D1D-5B23-A76C-55EF-C568E49A99DD' LIMIT 0, 50000                               1 row(s) returned   0.000 sec / 0.000 s
```

Exercici 4

Des de recursos humans et sol·liciten eliminar la columna "pan" de la taula credit_card. Recorda mostrar el canvi realitzat.

Amb la instrucció **ALTER TABLE** i **DROP** eliminarem la columna “pan”



```sql
ALTER TABLE credit_card
DROP COLUMN pan;
-- Mostrem canvi
DESCRIBE credit_card;
```

Field	Type	Null	Key	Default	Extra
id	varchar(15)	NO	PRI	NULL	
iban	varchar(34)	YES		NULL	
pin	varchar(4)	YES		NULL	
cvv	varchar(3)	YES		NULL	
expiring_date	varchar(15)	YES		NULL	

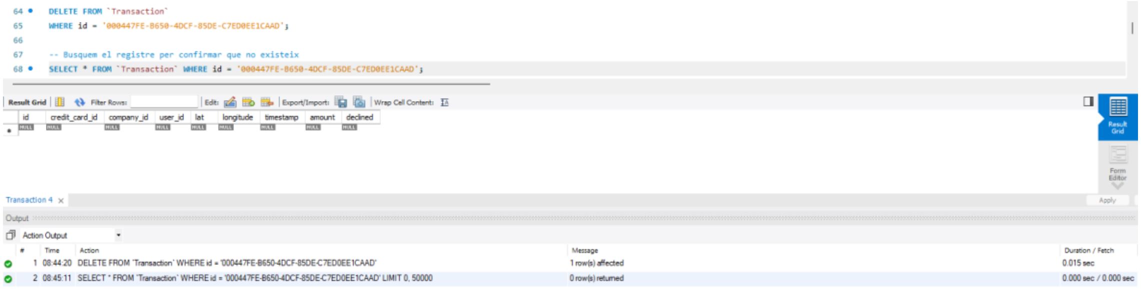
```
#  Time      Action                                  Message                                                  Duration / Fetch
1  08:42:41  ALTER TABLE credit_card DROP COLUMN pan 0 row(s) affected Records: 0  Duplicates: 0  Warnings: 0   0.031 sec
2  08:42:49  DESCRIBE credit_card                    5 row(s) returned                                        0.000 sec / 0.000 sec
```

Nivell 2

Exercici 1

Elimina de la taula transaction el registre amb ID 000447FE-B650-4DCF-85DE-C7ED0EE1CAAD de la base de dades.

Utilitzem la instrucció **DELETE** per eliminar el registre de la taula, tot filtrant per id. Després mostrem que s'ha eliminat el registre fent un **SELECT** per mostrar que aquest registre ha estat eliminat.



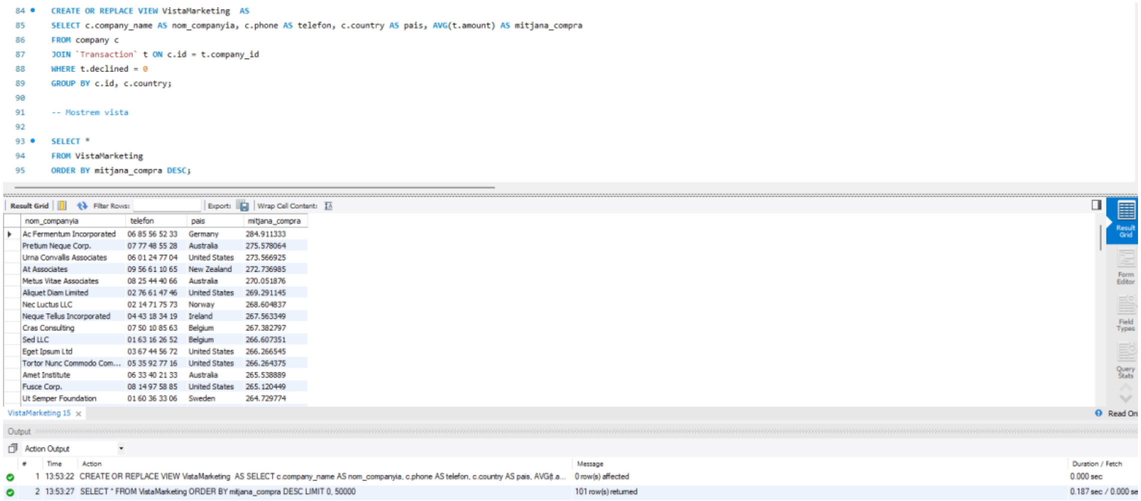
```sql
DELETE FROM `Transaction`
WHERE id = '000447FE-B650-4DCF-85DE-C7ED0EE1CAAD';

-- Busquem el registre per confirmar que no existeix
SELECT * FROM `Transaction` WHERE id = '000447FE-B650-4DCF-85DE-C7ED0EE1CAAD';
```

id	credit_card_id	company_id	user_id	lat	longitude	timestamp	amount	declined
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

```
#  Time      Action                                                                                      Message             Duration / Fetch
1  08:44:20  DELETE FROM 'Transaction' WHERE id = '000447FE-B650-4DCF-85DE-C7ED0EE1CAAD'                 1 row(s) affected   0.015 sec
2  08:45:11  SELECT * FROM 'Transaction' WHERE id = '000447FE-B650-4DCF-85DE-C7ED0EE1CAAD' LIMIT 0, 50000  0 row(s) returned   0.000 sec / 0.000 sec
```

Exercici 2

La secció de màrqueting desitja tenir accés a informació específica per a realitzar anàlisi i estratègies efectives. S'ha sol·licitat crear una vista que proporcioni detalls clau sobre les companyies i les seves transaccions. Serà necessària que creïs una vista anomenada VistaMarketing que contingui la següent informació: Nom de la companyia. Telèfon de contacte. País de residència. Mitjana de compra realitzat per cada companyia. Presenta la vista creada, ordenant les dades de major a menor mitjana de compra.



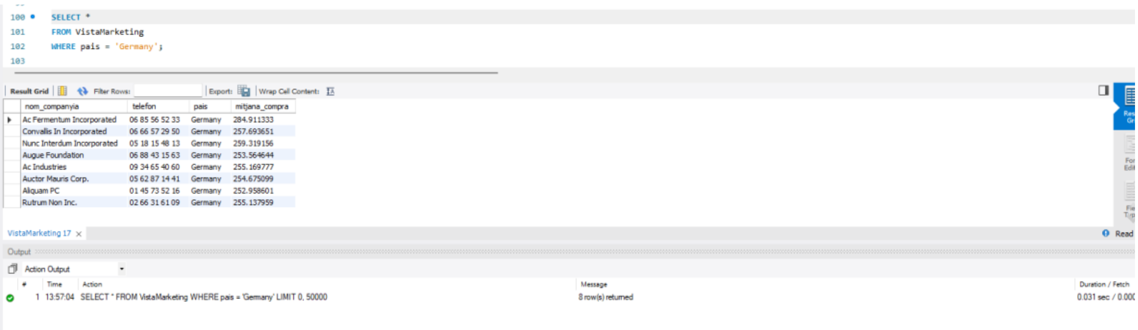
```sql
CREATE OR REPLACE VIEW VistaMarketing  AS
SELECT c.company_name AS nom_companyia, c.phone AS telefon, c.country AS pais, AVG(t.amount) AS mitjana_compra
FROM company c
JOIN `Transaction` t ON c.id = t.company_id
WHERE t.declined = 0
GROUP BY c.id, c.country;

-- Mostrem vista

SELECT *
FROM VistaMarketing
ORDER BY mitjana_compra DESC;
```

nom_companyia	telefon	pais	mitjana_compra
Ac Fermentum Incorporated	06 85 56 52 33	Germany	284.911333
Pretium Neque Corp.	07 77 48 55 28	Australia	275.578064
Urna Convallis Associates	06 01 24 77 04	United States	273.566925
At Associates	09 56 61 10 65	New Zealand	272.736985
Metus Vitae Associates	08 25 44 40 66	Australia	270.051876
Aliquet Diam Limited	02 76 61 47 46	United States	269.291145
Nec Luctus LLC	02 14 71 75 73	Norway	268.604837
Neque Tellus Incorporated	04 43 18 34 19	Ireland	267.563349
Cras Consulting	07 50 10 85 63	Belgium	267.382797
Sed LLC	01 63 16 26 52	Belgium	266.607351
Eget Ipsum Ltd	03 67 44 56 72	United States	266.266545
Tortor Nunc Commodo Com...	05 35 92 77 16	United States	266.264375
Amet Institute	06 33 40 21 33	Australia	265.538889
Fusce Corp.	08 14 97 58 85	United States	265.120449
Ut Semper Foundation	01 60 36 33 06	Sweden	264.729774

```
#  Time      Action                                                                                                                    Message              Duration / Fetch
1  13:53:22  CREATE OR REPLACE VIEW VistaMarketing  AS SELECT c.company_name AS nom_companyia, c.phone AS telefon, c.country AS pais, AVG(t.a...  0 row(s) affected    0.000 sec
2  13:53:27  SELECT * FROM VistaMarketing ORDER BY mitjana_compra DESC LIMIT 0, 50000                                                        101 row(s) returned  0.187 sec / 0.000 se
```

Exercici 3

Filtra la vista VistaMarketing per a mostrar només les companyies que tenen el seu país de residència en "Germany"



```sql
SELECT *
FROM VistaMarketing
WHERE pais = 'Germany';
```

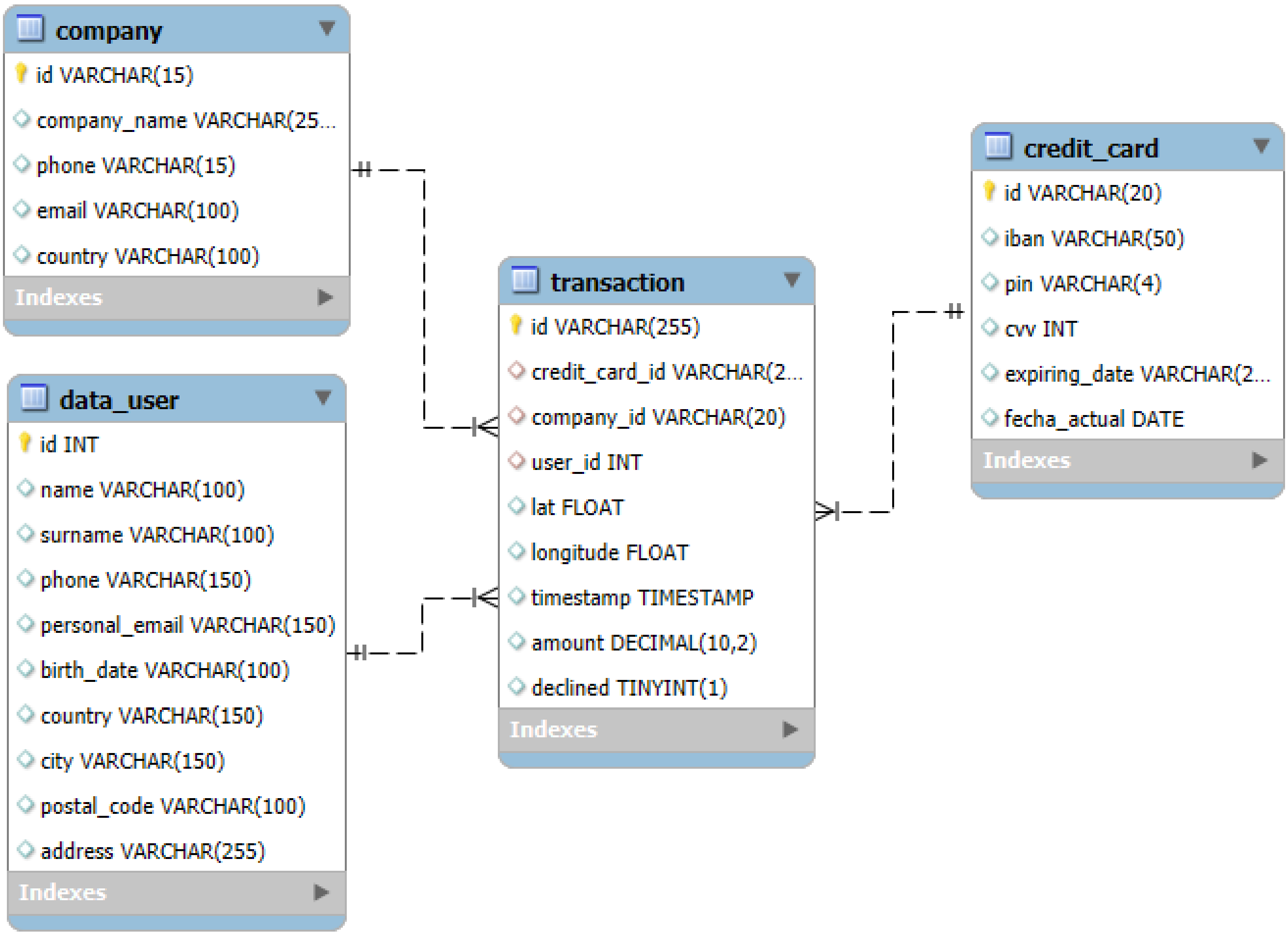
nom_companyia	telefon	pais	mitjana_compra
Ac Fermentum Incorporated	06 85 56 52 33	Germany	284.911333
Convallis In Incorporated	06 66 57 29 50	Germany	257.693651
Nunc Interdum Incorporated	05 18 15 48 13	Germany	259.319156
Augue Foundation	06 88 43 15 63	Germany	253.564644
Ac Industries	09 34 65 40 60	Germany	255.169777
Auctor Mauris Corp.	05 62 87 14 41	Germany	254.675099
Aliquam PC	01 45 73 52 16	Germany	252.958601
Rutrum Non Inc.	02 66 31 61 09	Germany	255.137959

```
#  Time      Action                                                          Message             Duration / Fetch
1  13:57:04  SELECT * FROM VistaMarketing WHERE pais = 'Germany' LIMIT 0, 50000  8 row(s) returned   0.031 sec / 0.000
```

Nivell 3

Exercici 1

La setmana vinent tindràs una nova reunió amb els gerents de màrqueting. Un company del teu equip va realitzar modificacions en la base de dades, però no recorda com les va realitzar. Et demana que l'ajudis a deixar els comandos executats per a obtenir el següent diagrama:

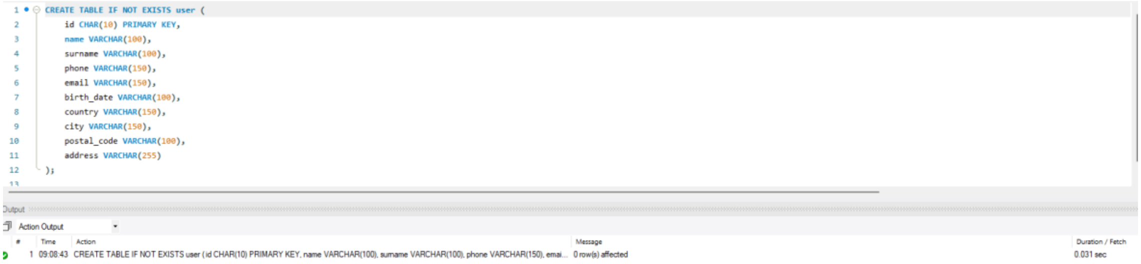


Recordatori

En aquesta activitat, és necessari que descriguis el "pas a pas" de les tasques realitzades. És important realitzar descripcions senzilles, simples i fàcils de comprendre. Per a realitzar aquesta activitat hauràs de treballar amb els arxius denominats "estructura_dades_user" i "dades_introduir_user"

Recorda continuar treballant sobre el model i les taules amb les quals ja has treballat fins ara.

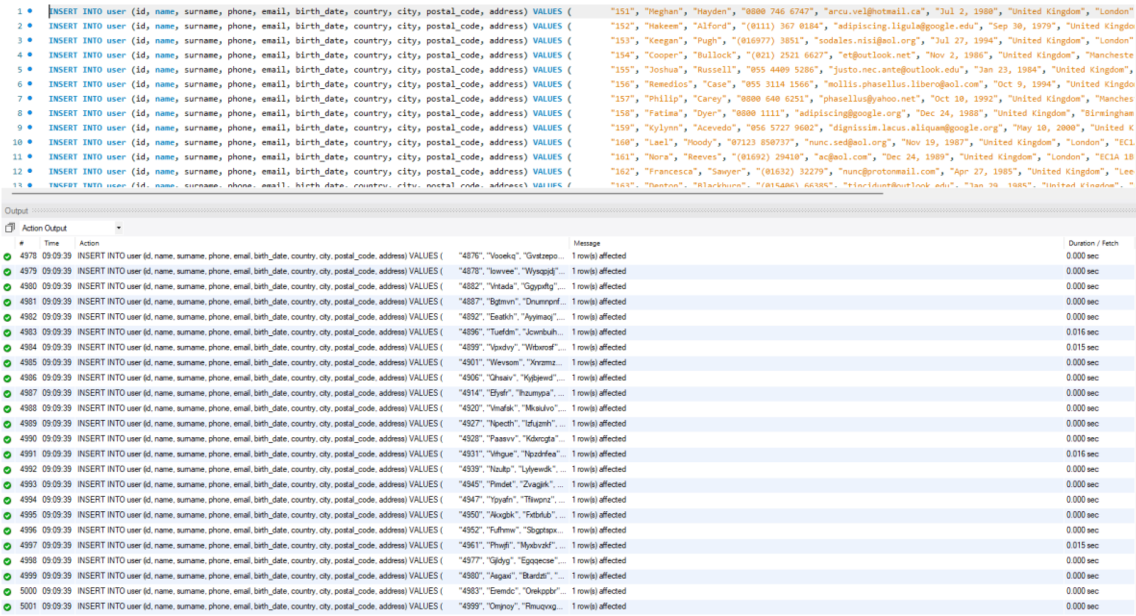
Executem el fitxer "**estructura_dades_user**" per crear la taula user.



```
CREATE TABLE IF NOT EXISTS user (
    id CHAR(10) 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)
);
```

```
#  Time      Action                                                                                                               Message            Duration / Fetch
1  09:08:43  CREATE TABLE IF NOT EXISTS user (id CHAR(10) PRIMARY KEY, name VARCHAR(100), surname VARCHAR(100), phone VARCHAR(150), emai...  0 row(s) affected  0.031 sec
```

Introduïm les dades executant el fitxer "**dades_introduir_user**"



```
INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (        "151", "Meghan", "Hayden", "0800 746 6747", "arcu.vel@hotmail.ca", "Jul 2, 1980", "United Kingdom", "London"
INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (        "152", "Hakeem", "Alford", "(0111) 367 0184", "adipiscing.ligula@google.edu", "Sep 30, 1979", "United Kingdo
INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (        "153", "Keegan", "Pugh", "(016977) 3851", "sodales.nisi@aol.org", "Jul 27, 1994", "United Kingdom", "London"
INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (        "154", "Cooper", "Bullock", "(021) 2521 6627", "et@outlook.net", "Nov 2, 1986", "United Kingdom", "Mancheste
INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (        "155", "Joshua", "Russell", "055 4409 5286", "justo.nec.ante@outlook.edu", "Jan 23, 1984", "United Kingdom",
INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (        "156", "Remedios", "Case", "055 3114 1566", "mollis.phasellus.libero@aol.com", "Oct 9, 1994", "United Kingdo
INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (        "157", "Philip", "Carey", "0800 640 6251", "phasellus@yahoo.net", "Oct 10, 1992", "United Kingdom", "Manches
INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (        "158", "Fatima", "Dyer", "0800 1111", "adipiscing@google.org", "Dec 24, 1988", "United Kingdom", "Birmingham
INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (        "159", "Kylynn", "Acevedo", "056 5727 9602", "dignissim.lacus.aliquam@google.org", "May 10, 2000", "United K
INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (        "160", "Lael", "Moody", "07123 850737", "nunc.sed@aol.org", "Nov 19, 1987", "United Kingdom", "London", "EC1
INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (        "161", "Nora", "Reeves", "(01692) 29410", "ac@aol.com", "Dec 24, 1989", "United Kingdom", "London", "EC1A 1B
INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (        "162", "Francesca", "Sawyer", "(01632) 32279", "nunc@protonmail.com", "Apr 27, 1985", "United Kingdom", "Lee
INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (        "163", "Denton", "Blackburn", "(015406) 66385", "tincidunt@outlook.edu", "Jan 29, 1985", "United Kingdom", "
```

Output

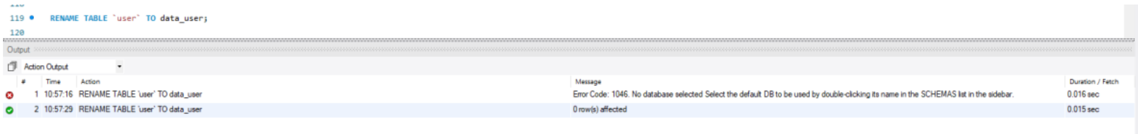
Action Output

```
#     Time      Action                                                                                                   Message            Duration / Fetch
4978  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4876", "Vooekq", "Gvstzepo...   1 row(s) affected   0.000 sec
4979  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4878", "lowvee", "Wysqpjdj"...  1 row(s) affected   0.000 sec
4980  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4882", "Vntada", "Ggypxftg",...  1 row(s) affected   0.000 sec
4981  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4887", "Bgtmvn", "Dnumnpnf...   1 row(s) affected   0.000 sec
4982  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4892", "Eeatkh", "Ayyimaoj",...  1 row(s) affected   0.000 sec
4983  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4896", "Tuefdm", "Jcwnbuih...   1 row(s) affected   0.016 sec
4984  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4899", "Vpxdvy", "Wrbxrosf",...  1 row(s) affected   0.015 sec
4985  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4901", "Wevsom", "Xnrzmz...     1 row(s) affected   0.000 sec
4986  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4906", "Qhsaiv", "Kyjbjewd",...  1 row(s) affected   0.000 sec
4987  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4914", "Efysfr", "Ihzumypa", ... 1 row(s) affected   0.000 sec
4988  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4920", "Vmafsk", "Mksiulvo",...  1 row(s) affected   0.000 sec
4989  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4927", "Npecth", "Izfujzmh", ... 1 row(s) affected   0.000 sec
4990  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4928", "Paasvv", "Kdxrcgta"...   1 row(s) affected   0.000 sec
4991  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4931", "Vrhgue", "Npzdnfea"...   1 row(s) affected   0.016 sec
4992  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4939", "Nzultp", "Lylyewdk", ... 1 row(s) affected   0.000 sec
4993  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4945", "Pimdet", "Zvagjirk", ... 1 row(s) affected   0.000 sec
4994  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4947", "Ypyafn", "Tfiiwpnz", ... 1 row(s) affected   0.000 sec
4995  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4950", "Akxgbk", "Fxtbrlub", ... 1 row(s) affected   0.000 sec
4996  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4952", "Fufhmw", "Sbgptspx...   1 row(s) affected   0.000 sec
4997  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4961", "Phwjfi", "Myxbvzkf", ... 1 row(s) affected   0.015 sec
4998  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4977", "Gjldyg", "Egqqecse",...  1 row(s) affected   0.000 sec
4999  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4980", "Asgaxi", "Btardzti", "... 1 row(s) affected   0.000 sec
5000  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4983", "Eremdc", "Orekppbr"...   1 row(s) affected   0.000 sec
5001  09:09:39  INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES (   "4999", "Omjnoy", "Rmuqvxg...    1 row(s) affected   0.000 sec
```

A partir d’aquí, anem a indicar els comandos que s’han executat per a l’obtenció del diagrama.

En la taula **user** s’ha fet el següent:

- Fer el canvi de nom amb la instrucció: **RENAME TABLE `user` TO data_user;**



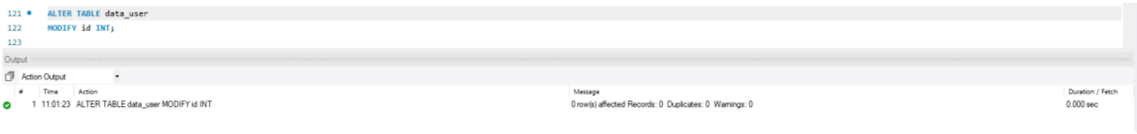
```
RENAME TABLE `user` TO data_user;
```

Output

Action Output

```
#  Time      Action                                 Message                                                                                                              Duration / Fetch
1  10:57:16  RENAME TABLE `user` TO data_user       Error Code: 1046. No database selected Select the default DB to be used by double-clicking its name in the SCHEMAS list in the sidebar.   0.016 sec
2  10:57:29  RENAME TABLE `user` TO data_user       0 row(s) affected                                                                                                    0.015 sec
```

- Canviar el tipus de data de la variable **id** que és la PK a INT com s’indica en Diagrama:



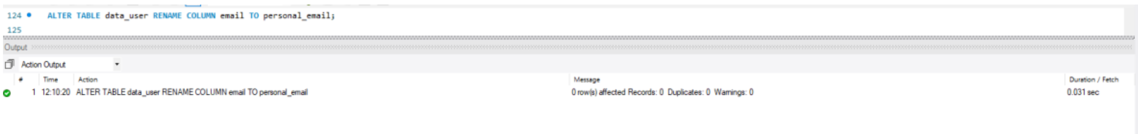
```
ALTER TABLE data_user
MODIFY id INT;
```

Output

Action Output

```
#  Time      Action                            Message                                                      Duration / Fetch
1  11:01:23  ALTER TABLE data_user MODIFY id INT   0 row(s) affected Records: 0  Duplicates: 0  Warnings: 0   0.000 sec
```

- Fem el canvi de nom de la variable “**email**” a “**personal email**”



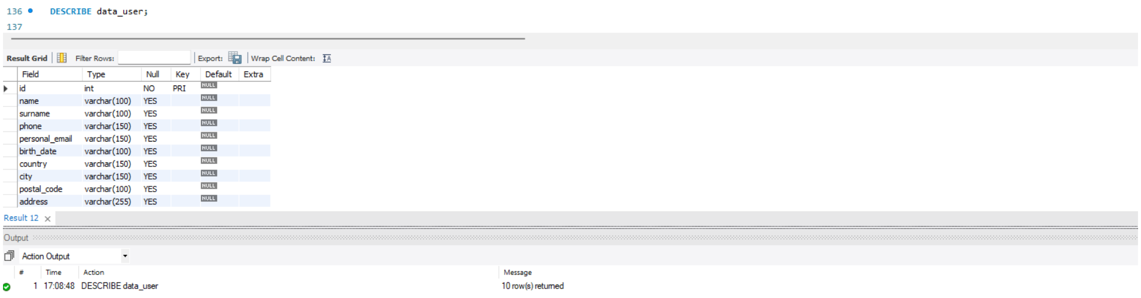
```
ALTER TABLE data_user RENAME COLUMN email TO personal_email;
```

Output

Action Output

```
#  Time      Action                                                 Message                                                      Duration / Fetch
1  12:10:20  ALTER TABLE data_user RENAME COLUMN email TO personal_email   0 row(s) affected Records: 0  Duplicates: 0  Warnings: 0   0.031 sec
```

La taula queda així:



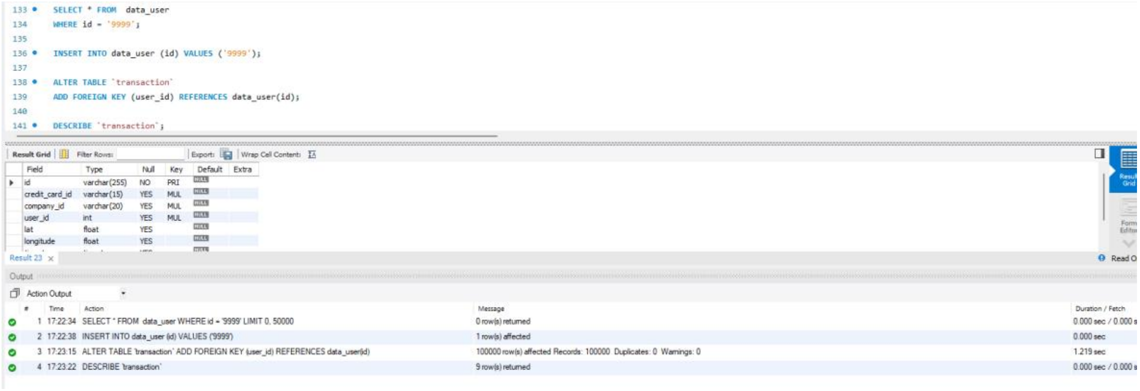
```sql
DESCRIBE data_user;
```

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	

```
#   Time      Action                  Message
1   17:08:48  DESCRIBE data_user      10 row(s) returned
```

En la taula **“transaction”** fem les següent transformacions:

Fem que la variable “**user_id**” sigui **FK** de la **PK** id de la taula “**data_user**”. Abans per això, introduïm en la taula “**data_user**” el id “**9999**”, que s’havia introduït en la taula “**transaction**” en l’exercici 3 del nivell 1.

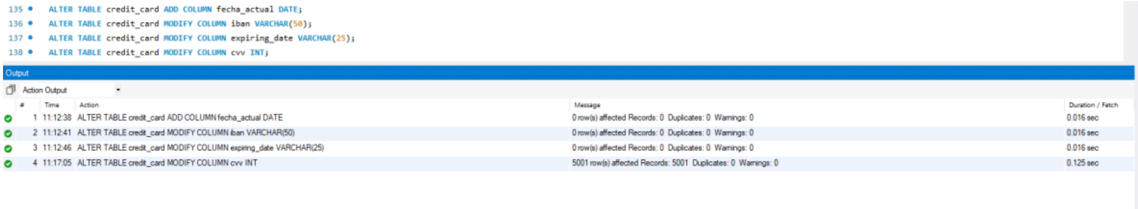


```sql
SELECT * FROM  data_user
WHERE id = '9999';

INSERT INTO data_user (id) VALUES ('9999');

ALTER TABLE `transaction`
ADD FOREIGN KEY (user_id) REFERENCES data_user(id);

DESCRIBE `transaction`;
```

Field	Type	Null	Key	Default	Extra
id	varchar(255)	NO	PRI	NULL	
credit_card_id	varchar(15)	YES	MUL	NULL	
company_id	varchar(20)	YES	MUL	NULL	
user_id	int	YES	MUL	NULL	
lat	float	YES		NULL	
longitude	float	YES		NULL	

```
#   Time      Action                                                                      Message                                                          Duration / Fetch
1   17:22:34  SELECT * FROM data_user WHERE id = '9999' LIMIT 0, 50000                    0 row(s) returned                                                0.000 sec / 0.000 s
2   17:22:38  INSERT INTO data_user (id) VALUES ('9999')                                  1 row(s) affected                                                0.000 sec
3   17:23:15  ALTER TABLE `transaction` ADD FOREIGN KEY (user_id) REFERENCES data_user(id)  100000 row(s) affected Records: 100000  Duplicates: 0  Warnings: 0  1.219 sec
4   17:23:22  DESCRIBE `transaction`                                                      9 row(s) returned                                                0.000 sec / 0.000 s
```

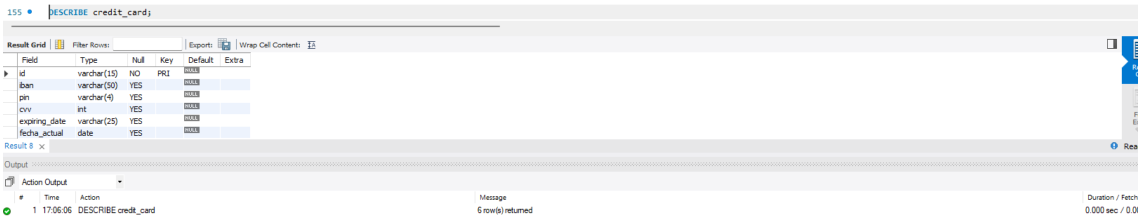
En taula "**credit_card**" afegim la columna fecha_actual DATE, i canviem el tipus de dades a les variables **iban**, **expiring date** i **cvv**, usant la instrucció **ALTER TABLE** en cada cas



```sql
ALTER TABLE credit_card ADD COLUMN fecha_actual DATE;
ALTER TABLE credit_card MODIFY COLUMN iban VARCHAR(50);
ALTER TABLE credit_card MODIFY COLUMN expiring_date VARCHAR(25);
ALTER TABLE credit_card MODIFY COLUMN cvv INT;
```

```
#   Time      Action                                                       Message                                                  Duration / Fetch
1   11:12:38  ALTER TABLE credit_card ADD COLUMN fecha_actual DATE         0 row(s) affected Records: 0  Duplicates: 0  Warnings: 0   0.016 sec
2   11:12:41  ALTER TABLE credit_card MODIFY COLUMN iban VARCHAR(50)       0 row(s) affected Records: 0  Duplicates: 0  Warnings: 0   0.016 sec
3   11:12:46  ALTER TABLE credit_card MODIFY COLUMN expiring_date VARCHAR(25)  0 row(s) affected Records: 0  Duplicates: 0  Warnings: 0   0.016 sec
4   11:17:05  ALTER TABLE credit_card MODIFY COLUMN cvv INT                5001 row(s) affected Records: 5001  Duplicates: 0  Warnings: 0  0.125 sec
```

La taula queda així:

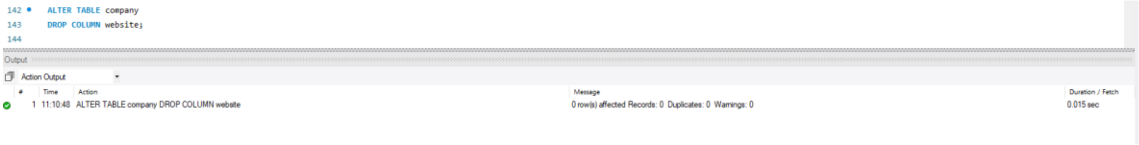


```sql
DESCRIBE credit_card;
```

Field	Type	Null	Key	Default	Extra
id	varchar(15)	NO	PRI	NULL	
iban	varchar(50)	YES		NULL	
pin	varchar(4)	YES		NULL	
cvv	int	YES		NULL	
expiring_date	varchar(25)	YES		NULL	
fecha_actual	date	YES		NULL	

```
#   Time      Action                  Message              Duration / Fetch
1   17:06:06  DESCRIBE credit_card    6 row(s) returned    0.000 sec / 0.00
```

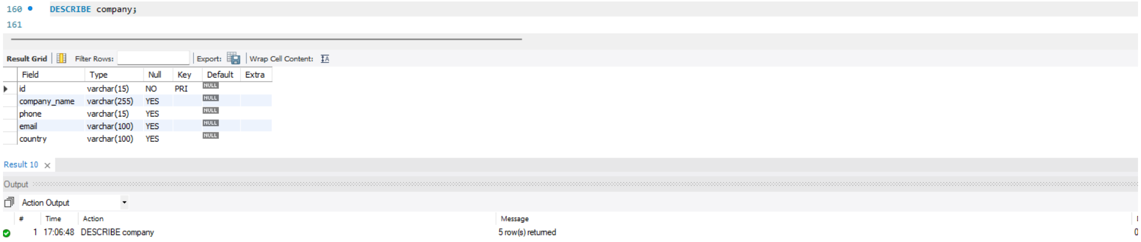
Finalment en la taula “**company**” eliminem la columna **website**



```sql
ALTER TABLE company
DROP COLUMN website;
```

```
Output
Action Output
 #  Time      Action                                    Message                                                          Duration / Fetch
 1  11:10:48  ALTER TABLE company DROP COLUMN website   0 row(s) affected Records: 0  Duplicates: 0  Warnings: 0      0.015 sec
```

Quedant la taula així:

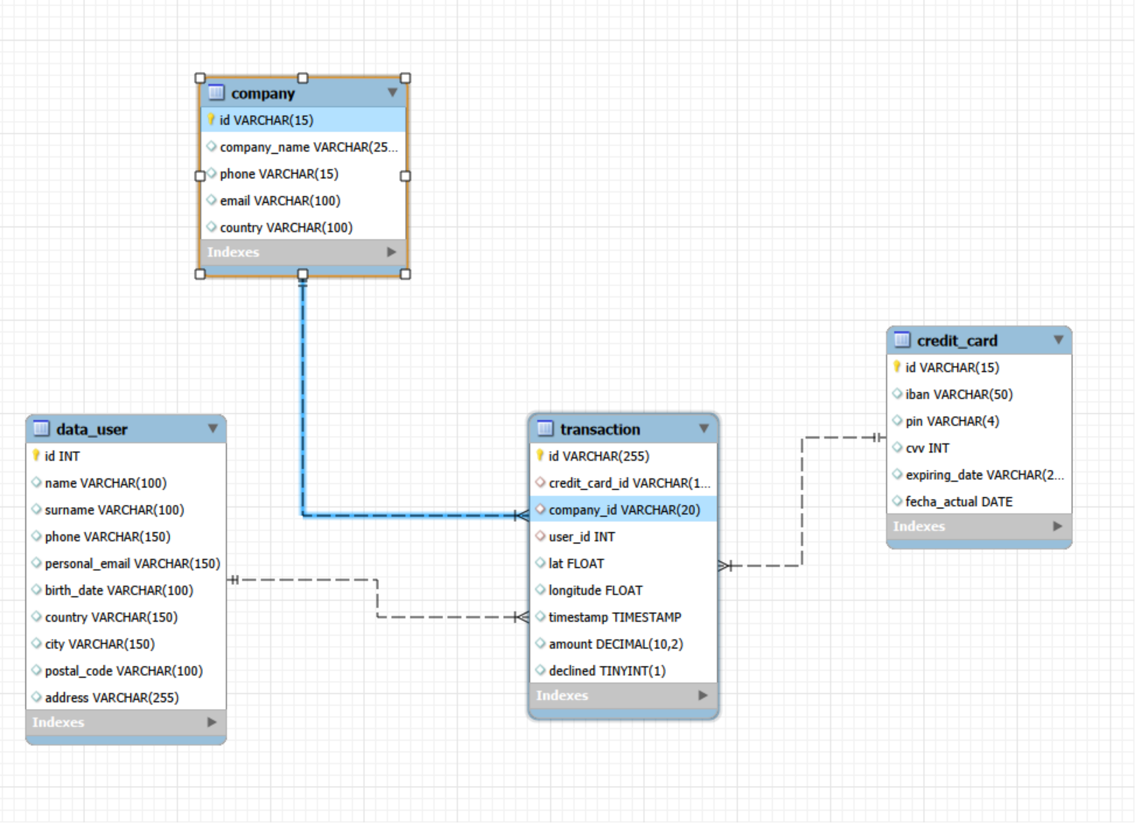


```sql
DESCRIBE company;
```

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	

```
Result 10
Output
Action Output
 #  Time      Action             Message
 1  17:06:48  DESCRIBE company   5 row(s) returned
```

El diagrama resultant és com l’havia deixat el company d’equip:



Exercici 2

L'empresa també us demana crear una vista anomenada "InformeTecnico" que contingui la següent informació:

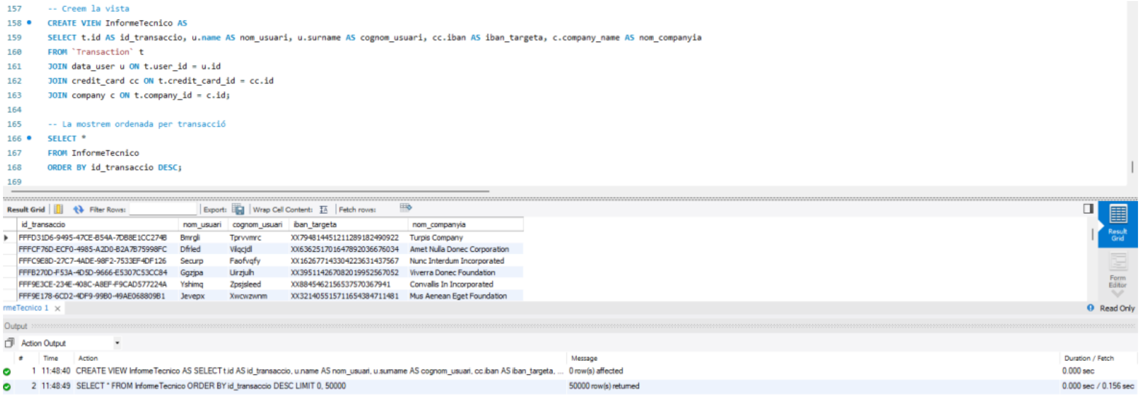
- ○ **ID de la transacció**
- ○ **Nom de l'usuari/ària**
- ○ **Cognom de l'usuari/ària**
- ○ **IBAN de la targeta de crèdit usada.**
- ○ **Nom de la companyia de la transacció realitzada.**

- **Assegureu-vos d'incloure informació rellevant de les taules que coneixereu i utilitzeu àlies per canviar de nom columnes segons calgui.**

Mostra els resultats de la vista, ordena els resultats de forma descendent en funció de la variable ID de transacció.

Creem la vista indicada amb "**CREATE VIEW**" on fem una consulta amb 3 joins per poder mostrar les dades demanades, que es troben en les taules data_user, credit_card i transactions.

Finalment mostrem els resultats amb l'ordre requerit.



```sql
-- Creem la vista
CREATE VIEW InformeTecnico AS
SELECT t.id AS id_transaccio, u.name AS nom_usuari, u.surname AS cognom_usuari, cc.iban AS iban_targeta, c.company_name AS nom_companyia
FROM `Transaction` t
JOIN data_user u ON t.user_id = u.id
JOIN credit_card cc ON t.credit_card_id = cc.id
JOIN company c ON t.company_id = c.id;

-- La mostrem ordenada per transacció
SELECT *
FROM InformeTecnico
ORDER BY id_transaccio DESC;
```

id_transaccio	nom_usuari	cognom_usuari	iban_targeta	nom_companyia
FFFD31D6-9495-47CE-B54A-7DB8E1CC274B	Bmrgli	Tprvvmrc	XX794814451211289182490922	Turpis Company
FFFCF76D-ECF0-4985-A2D0-B2A7B75998FC	Dfrled	Vilqcjdl	XX636251701647892036676034	Amet Nulla Donec Corporation
FFFC9E8D-27C7-4ADE-98F2-7533EF4DF126	Securp	Faofvqfy	XX162677143304223631437567	Nunc Interdum Incorporated
FFFB270D-F53A-4D5D-9666-E5307C53CC84	Ggzjpa	Uirzjulh	XX395114267082019952567052	Viverra Donec Foundation
FFF9E3CE-234E-408C-A8EF-F9CAD577224A	Yshimq	Zpsjsleed	XX8845462156537570367941	Convallis In Incorporated
FFF9E178-6CD2-4DF9-99B0-49AE068809B1	Jevepx	Xwcwzwnm	XX321405515711654384711481	Mus Aenean Eget Foundation

```
#  Time      Action                                                                                                              Message                 Duration / Fetch
1  11:48:40  CREATE VIEW InformeTecnico AS SELECT t.id AS id_transaccio, u.name AS nom_usuari, u.surname AS cognom_usuari, cc.iban AS iban_targeta, ...  0 row(s) affected  0.000 sec
2  11:48:49  SELECT * FROM InformeTecnico ORDER BY id_transaccio DESC LIMIT 0, 50000                                          50000 row(s) returned   0.000 sec / 0.156 sec
```