

- 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.

He creado la tabla con la siguiente query:

```
create table credit_card
(ID varchar (20),
IBAN varchar (50),
PAN varchar (25),
PIN varchar(4),
CVV varchar(3),
Expiring_Date varchar(20),
primary key (ID))
;
```



The screenshot shows a SQL editor with the following query:

```
1 • create table credit_card
2 (ID varchar (20),
3 IBAN varchar (50),
4 PAN varchar (25),
5 PIN varchar(4),
6 CVV varchar(3),
7 Expiring_Date varchar(20),
8 primary key (ID))
9 ;
10
```

Below the editor is an "Output" window showing the execution results:

| # | Time | Action | Message |
|---|----------|--|-------------------|
| 1 | 15:40:31 | DROP TABLE 'transactions'. 'credit_card' | 0 row(s) affected |
| 2 | 15:40:33 | create table credit_card (ID varchar (20), IBAN varchar (50), PAN varchar (25), PIN varchar(4), CVV varchar(3), E... | 0 row(s) affected |

Los campos han sido creados según necesidad del documentos de datos a introducir. También asigno el campo ID como el índice primario.

Para crear la relación entre las tablas transaction y credit_card:

```
ALTER TABLE transaction
ADD FOREIGN KEY (credit_card_ID) REFERENCES credit_card(ID);
```

```
1 • ALTER TABLE transaction
2 ADD FOREIGN KEY (credit_card_ID) REFERENCES credit_card(ID);
```

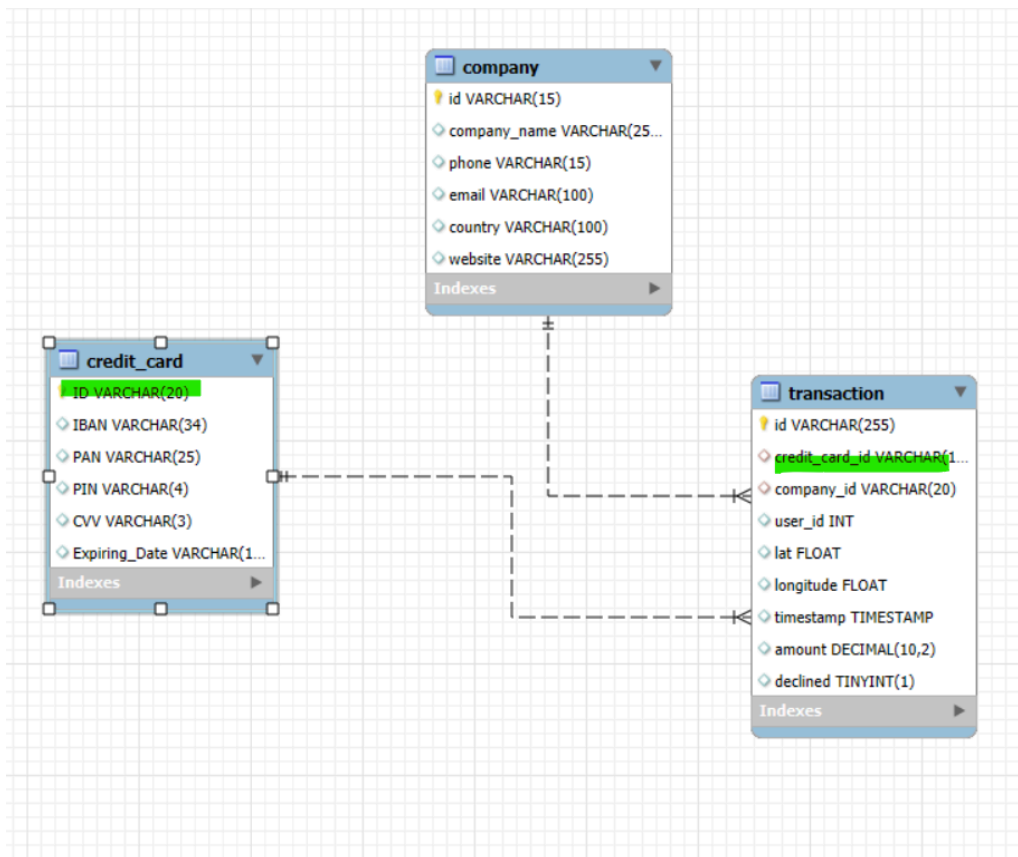
Output

| # | Time | Action | Message |
|---|----------|---|--|
| 1 | 15:46:13 | ALTER TABLE transaction ADD FOREIGN KEY (credit_card_ID) REFERENCES credit_card(ID) | 587 row(s) affected Records: 587 Duplicates: 0 Warnings: 0 |

El modelo relacional queda asi:

La tabla transaction con credit card por credit card id

La tabla transaction con company por company id



- Exercici 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.

Con la función update (tabla) y el filtro con el ID deseado, cambio el campo “IBAN”.

USE transactions;

UPDATE credit_card

SET IBAN = 'R323456312213576817699999'

WHERE ID = 'CcU-2938';

The screenshot displays a database management interface. At the top, a toolbar contains various icons for file operations, editing, and viewing. Below the toolbar, a SQL query is entered in a text area: `1 • SELECT * FROM transactions.credit_card;`. The main area shows a 'Result Grid' with a table of credit card records. The table has columns: ID, IBAN, PAN, PIN, CVV, and Expiring_Date. The first row, with ID 'CcU-2938', has its IBAN field highlighted in green, showing the value 'R323456312213576817699999'. Below the table, there is an 'Output' section with a dropdown menu set to 'Action Output'. This section shows two log entries: a successful UPDATE operation at 13:48:13 and a SELECT query at 13:48:19. The UPDATE message states: '1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0'. The SELECT message states: '275 row(s) returned'.

| ID | IBAN | PAN | PIN | CVV | Expiring_Date |
|----------|-------------------------------|---------------------|------|-----|---------------|
| CcU-2938 | R323456312213576817699999 | 5424465566813633 | 3257 | 984 | 10/30/22 |
| CcU-2945 | DO26854763748537475216568689 | 5142423821948828 | 9080 | 887 | 08/24/23 |
| CcU-2952 | BG45IVQL52710525608255 | 4556 453 55 5287 | 4598 | 438 | 06/29/21 |
| CcU-2959 | CR7242477244335841535 | 372461377349375 | 3583 | 667 | 02/24/23 |
| CcU-2966 | BG72LKTQ15627628377363 | 448566 886747 7265 | 4900 | 130 | 10/29/24 |
| CcU-2973 | PT87806228135092429456346 | 544 58654 54343 384 | 8760 | 887 | 01/30/25 |
| CcU-2980 | DE39241881883086277136 | 402400 7145845969 | 5075 | 596 | 07/24/22 |
| CcU-2987 | GE89681434837748781813 | 3763 747687 76666 | 2298 | 797 | 10/31/23 |
| CcU-2994 | BH62714428368066765294 | 344283273252593 | 7545 | 595 | 02/28/22 |
| CcU-3001 | CY49087426654774581266832110 | 511722 924833 2244 | 9562 | 867 | 09/16/22 |
| CcU-3008 | LU507216693616119230 | 4485744464433884 | 1856 | 740 | 04/05/25 |
| CcU-3015 | PS119398216295715968342456821 | 3784 662233 17389 | 3246 | 822 | 01/31/22 |

credit_card 1 x

Output

| # | Time | Action | Message |
|------|----------|---|--|
| 1620 | 13:48:13 | UPDATE credit_card SET IBAN = 'R323456312213576817699999' WHERE ID = 'CcU-2938' | 1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0 |
| 1621 | 13:48:19 | SELECT * FROM transactions.credit_card | 275 row(s) returned |

- Exercici 3

En la taula "transaction" ingresa un nou usuari amb la següent informació:

Primero hay que insertar un nuevo id en la tabla company, ya que servirá de FK en la tabla transaction.

`INSERT INTO company (id) VALUES ('b-9999');`

```
1 • INSERT INTO company (id) VALUES ('b-9999');
```

| Output | | | |
|---------------|----------|--|-------------------|
| Action Output | | | |
| # | Time | Action | Message |
| ✓ 1 | 15:53:40 | INSERT INTO company (id) VALUES (b-9999) | 1 row(s) affected |

También insertar en credit_card el ID que servirá de FK en transactions

`INSERT INTO credit_card (id) VALUES ('CcU-9999');`

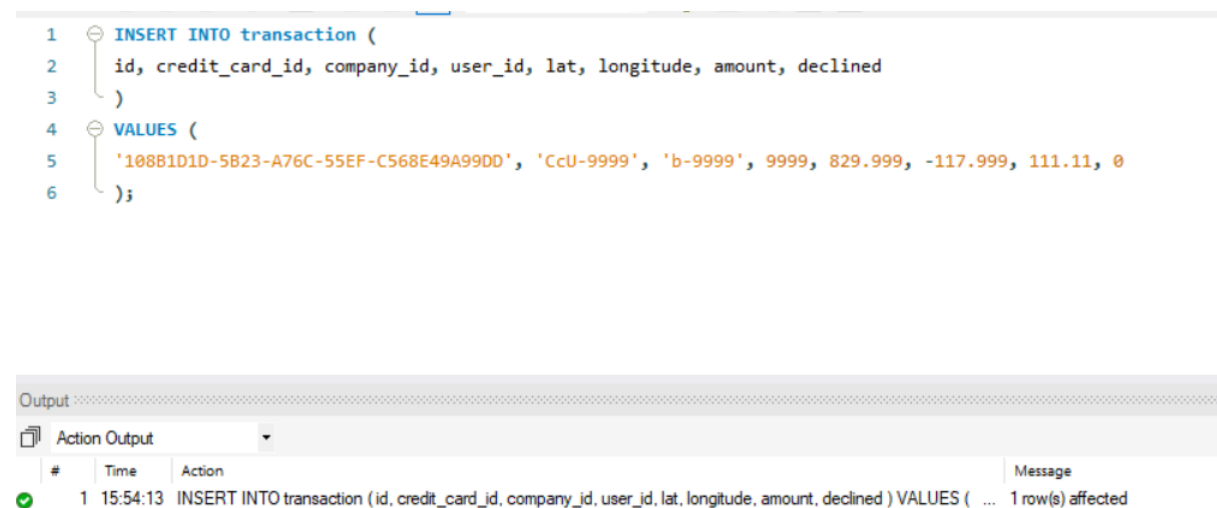
```
1 • INSERT INTO credit_card (id) VALUES ('CcU-9999');
```

| Output | | | |
|---------------|----------|--|-------------------|
| Action Output | | | |
| # | Time | Action | Message |
| ✓ 1 | 15:48:41 | INSERT INTO credit_card (id) VALUES (CcU-9999) | 1 row(s) affected |

En caso de no insertar los ID previamente en credit_Card y companies, no será posible crear el usuario en transactions, debido a la relación 1-N.

Acto seguido insertamos los datos requeridos. No hay fecha, así que será un valor nulo.

```
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  
  
);
```



The screenshot shows a SQL IDE interface. The top part displays a SQL query with line numbers 1 through 6. The query is an INSERT statement into the 'transaction' table. The bottom part shows the 'Output' window with a tab for 'Action Output'. It contains a table with columns '#', 'Time', 'Action', and 'Message'. A single row is shown with a green checkmark icon, indicating a successful execution. The message states '1 row(s) affected'.

```
1  INSERT INTO transaction (  
2      id, credit_card_id, company_id, user_id, lat, longitude, amount, declined  
3  )  
4  VALUES (  
5      '108B1D1D-5B23-A76C-55EF-C568E49A99DD', 'CcU-9999', 'b-9999', 9999, 829.999, -117.999, 111.11, 0  
6  );
```

| # | Time | Action | Message |
|---|----------|--|-------------------|
| 1 | 15:54:13 | INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, amount, declined) VALUES (... | 1 row(s) affected |

- Exercici 4

Des de recursos humans et sol·liciten eliminar la columna "pan" de la taula credit_*card. Recordar mostrar el canvi realitzat.

Con la siguiente query:

```
ALTER TABLE credit_card  
  
DROP COLUMN pan;
```

1 • **SELECT * FROM transactions.credit_card;**

Result Grid

Filter Rows:

Edit:

Export/Import:

Wrap Cell Content:

| | 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 |
| | CcU-3008 | LU507216693616119230 | 1856 | 740 | 04/05/25 |
| | CcU-3015 | PS119398216295715968342456821 | 3246 | 822 | 01/31/22 |
| | CcU-3022 | GT91695162850556977423121857 | 5610 | 342 | 04/25/25 |

credit_card 1 x

Output

Action Output

| # | Time | Action | Message |
|---|------------|---|--|
| ✖ | 1 14:23:56 | ALTER TABLE credit_card DROP COLUMN pan | Error Code: 1091. Can't DROP 'pan'; check that column/key exists |
| ✔ | 2 14:25:10 | SELECT * FROM transactions.credit_card | 275 row(s) returned |

NIVEL II

Exercici 1

Elimina de la taula transaction el registre amb ID 02C6201E-D90A-1859-B4EE-88D2986D3B02 de la base de dades.

Utilizo comando borrar, para la tabla de transacciones y agrego un filtro del campo id que es inequívoco.

DELETE from transaction

WHERE id = '02C6201E-D90A-1859-B4EE-88D2986D3B02';

| | | | |
|---|---|--|--|
| 1 | • | DELETE from transaction | |
| 2 | | WHERE id = '02C6201E-D90A-1859-B4EE-88D2986D3B02'; | |
| 3 | | | |

| Output | | | |
|---------------|----------|---|---|
| Action Output | | | |
| # | Time | Action | Message |
| 1 | 10:19:38 | DELETE from transaction WHERE id = '02C6201E-D90A-1859-B4EE-88D2986D3B02' | Error Code: 1054. Unknown column '02C6201E' in 'where clause' |
| 2 | 10:19:56 | DELETE from transaction WHERE id = '02C6201E-D90A-1859-B4EE-88D2986D3B02' | Error Code: 1054. Unknown column '02C6201E' in 'where clause' |
| 3 | 10:20:13 | DELETE from transaction WHERE id = '02C6201E-D90A-1859-B4EE-88D2986D3B02' | 1 row(s) affected |

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.

Con la función CREATE VIEW creo la vista con los campos solicitados en el enunciado.

```
CREATE VIEW VistaMarketing AS
```

```
SELECT company_name, phone, country, AVG(amount) As media
```

```
FROM transaction
```

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

```
GROUP BY company_name, phone, country
```

```
ORDER BY media desc;
```

```
1 • SELECT * FROM transactions.vistamarketing;
```

| company_name | phone | country | media |
|------------------------------|----------------|----------------|------------|
| Eget Ipsum Ltd | 03 67 44 56 72 | United States | 473.075000 |
| Non Magna LLC | 06 71 73 13 17 | United Kingdom | 468.345000 |
| Sed Id Limited | 07 28 18 18 13 | United States | 461.210000 |
| Justo Eu Arcu Ltd | 08 42 56 71 52 | Italy | 443.635000 |
| Eget Tincidunt Dui Institute | 05 35 93 32 44 | Netherlands | 442.520000 |
| Viverra Donec Foundation | 03 33 12 32 73 | United Kingdom | 442.280000 |
| Vestibulum Lorem PC | 02 02 87 33 40 | Belgium | 434.060000 |

Output

Action Output

| # | Time | Action | Message |
|---|----------|---|---------------------|
| 1 | 13:00:53 | SELECT * FROM transactions.vistamarketing LIMIT 0, 1000 | 100 row(s) returned |

Exercici 3

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

A la vista le añado el filtro por país.

```
SELECT * FROM transactions.vistamarketing
```

```
WHERE country = 'Germany';
```

```
1 • SELECT * FROM transactions.vistamarketing
2 WHERE country = 'Germany';
```

| Result Grid | | | | |
|----------------------------|----------------|------------------------------|------------|--|
| Filter Rows: | | Export: Wrap Cell Content: | | |
| company_name | phone | country | media | |
| Aliquam PC | 01 45 73 52 16 | Germany | 385.265000 | |
| Ac Industries | 09 34 65 40 60 | Germany | 289.645000 | |
| Rutrum Non Inc. | 02 66 31 61 09 | Germany | 266.900000 | |
| Nunc Interdum Incorporated | 05 18 15 48 13 | Germany | 244.025238 | |
| Augue Foundation | 06 88 43 15 63 | Germany | 240.800000 | |
| Ac Fermentum Incorporated | 06 85 56 52 33 | Germany | 206.465000 | |
| Auctor Mauris Corp. | 05 62 87 14 41 | Germany | 184.310000 | |

| Output | | | |
|---------------|----------|---|---------------------|
| Action Output | | | |
| # | Time | Action | Message |
| 1 | 13:00:53 | SELECT * FROM transactions.vistamarketing LIMIT 0, 1000 | 100 row(s) returned |
| 2 | 13:05:07 | SELECT * FROM transactions.vistamarketing WHERE country = 'Germany' LIMIT 0, 1000 | 8 row(s) returned |

NIVEL III

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:

En la tabla company se elimina la fila “website”

```
alter table company
```

```
drop website;
```

```
1 • ALTER TABLE company
2 DROP website;
```

| Output | | | |
|---------------|----------|----------------------------------|--|
| Action Output | | | |
| # | Time | Action | Message |
| ✓ 1 | 16:14:09 | ALTER TABLE company DROP website | 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0 |

En la tabla credit card se ha añadido “fecha actual”

```
ALTER TABLE credit_card
```

```
ADD fecha_actual date;
```

```
1 • ALTER TABLE credit_card
2 ADD fecha_actual date;
3
```

| Output | | | |
|---------------|----------|---|--|
| Action Output | | | |
| # | Time | Action | Message |
| ✓ 1 | 16:14:37 | ALTER TABLE credit_card ADD fecha_actual date | 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0 |

La tabla user cambió el nombre a data_user:

```
ALTER TABLE user
```

```
RENAME data_user;
```

```

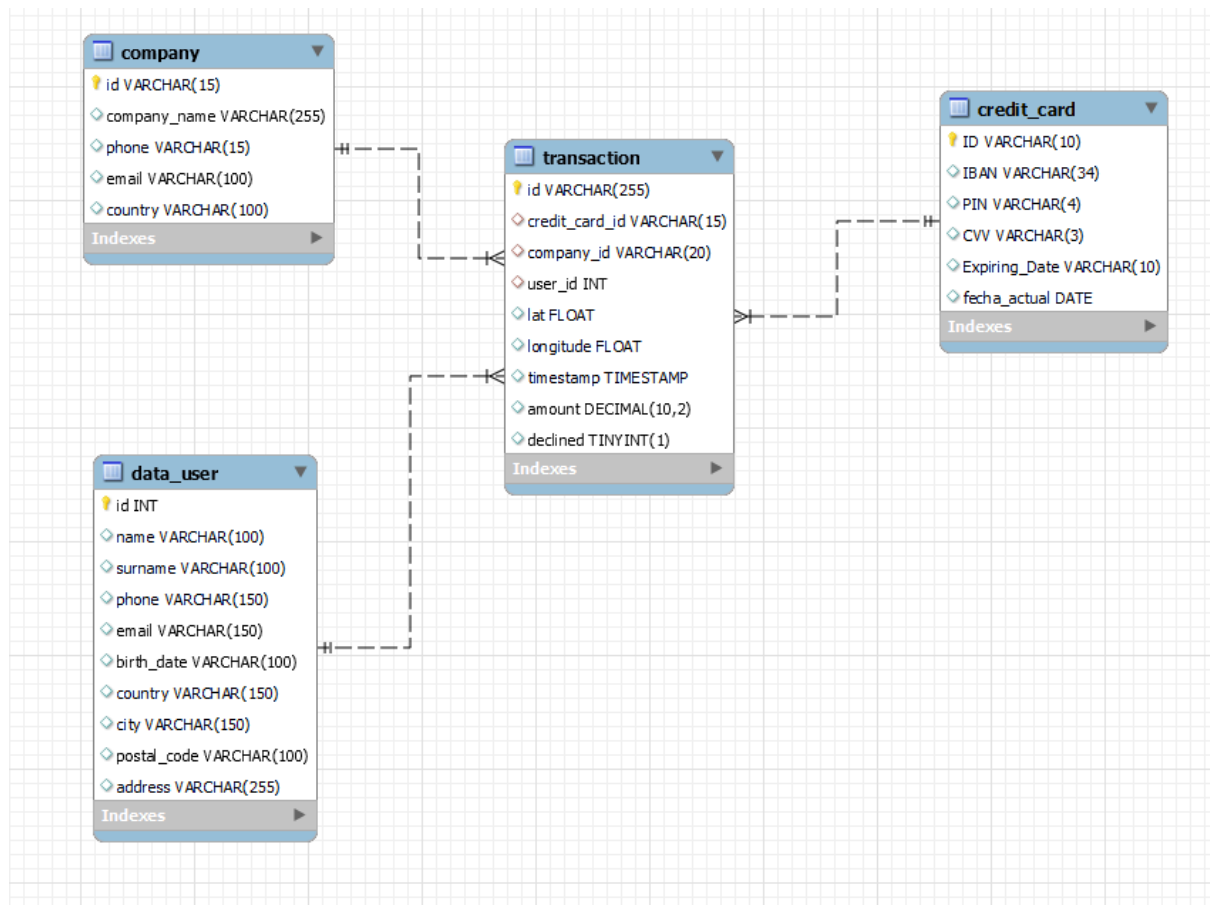
1 • ALTER table user
2   RENAME data_user;

```

| Output | | | |
|---------------|----------|-----------------------------------|-------------------|
| Action Output | | | |
| # | Time | Action | Message |
| ✓ 1 | 16:16:39 | ALTER table user RENAME data_user | 0 row(s) affected |

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"



Exercici 2

L'empresa també et sol·licita 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.
- Assegura't d'incloure informació rellevant de totes dues taules i utilitza àlies per a canviar de nom columnes segons sigui necessari.

Mostra els resultats de la vista, ordena els resultats de manera descendent en funció de la variable ID de transaction.

Con la función CREATE VIEW creé la vista con los campos solicitados, además incluí los siguientes: amount, timestamp, declined, credit card id y país. También renombré los siguientes campos: transaction.id como transaction_id y timestamp como date.

```
CREATE VIEW InformeTecnico AS
```

```
SELECT t.id AS transaction_id, amount, timestamp AS date, declined, du.name,  
du.surname, cc.IBAN, credit_card_id, company_name, c.country
```

```
FROM company c
```

```
JOIN transaction t ON c.id = t.company_id
```

```
JOIN credit_card cc ON t.credit_card_id = cc.id
```

```
JOIN data_user du ON t.user_id = du.id
```

```
ORDER BY transaction_id desc;
```

1 • `SELECT * FROM transactions.informetecnico;`

Result Grid

Filter Rows:

Export:

Wrap Cell Contents:

IA

| transaction_id | amount | date | declined | name | surname | IBAN | credit_card_id | company_name | country |
|--------------------------------------|--------|---------------------|----------|--------|---------|--------------------------------|----------------|------------------------------|-----------|
| FE96CE47-BD59-381C-4E18-E3CA3D44E8FF | 480.13 | 2021-06-15 00:26:29 | 1 | Kenyon | Hartman | DO26854763748537475216568689 | CcU-2945 | Magna A Neque Industries | Australia |
| FE809ED4-2DB6-55AC-C915-929516E46468 | 219.83 | 2021-11-09 21:35:40 | 0 | Molly | Gilliam | SE2813123487163628531121 | CcU-4849 | Nunc Interdum Incorporated | Germany |
| FD9CBCCD-8E1E-8DA1-4606-7E3A6F3A5A65 | 42.32 | 2021-06-13 11:41:17 | 0 | Linus | Willis | KW9485332754781757886242955643 | CcU-4331 | Nunc Interdum Incorporated | Germany |
| FD89D51B-AE8D-77DC-E450-B8083FBD3187 | 200.72 | 2022-03-16 02:35:05 | 0 | Hilda | Levy | LT053237077744561475 | CcU-3960 | Malesuada PC | Ireland |
| FD2E8957-414B-BEEC-E9AD-59AA7A8A6290 | 78.29 | 2022-03-13 00:27:34 | 0 | Hedwig | Gilbert | GE84848451582810541526 | CcU-3232 | Neque Tellus Imperdiet Corp. | Ireland |
| FCE2A89A-271D-2BDC-9E49-80D92A373391 | 335.56 | 2022-02-06 22:48:41 | 0 | Hakeem | Alford | MD1234119525145401270486 | CcU-4219 | Nunc Interdum Incorporated | Germany |
| FBD7E0D6-8A68-F5BC-0CA9-EA4B876D100C | 207.09 | 2021-04-29 14:17:50 | 1 | Hedwig | Gilbert | MU4132333444534342541344788855 | CcU-3281 | Mauris Id Inc. | Ireland |

informetecnico 2 x

Output

Action Output

| # | Time | Action | Message |
|---|----------|---|---------------------|
| 1 | 10:40:07 | SELECT * FROM transactions.informetecnico LIMIT 0, 1000 | 586 row(s) returned |