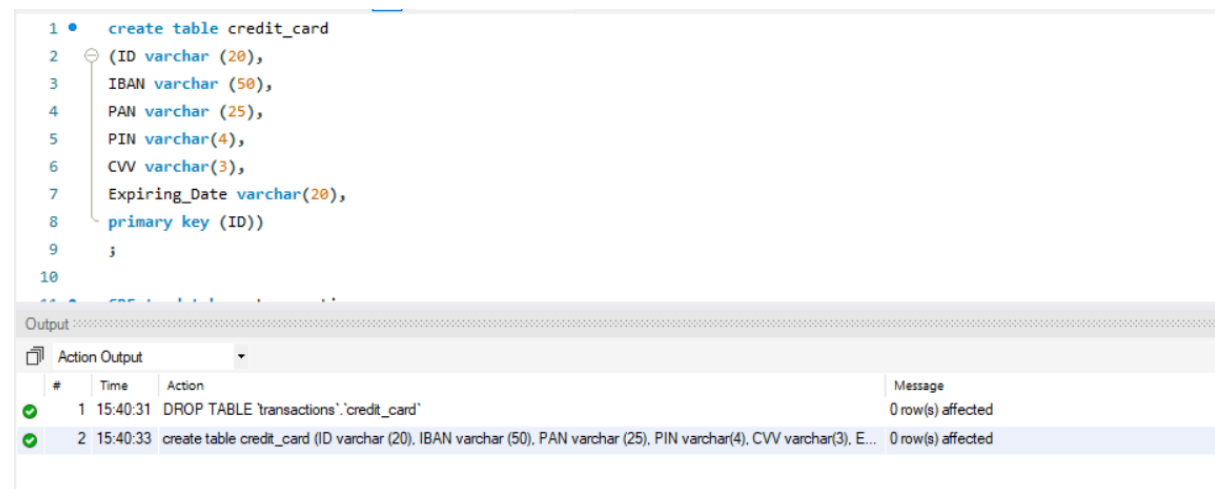


- Exercici 1

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

Action Output

#	Time	Action
1	15:46:13	ALTER TABLE transaction ADD FOREIGN KEY (credit_card_ID) REFERENCES credit_card(ID)

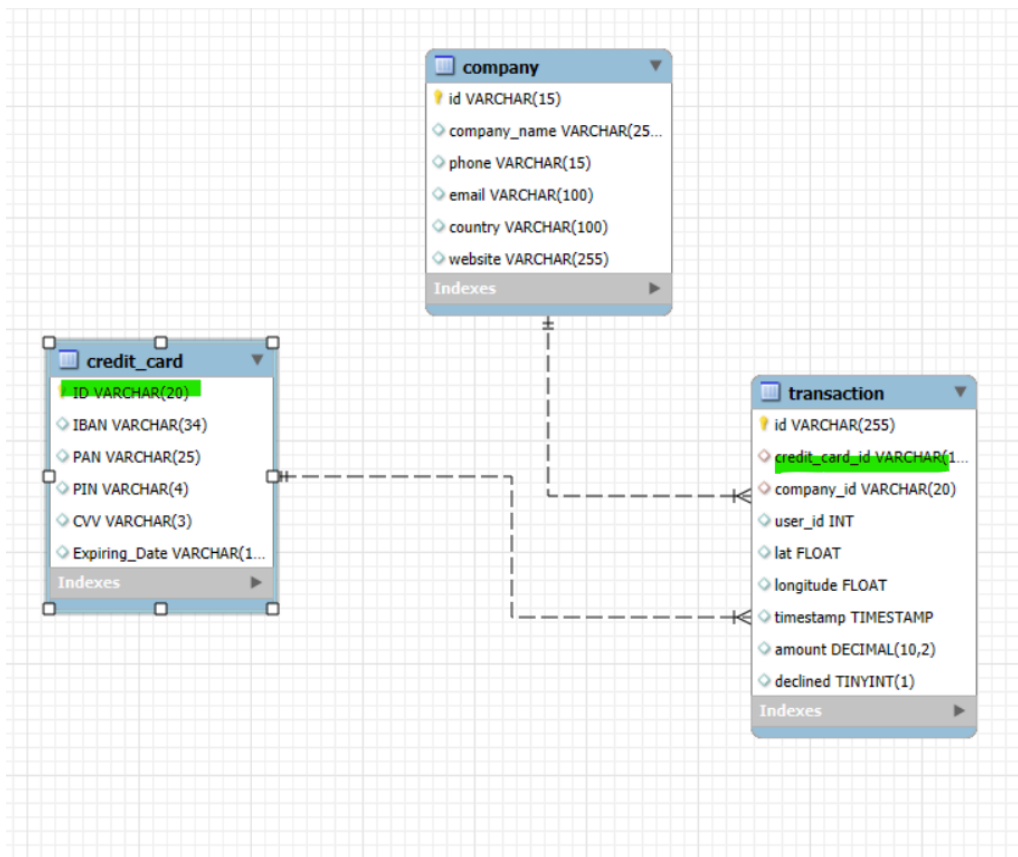
Message

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 shows a database management interface. At the top, a SQL query is entered in a text area:

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

Below the query, a table of results is displayed. The table has columns: ID, IBAN, PAN, PIN, CVV, and Expiring_Date. The first row, with ID 'CcU-2938', has its IBAN value highlighted in green.

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

Below the table, the 'Output' section shows the execution of the SQL query. It displays two rows of 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');`

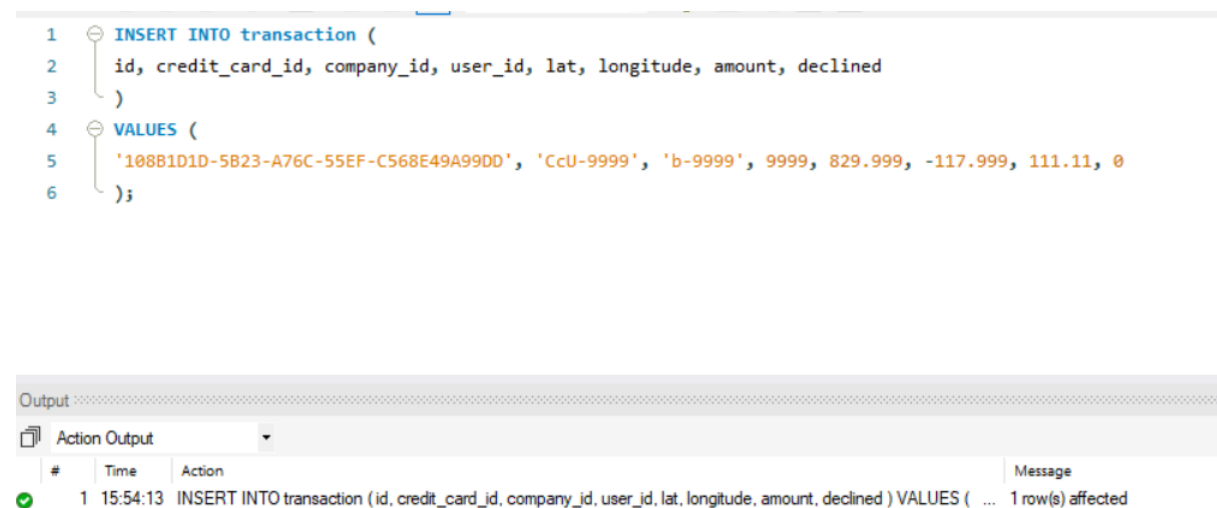
```
1 • INSERT INTO credit_card (id) VALUES ('CcU-9999');
```

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 a table named 'transaction'. The columns listed are id, credit_card_id, company_id, user_id, lat, longitude, amount, and declined. The values provided are '108B1D1D-5B23-A76C-55EF-C568E49A99DD', 'CcU-9999', 'b-9999', 9999, 829.999, -117.999, 111.11, and 0. The query ends with a semicolon. Below the query, there is an 'Output' window. The 'Output' window has a tab labeled 'Action Output'. It shows a table with three columns: '#', 'Time', and 'Action'. The first row shows the execution of the INSERT query, with a message indicating that 1 row(s) were 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  );
```

Output

Action Output

#	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

En la tabla data user cambiar email por personal_email

ALTER TABLE data_user

RENAME COLUMN email TO personal_email;

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

Output			
Action Output			
#	Time	Action	Message
1	16:28:28	ALTER TABLE data_user RENAME COLUMN email TO personal_email	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0

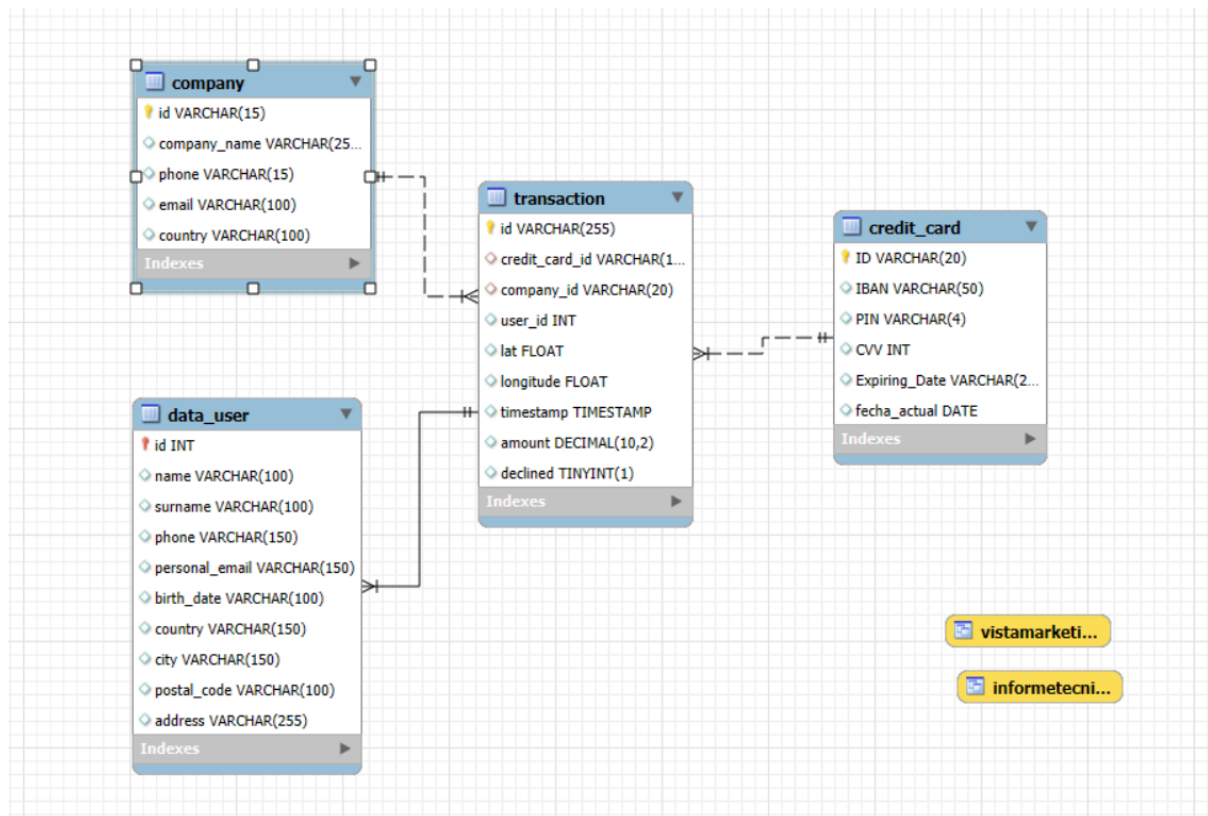
Aunque en este caso no es recomendable, para dejarlo tal y como el ejercicio, cambio CVV por int:

Alter table credit_card

Modify CVV int;

```
1 • Alter table credit_card
2 Modify CVV int;
```

Output			
Action Output			
#	Time	Action	Message
1	16:31:56	Alter table credit_card Modify CVV int	276 row(s) affected Records: 276 Duplicates: 0 Warnings: 0



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 créa 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.infometecnico;

Result Grid										
Filter Rows:										
Export: Wrap Cell Contents: 1A										
	transaction_id	amount	date	declined	name	surname	IBAN	credit_card_id	company_name	country
	FE96CE47-8D59-381C-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
	FCE2AB9A-271D-2BDC-9E49-8DD92A373391	335.56	2022-02-06 22:48:41	0	Haskeem	Alford	MD1234119525145401270486	CcU-4219	Nunc Interdum Incorporated	Germany
	FBD7E0D6-BA68-F5BC-0CA9-EA4B8760100C	207.09	2021-04-29 14:17:50	1	Hedwig	Gilbert	MU413233344453432541344788855	CcU-3281	Mauris Id Inc.	Ireland
infometecnico 2 x										
Output										
Action Output										
#	Time	Action							Message	
1	10:40:07	SELECT * FROM transactions.infometecnico LIMIT 0, 1000							586 row(s) returned	