

NIVEL I

- 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. Los campos han sido creados según necesidad me he documentado sobre los tipos de datos a introducir. También asigné el campo ID como el índice primario.

```
create table credit_card
(ID varchar (10),
IBAN varchar (34),
PAN varchar (25),
PIN varchar(4),
CVV varchar(3),
Expiring_Date varchar(10),
primary key (ID))
;
```

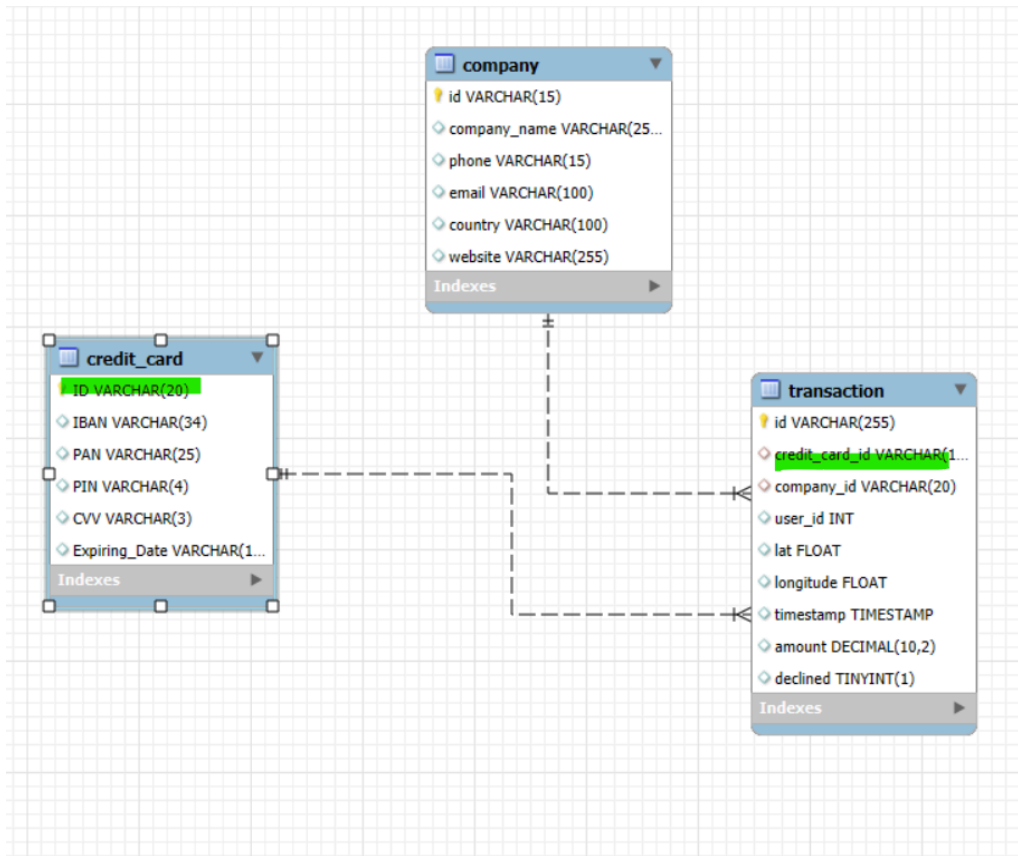
En un principio había creado los campos con las longitudes de los varchar que me parecía la más adecuada según el tipo de dato que iba a contener. A posteriori modifiqué los tipos de dato para dejarlos tal cual se muestran en los siguientes ejercicios.

```
ALTER TABLE credit_card
MODIFY COLUMN id varchar(20);
```

```
ALTER TABLE credit_card
MODIFY COLUMN IBAN varchar(50);
```

```
ALTER TABLE credit_card
MODIFY COLUMN CVV int;
```

```
ALTER TABLE credit_card
MODIFY COLUMN Expiring_Date varchar(20);
```



- 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".

```
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 the editor:

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

Below the editor, a table titled "Result Grid" displays the data for the "credit_card" table. The table has columns: ID, IBAN, PAN, PIN, CVV, and Expiring_Date. The row for ID "CcU-2938" is highlighted, showing the updated IBAN "R323456312213576817699999".

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 UPDATE statement. The first row indicates that 1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0. The second row shows the result of the SELECT statement, which returned 275 row(s).

#	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" ingressa 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');
```

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

INSERT INTO transaction (

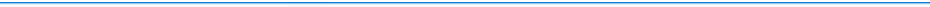
id, credit_card_id, company_id, user_id, lat, longitude, amount, declined

)

VALUES (

```
'108B1D1D-5B23-A76C-55EF-C568E49A99DD', 'CcU-9999', 'b-9999', 9999, 829.999,
-117.999, 111.11, 0
```

);



The screenshot shows a SQL query editor with a toolbar at the top. The toolbar includes icons for file operations (folder, save, undo, redo, find, replace, run), a 'Don't Limit' button, and other utility icons. The query text is as follows:

```
1 • SELECT * FROM transactions.transaction
2 Where company id = 'b-9999';
```

	id	credit_card_id	company_id	user_id	lat	longitude	timestamp	amount	declined
*	10881D ID-5B23-A76C-5SEF-C568E49A99DD NULL	CcU-9999 NULL	b-9999 NULL	9999 NULL	829.999 NULL	-117.999 NULL	NULl NULl	111.11 NULL	0 NULL

- Exercici 4

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

Con la siguiente query:

```
ALTER TABLE credit_card
```

```
DROP COLUMN pan;
```

The screenshot shows a database management interface. At the top, a query editor displays the command: `SELECT * FROM transactions.credit_card;`. Below the editor, a 'Result Grid' shows a table with columns: ID, IBAN, PIN, CVV, and Expiring_Date. The table contains 15 rows of data. Below the result grid, the 'Output' pane shows the 'Action Output' for the executed query. It displays two actions: 1. An error message: 'Error Code: 1091. Can't DROP 'pan'; check that column/key exists'. 2. A successful execution message: '275 row(s) returned'.

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

#	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, ROUND(AVG(amount),2) As media
```

```
FROM transaction t
```

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

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

```
ORDER BY media desc;
```

1 • `SELECT * FROM transactions.vistamarketing;`

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

	company_name	phone	country	media
▶	Eget Ipsum Ltd	03 67 44 56 72	United States	473.08
	Non Magna LLC	06 71 73 13 17	United Kingdom	468.35
	Sed Id Limited	07 28 18 18 13	United States	461.21
	Justo Eu Arcu Ltd	08 42 56 71 52	Italy	443.64
	Eget Tindunt Dui Institute	05 35 93 32 44	Netherlands	442.52
	Viverra Donec Foundation	03 33 12 32 73	United Kingdom	442.28
	Vestibulum Lorem PC	02 02 87 33 40	Belgium	434.06
	Aliquet Diam Limited	02 76 61 47 46	United States	425.64
	Maecenas Malesuada Fringilla Inc.	09 38 53 76 61	Netherlands	408.62
	Non Ante LLP	08 89 47 65 08	Sweden	407.79
	Egestas Nunc Sed Limited	06 01 02 70 47	Italy	406.11
	Nunc Sit Incorporated	07 28 42 63 63	Norway	405.36
	Magna A Neque Industries	04 14 44 64 62	Australia	396.32
	Amet Luctus Vulputate Foundation	03 18 54 24 19	Canada	390.33
	Aliquam PC	01 45 73 52 16	Germany	385.27
	Neque Tellus Incorporated	04 43 18 34 19	Ireland	364.01
	Placerat LLP	05 43 67 24 41	Netherlands	357.08

vistamarketing 2 x

Output

Action Output

#	Time	Action	Message
1	13:27:23	SELECT * FROM transactions.vistamarketing	101 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';
3
```

company_name	phone	country	media
Aliquam PC	01 45 73 52 16	Germany	385.27
Ac Industries	09 34 65 40 60	Germany	289.65
Rutrum Non Inc.	02 66 31 61 09	Germany	266.90
Nunc Interdum Incorporated	05 18 15 48 13	Germany	244.03
Augue Foundation	06 88 43 15 63	Germany	240.80
Ac Fermentum Incorporated	06 85 56 52 33	Germany	206.47
Auctor Mauris Corp.	05 62 87 14 41	Germany	184.31
Convallis In Incorporated	06 66 57 29 50	Germany	156.73

vistamarketing 3 x

Output

Action Output

#	Time	Action	Message
✓ 1	13:28:02	SELECT * FROM transactions.vistamarketing WHERE country = 'Germany'	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;
```

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

```
ALTER TABLE credit_card
```

```
ADD fecha_actual date;
```

La tabla user cambió el nombre a data_user:

```
ALTER TABLE user
```

```
RENAME date_user;
```

Modificar la columna email por personal_email en la tabla data_user

```
ALTER TABLE data_user
```

```
RENAME COLUMN email TO personal_email;
```

Añadir en la tabla date_user el ID 9999 ya que en caso contrario dará un error al añadir la clave foránea en el paso siguiente.

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

Añadir la restricción con la tabla data_user

```
ALTER TABLE transaction
```

```
ADD FOREIGN KEY (user_id) REFERENCES data_user(id);
```

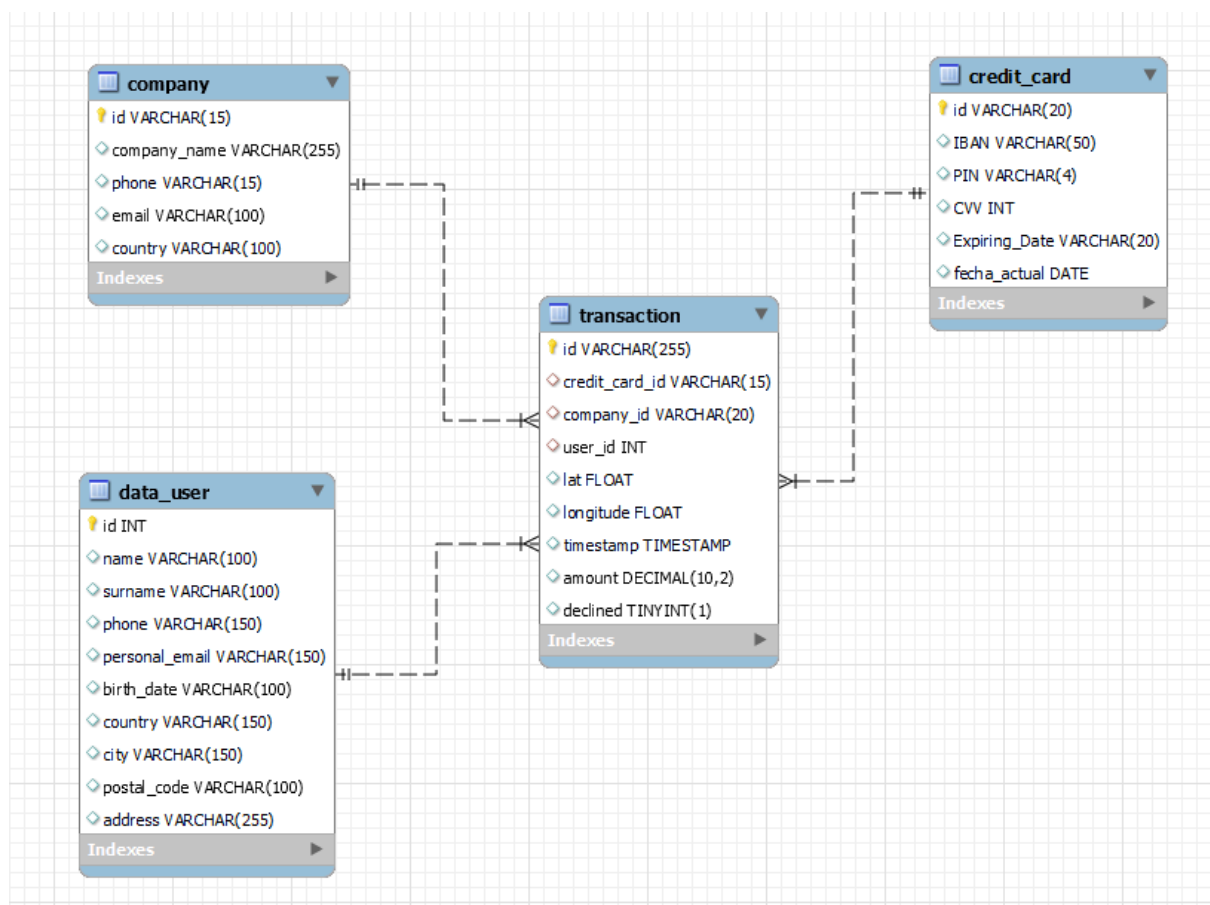
Añadir en la tabla credit_card el ID CcU-9999 ya que en caso contrario dará un error al añadir la clave foránea en el paso siguiente.

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

Añadir la restricción con la tabla credit_card

```
ALTER TABLE transaction
```

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



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 créé la vista con los campos solicitados, además incluí los siguientes: amount, timestamp, declined, credit card id y país, ya que considero que es información relevante en relación a las transacciones.

Para mejor visibilidad renombré los campos y los traduje. También redondeé la cantidad a dos decimales.

Utilicé alias para todas las tablas.

```
CREATE VIEW InformeTecnico AS
```

```
SELECT t.id AS ID_transaccion, ROUND (amount, 2) AS cantidad, timestamp AS fecha,  
declined AS declinado, du.name AS nombre_usuario, du.surname AS apellido_usuario,  
cc.IBAN,
```

```
credit_card_id AS ID_tarjeta, company_name AS nombre_compañía, c.country AS pais
```

```
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 ID_transaccion desc;
```

1 • SELECT * FROM transactions.infometecnico;

Result Grid										Filter Rows:		Export:	Wrap Cell Content: 	
ID_transaccion	cantidad	fecha	declinado	nombre_usuario	apellido_usuario	IBAN	ID_tarjeta	nombre_compañia	pais					
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-C915-929516E4646B	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-E450-88083FBD3187	200.72	2022-03-16 02:35:05	0	Hilda	Levy	LT053237077744561475	CcU-3960	Malesuada PC	Ireland					
FD2E8957-414B-8EEC-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	Hakeem	Alford	MD1234119525145401270486	CcU-4219	Nunc Interdum Incorporated	Germany					
FBD7E0D6-BA6B-F5BC-0CA9-EA4B8760100C	207.09	2021-04-29 14:17:50	1	Hedwig	Gilbert	MU4132333444534342541344788855	CcU-3281	Mauris Id Inc.	Ireland					
FAC76A80-8448-69AA-E892-426C2F12621C	304.95	2021-05-30 21:10:55	0	Slade	Poole	MT05JWCF58868200575771634583813	CcU-4576	Arcu LLP	Norway					
FAAD3FFC-1A17-E141-43D3-359A5BA7CB3B	149.84	2021-10-24 20:16:23	0	Hedwig	Gilbert	GE90157928843338134463	CcU-3183	Lorem Eu Incorporated	Canada					
FA053936-75D8-85FA-49D0-9B624E1B920A	151.32	2021-07-06 10:18:35	0	Hedwig	Gilbert	GT02497653655330848247645975	CcU-3197	Non Justo Corp.	Sweden					
F85A7D75-2778-9D75-D776-3F41A828DE88	135.93	2021-10-10 01:46:36	0	Sarah	Beck	VG1468087984174645729577	CcU-3393	Ut Semper Foundation	Sweden					
F843DC08-CCB5-2444-1B4E-5966289FBA8B	18.08	2021-04-27 08:12:28	0	Jasper	Landry	VG1468087984174645729577	CcU-3393	Ut Semper Foundation	Sweden					
F5ACD74B-4275-SAA1-2414-6EF417636B98	148.97	2021-11-20 20:00:40	0	Nora	Reeves	MD1234119525145401270486	CcU-4219	Nunc Interdum Incorporated	Germany					
F56FCA4A-0039-9F64-7376-85632B91121B	294.13	2021-04-04 04:51:04	0	Lynn	Riddle	CR7242477244335841535	CcU-2959	Ut Semper Foundation	Sweden					
F55B3CE1-3379-E0BF-SAB9-6F4CC2C5479C	227.05	2021-04-13 18:19:18	0	Sonya	Mckee	EE541536644818872885	CcU-4730	Arcu LLP	Norway					
F4BCAE41-388E-EA8D-9C24-466F7CEB9F9A	182.01	2021-05-05 00:06:42	0	Chester	Haynes	CY94263537405015481188625576	CcU-4128	Malesuada PC	Ireland					
F2B3E645-2E6D-E891-9D05-33DBACE58DE4	267.52	2021-05-06 08:41:18	0	Heather	Burks	SM6022751049715477062682363	CcU-3862	Malesuada PC	Ireland					
F28E106B-5418-4667-9514-2E2A823EC655	114.89	2022-03-05 06:54:37	1	Hedwig	Gilbert	RO76ADF06583348580208155	CcU-3358	Pede Ultrices Ltd	Belgium					
F233E386-5A74-63B3-8111-09FC9BA38011	146.34	2021-06-21 23:01:35	0	Nero	Mills	HU95215627749276573565556322	CcU-4793	Arcu LLP	Norway					
F228B361-E3CD-BC41-DD6A-A4694F175CD8	385.28	2021-08-22 15:01:01	0	Alko	Chaney	MD5723087436783068347555	CcU-3729	Non Institute	United Kingdom					
F1A598A2-86C5-50A9-F1CE-FB1D69866C39	229.65	2022-03-09 20:53:59	0	Craig	Shepherd	R323456312213576817699999	CcU-2938	Lorem Eu Incorporated	Canada					
EFEECC2E-2A69-AB33-D599-E82AA689E3B3	394.59	2021-07-11 00:19:27	0	Alika	Kinney	R323456312213576817699999	CcU-2938	Lorem Eu Incorporated	Canada					
EF9E08A9-457D-D7C1-41E4-059B31C35CEC	274.28	2021-05-17 12:51:12	0	Cassandra	Ferguson	DO68192976973138848171352176	CcU-4191	Ut Semper Foundation	Sweden					
EEAAE515-66B6-8449-5926-54D397988AD9	316.74	2021-07-06 22:34:47	0	Ocean	Nelson	AE640696354928782425103	CcU-3589	Et Magnis Ltd	Belgium					
EE8ED5A8-CEC8-9387-524C-A911B8473C1F	105.51	2021-12-13 12:30:15	0	Ainsley	Herrera	BH62714428368066765294	CcU-2994	Enim Condimentum Ltd	United Kingdom					
EE2D8157-D63E-6A91-A363-9CF688530AD3	293.94	2021-04-26 11:11:06	0	Jada	Porter	GI98DMNL122444875373267	CcU-4093	Malesuada PC	Ireland					

infometecnico 2 x

Output

Action Output

#

Time

Action

1

13:47:56

SELECT * FROM transactions.infometecnico

Message

587 row(s) returned