

Tarea S3.01 Manipulación de tablas

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Nivel 1

Ejercicio 1

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

1) Creación de la tabla credit_card

The screenshot shows the MySQL Workbench interface with a SQL editor and an action history table.

SQL Editor:

```
17 • ① create table if not exists credit_card (
18     id varchar(50),
19     iban varchar(50),
20     pan varchar(100),
21     pin varchar(5),
22     cvv int ,
23     expiring_date varchar(20),
24     primary key (id)
25
26 );
27
28 -- create a constraint foreign key
29
```

Action History:

Action	Time	Response	Duration / Fetch Time
create table if not exists credit_card (13:19:18	Error Code: 1046. No database selected Select the de...	0.00033 sec
create table if not exists credit_card (13:19:28	Error Code: 1046. No database selected Select the de...	0.00023 sec
create table if not exists credit_card (13:19:35	0 row(s) affected	0.0072 sec

La tabla credit_card fue generada a partir del script elaborado por mí. La tabla credit_card tiene seis columnas, dentro de ellas, una primary key (pk), **id**.

2) Inserción de los datos para la tabla credit_card

Los datos que se insertarán en la tabla provienen del archivo ‘*datos_introducir_credit.sql*’ descargado en la página web del script 3 del curso de análisis de datos.

```

28
29
30 -- inserir los datos en la tabla credit_card
31
32 • INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (
33 •     'Ccu-2938', 'TR301950312213576817638661', '5424465566813633', '3257', '984', '10/30/22');
34 •     'Ccu-2945', 'D026854763748537475216568689', '5142423821948828', '9888', '887', '08/24/23');
35 •     'Ccu-2952', 'B645IV0L52710525608255', '4556 453 55 5287', '4598', '438', '06/29/21';
36 •     'Ccu-2959', 'CR72427472435841535', '372461377349375', '3583', '667', '02/24/23';
37 •     'Ccu-2966', 'BG72LKTQ15627628377363', '448568 886747 7265', '4900', '130', '10/24/24');
38 •     'Ccu-2973', 'PT87806228135892479456346', '544 58654 54343 384', '8760', '887', '01/30/25');
39 •     'Ccu-2980', 'DE8924188183886277136', '402400 7145845969', '5075', '506', '07/24/22';
40 •     'Ccu-2987', 'GE89681434837748781813', '3763 747687 76666', '2298', '797', '10/31/23';
41 •     'Ccu-2994', 'H86214428368066765294', '344283273252593', '7545', '595', '02/28/22';
42 •     'Ccu-3001', 'CY49087426654774581266832110', '511722 924833 2244', '9562', '867', '09/16/22';
43 •     'Ccu-3008', 'LU507216693616119230', '4485744464433884', '1856', '740', '04/05/25';
44 •     'Ccu-3015', 'PS119398216295715968342456821', '3788 662233 17389', '3246', '822', '01/31/22';
45 •     'Ccu-3022', 'GT91695162850556977423121857', '5164 1379 4842 3951', '5618', '342', '04/25/25';
46 •     'Ccu-3029', 'A26231741398244148123739746', '3429 279566 77631', '9708', '505', '09/02/23';
47 •     'Ccu-3036', 'AZ3933600295842865843941994', '3768 451556 48766', '2232', '565', '10/27/25';
48 •     'Ccu-3043', 'H86214428368066765294', '344283273252593', '7545', '595', '02/28/22';
49 •     'Ccu-3050', 'FR5167744369175836831854477', '4024087123722', '4834', '126', '10/09/23';
50 •     'Ccu-3057', 'LU931822574697545215', '3488 621767 21237', '6805', '848', '09/14/25';
51 •     'Ccu-3064', 'PS146965545449253377627273133', '3467 732741 26810', '3865', '498', '06/03/25';
52 •     'Ccu-3071', 'N08923814763512', '3464 789562 23352', '6625', '661', '12/20/23';
53 •     'Ccu-3078', 'IS025127145884623279548733', '4539 322 74 2377', '9485', '720', '03/08/23';
54 •     'Ccu-3085', 'BE63114723972437', '5266 3346 1135 1687', '7241', '413', '05/10/23';
55 •     'Ccu-3092', 'R065150011661221254474787', '3488 754223 46253', '9417', '594', '12/19/22';
56 •     'Ccu-3099', 'PT26105275356823705537218', '448 5518 9886 789', '5612', '564', '01/22/23';
57 •     'Ccu-3106', 'AT684251637751136592', '349547146395283', '9733', '289', '01/27/24';
58 •     'Ccu-3113', 'IE26LCGT47732173572752', '341834822877471', '9011', '287', '06/12/21';
59 •     'Ccu-3120', 'RS7265576666166237144', '527646 533375 6577', '7658', '265', '01/16/21';
60 •     'Ccu-3127', 'PT83533461438644342816864', '4716 441 46 4368', '8038', '924', '01/16/23';
61 •     'Ccu-3134', 'BG23MYJ052668951824779', '514 3453 9766 2168', '7260', '935', '08/24/25';
62 •     'Ccu-3141', 'CH443780477669672438', '3775 626726 45261', '2923', '330', '05/11/24';
63 •     'Ccu-3148', 'F1E6261403224677114', '3733 238351 51810', '2236', '333', '09/28/21';
64 •     'Ccu-3155', 'AD277720476277722805082', '4532263578421', '3015', '779', '01/12/22';
65 •     'Ccu-3162', 'H0560740548262373062823311', '455666 645685 4443', '5898', '603', '05/18/20';
66 •     'Ccu-3169', 'AT658218806585843788', '5398 2876 7721 4764', '6102', '420', '06/25/24';
67 •     'Ccu-3176', 'LV840ASY10399587222', '448538 587842 4778', '4457', '787', '03/04/22';
68 •     'Ccu-3183', 'GE9015792884338134463', '516318 373677 5641', '6198', '327', '10/01/21';
100%   ⌂ 23:317 |
```

Action Output	Time	Action	Response	Duration / Fetch Time
280 13:22:49	INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('Ccu-4849', 'SE2813123487163628531121', '5223363813491514', '9989', '779', '03/21/25')	1 row(s) affected	0.00043 sec
281 13:22:49	INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES ('Ccu-4856', 'TR37387255831545667124286', '349528235713651', '9086', '974', '05/19/23')	Error Code: 1062. Duplicate entry 'Ccu-4856' for key 'PRIMARY'	0.00014 sec
282 13:23:28	SELECT * FROM transactions.credit_card LIMIT 0, 50000		275 row(s) returned	0.00064 sec / 0.000...

MySQL solo acepta el formato ‘YYYY-MM-DD’ como fecha. Por esta razón, la columna **expiring_date** se asignó como VARCHAR (carácter variable) para que se pudieran ingresar datos. Posteriormente, se cambiará el formato de la fecha.

3) Descripción de la tabla tras inserción de los datos originales

```

316
317 •  describe credit_card;
318
100%  23:317

Result Grid Filter Rows: Search Export: 

Field Type Null Key Default Extra
id varchar(50) NO PRI NULL
iban varchar(50) YES NULL
pan varchar(100) YES NULL
pin varchar(5) YES NULL
cvv int YES NULL
expiring_date varchar(20) YES NULL

Result 1

Action Output
Time Response Duration / Fetch Time
984 13:34:26 sl 1 row(s) returned 0.00040 sec / 0.000...
985 13:34:38 al 587 row(s) affected Records: 587 Duplicates: 0 Warnings: 0 0.031 sec
986 18:54:55 d 6 row(s) returned 0.059 sec / 0.00037...

```

4) Creación de la constraint foreign key relacionada con la tabla **transaction**

La foreign key (fk) será creada para establecer una relación de 1 a N con la tabla **transaction**. La tabla **transaction** será alterada y la fk será añadida en ella. Esta relación de 1 (desde la tabla **credit_card**) a N (tabla **transaction**) significa que 1 tarjeta de crédito puede hacer varias transacciones, pero una transacción es hecha por una tarjeta de crédito.

```

310 -- create a constraint foreign key
311
312 • alter table transaction
313 add constraint fk_transaction_credit_card
314 foreign key(credit_card_id) references credit_card(id);
315
316
100%  56:314

Action Output
Time Response Duration / Fetch Time
983 13:34:13 S 587 row(s) returned 0.00052 sec / 0.0005...
984 13:34:26 sl 1 row(s) returned 0.00040 sec / 0.000...
985 13:34:38 al 587 row(s) affected Records: 587 Duplicates: 0 Warnings: 0 0.031 sec

```

5) Hay 275 filas distintas en la tabla credit_card.

```
319 • select count(*) from credit_card;
320
321
322 -- cambiar la columna expiring_date de varchar para date
100% 34:319 | Result Grid Filter Rows: Search Export: 
| count(*) |
| 275 |
Result 3 | Action Output | Time | Response | Duration / Fetch Time |
| 986 18:54:55 d 6 row(s) returned | 0.059 sec / 0.00037... |
| 987 19:20:16 d 6 row(s) returned | 0.0012 sec / 0.00000... |
| 988 19:21:09 s 1 row(s) returned | 0.0097 sec / 0.00000... |
```

6) Datos introducidos en la tabla credit_card

```
321 • select * from credit_card;
322
100% 27:321 | Result Grid Filter Rows: Search Edit: Export/Import: 
| id | iban | pan | pin | cvv | expiring_date |
| CcU-2938 | TR301950312213576817638661 | 5424465566813633 | 3257 | 984 | 10/30/22 |
| CcU-2945 | DO26854763748537475216568689 | 5142423821948828 | 9080 | 887 | 08/24/23 |
| CcU-2952 | BG45VQL52710525608255 | 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 | 448574464433884 | 1856 | 740 | 04/05/25 |
| CcU-3015 | PS119398216295715968342456821 | 3784 662233 17389 | 3246 | 822 | 01/31/22 |
| CcU-3022 | GT91695162850556977423121857 | 5164 1379 4842 3951 | 5610 | 342 | 04/25/25 |
| CcU-3029 | AZ62317413982441418123739746 | 3429 279566 77631 | 9708 | 505 | 09/02/23 |
| CcU-3036 | AZ39336002925842865843941994 | 3768 451556 48766 | 2232 | 565 | 10/27/25 |
| CcU-3043 | TN6488143310514852179535 | 455676 6437463635 | 5969 | 196 | 06/07/25 |
| CcU-3050 | FR5167744369175836831854477 | 4024007123722 | 4834 | 126 | 10/09/23 |
| CcU-3057 | LU931822574697545215 | 3484 621767 21237 | 6805 | 848 | 09/14/25 |
| CcU-3064 | PS146965545449253377627273133 | 3467 732741 26810 | 3865 | 498 | 06/03/25 |

credit_card 4 | Action Output | Time | Response | Duration / Fetch Time |
| 987 19:20:16 d 6 row(s) returned | 0.0012 sec / 0.00000... |
| 988 19:21:09 s 1 row(s) returned | 0.0097 sec / 0.00000... |
| 989 19:23:08 s 275 row(s) returned | 0.00062 sec / 0.0000... |
```

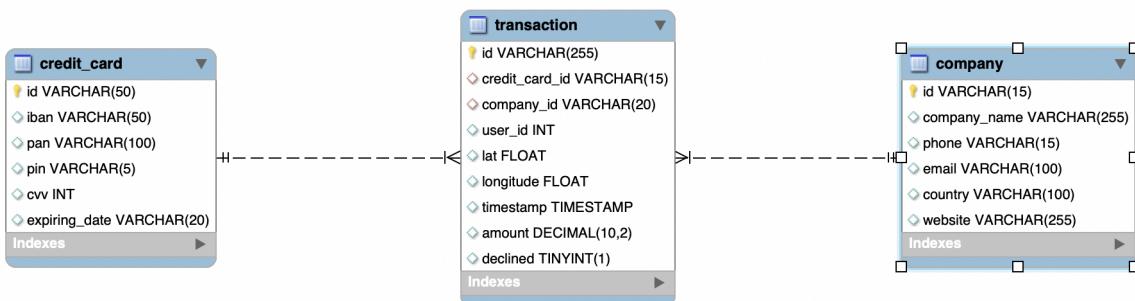
7) Diagrama **company-transaction-credit_card**

El diagrama creado en este ejercicio, **company-transaction-credit_card**, enseña la relación entre las tablas **credit_card**, **transaction** y **company**.

La tabla **credit_card**, creada en este ejercicio, tiene el campo **id** como primary key y es parte de la tabla **transaction** como foreign key (**credit_card_id**), estableciendo la relación entre ambas.

Esta relación es de 1 para N, o sea, una tarjeta de crédito puede hacer varias transacciones, pero una transacción es hecha por una única tarjeta de crédito.

De la misma manera, la tabla **company** tiene el campo **id** como primary key y es parte de la tabla **transaction** como foreign key (**company_id**), también estableciendo la relación entre ambas. Las tablas **company** y **credit_card** no están conectadas directamente. La relación es de 1 para N, o sea, una compañía puede hacer varias transacciones, pero una transacción es hecha por una única compañía.



El formato de la fecha será cambiado por ' YYYY-MM-DD '. Para eso, utilicé la función **str_to_date** para cambio del formato mm/dd/yy para yyyy-mm-dd. A continuación, utilice la función date para cambiar el formato, lo que puede ser visto en la imagen abajo.

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8) Cambio de la columna “`expiring_date`” de `VARCHAR` para `DATE`

```

329
330 •  describe credit_card;
331
100% 23:330

Result Grid Filter Rows: Search Export: 

```

Field	Type	Null	Key	Default	Extra
<code>id</code>	<code>varchar(50)</code>	NO	PRI	<code>NULL</code>	
<code>iban</code>	<code>varchar(50)</code>	YES		<code>NULL</code>	
<code>pan</code>	<code>varchar(100)</code>	YES		<code>NULL</code>	
<code>pin</code>	<code>varchar(5)</code>	YES		<code>NULL</code>	
<code>cvv</code>	<code>int</code>	YES		<code>NULL</code>	
<code>expiring_date</code>	<code>date</code>	YES		<code>NULL</code>	

Result 5

Action Output

Time	Response	Duration / Fetch Time
984 13:34:26	sl 1 row(s) returned	0.00040 sec / 0.000...
985 13:34:38	al 587 row(s) affected Records: 587 Duplicates: 0 Warnings: 0	0.031 sec
986 18:54:55	d 6 row(s) returned	0.059 sec / 0.00037...
987 19:20:16	d 6 row(s) returned	0.0012 sec / 0.00000...
988 19:21:09	sl 1 row(s) returned	0.0097 sec / 0.00000...
989 19:23:08	sl 275 row(s) returned	0.00062 sec / 0.000...
990 19:27:36	uj 275 row(s) affected Rows matched: 275 Changed: 275 Warnings: 0	0.021 sec
991 19:27:50	al 275 row(s) affected Records: 275 Duplicates: 0 Warnings: 0	0.030 sec
992 19:31:21	d 6 row(s) returned	0.0012 sec / 0.00001...

```

332 •  select * from credit_card;
333
334
100% 27:332

Result Grid Filter Rows: Search Edit: Export/Import: 

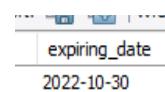
```

<code>id</code>	<code>iban</code>	<code>pan</code>	<code>pin</code>	<code>cvv</code>	<code>expiring_date</code>
CcU-2938	TR301950312213576817638661	5424465566813633	3257	984	2022-10-30
CcU-2945	DO26854763748537475216568689	5142423821948828	9080	887	2023-08-24
CcU-2952	BG45IVQL52710525608255	4556 453 55 5287	4598	438	2021-06-29
CcU-2959	CR724247724435841535	372461377349375	3583	667	2023-02-24
CcU-2966	BG72LKTQ15627628377363	448566 886747 7265	4900	130	2024-10-29
CcU-2973	PT87806228135092429456346	544 58654 54343 384	8760	887	2025-01-30
CcU-2980	DE39241881883086277136	402400 7145845969	5075	596	2022-07-24
CcU-2987	GE89681434837748781813	3763 747687 76666	2298	797	2023-10-31
CcU-2994	BH62714428368066765294	344283273252593	7545	595	2022-02-28
CcU-3001	CY49087426654774581266832110	511722 924833 2244	9562	867	2022-09-16
CcU-3008	LU507216693616119230	448574464433884	1856	740	2025-04-05
CcU-3015	PS119398216295715968342456821	3784 662233 17389	3246	822	2022-01-31

credit_card 6

Action Output

Time	Response	Duration / Fetch Time
985 13:34:38	al 587 row(s) affected Records: 587 Duplicates: 0 Warnings: 0	0.031 sec
986 18:54:55	d 6 row(s) returned	0.059 sec / 0.00037...
987 19:20:16	d 6 row(s) returned	0.0012 sec / 0.00000...
988 19:21:09	sl 1 row(s) returned	0.0097 sec / 0.00000...
989 19:23:08	sl 275 row(s) returned	0.00062 sec / 0.00000...
990 19:27:36	uj 275 row(s) affected Rows matched: 275 Changed: 275 Warnings: 0	0.021 sec
991 19:27:50	al 275 row(s) affected Records: 275 Duplicates: 0 Warnings: 0	0.030 sec
992 19:31:21	d 6 row(s) returned	0.0012 sec / 0.00001...
993 19:33:33	sl 275 row(s) returned	0.00047 sec / 0.0000...

Antes (como VARCHAR)	Después (como DATE)
 <p>expiring_date</p> <p>12/03/20</p> <p>05/11/23</p> <p>07/25/21</p> <p>02/13/26</p> <p>08/19/23</p>	 <p>expiring_date</p> <p>2022-10-30</p> <p>2023-08-24</p> <p>2021-06-29</p> <p>2023-02-24</p> <p>2024-10-29</p>

Ejercicio 2

El departamento de Recursos Humanos ha identificado un error en el número de cuenta del usuario con ID CcU-2938. La información que debe mostrarse para este registro es: R323456312213576817699999. Recuerda mostrar que el cambio se realizó.

- 1) Información sobre la tarjeta de ID CcU-2938 antes del cambio solicitado

2) Información sobre la tarjeta de ID CcU-2938 después del cambio solicitado

Ejercicio 3

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

En la taula "transaction" ingressa un nou usuari 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

"Una relación fk involucra una tabla *parent* que contiene los valores de la columna inicial y una tabla *child* con valores de columna que se refieren a los valores de la columna de la tabla *parent*." (citación:

<https://dev.mysql.com/doc/refman/8.0/en/create-table-foreign-keys.html>)

Una restricción de fk se define en la tabla *child*, como se hizo anteriormente en la tabla de **transacciones** en relación con las tablas **company** y **credit_card**.

Existe una relación establecida entre la **company** (*parent*) y la **transaction** (*child*), y las tablas **credit_card** (*parent*) y **Transaction** (*child*) debido a la restricción de su respectiva fk. Debido a esto, el cambio es realizado primero en las tablas **company** y **credit_card** para hacer la introducción de datos en sus respectivas columnas, como la pk. En otras palabras, si el intento de ingresar los datos se lleva a cabo primero en la tabla de transacciones (*child*), se produce un error en su ejecución.

Antes de inserir los valores, voy a hacerlos en las tablas donde ellos son primary key:

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1) Inserción de la tarjeta de crédito CcU-99 en la tabla **credit_card**

2) Imagen 13 -inserción de la compañía b-9999 en la tabla company

- 3) Imagen 14 - inserción del nuevo usuario en la tabla **transaction**. La columna **timestamp** tiene el dato correspondiente como *NULL* porque no fue incluida en la inserción de datos.

The screenshot shows a MySQL Workbench session with the following details:

- SQL Editor:** Contains the following SQL code:


```

379 • insert into transaction (id, credit_card_id, company_id, user_id, lat, longitude, amount, declined)
380   values ('108B1D1D-5B23-A76C-55EF-C568E49A99DD', 'CcU-9999', 'b-9999', '9999', 829.999, -117.999, 111.11, 0);
381
382 • select * from transaction -- comprobando el ingreso de los valores
383   where id = '108B1D1D-5B23-A76C-55EF-C568E49A99DD';
            
```
- Result Grid:** Shows the inserted row in the transaction table. The columns are: id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, and declined. The timestamp column is marked as *NULL*.

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	<i>NULL</i>	111.11	0
<i>NULL</i>	<i>NULL</i>	<i>NULL</i>	<i>NULL</i>	<i>NULL</i>	<i>NULL</i>	<i>NULL</i>	<i>NULL</i>	<i>NULL</i>
- Action Output:** Displays the log of actions taken by the system, showing timestamps, responses, and durations. The log includes entries for insertions (994-995), updates (996-997), and other operations (998-1002).

Action	Time	Response	Duration / Fetch Time
994	19:40:45	si 1 row(s) returned	0.00037 sec / 0.0000...
995	19:44:04	uj 1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0	0.00097 sec
996	19:44:10	si 1 row(s) returned	0.00033 sec / 0.0000...
997	20:03:11	in 1 row(s) affected	0.0055 sec
998	20:03:15	si 1 row(s) returned	0.00036 sec / 0.000...
999	20:06:11	in 1 row(s) affected	0.0030 sec
10...	20:06:13	si 1 row(s) returned	0.00037 sec / 0.0000...
1001	20:06:56	in 1 row(s) affected	0.0049 sec
1002	20:06:58	si 1 row(s) returned	0.00041 sec / 0.0000...

Ejercicio 4

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

1) Tabla antes de la eliminación de la columna pan

```

394      -- verificar la tabla antes del cambio
395 •  select * from credit_card;
396
100%   27:395

```

id	iban	pan	pin	cvv	expiring_date
CcU-2938	R323456312213576817699999	5424465566813633	3257	984	2022-10-30
CcU-2945	D026854763748537475216568689	5142423821948828	9080	887	2023-08-24
CcU-2952	BG45VQL52710525608255	4556 453 55 5287	4598	438	2021-06-29
CcU-2959	CR7242477244335841535	372461377349375	3583	667	2023-02-24
CcU-2966	BG72LKTQ15627628377363	448566 886747 7265	4900	130	2024-10-29
CcU-2973	PT87806228135092429456346	544 58654 5434 384	8760	887	2025-01-30
CcU-2980	DE39241881883086277136	402400 7145845969	5075	596	2022-07-24
CcU-2987	GE89681434837748781813	3763 747687 76666	2298	797	2023-10-31
CcU-2994	BH62714428368066765294	34428373252593	7545	595	2022-02-28
CcU-3001	CY49087426654774581266832110	511722 924833 2244	9562	867	2022-09-16
CcU-3008	LU507216693616119230	4485744464433884	1856	740	2025-04-05
CcU-3015	PS119398216295715968342456821	3784 662233 17389	3246	822	2022-01-31
CcU-3022	GT91695162850556977423121857	5164 1379 4842 3951	5610	342	2025-04-25
CcU-3029	AZ62317413982441418123739746	3429 279566 77631	9708	505	2023-09-02
CcU-3036	AZ39336002925842865843941994	3768 451556 48766	2232	565	2025-10-27
CcU-3043	TN6488143310514852179535	455676 6437463635	5969	196	2025-06-07
CcU-3050	FR5167744369175836831854477	4024007123722	4834	126	2023-10-09
CcU-3057	LU931822574697545215	3484 621767 21237	6805	848	2025-09-14
CcU-3064	PS14696554549253377627273133	3467 732741 26810	3865	498	2025-06-03
CcU-3071	NO8923814763512	3464 789562 23352	6625	661	2023-12-20

credit_card 13

Action	Output	Time	Response	Duration / Fetch Time
✓	996	19:44:10	st 1 row(s) returned	0.00033 sec / 0.0000...
✓	997	20:03:11	st 1 row(s) affected	0.0055 sec
✓	998	20:03:15	st 1 row(s) returned	0.00036 sec / 0.000...
✓	999	20:06:11	st 1 row(s) affected	0.0030 sec
✓	10...	20:06:13	st 1 row(s) returned	0.00037 sec / 0.0000...
✓	1001	20:06:56	st 1 row(s) affected	0.0049 sec
✓	1002	20:06:58	st 1 row(s) returned	0.00041 sec / 0.0000...
✓	10...	20:08:32	st 1 row(s) returned	0.0021 sec / 0.00000...
✓	10...	20:13:50	st 276 row(s) returned	0.00048 sec / 0.000...

2) Tabla después de la eliminación de la columna **pan**

```

397 • alter table credit_card
398   drop column pan;
399
400
401 • select * from credit_card; -- Verificar el cambio mostrando la estructura de la tabla.
402
403
100% 29:401

```

Result Grid Filter Rows: Search Edit: Export/Import:

id	iban	pin	cvv	expiring_date
CcU-2938	R323456312213576817699999	3257	984	2022-10-30
CcU-2945	DO26854763748537475216568689	9080	887	2023-08-24
CcU-2952	BG45IVQL52710525608255	4598	438	2021-06-29
CcU-2959	CR7242477244335841535	3583	667	2023-02-24
CcU-2966	BG72LKTQ15627628377363	4900	130	2024-10-29
CcU-2973	PT87806228135092429456346	8760	887	2025-01-30
CcU-2980	DE39241881883086277136	5075	596	2022-07-24
CcU-2987	GE89681434837748781813	2298	797	2023-10-31
CcU-2994	BH62714428368066765294	7545	595	2022-02-28
CcU-3001	CY49087426654774581266832110	9562	867	2022-09-16
CcU-3008	LU507216693616119230	1856	740	2025-04-05

credit_card 14

Action Output

Time	Response	Duration / Fetch Time
998 20:03:15	s 1 row(s) returned	0.00036 sec / 0.000...
999 20:06:11	in 1 row(s) affected	0.0030 sec
10... 20:06:13	s 1 row(s) returned	0.00037 sec / 0.000...
1001 20:06:56	in 1 row(s) affected	0.0049 sec
1002 20:06:58	s 1 row(s) returned	0.00041 sec / 0.000...
10... 20:08:32	s 1 row(s) returned	0.0021 sec / 0.00000...
10... 20:13:50	s 276 row(s) returned	0.00048 sec / 0.000...
10... 20:15:35	al 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.012 sec
10... 20:15:38	s 276 row(s) returned	0.00046 sec / 0.000...

Nivel 2

Ejercicio 1

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

1) Registro con ID antes de su eliminación

```
409 -- verificar la tabla antes del cambio
410 • select * from transaction
411 where ID = '02C6201E-D90A-1859-B4EE-88D2986D3B02';
412
```

Result Grid | Filter Rows: | Search | Edit: | Export/Import: |

id	credit_card...	company_id	user_id	lat	longitude	timestamp	amount	declined
02C6201E-D90A-1859-B4EE-88D2986D3B02	CcU-2938	b-2362	92	81.9185	-12.5276	2021-08-28 23:42:24	466.92	0
HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL

transaction 15

Action Output | Time | # Response | Duration / Fetch Time |

Time	# Response	Duration / Fetch Time
999 20:06:11	in 1 row(s) affected	0.0030 sec
10... 20:06:13	si 1 row(s) returned	0.00037 sec / 0.0000...
1001 20:06:56	in 1 row(s) affected	0.0049 sec
1002 20:06:58	si 1 row(s) returned	0.00041 sec / 0.0000...
10... 20:08:32	si 1 row(s) returned	0.0021 sec / 0.00000...
1003 20:13:50	si 276 row(s) returned	0.00048 sec / 0.000...
10... 20:15:35	al 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.012 sec
1004 20:15:38	si 276 row(s) returned	0.00046 sec / 0.000...
1007 20:17:13	si 1 row(s) returned	0.0011 sec / 0.00000...

2) Registro con ID después de su eliminación

Ejercicio 2

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

1) Creación de la vista vistamarketing

The screenshot shows the MySQL Workbench interface. On the left, the 'SCHEMAS' tree view is open, showing the 'transaction' schema. Inside 'transaction', there is a 'Views' folder which contains a file named 'vistamarketing'. A red box highlights this file, and a red arrow points from it towards the central query editor area. The central area displays the SQL code for creating the view:

```

430
431 • create view `VistaMarketing` as
432     select c.company_name, c.phone, c.country, avg(t.amount) as media_compra_realizada
433     from company c
434     join transaction t
435     on c.id = t.company_id
436     where t.declined = 0
437     group by c.company_name, c.phone, c.country
438     order by media_compra_realizada desc;
439
440 • select * from vistamarketing;

```

Below the code, the 'Result Grid' shows the results of the query. The table has columns: company_name, phone, country, and media_compra_realizada. The data includes various companies like Eget Ipsum Ltd, Sed Id Limited, Neque Tellus Incorporated, Nunc Sit Incorporated, Non Magna LLC, Maecenas Malesuada Fringilla Inc., Erat LLP, Tortor Nunc Commodo Company, Justo Eu Arcu Ltd, Pede Cum Ltd, and Vestibulum Lorem PC, along with their respective details and average purchase amounts.

company_name	phone	country	media_compra_realizada
Eget Ipsum Ltd	03 67 44 56 72	United States	481.860000
Sed Id Limited	07 28 18 18 13	United States	477.510000
Neque Tellus Incorporated	04 43 18 34 19	Ireland	477.100000
Nunc Sit Incorporated	07 28 42 63 63	Norway	461.830000
Non Magna LLC	06 71 73 13 17	United Kingdom	458.740000
Maecenas Malesuada Fringilla Inc.	09 38 53 76 61	Netherlands	451.290000
Erat LLP	03 18 88 77 79	Netherlands	448.440000
Tortor Nunc Commodo Company	05 35 92 77 16	United States	447.110000
Justo Eu Arcu Ltd	08 42 56 71 52	Italy	444.160000
Pede Cum Ltd	07 62 26 48 38	Norway	442.320000
Vestibulum Lorem PC	02 02 87 33 40	Belgium	428.400000

At the bottom, the 'Action Output' section shows the execution log with various status messages and durations.

Ejercicio 3

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

2) VistaMarketing con filtro 'Germany'

```
443 -- Ejercicio 3
444 -- Filtra la vista VistaMarketing para mostrar sólo las compañías que tienen su país de residencia en "Germany"
445
446 • select *
447   from vistamarketing
448   where country = 'Germany';
449
```

100% 27:448

Result Grid Filter Rows: Search Export:

company_name	phone	country	media_compra_realiza...
Ac Industries	09 34 65 40 60	Germany	396.150000
Auctor Mauris Corp.	05 62 87 14 41	Germany	308.990000
Ac Fermentum Incorporated	06 85 56 52 33	Germany	293.570000
Aliquam PC	01 45 73 52 16	Germany	280.340000
Rutrum Non Inc.	02 66 31 61 09	Germany	266.900000
Nunc Interdum Incorporated	05 18 15 48 13	Germany	242.947692
Convallis In Incorporated	06 66 57 29 50	Germany	60.990000
Augue Foundation	06 88 43 15 63	Germany	15.050000

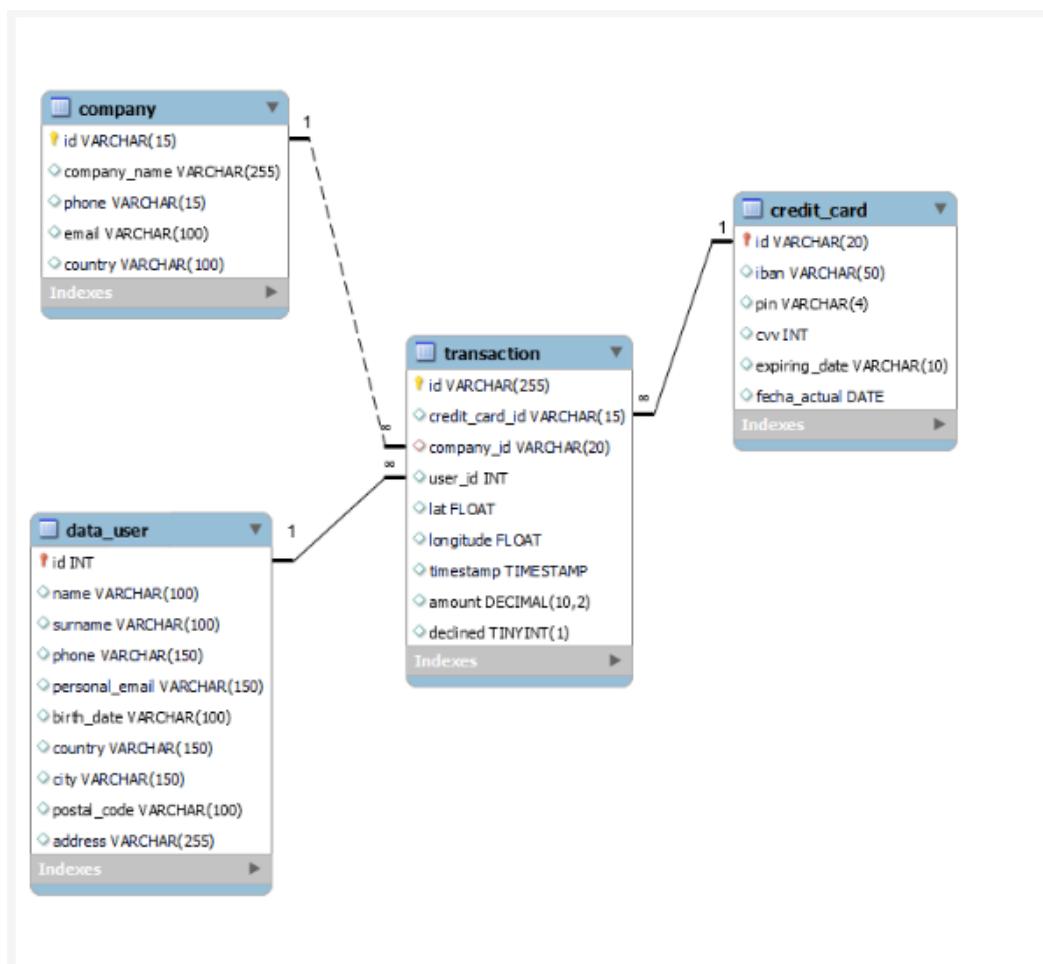
vistamarketing 18

Action Output

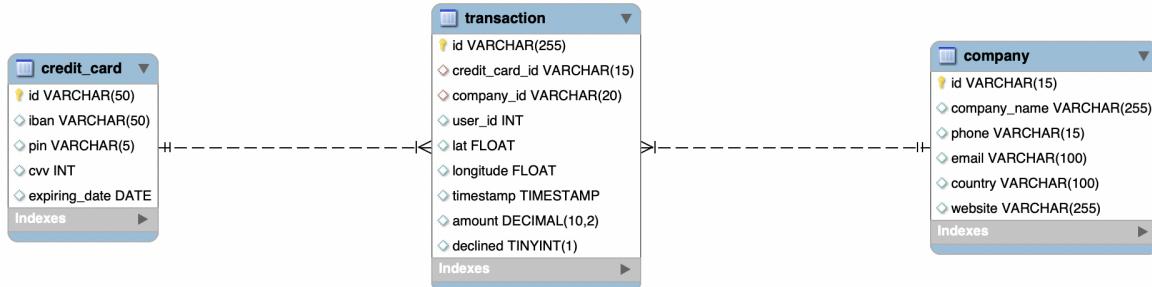
Time	Response	Duration / Fetch Time
10... 20:15:35	al 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.012 sec
10... 20:15:38	sr 276 row(s) returned	0.00046 sec / 0.000...
1007 20:17:13	sr 1 row(s) returned	0.0011 sec / 0.00000...
10... 20:19:32	di 1 row(s) affected	0.0021 sec
10... 20:19:37	sr 0 row(s) returned	0.00095 sec / 0.000...
1010 20:22:52	ci 0 row(s) affected	0.012 sec
1011 20:23:29	sr Error Code: 1054. Unknown column 'vistamarketing' in 'field list'	0.0028 sec
1012 20:23:42	sr 101 row(s) returned	0.0076 sec / 0.00003...
1013 20:26:30	sr 8 row(s) returned	0.0029 sec / 0.00001...

Nivel 3

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



1) Modelo Anterior



credit_card	
Columna	datatype
id	VARCHAR (50)
iban	VARCHAR (50)
pin	VARCHAR (5)
cvv	INT
expiring_date	DATE

transaction	
Columna	datatype
id	VARCHAR (255)
credit_card_id	VARCHAR (15)
company_id	VARCHAR (20)
user_id	INT
lat	FLOAT
longitude	FLOAT
timestamp	TIMESTAMP
amount	DECIMAL(10,2)
declined	TINYINT(1)

company	
Columna	datatype
id	VARCHAR (15)
company_name	VARCHAR (255)
phone	VARCHAR (15)
email	VARCHAR (100)
country	VARCHAR (100)
website	VARCHAR (255)

2) Creación de la tabla user

El script de la tabla proviene del archivo ‘estructura_datos_user.sql’ descargado en la página web del script 3 del curso de análisis de datos.

```

457      -- Creamos la tabla user
458
459 •  CREATE INDEX idx_user_id ON transaction(user_id);
460
461 •  CREATE TABLE IF NOT EXISTS user (
462     id INT PRIMARY KEY,
463     name VARCHAR(100),
464     surname VARCHAR(100),
465     phone VARCHAR(150),
466     email VARCHAR(150),
467     birth_date VARCHAR(100),
468     country VARCHAR(150),
469     city VARCHAR(150),
470     postal_code VARCHAR(100),
471     address VARCHAR(255),
472     FOREIGN KEY(id) REFERENCES transaction(user_id)
473 );
474
475
100% ◊ 7:473
Action Output ◊
| Time | Response | Duration / Fetch Time |
|---|---|---|
| 1007 20:17:13 | si 1 row(s) returned | 0.0011 sec / 0.0000... |
| 10... 20:19:32 | di 1 row(s) affected | 0.0021 sec |
| 10... 20:19:37 | si 0 row(s) returned | 0.00095 sec / 0.000... |
| 1010 20:22:52 | ci 0 row(s) affected | 0.012 sec |
| 1011 20:23:29 | si Error Code: 1054. Unknown column 'vistamarketing' in 'field list' | 0.0028 sec |
| 1012 20:23:42 | si 101 row(s) returned | 0.0076 sec / 0.00003... |
| 1013 20:26:30 | si 8 row(s) returned | 0.0029 sec / 0.00001... |
| 1014 20:57:36 | si 4 row(s) returned | 0.00090 sec / 0.000... |
| 1015 20:58:29 | C Error Code: 1822. Failed to add the foreign key constraint. Missing index for constraint 'user_ibfk_1' in the referenced table 'transaction' | 0.0045 sec |
| 1016 21:00:10 | si 1 row(s) returned | 0.00038 sec / 0.000... |
| 1017 21:00:45 | C 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0 | 0.044 sec |
| 1018 21:00:59 | C 0 row(s) affected | 0.012 sec |

```

3) Inserción de los datos en la tabla user

Los datos que se insertarán en la tabla provienen del archivo 'datos_introducir_user(1).sql' descargado en la página web del script 3 del curso de análisis de datos.

```

...
477 •   SET foreign_key_checks = 0;
478
479 -- Insertamos datos de user
480 •   INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES ('1', "Zeus",
481 •   INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES ('2', "Garret",
482 •   INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES ('3', "Ciaran",
483 •   INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES ('4', "Howard",
484 •   INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES ('5', "Hayfa",
485 •   INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES ('6', "Joel",
486 •   INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES ('7', "Rafael",
487 •   INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES ('8', "Nissim",
488 •   INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES ('9', "Mann",
489 •   INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES ('10', "Robert",
490 •   INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES ('11', "Joan",
491 •   INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES ('12', "Benedict",
492 •   INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES ('13', "Allegra",
493 •   INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES ('14', "Sara",
494 •   INSERT INTO user (id, name, surname, phone, email, birth_date, country, city, postal_code, address) VALUES ('15', "Noelia"
100% 28:756

```

Action Output	Time	Response	Duration / Fetch Time
10... 20:19:32	d	1 row(s) affected	0.0021 sec
10... 20:19:37	s	0 row(s) returned	0.00095 sec / 0.000...
1010 20:22:52	c	0 row(s) affected	0.012 sec
1011 20:23:29	s	Error Code: 1054. Unknown column 'vistamarketing' in 'field list'	0.0028 sec
1012 20:23:42	s	101 row(s) returned	0.0076 sec / 0.00003...
1013 20:26:30	s	8 row(s) returned	0.0029 sec / 0.00001...
1014 20:57:36	s	4 row(s) returned	0.00090 sec / 0.000...
1015 20:58:29	C	Error Code: 1822. Failed to add the foreign key constraint. Missing index for constraint 'user_ibfk_1' in the referenced table 'transaction'	0.0045 sec
1016 21:00:10	s	1 row(s) returned	0.00038 sec / 0.000...
1017 21:00:45	C	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.044 sec
1018 21:00:59	C	0 row(s) affected	0.012 sec
1019 21:03:46	S	0 row(s) affected	0.00025 sec

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4) Tabla user en el database transactions

```

ruev
761 • show tables;
100% 14:761

Result Grid Filter Rows: Search Export: □

Tables_in_transactions...
company
credit_card
transaction
user
vistamarketing
Result 20

Action Output ▲
Time / Response Duration / Fetch Time
0... 20:19:37 sr 0 row(s) returned 0.00095 sec / 0.000...
0100 20:22:52 ci 0 row(s) affected 0.012 sec
0101 20:23:29 sr Error Code: 1054. Unknown column 'vistamarketing' in 'field list' 0.0028 sec
0102 20:23:42 sr 101 row(s) returned 0.0076 sec / 0.0003...
0103 20:26:30 sr 8 row(s) returned 0.0029 sec / 0.0001...
0104 20:57:36 sr 4 row(s) returned 0.00090 sec / 0.000...
0105 20:58:29 C Error Code: 1822. Failed to add the foreign key constraint. Missing index for constraint 'user_ibfk_1' in the referenced table 'transaction' 0.0045 sec
0106 21:00:10 sr 1 row(s) returned 0.00038 sec / 0.000...
0107 21:00:45 C 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0 0.044 sec
0108 21:00:59 C 0 row(s) affected 0.012 sec
0109 21:03:46 S 0 row(s) affected 0.00025 sec
0120 21:08:41 sr 5 row(s) returned 0.00092 sec / 0.000...

```

5) Tabla user con 275 filas

```

ruev
760 • select * from user;
761
100% 21:760

Result Grid Filter Rows: Search Edit: Export/Import: □
Result Grid Form Editor Field Types
Id name surname phone email birth_date country city postal_code address
1 Zeus Gamble 1-282-581-0551 interdum.enim@protonmail.edu Nov 17, 1985 United States Lowell 73544 348-7818 Sagittis St.
2 Garrett McConnell (718) 257-2412 integer.vita.nibh@protonmail.org Aug 23, 1992 United States Des Moines 59464 903 Sit Ave
3 Ciaran Harrison (522) 598-1365 interdum.feugiat@aol.org Apr 29, 1998 United States Columbus 56518 736-2063 Tellus St.
4 Howard Stafford 1-411-740-2369 ornare.egetas@icloud.edu Feb 18, 1989 United States Kailua 77417 Ap #545-2244 Erat. Rd.
5 Hayfa Pierce 1-554-541-2077 et.malesuada.fames@hotmail.org Sep 26, 1998 United States Sandy 31564 341-2821 Ultrices Av.
6 Joel Tyson (718) 288-8020 gravida.nunc.sed@yahoo.ca Oct 15, 1989 United States Nashville 96838 888-2799 Amet Street
7 Rafael Jimenez (817) 689-0478 eget@outlook.ca Dec 4, 1981 United States Hillsboro 29874 8627 Malesuada Rd.
8 Nissim Franks (692) 157-3469 egestas.aliquam.fringilla@google.ca Aug 1, 1993 United States Jackson 61750 Ap #251-7144 Integer St.
9 Mannix Mcclain (590) 883-2184 aliquam.nisi.outlook.com Jan 24, 1987 United States Richmond 35987 647-3080 Lacus. St.
10 Robert McCarthy (324) 746-6771 fermentum@protonmail.com Apr 30, 1984 United States Eugene 85526 P.O. Box 773, 3594 Ornare St.
11 Joan Baird (981) 429-8106 et@outlook.net Feb 25, 1990 United States Lincoln 35211 P.O. Box 687, 8917 I. iacula St.

user 22

Action Output ▲
Time / Response Duration / Fetch Time
12... 21:10:18 ih 1 row(s) affected 0.00036 sec
1297 21:10:18 ih 1 row(s) affected 0.00032 sec
12... 21:10:18 S 0 row(s) affected 0.000080 sec
12... 21:10:37 S 0 row(s) affected 0.00022 sec
13... 21:10:51 sr 275 row(s) returned 0.00058 sec / 0.0001...

```

6) Adición de usuario "9999" en la tabla **user**.

The screenshot shows the MySQL Workbench interface. At the top, there is a code editor window displaying SQL commands:

```

763 -- adición de usuario "9999" a la tabla user
764 • insert into user (id)
765     values ( '9999');
766
767 • select * from user -- comprobando el ingreso de los valores
768 where id = '9999';
769
    
```

Below the code editor is a result grid titled "user 23". The grid has columns: id, name, surname, phone, email, birth_da..., country, city, postal_code, address. It contains one row for user ID 9999, where all fields except 'name' and 'surname' are set to NULL.

At the bottom of the interface, there is an "Action Output" section showing the execution log:

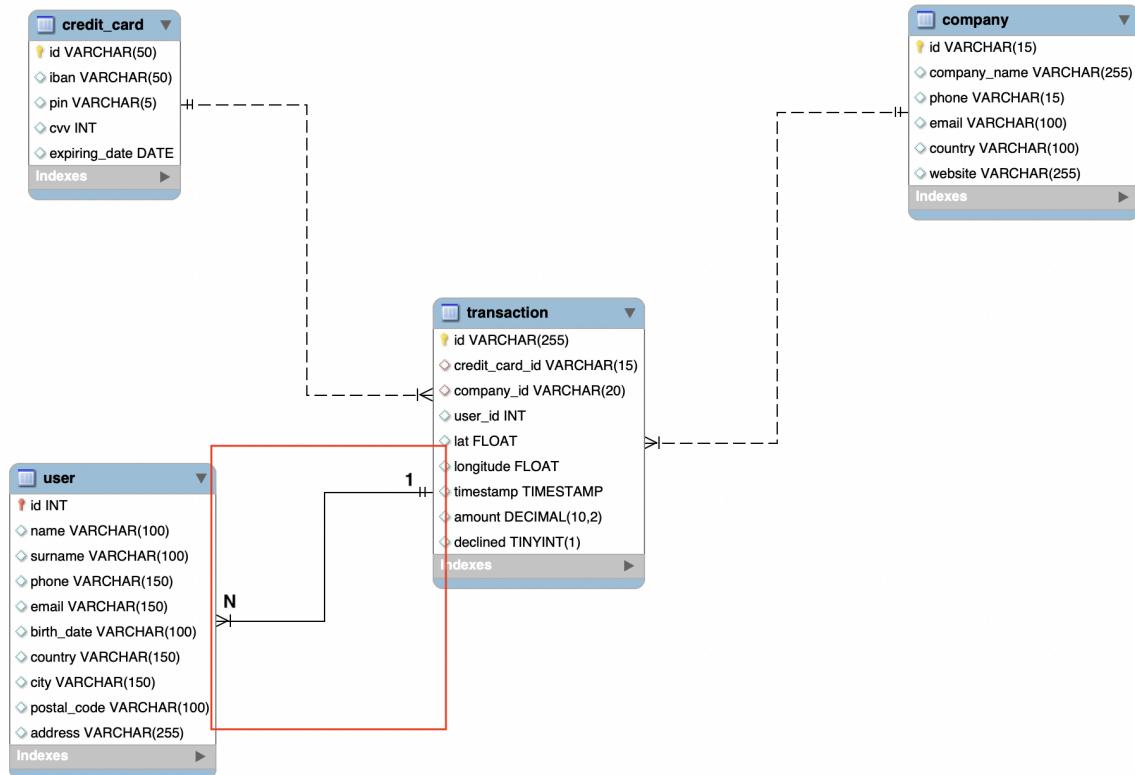
Action	Time	Response	Duration / Fetch Time
12...	21:10:18	S 0 row(s) affected	0.000080 sec
12...	21:10:37	S 0 row(s) affected	0.00022 sec
13...	21:10:51	si 275 row(s) returned	0.00058 sec / 0.0001...
1301	21:15:01	in 1 row(s) affected	0.0016 sec
1302	21:15:06	si 1 row(s) returned	0.0022 sec / 0.00000...

7) Elaboración del diagrama

El script para la creación de la tabla user fue obtenido desde la página web del sprint 3. Allí ya había una relación entre las tablas **user** y **transaction** a través de la *Foreign Key* **id (user)** y **user_id(transaction)**. Sin embargo, de esta manera el **id** de la tabla **user** es utilizado como *primary key* y *foreign key* y la relación se establece como 1 para N , desde **transaction** para **user**. Es decir, habría una transacción realizada por varios usuarios y esto no es correcto. Lo que queremos es una transacción hecha por un usuario, pero un usuario puede hacer varias transacciones.

Para cambiar esto, la *Foreign Key* (*fk*) **user_id** será establecida en la tabla **transaction** (**child**) al revés de la tabla **user (parent)**.

8) Diagrama antes del cambio de la relación 1-N entre las tablas **transaction** y **user**.



9) Averiguar el nombre del fk de la tabla **user**.

```

771      -- obtener el nombre de la restriccion de la tabla user con transaction
772
773 •  show create table user;
774
100%   ◇ 24:73
Form Editor  Navigate: ⟲ ⟳ 1/1 ⟷
Table: user
Create Table:
CREATE TABLE `user` (
  `id` int NOT NULL,
  `name` varchar(100) DEFAULT NULL,
  `surname` varchar(100) DEFAULT NULL,
  `phone` varchar(150) DEFAULT NULL,
  `email` varchar(150) DEFAULT NULL,
  `birth_date` varchar(100) DEFAULT NULL,
  `country` varchar(150) DEFAULT NULL,
  `city` varchar(150) DEFAULT NULL,
  `postal_code` varchar(100) DEFAULT NULL,
  `address` varchar(255) DEFAULT NULL,
  PRIMARY KEY(`id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
    CONSTRAINT `user_ibfk_1` FOREIGN KEY (`id`) REFERENCES `transaction` (`user_id`)
)
Result 24
Action Output  ◇
| | Time | / Response | Duration / Fetch Time |
| 1297 21:10:18 | In 1 row(s) affected | 0.00032 sec
| 12... 21:10:18 | S 0 row(s) affected | 0.000080 sec
| 12... 21:10:37 | S 0 row(s) affected | 0.00022 sec
| 13... 21:10:51 | si 275 row(s) returned | 0.00058 sec / 0.0001...
| 1301 21:15:01 | in 1 row(s) affected | 0.0016 sec
| 1302 21:15:06 | si 1 row(s) returned | 0.0022 sec / 0.0000...
| 13... 21:27:18 | si 1 row(s) returned | 0.00038 sec / 0.000...
Read Only

```

El nombre de la restricción de la tabla **user** es '**user_ibfk_1**'

10) Establecer una relación 1 a N entre las tablas **user** y la tabla **transaction**

```

775      -- establecer una relaci&on 1 a N entre las tablas user y la tabla transaction
776
777 •  alter table transaction
778   add constraint fk_transation_user
779   foreign key(user_id) references user(id);
780
100%   ◇ 42:79
Action Output  ◇
| | Time | / Response | Duration / Fetch Time |
| 12... 21:10:18 | S 0 row(s) affected | 0.000080 sec
| 12... 21:10:37 | S 0 row(s) affected | 0.00022 sec
| 13... 21:10:51 | si 275 row(s) returned | 0.00058 sec / 0.0001...
| 1301 21:15:01 | in 1 row(s) affected | 0.0016 sec
| 1302 21:15:06 | si 1 row(s) returned | 0.0022 sec / 0.0000...
| 13... 21:27:18 | si 1 row(s) returned | 0.00038 sec / 0.000...
| 13... 21:31:55 | al 587 row(s) affected Records: 587 Duplicates: 0 Warnings: 0 | 0.073 sec

```

11) Eliminación de la FK 'user_ibfk_1'.

```

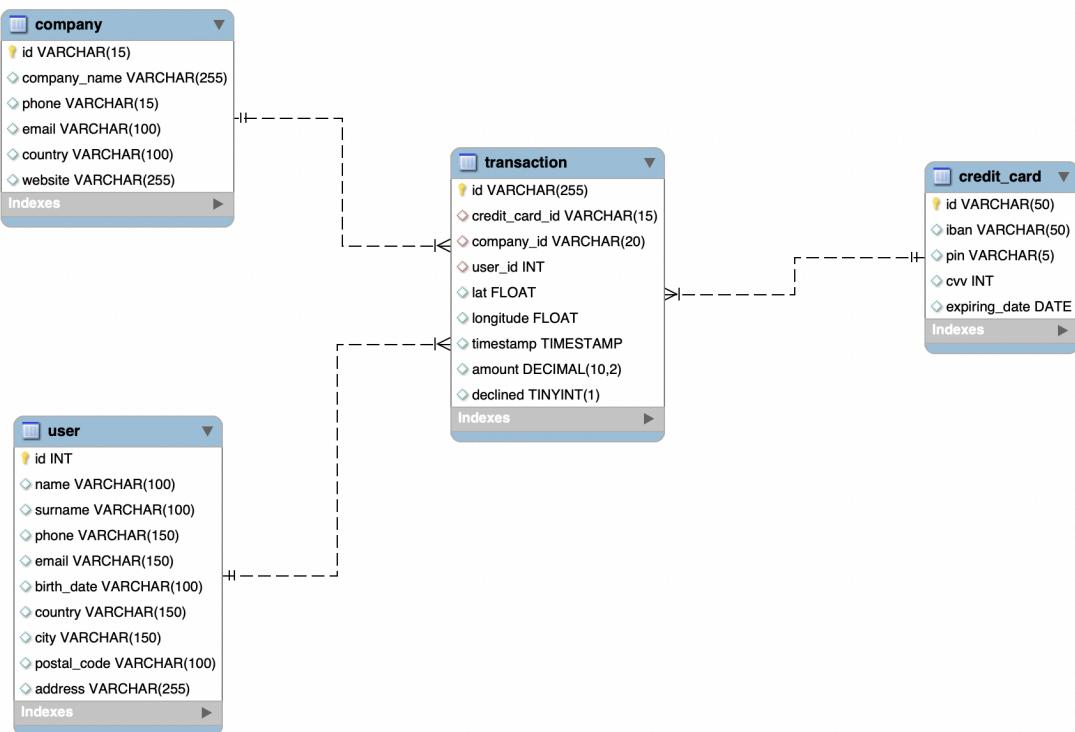
782
783 • alter table user
784 drop foreign key user_ibfk_1;
785
786
100% 30:784

Action Output
Time / Response Duration / Fetch Time
12... 21:10:37 S 0 row(s) affected 0.00022 sec
13... 21:10:51 si 275 row(s) returned 0.00058 sec / 0.0001...
1301 21:15:01 in 1 row(s) affected 0.0016 sec
1302 21:15:06 si 1 row(s) returned 0.0022 sec / 0.0000...
13... 21:27:18 si 1 row(s) returned 0.00038 sec / 0.000...
13... 21:31:55 al 587 row(s) affected Records: 587 Duplicates: 0 Warnings: 0 0.073 sec
1305 21:32:58 al 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0 0.012 sec

```

Ahora tenemos un diagrama donde las tablas **company**, **credit_card** y **user** tienen una relación 1-N con la tabla **transaction**.

A continuación, la imagen del diagrama después de la eliminación de la restricción foreign key de la tabla user



12) Cambios en la tabla user

a) Cambio de nombre de la tabla 'user' para 'data_user'

```

787      -- Cambios en la tabla user
788
789      -- Cambio de nombre de la tabla de user para data_user
790 •     rename table user TO data_user;
791 •     show tables;
792

```

Result Grid Filter Rows: Search Export:

Tables_in_transaction

company
credit_card
data_user
transaction
vistamarketing

Result 25

Action Output Duration / Fetch Time

Action	Time	Response	Duration / Fetch Time
12...	21:10:18	S 0 row(s) affected	0.000080 sec
12...	21:10:37	S 0 row(s) affected	0.00022 sec
13...	21:10:51	si 275 row(s) returned	0.00058 sec / 0.0001...
1301	21:15:01	in 1 row(s) affected	0.0016 sec
1302	21:15:06	si 1 row(s) returned	0.0022 sec / 0.0000...
13...	21:27:18	si 1 row(s) returned	0.00038 sec / 0.000...
13...	21:31:55	al 587 row(s) affected Records: 587 Duplicates: 0 Warnings: 0	0.073 sec
1305	21:32:58	al 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.012 sec
13...	21:49:13	re 0 row(s) affected	0.020 sec
1307	21:49:17	si 5 row(s) returned	0.00094 sec / 0.000...

b) Cambiar la columna 'email' para 'personal_email'

```

794
795      -- Cambiar la columna email para personal_email
796
797 •     alter table data_user change email personal_email VARCHAR(150);
798 •     select * from data_user;
799

```

Result Grid Filter Rows: Search Edit: Export/Import:

data_user

ID	Name	Surname	Phone	Personal_email	Birth_date	Country	City	Postal_code	Address
1	Zeus	Gamble	1-282-581-0551	interdum.enim@protonmail.edu	Nov 17, 1985	United States	Lowell	73544	348-7818 Sagittis St.
2	Garrett	Mcconnell	(718) 257-2412	integer.vitae.nibh@protonmail.org	Aug 23, 1992	United States	Des Moines	59464	903 Sit Ave
3	Claran	Harrison	(522) 598-1365	interdum.feugiat@aol.org	Apr 29, 1998	United States	Columbus	56518	736-2063 Tellus St.
4	Howard	Stafford	1-411-740-3269	ornare.egestas@icloud.edu	Feb 18, 1989	United States	Kailua	77417	Ap #545-2244 Erat Rd.
5	Hayfa	Pierce	1-554-541-2077	et.malesuada.fames@hotmail.org	Sep 26, 1998	United States	Sandy	31564	341-2821 Ulltrices Av.
6	Joel	Tyson	(718) 288-8020	gravida.nunc.sed@yahoo.ca	Oct 15, 1989	United States	Nashville	96838	888-2799 Amet Street

Action Output Duration / Fetch Time

Action	Time	Response	Duration / Fetch Time
13...	21:10:51	si 275 row(s) returned	0.00058 sec / 0.0001...
1301	21:15:01	in 1 row(s) affected	0.0016 sec
1302	21:15:06	si 1 row(s) returned	0.0022 sec / 0.0000...
13...	21:27:18	si 1 row(s) returned	0.00038 sec / 0.000...
13...	21:31:55	al 587 row(s) affected Records: 587 Duplicates: 0 Warnings: 0	0.073 sec
1305	21:32:58	al 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.012 sec
13...	21:49:13	re 0 row(s) affected	0.020 sec
1307	21:49:17	si 5 row(s) returned	0.00094 sec / 0.000...
13...	21:54:25	al 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.012 sec
13...	21:54:29	si 276 row(s) returned	0.00055 sec / 0.0001...

13) Cambios en la tabla **company**

a) Eliminar la columna **website**

Descripción de la tabla **company** con la columna ‘website’

```

800 -- Cambios en la tabla company
801     -- Eliminar la columna website
802 • describe company;
803
804
100% 18:802
Result Grid Filter Rows: Search Export:
Field Type Null Key Default Extra
id varchar(15) NO PRI NULL
company_name varchar(255) YES NULL
phone varchar(15) YES NULL
email varchar(100) YES NULL
country varchar(100) YES NULL
website varchar(255) YES NULL
Result 27
Action Output
Time Response Duration / Fetch Time
1301 21:15:01 in 1 row(s) affected 0.0016 sec
1302 21:15:06 si 1 row(s) returned 0.0022 sec / 0.0000...
13... 21:27:18 si 1 row(s) returned 0.00038 sec / 0.000...
13... 21:31:55 al 587 row(s) affected Records: 587 Duplicates: 0 Warnings: 0 0.073 sec
1305 21:32:56 al 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0 0.012 sec
13... 21:49:13 re 0 row(s) affected 0.020 sec
1307 21:49:17 si 5 row(s) returned 0.00094 sec / 0.000

```

b) Eliminación de la columna ‘website’

```

808 • describe company; -- comprobar la eliminacion
809
100% 19:808
Result Grid Filter Rows: Search Export:
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 28
Action Output
Time Response Duration / Fetch Time
1307 21:49:17 si 5 row(s) returned 0.00094 sec / 0.000...
13... 21:54:25 al 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0 0.012 sec
13... 21:54:29 si 276 row(s) returned 0.00055 sec / 0.0001...
13... 21:56:16 d 6 row(s) returned 0.0011 sec / 0.0000...
1311 21:59:25 al 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0 0.013 sec
1312 21:59:50 d 5 row(s) returned 0.00097 sec / 0.000...

```

14) Cambios en la tabla **transaction**

Ningún cambio.

15) Cambios en la tabla `credit_card`

Descripción de la tabla antes de las alteraciones

```

810      -- Cambios en la tabla credit_card
811
812 •      describe credit_card; -- descripción de la tabla antes de las alteraciones
813
814
100%  5:814
Result Grid Filter Rows: Search Export:
Field Type Null Key Default Extra
id varchar(50) NO PRI
iban varchar(50) YES
pin varchar(5) YES
cvv int YES
expiring_date date YES
Result 29
Read Only
Action Output
Time / Response Duration / Fetch Time
13... 21:54:25 al 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0 0.012 sec
13... 21:54:29 si 276 row(s) returned 0.00055 sec / 0.0001...
1310 21:56:16 d 6 row(s) returned 0.0011 sec / 0.0000...
1311 21:59:25 al 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0 0.013 sec
1312 21:59:50 d 5 row(s) returned 0.00097 sec / 0.0000...
1313 22:02:46 d 5 row(s) returned 0.0015 sec / 0.0001...

```

- a) Cambio de la columna `id` de `VARCHAR(50)` para `VARCHAR(20)`

Al intentar cambiar el tipo de datos de una clave primaria que es la clave extranjera en la tabla de transacciones, se me impidió realizar esta acción debido a la restricción FK.

Se dio el siguiente error:

Error Code: 1833. Cannot change column 'id': used in a foreign key constraint 'fk_transation_credit_card' of table 'transactions.transaction'

Eliminaré la restricción y después de las modificaciones, la agregaré nuevamente

Primero, verificaré el nombre de la restricción `fk credit_card - transaction`

```

814      -- verificar el nombre de la restriccion credit_card - transaction
815 •     show create table transaction;
816
100%  35:85  1 error found
Form Editor  Navigate: << < 1/1 > >>
Table: transaction
Create Table:
Result 31
Action Output  c
Time / Response Duration / Fetch Time
1316 22:18:27 al Error Code: 1146. Table transactions.credit_card doesn't exist 0.001 sec
1317 22:18:37 al 1 row(s) returned 0.0013 sec / 0.00001...
1318 22:19:02 al 1 row(s) returned 0.00064 sec / 0.000...
Read Only

```

La restricción se llama 'fk_transation_credit_card'.

A continuación, la eliminación de la restricción:

```

816
817      -- eliminar la restriccion de la FK de la tabla transaction
818
819 •     alter table transaction
820         drop foreign key fk_transation_credit_card ;
821
822
100%  46:820
Action Output  c
Time / Response Duration / Fetch Time
1320 22:23:42 al Error Code: 1091. Can't DROP 'fk_transation_credit_card'; check that column/key exists 0.000 sec
1321 22:23:53 al Error Code: 1091. Can't DROP 'fk_transation_credit_card'; check that column/key exists 0.00060 sec
1322 22:25:22 al 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0 0.0097 sec

```

b) Cambio de la columna id de VARCHAR(50) para VARCHAR(20)

```

822
823      -- Cambio de la columna id de VARCHAR(50) para VARCHAR(20)
824
825 •     alter table credit_card modify column id VARCHAR(20);
826
827
100%  58:825
Action Output  c
Time / Response Duration / Fetch Time
1321 22:23:53 al Error Code: 1091. Can't DROP 'fk_transation_credit_card'; check that column/key exists 0.000060 sec
1322 22:25:22 al 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0 0.0097 sec
1323 22:26:54 al 276 row(s) affected Records: 276 Duplicates: 0 Warnings: 0 0.019 sec

```

c) Cambio de la columna pin de VARCHAR(5) para VARCHAR(4)

```

828      -- Cambio de la columna pin de VARCHAR(5) para VARCHAR(4)
829
830 •     alter table credit_card modify column pin VARCHAR(4);
831
100%  58:830
Action Output  c
Time / Response Duration / Fetch Time
1324 22:25:22 al 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0 0.000 sec
1323 22:26:54 al 276 row(s) affected Records: 276 Duplicates: 0 Warnings: 0 0.019 sec
1324 22:29:18 al 276 row(s) affected Records: 276 Duplicates: 0 Warnings: 0 0.017 sec

```

d) Añadir columna, fecha_actual y datatype DATE

```

832      -- Añadir columna, fecha_actual y datatype DATE
833
834  alter table credit_card add column fecha_actual DATE;
835
836
100%  56:834

Action Output  ◊
Time          / Response                                Duration / Fetch Time
-----+-----+-----+-----+-----+-----+
✔ 1323 22:29:54  ai 2/b row(s) affected Records: 2/b  Duplicates: 0  Warnings: 0  0.019 sec
✔ 1324 22:29:18  ai 276 row(s) affected Records: 276  Duplicates: 0  Warnings: 0  0.017 sec
✔ 1325 22:32:10  ai 0 row(s) affected Records: 0  Duplicates: 0  Warnings: 0  0.011 sec

```

e) Cambio expiring_date para datatype VARCHAR(10)

```

836      -- cambio de la columna expiring_date de DATE  VARCHAR(10)
837
838  alter table credit_card modify column expiring_date VARCHAR(10);
839
840
100%  5:837

Action Output  ◊
Time          / Response                                Duration / Fetch Time
-----+-----+-----+-----+-----+-----+
✔ 1326 22:32:10  ai 0 row(s) affected Records: 0  Duplicates: 0  Warnings: 0  0.011 sec
✔ 1326 22:33:13  d: 6 row(s) returned
✔ 1327 22:40:16  ai 276 row(s) affected Records: 276  Duplicates: 0  Warnings: 0  0.026 sec

```

Verificar los cambios:

```

841  -- verificar los cambios
842
843  describe credit_card;
844
100%  22:843

Result Grid  Filter Rows:  Search  Export:  □  Result Grid
Field        Type   Null  Key  Default  Extra
---+-----+-----+-----+-----+-----+
id          varchar(20) NO  PRI  NULL
iban        varchar(50) YES
pin         varchar(4)  YES
cvv          int     YES
expiring_date  varchar(10) YES
fecha_actual  date    YES  NULL
Result 33
Read Only

Action Output  ◊
Time          / Response                                Duration / Fetch Time
-----+-----+-----+-----+-----+-----+
✔ 1326 22:33:13  d: 6 row(s) returned
✔ 1327 22:40:16  ai 276 row(s) affected Records: 276  Duplicates: 0  Warnings: 0  0.0011 sec / 0.00001...
✔ 1328 22:41:14  d: 6 row(s) returned

```

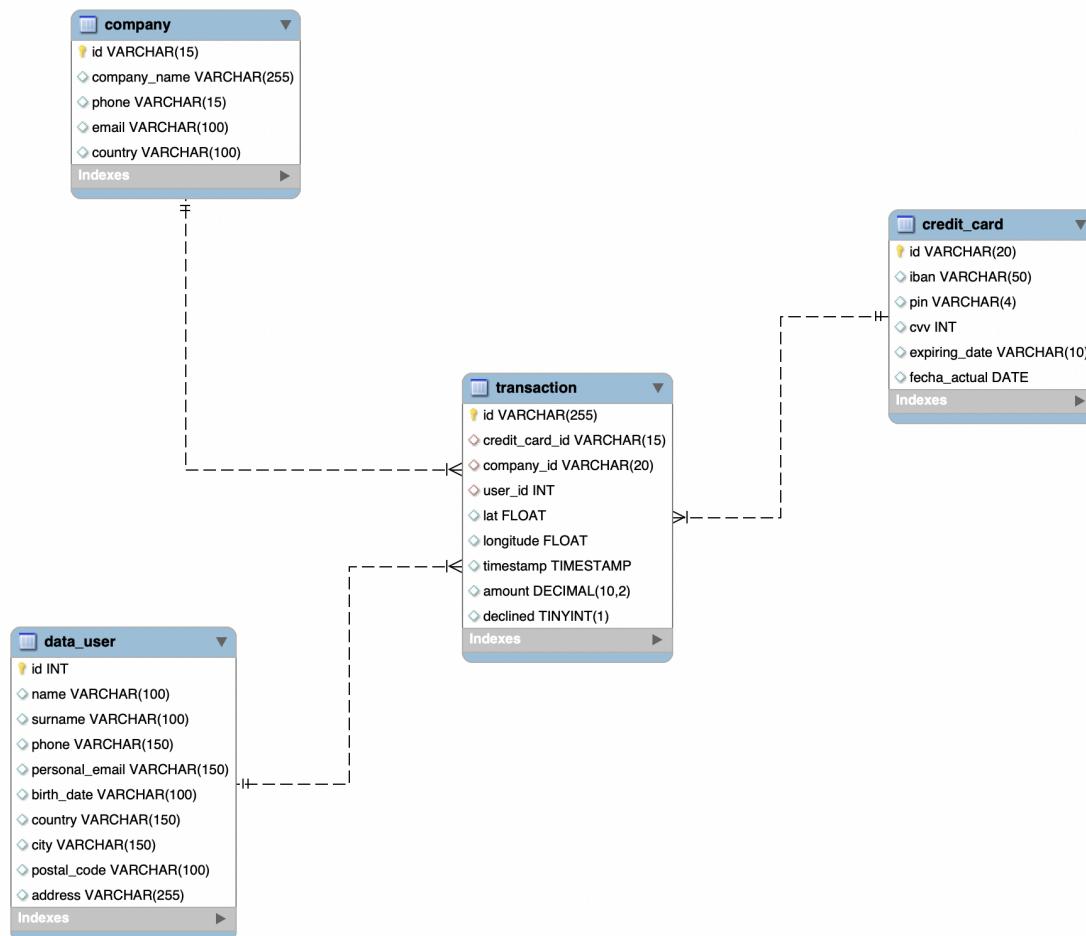
Después de todos los cambios, volveré con la restricción fk credit_card- transaction

```

844
845 -- volver con la restriccion en la tabla transaction referente a la tabla credit_card
846
847
848 alter table transaction
849 add constraint fk_transaction_credit_card
850 foreign key(credit_card_id) references credit_card(id);
851
100% 1:846
Action Output
Time Response
1327 22:40:10 ai 2/b rows(s) affected Records: 2/b Duplicates: 0 Warnings: 0 Duration / Fetch Time
0.026 sec
1328 22:41:14 di 6 row(s) returned 0.0010 sec / 0.00001...
1329 22:52:24 al 587 row(s) affected Records: 587 Duplicates: 0 Warnings: 0 0.066 sec

```

16) Modelo Final



Ejercicio 2

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

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

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

1) Elaboración del script de la vista informetecnico

```

863 •    create view `InformeTecnico` as
864     select t.id as 'Transaction ID', u.name as 'User name' , u.surname as 'User last name',
865     cc.iban as 'IBAN credit card', c.company_name as 'Company name of the transaction'
866     from transaction t
867     join data_user u
868     on t.user_id = u.id
869     join company c
870     on c.id = t.company_id
871     join credit_card cc
872     on cc.id = t.credit_card_id
873     order by t.id desc;
874
875 -- seleccionar los datos del informetecnico
876 •    select * from transactions.informetecnico;
  
```

Object Info **Session**

Column: Transaction ID

Definition: Transaction ID varchar(255)

Collation: utf8mb4_0900_ai_ci

Result Grid Filter Rows: 0 Search Export:

Transaction ID	User name	User last name	IBAN credit card	Company name of the transact...
FDC9CCCD-BE1E-4D01-460C-73A46F3A5A65	Linus	Willis	KW948533275478157886242055643	Nunc Interdum Incorporated
FD89051B-AE80-77DC-E450-B8083FB3D187	Hilda	Levy	LT053237077446561478	Maleuada PC
FD2E9597-414B-BEEC-E9AD-59AA7AB8A6290	Hedwig	Gilbert	GE8484851582810541526	Neque Telus Imperdiet Corp.
FC2EABA2-271D-2BDC-9E49-BD092373391	Hakeem	Alford	MD1234119852145401270486	Nunc Interdum Incorporated
FB07E0D6-BAB6-F5BC-0CA9-EA4B8760100C	Hedwig	Gilbert	MU4132333444534342541344788855	Mauris Id Inc.
FA76A80-8448-69AA-E892-426C2712621C	Slade	Poole	MT05WCF588662005771634583813	Arcu LLP
FA0DFFC-C1A7-E141-43D9-359A5BA7C83B	Hedwig	Gilbert	GE901792884338134463	Lorem Eu Incorporated
FA0A7D5-2773-8D72-4796-8624E1B9201	Hedwig	Gilbert	GT249785365330504847645975	Non Justo Corp.
FB33C09-C2B5-2444-18E1-826295628A8B	Sarah	Beck	VG148808794174845729577	Ut Semper Foundation
FDAC74B-2275-5A51-2414-8E417636998	Harper	Landry	VG148808794174845729577	Ut Semper Foundation
FG4SF7AA-07A0-0F84-7376-B9632981121B	Nora	Reeves	MD1234119852145401270486	Nunc Interdum Incorporated
FG4SF7AA-07A0-0F84-7376-B9632981121B	Ivan	Rosrite	CR7242477244339541538	Ut Semper Foundation

informetecnico 37

Action Output

Time	Response	Duration / Fetch Time
1s...	23:23:50 51 row(s) returned	0.0005 sec / 0.0014...
1s...	23:27:05 1 row(s) returned	0.00046 sec / 0.000...
1341	23:28:22 587 row(s) returned	0.0039 sec / 0.00016...

2) Verificar el id de la transacción añadido en el ejercicio 3, nivel 1

The screenshot shows a database query results interface. At the top, there is a SQL query:

```
880 • select * from informetecnico  
881 where `Transaction ID` = '108B1D1D-5B23-A76C-55EF-C568E49A99DD';
```

The results grid displays one row of data:

Transaction ID	User name	User last name	IBAN credit card	Company name of the transact...
108B1D1D-5B23-A76C-55EF-C568E49A99DD	HULL	HULL	HULL	HULL

Below the grid, a message indicates: "informetecnico 36". On the right side, there are several icons for different features: Result Grid, Form Editor, and Field Types. At the bottom, there is an "Action Output" section with three log entries:

Time	Response	Duration / Fetch Time
13... 23:23:37	1 row(s) affected	0.00029 sec
13... 23:23:50	587 row(s) returned	0.0085 sec / 0.00014...
13... 23:27:05	1 row(s) returned	0.00046 sec / 0.000...

Hasta que los recursos humanos informen sobre los datos del usuario 999, de la tarjeta de crédito CcU-9999 y de la compañía b-9999, los datos de la transaction '108B1D1D-5B23-A76C-55EF-C568E49A99DD' quedarán incompletos.