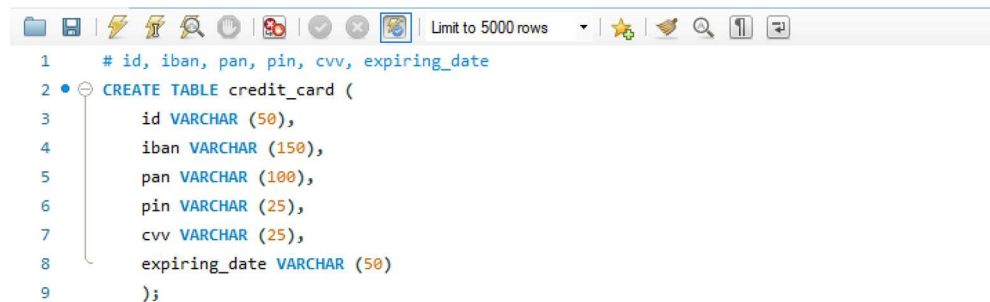


EXERCICIS SPRINT 3

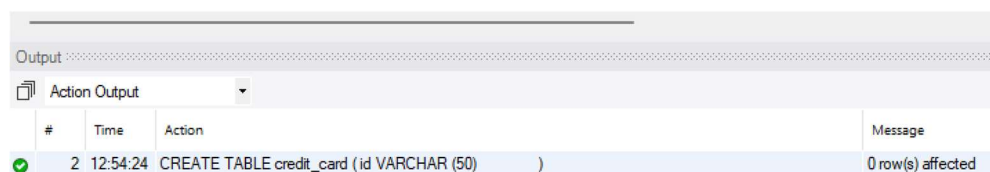
NIVELL 1

Exercici 1

He creat la taula “crèdit_card” amb els camps que conté d’arxiu “dades_introduir_credit” de la següent manera:



```
1 # id, iban, pan, pin, cvv, expiring_date
2 CREATE TABLE credit_card (
3     id VARCHAR (50),
4     iban VARCHAR (150),
5     pan VARCHAR (100),
6     pin VARCHAR (25),
7     cvv VARCHAR (25),
8     expiring_date VARCHAR (50)
9 );
```



Output			
Action Output			
#	Time	Action	Message
✓ 2	12:54:24	CREATE TABLE credit_card (id VARCHAR (50))	0 row(s) affected

He revisat quin tipus de dades eren per poder assignar el tipus que millor es correspongués a cada camp. La conclusió és que el tipus varchar és el que millor s’adapta, amb diferents extensions, fins i tot en el camp expiring_date perquè no té el format de data de MySQL: “00-00-000”. També podria haver considerat els camps pin i cvv com a integars (int).

Per introduir les dades, les he copiat de l’arxiu ja què està en sql i l’he executat al Workbench:

Limit to 5000 rows

1

-- Insertamos datos de credit_card

2

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

3

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

4

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

5

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

6

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

7

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

8

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

9

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

10

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

11

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

12

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

13

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

14

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

15

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

16

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

17

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

18

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

19

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

20

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

21

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

22

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

23

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

24

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

25

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

26

• INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

'CcU-2938', 'TR301950312213576817638661', '54244

'CcU-2945', 'DO26854763748537475216568689', '514

'CcU-2952', 'BG45IVQL52710525608255', '4556 453

'CcU-2959', 'CR7242477244335841535', '3724613773

'CcU-2966', 'BG72LKTQ15627628377363', '448566 88

'CcU-2973', 'PT87806228135092429456346', '544 58

'CcU-2980', 'DE39241881883086277136', '402400 71

'CcU-2987', 'GE89681434837748781813', '3763 7476

'CcU-2994', 'BH62714428368066765294', '344283273

'CcU-3001', 'CY49087426654774581266832110', '511

'CcU-3008', 'LU507216693616119230', '44857444644

'CcU-3015', 'PS119398216295715968342456821', '37

'CcU-3022', 'GT91695162850556977423121857', '516

'CcU-3029', 'AZ62317413982441418123739746', '342

'CcU-3036', 'AZ39336002925842865843941994', '376

'CcU-3043', 'TN6488143310514852179535', '455676

'CcU-3050', 'FR5167744369175836831854477', '4024

'CcU-3057', 'LU931822574697545215', '3484 621767

'CcU-3064', 'PS146965545449253377627273133', '34

'CcU-3071', 'N08923814763512', '3464 789562 2335

'CcU-3078', 'IS025127145884623279548733', '4539

'CcU-3085', 'BE63114723972437', '5266 3346 1135

'CcU-3092', 'RO65LSOD1166122125447487', '3488 75

'CcU-3099', 'PT26105275356823705537218', '448 55

'CcU-3106', 'AT684251637751136592', '34954714635

Output

Action Output

#

Time

Action

Message

279

13:18:03

INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

'CcU-4835', 'PT345...

1 row(s) affected

280

13:18:03

INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

'CcU-4842', 'SA215...

1 row(s) affected

Així queda la taula resultant:

Limit to 5000 rows

1

• SELECT * FROM transactions.credit_card;

Result Grid

Filter Rows:

Export:

Wrap Cell Contents:

	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	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

credit_card 1 x

Output

Action Output

#

Time

Action

Message

282

13:18:03

INSERT INTO credit_card (id, iban, pan, pin, cvv, expiring_date) VALUES (

'CcU-4856', 'TR373...

1 row(s) affected

283

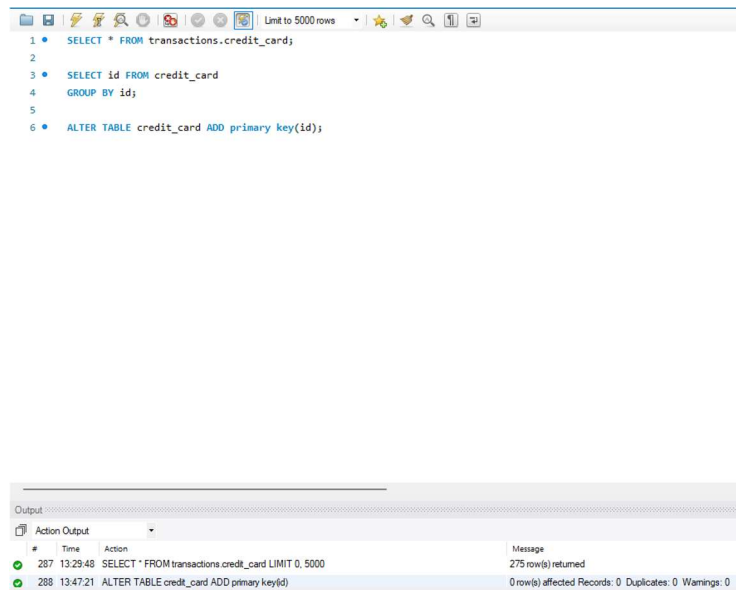
13:18:13

SELECT * FROM transactions.credit_card LIMIT 0, 5000

275 row(s) returned

2

Un cop revisades des dades d'aquesta taula, determino que la PK de la taula credit_card ha de ser el camp id:



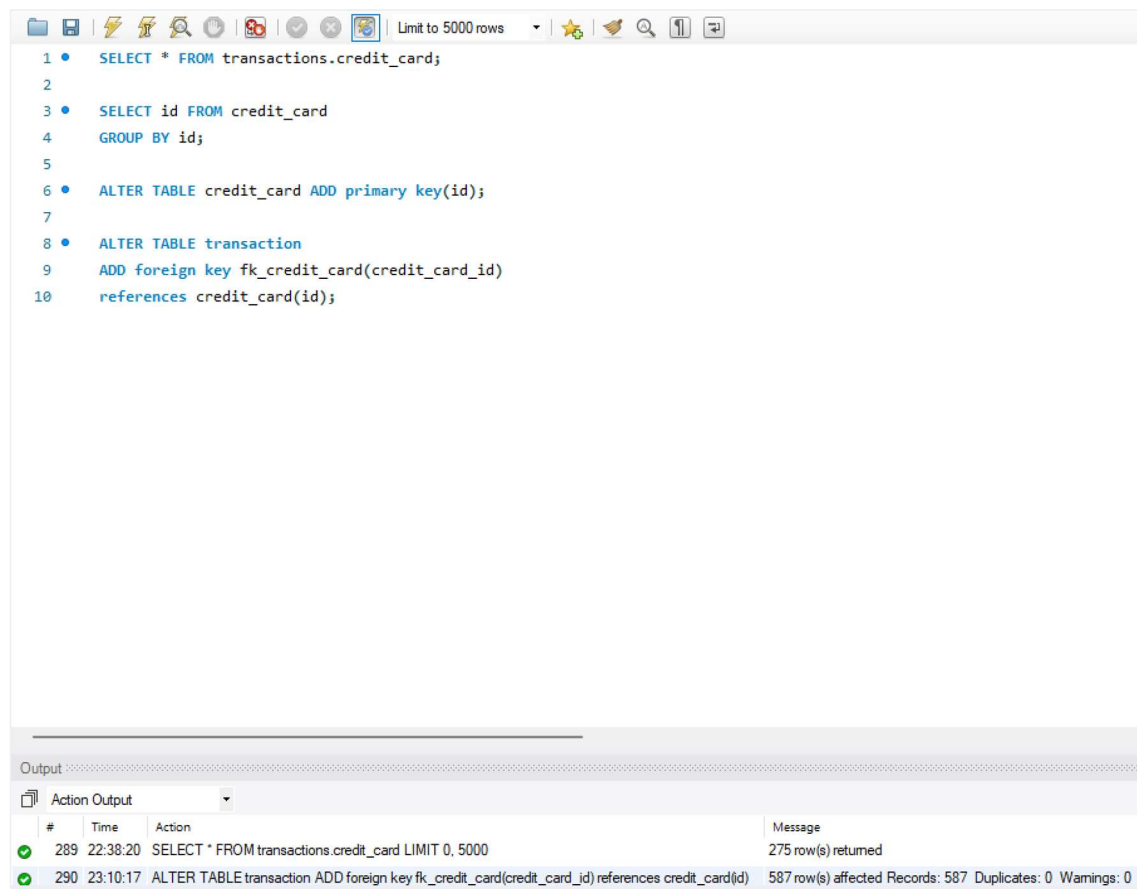
The screenshot shows a SQL IDE interface. The top pane contains the following SQL queries:

```
1 • SELECT * FROM transactions.credit_card;
2
3 • SELECT id FROM credit_card
  GROUP BY id;
4
5
6 • ALTER TABLE credit_card ADD primary key(id);
```

The bottom pane shows the output of these queries:

#	Time	Action	Message
287	13:29:48	SELECT * FROM transactions.credit_card LIMIT 0, 5000	275 row(s) returned
288	13:47:21	ALTER TABLE credit_card ADD primary key(id)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0

I es relaciona amb la taula Transaction per l'id, fent que el camp credit_card_id sigui la FK de transaction que es relaciona amb la PK (id) de la taula credit_card:



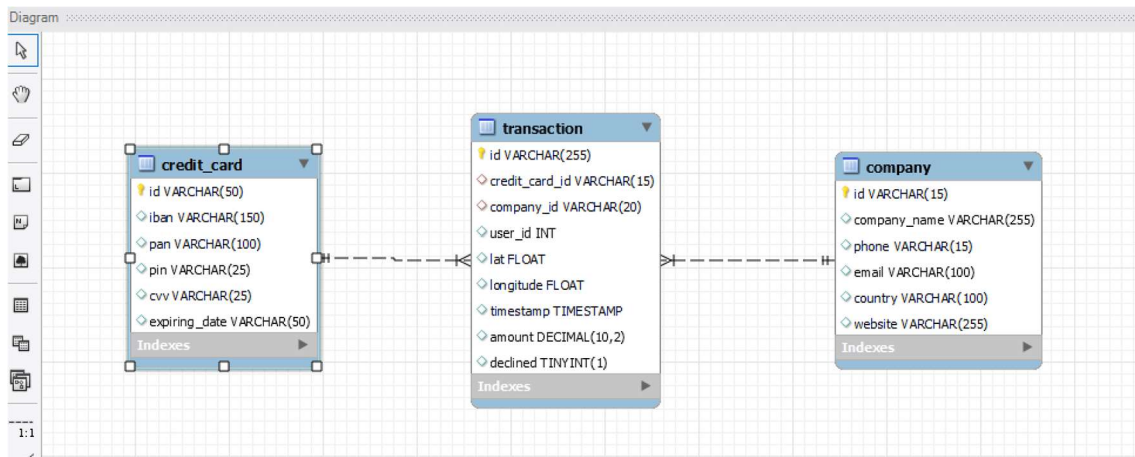
The screenshot shows a SQL IDE interface. The top pane contains the following SQL queries:

```
1 • SELECT * FROM transactions.credit_card;
2
3 • SELECT id FROM credit_card
  GROUP BY id;
4
5
6 • ALTER TABLE credit_card ADD primary key(id);
7
8 • ALTER TABLE transaction
9   ADD foreign key fk_credit_card(credit_card_id)
10  references credit_card(id);
```

The bottom pane shows the output of these queries:

#	Time	Action	Message
289	22:38:20	SELECT * FROM transactions.credit_card LIMIT 0, 5000	275 row(s) returned
290	23:10:17	ALTER TABLE transaction ADD foreign key fk_credit_card(credit_card_id) references credit_card(id)	587 row(s) affected Records: 587 Duplicates: 0 Warnings: 0

El diagrama d'aquestes tres taules relacionals és el següent:



La taula transaction és la taula de fets on estan les dades que es van introduint a mesura que s'efectuen les transaccions electròniques. Té com a PK el camp id. Es relaciona amb la taula de dimensions company de N (molts) a 1, on pot haver montes transaccions per a una sola companyia, amb la FK del camp company_id que es relaciona amb el camp id de la taula company, i permet fer relacions entre elles; La taula transaction també té una altre FK, el camp credit_card_id (les dades le hem creades i introduïdes en els passos anteriors des de l'arxiu .sql), i què igualment es tracta d'una relació de N a 1, on pot haver moltes transaccions per a una sola targeta de crèdit, però no moltes targetes per a una sola transacció.

Exercici 2 – registre id original és:

Limit to 5000 rows

```

1 • SELECT * FROM transactions.credit_card;
2
3 • SELECT id FROM credit_card
4   GROUP BY id;
5
6 • ALTER TABLE credit_card ADD primary key(id);
7
8 • ALTER TABLE transaction
9   ADD foreign key fk_credit_card(credit_card_id)
10  references credit_card(id);
11
12 • SELECT * FROM credit_card
13   WHERE id = "CcU-2938";
    
```

id	iban	pan	pin	cvv	expiring_date
CcU-2938	TR301950312213576817638661	5424465566813633	3257	984	10/30/22

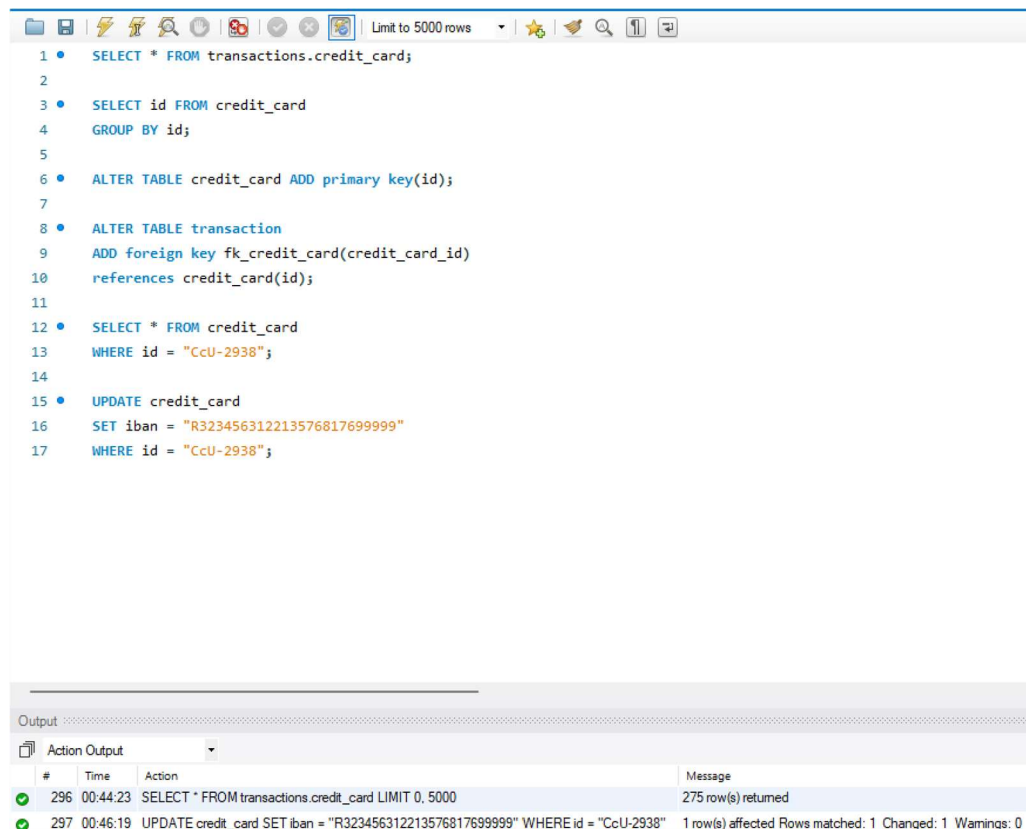
credit_card 7 x

Output

Action Output

#	Time	Action	Message
✓ 293	00:39:12	SELECT * FROM transactions.credit_card LIMIT 0, 5000	275 row(s) returned
✓ 294	00:39:26	SELECT * FROM credit_card WHERE id = "CcU-2938" LIMIT 0, 5000	1 row(s) returned

Modificació:



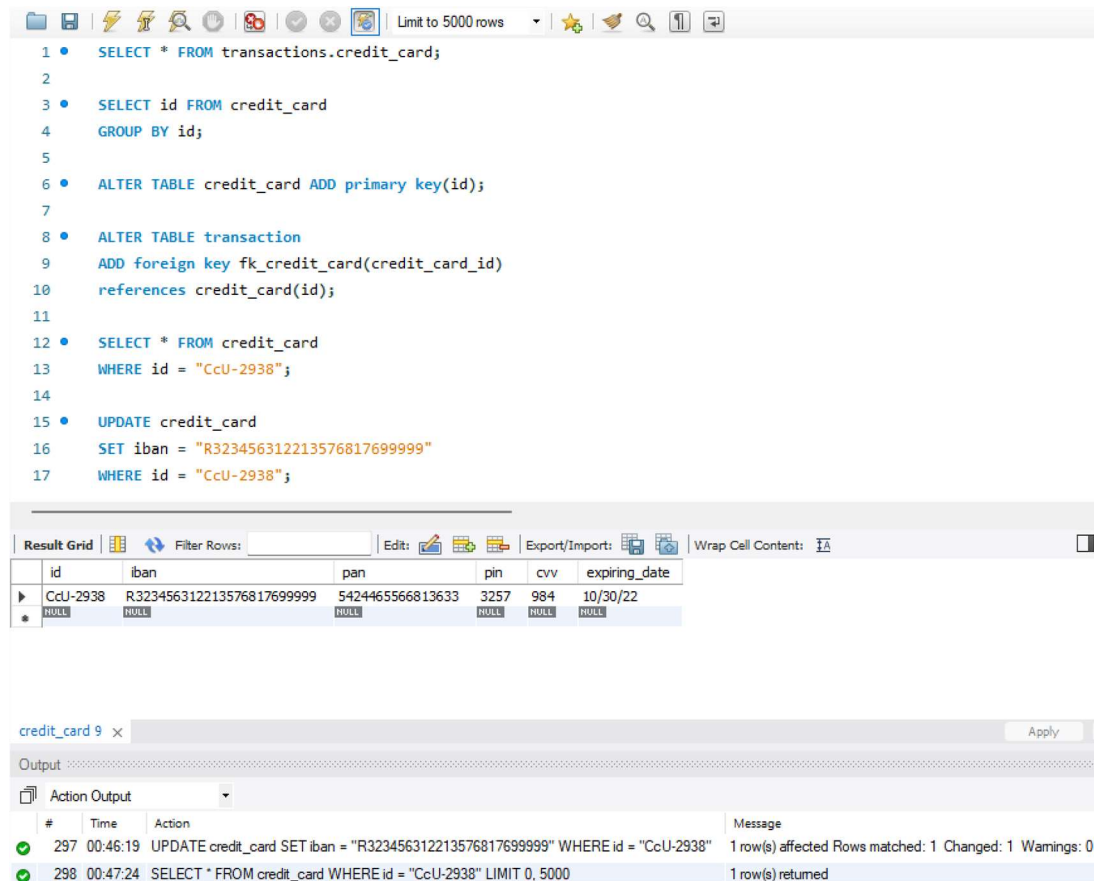
The screenshot shows a database management tool interface. The top panel displays a series of SQL queries:

- `SELECT * FROM transactions.credit_card;`
-
- `SELECT id FROM credit_card`
- `GROUP BY id;`
-
- `ALTER TABLE credit_card ADD primary key(id);`
-
- `ALTER TABLE transaction`
- `ADD foreign key fk_credit_card(credit_card_id)`
- `references credit_card(id);`
-
- `SELECT * FROM credit_card`
- `WHERE id = "CcU-2938";`
-
- `UPDATE credit_card`
- `SET iban = "R323456312213576817699999"`
- `WHERE id = "CcU-2938";`

 The bottom panel shows the 'Action Output' table with the following data:

#	Time	Action	Message
296	00:44:23	SELECT * FROM transactions.credit_card LIMIT 0, 5000	275 row(s) returned
297	00:46:19	UPDATE credit_card SET iban = "R323456312213576817699999" WHERE id = "CcU-2938"	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0

I el registre queda canviat de la següent manera:



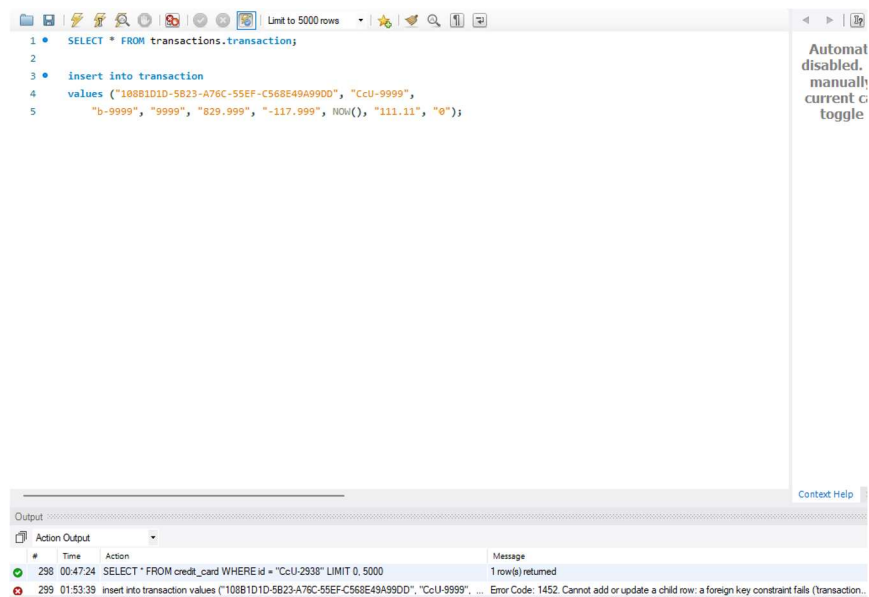
The screenshot shows the same database management tool interface. The top panel displays the same SQL queries as the previous screenshot. The bottom panel shows the 'Result Grid' with the following data:

id	iban	pan	pin	cvv	expiring_date
CcU-2938	R323456312213576817699999	5424465566813633	3257	984	10/30/22
*	NULL	NULL	NULL	NULL	NULL

 The bottom panel also shows the 'Action Output' table with the following data:

#	Time	Action	Message
297	00:46:19	UPDATE credit_card SET iban = "R323456312213576817699999" WHERE id = "CcU-2938"	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0
298	00:47:24	SELECT * FROM credit_card WHERE id = "CcU-2938" LIMIT 0, 5000	1 row(s) returned

Exercici 3



Al introduir el nou registre a la taula transaction dona un error relacionat amb la FK, que està connectant una dada nova (amb el valor b-9999) que és la FK de la taula transaction (company_id), amb la PK de la taula company, que no té aquest valor descrit a cap dels seus id.

Per tant, coma solució per poder introduir aquest registre primer hem de treure la restricció de FK de la taula transaction, per a poder introduir les noves dades sense que hi hagi errors relacionats amb la taula company:



I així queda la informació introduïda:

The screenshot shows a database management tool interface. At the top, there's a toolbar with icons for file operations, search, and execution. Below the toolbar, a SQL query is entered in a text area:

```
1 • SELECT * FROM transactions.transaction;
2
3 • insert into transaction
4 • values ("10881D1D-5B23-A76C-55EF-C568E49A99DD", "CcU-9999",
5 • "b-9999", "9999", "829.999", "-117.999", NOW(), "111.11", "0");
6
7 • SET FOREIGN_KEY_CHECKS = 0;
8
9 • select * FROM transaction
10 WHERE company_id = "b-9999";
```

Below the query editor, the "Result Grid" is displayed, showing the results of the queries. The first query returns a single row with various fields, including id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, and declined. The second query returns a single row with the same fields, but the company_id is "b-9999".

At the bottom, the "Output" pane shows the execution log:

#	Time	Action	Message
304	02:19:25	SET FOREIGN_KEY_CHECKS = 0	0 row(s) affected
305	02:19:36	insert into transaction values ("10881D1D-5B23-A76C-55EF-C568E49A99DD", "CcU-9999", ...	1 row(s) affected
306	02:23:55	select * FROM transaction WHERE company_id = "b-9999" LIMIT 0, 5000	1 row(s) returned

Ara hem de tenir en compta que està desactivada la relació de PK I FK entre les taules company i transactions, si no que només s'ha desactivat la verificació que té la relació de PK-FK.

Exercici 4: Aquesta es la taula credit_card abans de la eliminació de la columna pan:

The screenshot shows a database management tool interface. At the top, there's a toolbar with icons for file operations, search, and execution. Below the toolbar, a SQL query is entered in a text area:

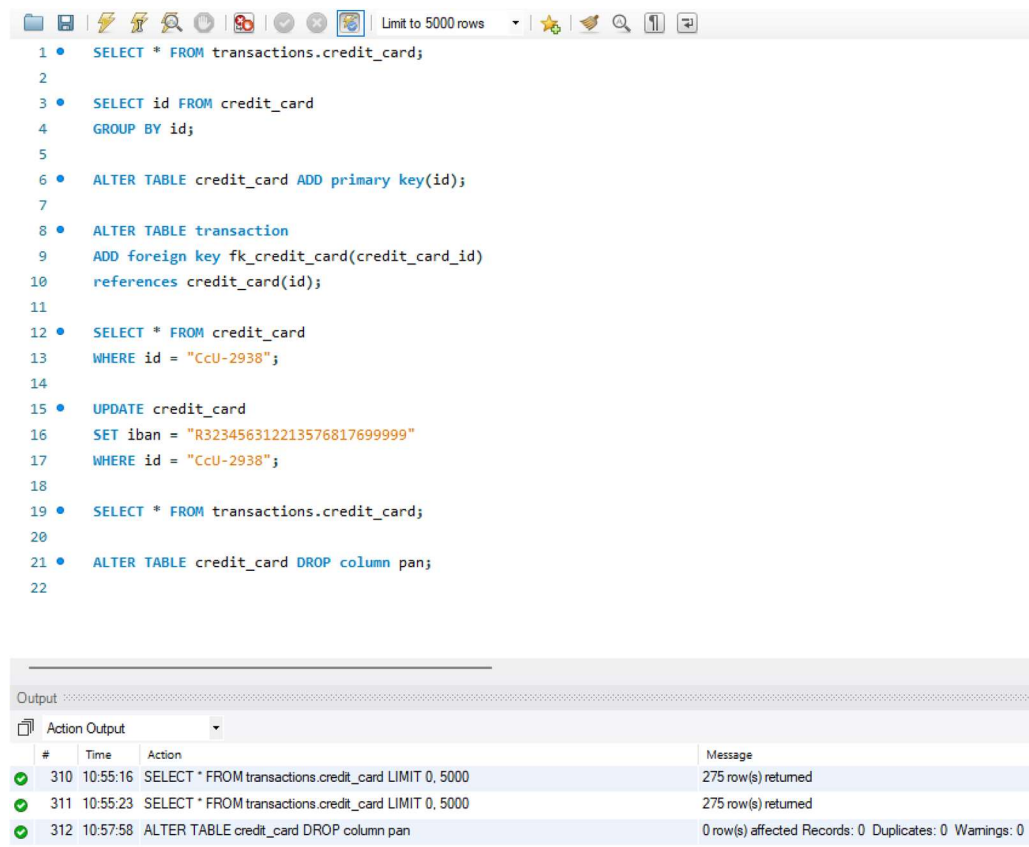
```
5
6 • ALTER TABLE credit_card ADD primary key(id);
7
8 • ALTER TABLE transaction
9 • ADD foreign key fk_credit_card(credit_card_id)
10 • references credit_card(id);
11
12 • SELECT * FROM credit_card
13 • WHERE id = "CcU-2938";
14
15 • UPDATE credit_card
16 • SET iban = "R323456312213576817699999"
17 • WHERE id = "CcU-2938";
18
19 • SELECT * FROM transactions.credit_card;
20
```

Below the query editor, the "Result Grid" is displayed, showing the results of the queries. The first query returns a single row with fields id, iban, pan, pin, cvv, and expiring_date. The second query returns a single row with the same fields, but the iban is "R323456312213576817699999".

At the bottom, the "Output" pane shows the execution log:

#	Time	Action	Message
306	02:23:55	select * FROM transaction WHERE company_id = "b-9999" LIMIT 0, 5000	1 row(s) returned
307	10:10:56	SELECT * FROM transactions.credit_card LIMIT 0, 5000	275 row(s) returned
308	10:46:17	SELECT * FROM transactions.credit_card LIMIT 0, 5000	275 row(s) returned

Per demanem la eliminació:

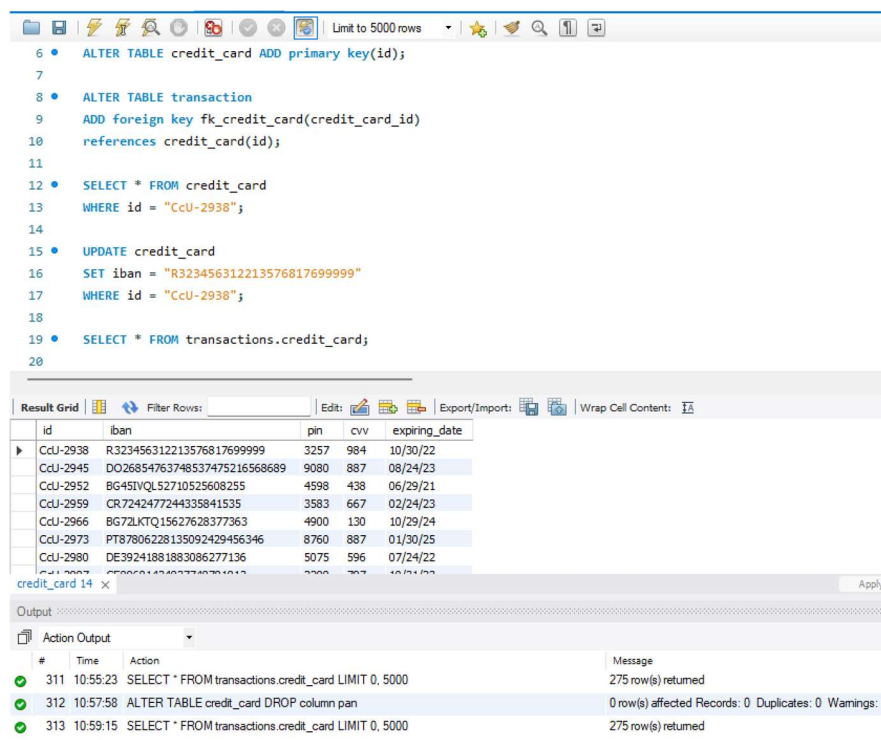


```
1 • SELECT * FROM transactions.credit_card;
2
3 • SELECT id FROM credit_card
4   GROUP BY id;
5
6 • ALTER TABLE credit_card ADD primary key(id);
7
8 • ALTER TABLE transaction
9   ADD foreign key fk_credit_card(credit_card_id)
10  references credit_card(id);
11
12 • SELECT * FROM credit_card
13   WHERE id = "CcU-2938";
14
15 • UPDATE credit_card
16   SET iban = "R323456312213576817699999"
17   WHERE id = "CcU-2938";
18
19 • SELECT * FROM transactions.credit_card;
20
21 • ALTER TABLE credit_card DROP column pan;
22
```

Output

#	Time	Action	Message
310	10:55:16	SELECT * FROM transactions.credit_card LIMIT 0, 5000	275 row(s) returned
311	10:55:23	SELECT * FROM transactions.credit_card LIMIT 0, 5000	275 row(s) returned
312	10:57:58	ALTER TABLE credit_card DROP column pan	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0

Aquest és el resultat després de l'eliminació de la columna pan:



```
6 • ALTER TABLE credit_card ADD primary key(id);
7
8 • ALTER TABLE transaction
9   ADD foreign key fk_credit_card(credit_card_id)
10  references credit_card(id);
11
12 • SELECT * FROM credit_card
13   WHERE id = "CcU-2938";
14
15 • UPDATE credit_card
16   SET iban = "R323456312213576817699999"
17   WHERE id = "CcU-2938";
18
19 • SELECT * FROM transactions.credit_card;
20
```

Result Grid

	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

credit_card 14 x

Output

#	Time	Action	Message
311	10:55:23	SELECT * FROM transactions.credit_card LIMIT 0, 5000	275 row(s) returned
312	10:57:58	ALTER TABLE credit_card DROP column pan	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0
313	10:59:15	SELECT * FROM transactions.credit_card LIMIT 0, 5000	275 row(s) returned