# Tasca S3.01. Manipulació de taules

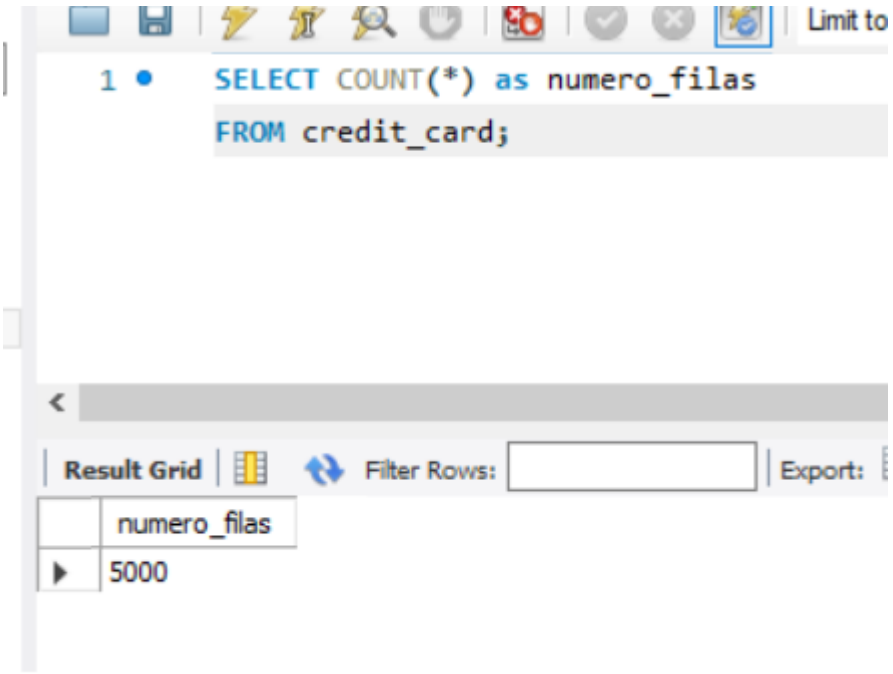
## Nivel 1.

### Ejercicio 1.

```
CREATE TABLE IF NOT EXISTS credit_card (
    id VARCHAR(15) PRIMARY KEY,
    iban VARCHAR(34) NOT NULL UNIQUE,
    pan VARCHAR(19) NOT NULL UNIQUE,
    pin VARCHAR(4) NOT NULL,
    cvv VARCHAR(4) NOT NULL,
    expiring_date VARCHAR(10) NOT NULL
);
```

**Resultado:**

SELECT COUNT(*) as numero_filas FROM credit_card;




```
ALTER TABLE transaction
ADD CONSTRAINT fk_transaction_credit_card
FOREIGN KEY (credit_card_id)
REFERENCES credit_card(id);
```

**Resultado (nuevo DDL):**

```
CREATE TABLE `transaction` (
  `id` varchar(255) NOT NULL,
  `credit_card_id` varchar(15) DEFAULT NULL,
  `company_id` varchar(20) DEFAULT NULL,
  `user_id` int DEFAULT NULL,
  `lat` float DEFAULT NULL,
  `longitude` float DEFAULT NULL,
  `timestamp` timestamp NULL DEFAULT NULL,
  `amount` decimal(10,2) DEFAULT NULL,
  `declined` tinyint(1) DEFAULT NULL,
  PRIMARY KEY (`id`),
  KEY `company_id` (`company_id`),
  KEY `fk_transaction_credit_card` (`credit_card_id`),
  CONSTRAINT `fk_transaction_credit_card` FOREIGN KEY (`credit_card_id`) REFERENCES `credit_card` (`id`),
  CONSTRAINT `transaction_ibfk_1` FOREIGN KEY (`company_id`) REFERENCES `company` (`id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
```

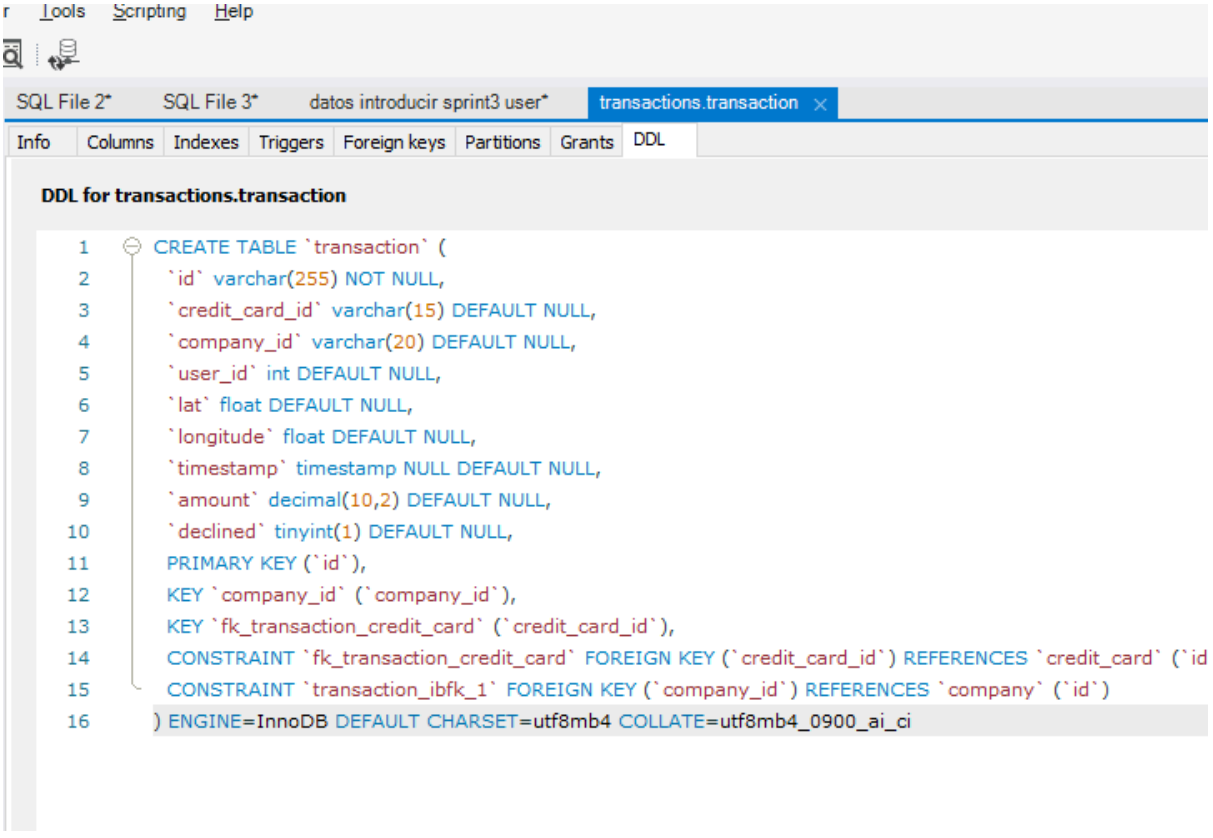
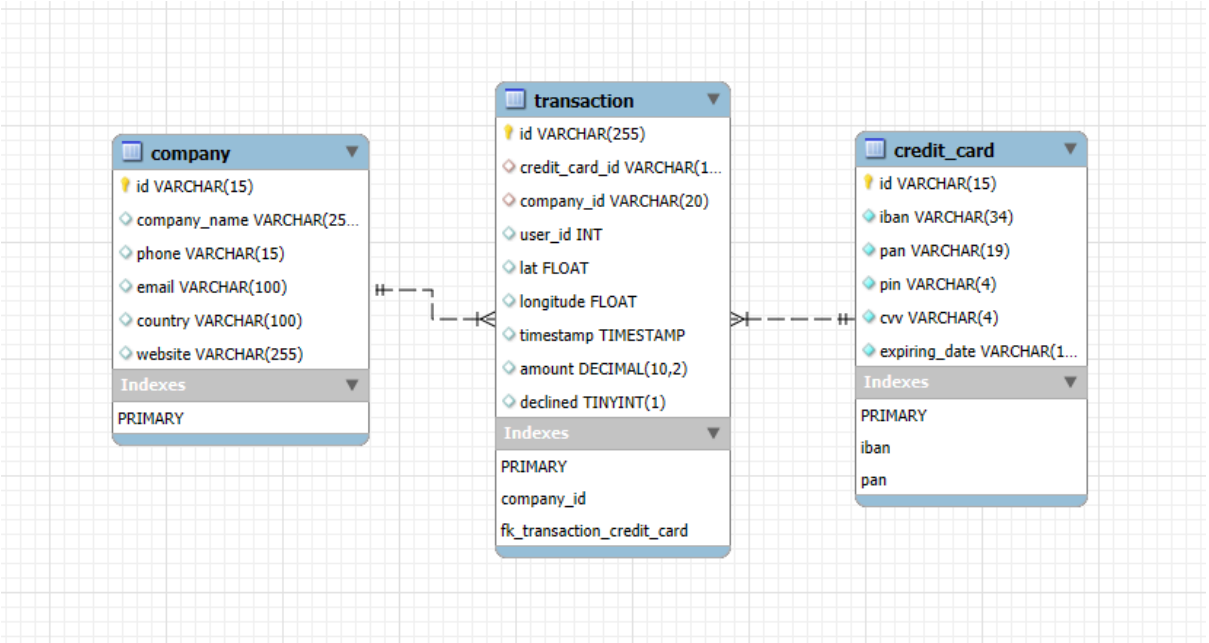


**Diagrama de relación:**




**Descripción del diagrama:**
El diagrama de relación se ha ampliado para abarcar la entidad credit_card. El sistema actualmente se basa en tres tablas relacionadas.

Función y descripción de la nueva tabla credit_card:
tabla que almacena detalles cruciales sobre las tarjetas de crédito usadas en las transacciones.

se compone de 6 campos:

id -> PK de la tabla. identificador único para cada tarjeta.

iban -> número de cuenta bancaria internacional. Único.

pan -> número principal de la tarjeta. Único.

pin -> código PIN de la tarjeta.

cvv -> código de verificación de la tarjeta.

expiring_date -> fecha de caducidad de la tarjeta.

La tabla transaction ha sido modificada, añadiendo una relación con credit_card.

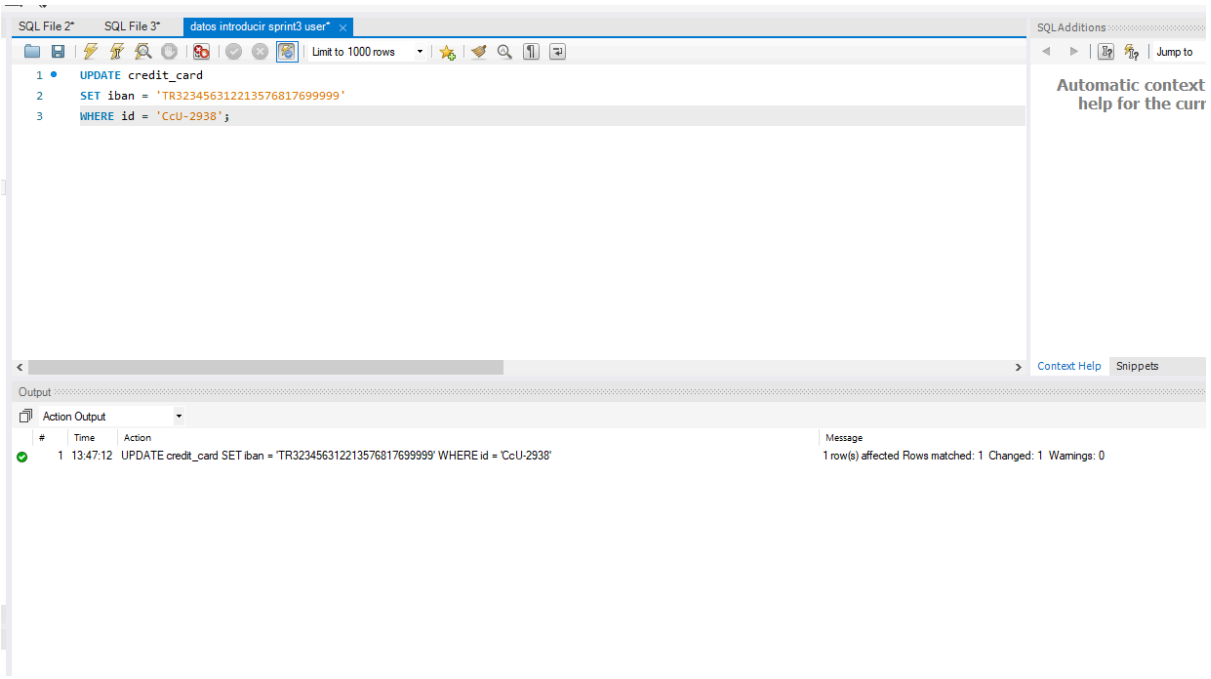
Las relaciones constan, funcionalmente, de dos:

- De transaction a credit_card: relacionando cada transacción con una tarjeta bancaria.
- De transaction a company: relacionando cada transacción a una empresa.

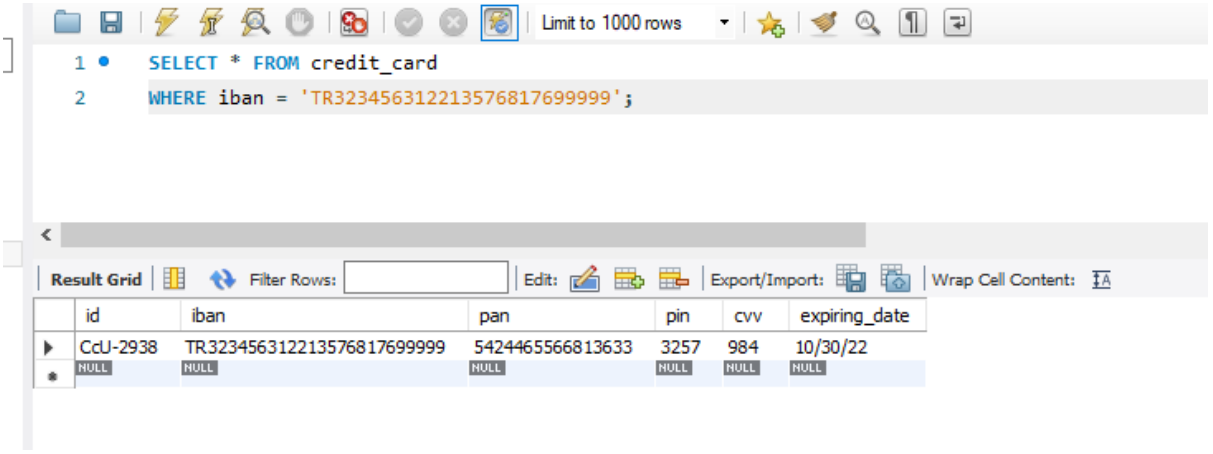
No existen más restricciones en este esquema; a parte de las PK y FK ya nombradas.

## Ejercicio 2

UPDATE credit_card
SET iban = 'TR323456312213576817699999'
WHERE id = 'CcU-2938';

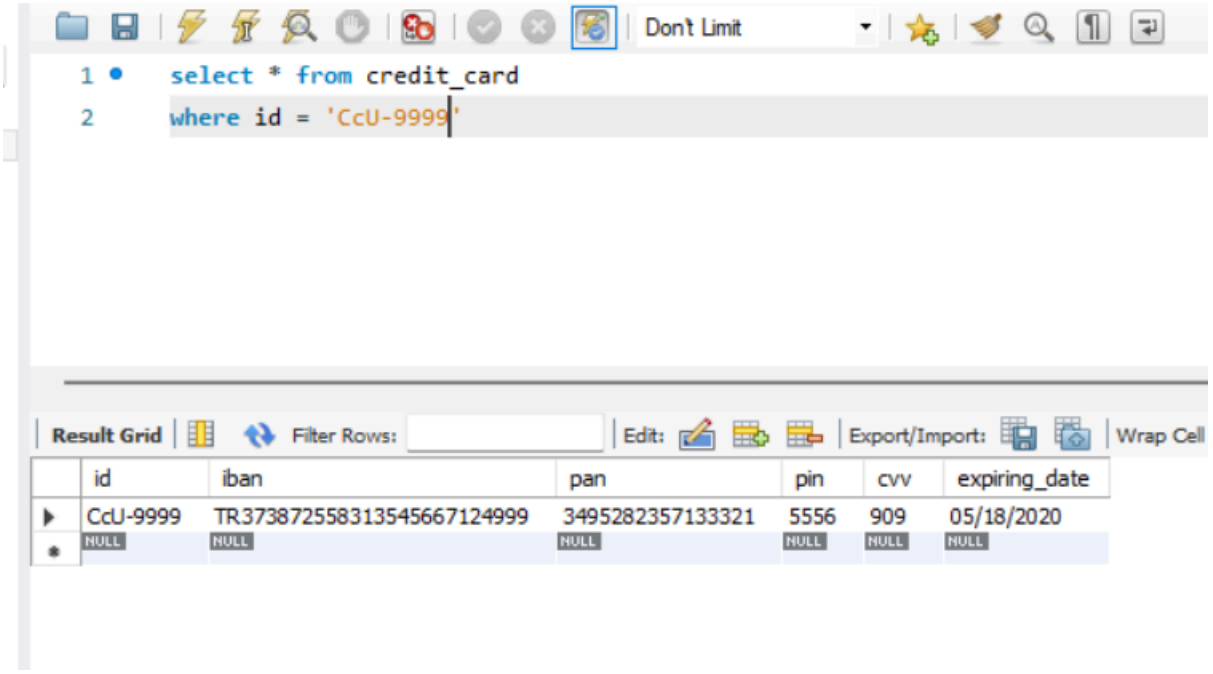



**Resultado:**
SELECT * FROM credit_card
WHERE iban = 'TR323456312213576817699999';

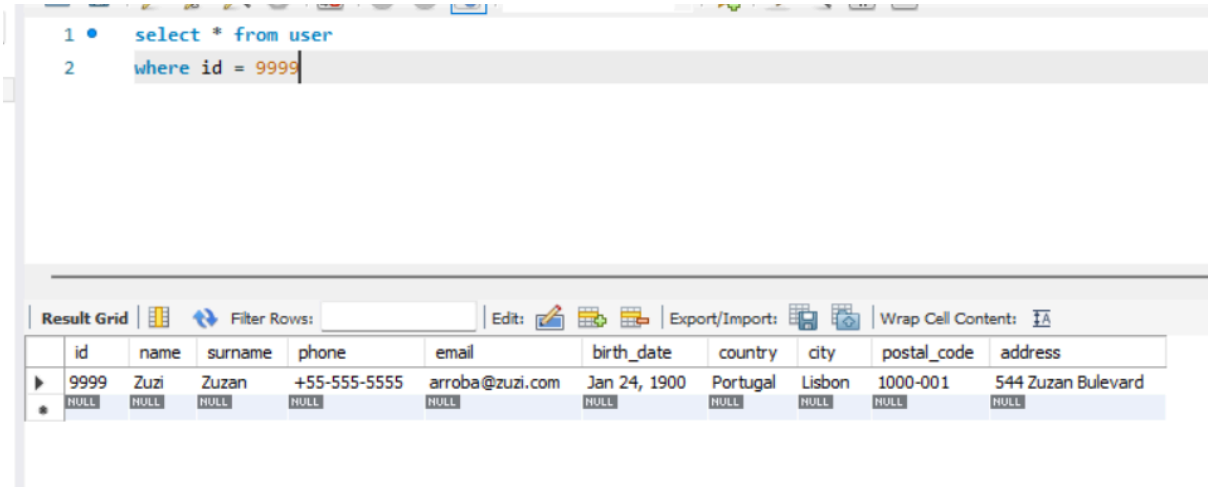


**Ejercicio 3**

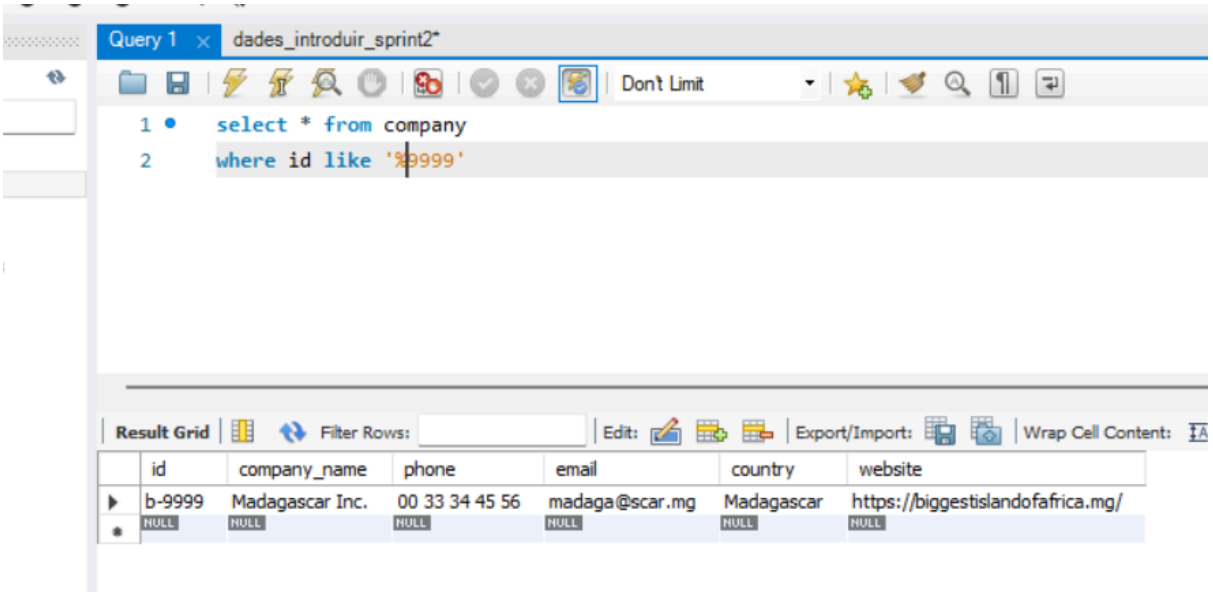
Para hacer el insert, cree registros en credit_card:




user:



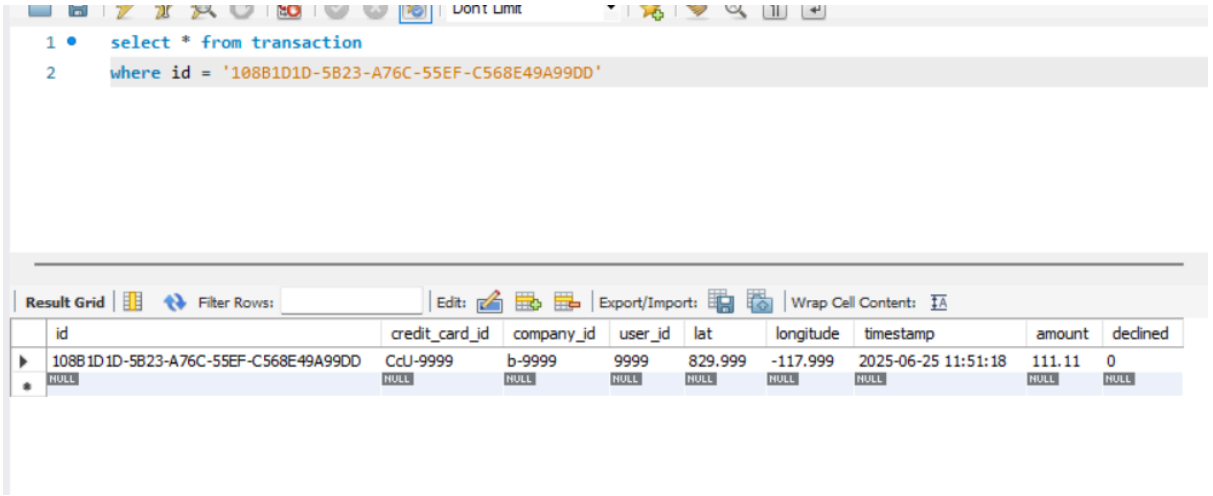
y company:




Las queries de los INSERT de otras tablas no están compartidas porque usé la interfaz gráfica para insertar más rápido.

```
INSERT INTO transaction (
    id,
    credit_card_id,
    company_id,
    user_id,
    lat,
    longitude,
    timestamp,
    amount,
    declined
) VALUES (
    '108B1D1D-5B23-A76C-55EF-C568E49A99DD',
    'CcU-9999',
    'b-9999',
    9999,
    829.999,
    -117.999,
    NOW(),
    111.11,
    FALSE
);
```

**Resultado:**



```
select * from transaction
where id = '108B1D1D-5B23-A76C-55EF-C568E49A99DD'
```

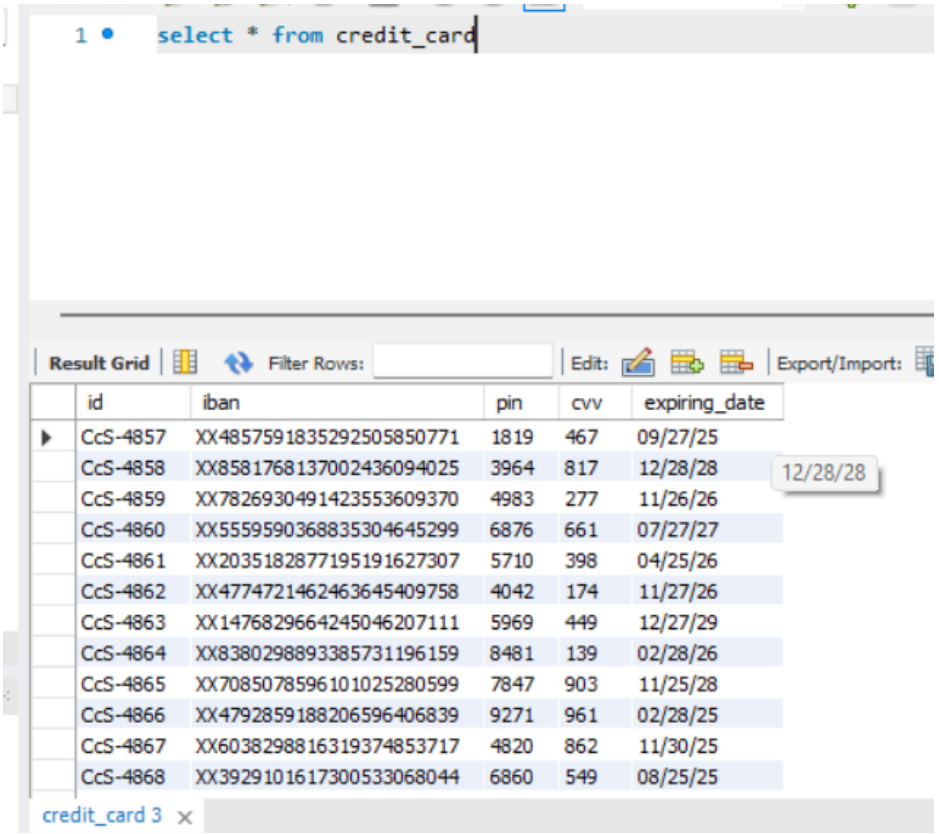
Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

| 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 | 2025-06-25 11:51:18 | 111.11 | 0 |
| NULL | NULL | NULL | NULL | NULL | NULL | NULL | NULL | NULL |

**Ejercicio 4**

ALTER TABLE credit_card
DROP COLUMN pan;

**Resultado:**



```
select * from credit_card
```

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

| id | iban | pin | cvv | expiring_date |
|---|---|---|---|---|
| CcS-4857 | XX4857591835292505850771 | 1819 | 467 | 09/27/25 |
| CcS-4858 | XX8581768137002436094025 | 3964 | 817 | 12/28/28 |
| CcS-4859 | XX7826930491423553609370 | 4983 | 277 | 11/26/26 |
| CcS-4860 | XX55595903688353046452 99 | 6876 | 661 | 07/27/27 |
| CcS-4861 | XX20351828771951916273 07 | 5710 | 398 | 04/25/26 |
| CcS-4862 | XX47747214624636454097 58 | 4042 | 174 | 11/27/26 |
| CcS-4863 | XX14768296642450462071 11 | 5969 | 449 | 12/27/29 |
| CcS-4864 | XX8380298893385731196159 | 8481 | 139 | 02/28/26 |
| CcS-4865 | XX7085078596101025280599 | 7847 | 903 | 11/25/28 |
| CcS-4866 | XX4792859188206596406839 | 9271 | 961 | 02/28/25 |
| CcS-4867 | XX6038298816319374853717 | 4820 | 862 | 11/30/25 |
| CcS-4868 | XX3929101617300533068044 | 6860 | 549 | 08/25/25 |

12/28/28

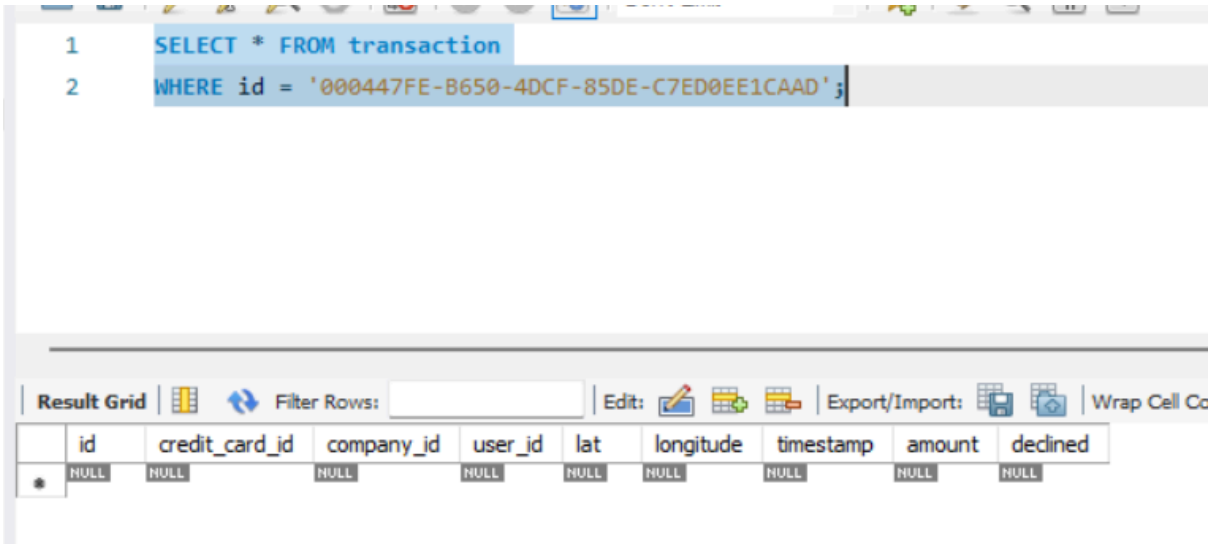
credit_card 3

## Nivel 2

### Ejercicio 1

DELETE FROM transaction
WHERE id = '000447FE-B650-4DCF-85DE-C7ED0EE1CAAD';

**Resultado:**




### Ejercicio 2

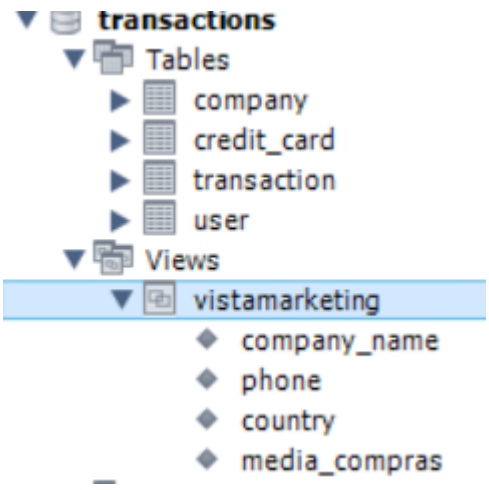
CREATE VIEW VistaMarketing AS
SELECT c.company_name, c.phone, c.country, AVG(t.amount) AS media_compras
FROM company c JOIN transaction t
ON c.id = t.company_id
WHERE t.declined = 0
AND t.amount > 0
GROUP BY c.company_name, c.phone, c.country;

**Resultado:**
SELECT * FROM VistaMarketing
ORDER BY media_compras DESC;

```
1 •  SELECT * FROM vistamarketing
2    ORDER BY media_compras DESC;
```

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

| company_name | phone | country | media_compras |
|---|---|---|---|
| Ac Fermentum Incorporated | 06 85 56 52 33 | Germany | 284.911333 |
| Pretium Neque Corp. | 07 77 48 55 28 | Australia | 275.578064 |
| Urna Convallis Associates | 06 01 24 77 04 | United States | 273.566925 |
| At Associates | 09 56 61 10 65 | New Zealand | 272.736985 |
| Metus Vitae Associates | 08 25 44 40 66 | Australia | 270.051876 |
| Aliquet Diam Limited | 02 76 61 47 46 | United States | 269.291145 |
| Nec Luctus LLC | 02 14 71 75 73 | Norway | 268.604837 |
| Neque Tellus Incorporated | 04 43 18 34 19 | Ireland | 267.563349 |
| Cras Consulting | 07 50 10 85 63 | Belgium | 267.382797 |
| Sed LLC | 01 63 16 26 52 | Belgium | 266.607351 |
| Eget Ipsum Ltd | 03 67 44 56 72 | United States | 266.266545 |
| Tortor Nunc Commodo Com... | 05 35 92 77 16 | United States | 266.264375 |




**Ejercicio 3**

SELECT * FROM VistaMarketing
WHERE country = 'Germany'
ORDER BY media_compras DESC;

**Resultado:**

```
1 •  SELECT * FROM vistamarketing
2    WHERE country = 'Germany'
3    ORDER BY media_compras DESC;
```

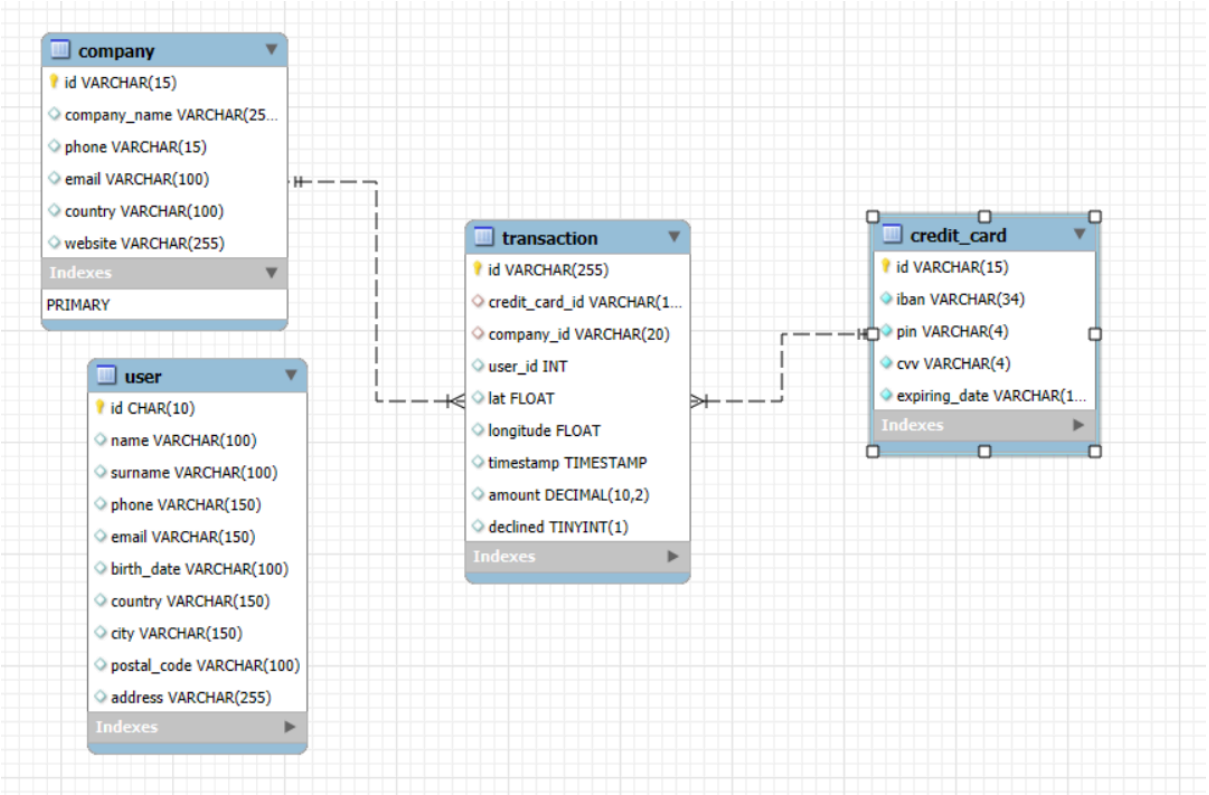
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

| company_name | phone | country | media_compras |
|---|---|---|---|
| Ac Fermentum Incorporated | 06 85 56 52 33 | Germany | 284.911333 |
| Nunc Interdum Incorporated | 05 18 15 48 13 | Germany | 259.319156 |
| Convallis In Incorporated | 06 66 57 29 50 | Germany | 257.693651 |
| Ac Industries | 09 34 65 40 60 | Germany | 255.169777 |
| Rutrum Non Inc. | 02 66 31 61 09 | Germany | 255.137959 |
| Auctor Mauris Corp. | 05 62 87 14 41 | Germany | 254.675099 |
| Augue Foundation | 06 88 43 15 63 | Germany | 253.564644 |
| Aliquam PC | 01 45 73 52 16 | Germany | 252.958601 |

## Nivel 3

### Ejercicio 1

**Diagrama antes de los cambios:**




**Cambios efectuados:**

**Tabla company:**

```
– eliminar columna website de company:
ALTER TABLE company
DROP COLUMN website;
```

**Tabla transaction:**

```
– modificar el largo máximo del campo credit_card_id. Supongo es que 20, o 25 quizás:
ALTER TABLE transaction
MODIFY credit_card_id VARCHAR(25);

– añadimos foreign key desde transaction a id:
ALTER TABLE transaction
ADD CONSTRAINT fk_transaction_user
```

```
FOREIGN KEY (user_id)
REFERENCES user(id);
```

**Tabla credit_card:**

```
– modificar largo máximo de id:
ALTER TABLE credit_card
MODIFY iban VARCHAR(50);

– modificar largo máximo de iban:
ALTER TABLE credit_card
MODIFY expiring_date VARCHAR(20);

– para modificar el id, primero borramos la FK afectada por la columna:
ALTER TABLE transaction
DROP FOREIGN KEY fk_transaction_credit_card;

– modificamos la columna id:
ALTER TABLE credit_card
MODIFY id VARCHAR(20);

– volvemos a a añadir la FK:
ALTER TABLE transaction
ADD CONSTRAINT fk_transaction_credit_card
FOREIGN KEY (credit_card_id)
REFERENCES credit_card(id);

– modificar el tipo de dato de cvv:
ALTER TABLE credit_card
MODIFY cvv INT;

– añadir columna fecha_actual (con la fecha actual por defecto):
ALTER TABLE credit_card
ADD COLUMN fecha_actual DATETIME DEFAULT CURRENT_TIMESTAMP;

– modificamos el tipo de dato de fecha_actual (un descuido):
ALTER TABLE credit_card
MODIFY fecha_actual DATE;

– modificamos el tipo de dato de expiring_date (creo que es VARCHAR(20)):
ALTER TABLE credit_card
MODIFY expiring_date VARCHAR(20);
```

**Tabla  user:**

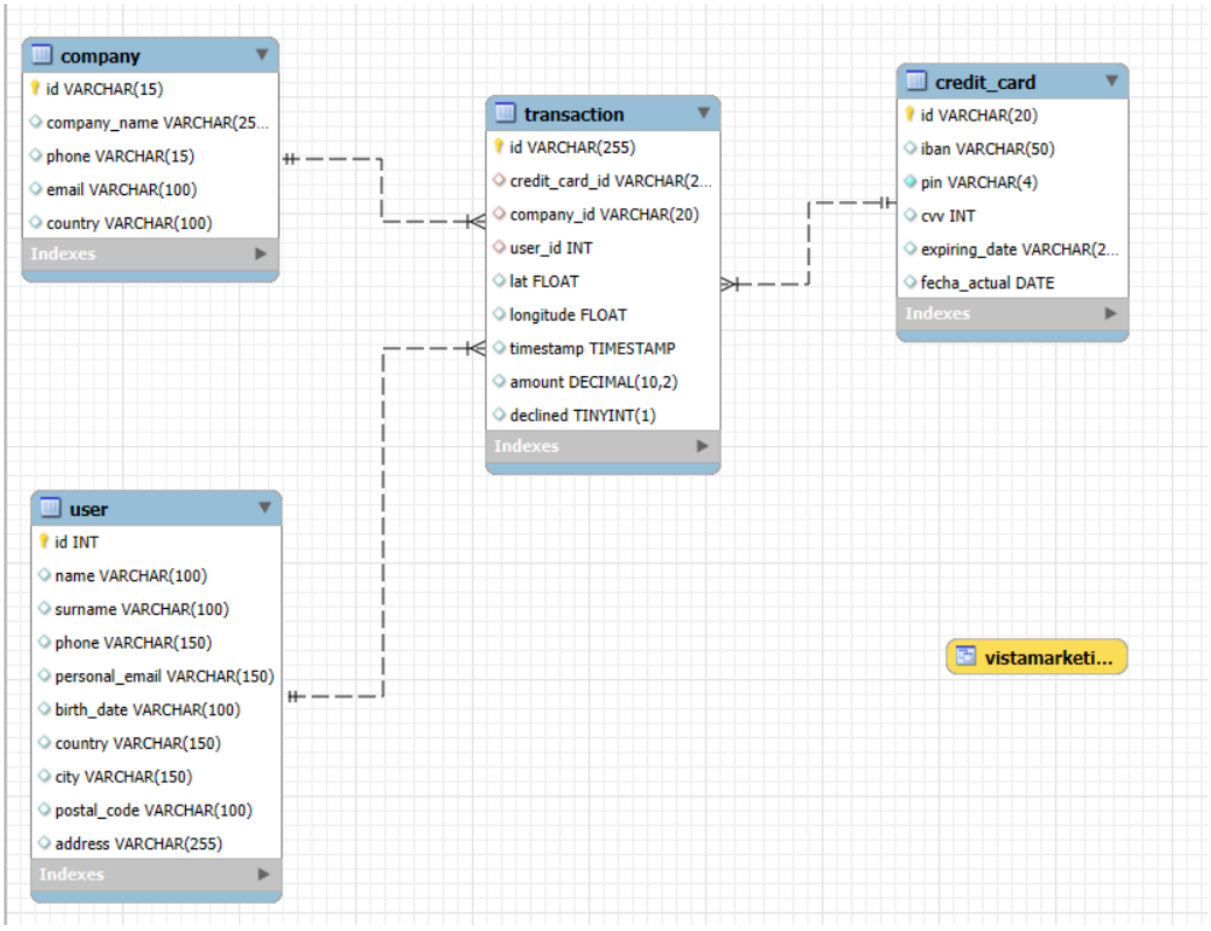
**– modificamos el tipo de dato de id:**

```
ALTER TABLE user
MODIFY id INT;
```

**– modificamos el nombre de la columna email:**

```
ALTER TABLE user
CHANGE email personal_email VARCHAR(150);
```

**Resultado:**




**Ejercicio 2**

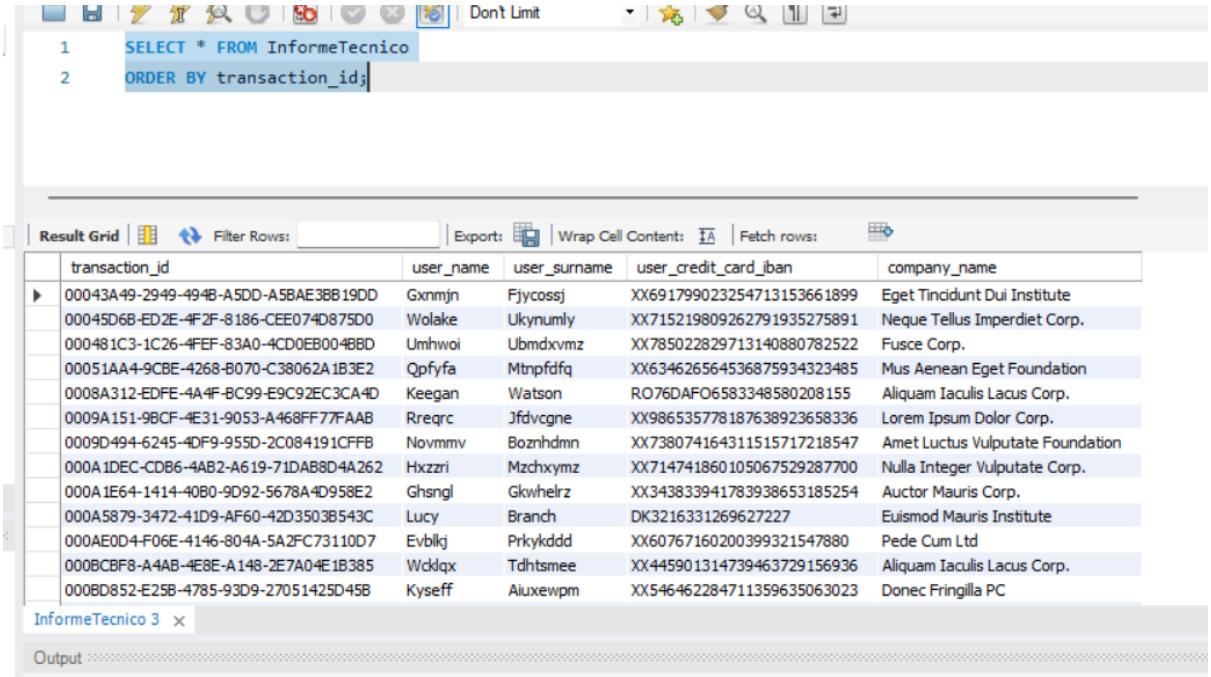
**– versión directa del ejercicio:**

```
CREATE VIEW InformeTecnico AS
SELECT
        t.id as transaction_id,
        u.name as user_name,
```

```
    u.surname as user_surname,
    cc.iban as user_credit_card_iban,
    c.company_name
FROM transaction t
INNER JOIN user as u ON t.user_id = u.id
INNER JOIN credit_card as cc ON t.credit_card_id = cc.id
INNER JOIN company as c ON t.company_id = c.id
WHERE t.declined = 0
AND amount > 0
```

**Resultado:**

```
SELECT * FROM InformeTecnico
ORDER BY transaction_id;
```



Don't Limit

```
1  SELECT * FROM InformeTecnico
2  ORDER BY transaction_id;
```

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

| transaction_id | user_name | user_surname | user_credit_card_iban | company_name |
|---|---|---|---|---|
| 00043A49-2949-494B-A5DD-A5BAE3BB19DD | Gxnmjn | Fjycossj | XX6917990232547131536661899 | Eget Tincidunt Dui Institute |
| 00045D6B-ED2E-4F2F-8186-CEE074D875D0 | Wolake | Ukynumly | XX7152198092627919352758 91 | Neque Tellus Imperdiet Corp. |
| 000481C3-1C26-4FEF-83A0-4CD0EB004BBD | Umhwoi | Ubmdxvmz | XX7850228297131408807825 22 | Fusce Corp. |
| 00051AA4-9CBE-4268-B070-C38062A1B3E2 | Qpfyfa | Mtnpfdfq | XX6346265645368759343234 85 | Mus Aenean Eget Foundation |
| 0008A312-EDFE-4A4F-BC99-E9C92EC3CA4D | Keegan | Watson | RO76DAFO6583348580208155 | Aliquam Iaculis Lacus Corp. |
| 0009A151-9BCF-4E31-9053-A468FF77FAAB | Rreqrc | Jfdvcgne | XX9865357781876389236583 36 | Lorem Ipsum Dolor Corp. |
| 0009D494-6245-4DF9-955D-2C084191CFFB | Novmmv | Boznhdmn | XX7380741643115157172185 47 | Amet Luctus Vulputate Foundation |
| 000A1DEC-CDB6-4AB2-A619-71DAB8D4A262 | Hxzzri | Mzchxymz | XX7147418601050675292877 00 | Nulla Integer Vulputate Corp. |
| 000A1E64-1414-40B0-9D92-5678A4D958E2 | Ghsngl | Gkwhelrz | XX3438339417839386531852 54 | Auctor Mauris Corp. |
| 000A5879-3472-41D9-AF60-42D3503B543C | Lucy | Branch | DK3216331269627227 | Euismod Mauris Institute |
| 000AE0D4-F06E-4146-804A-5A2FC73110D7 | Evblkj | Prkykddd | XX6076716020039932154788 0 | Pede Cum Ltd |
| 000BCBF8-A4AB-4E8E-A148-2E7A04E1B385 | Wcklqx | Tdhtsmee | XX4459013147394637291569 36 | Aliquam Iaculis Lacus Corp. |
| 000BD852-E25B-4785-93D9-27051425D45B | Kyseff | Aiuxewpm | XX5464622847113596350630 23 | Donec Fringilla PC |

InformeTecnico 3 ×

Output

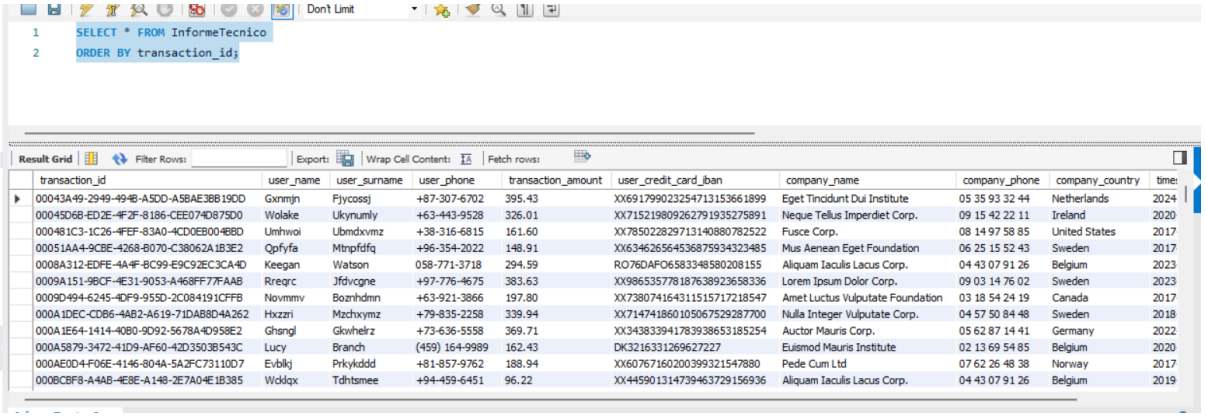
**– versión que incluye 'información rellevant de les taules que coneixereu':**

```
CREATE VIEW InformeTecnico AS
SELECT
    t.id as transaction_id,
    u.name as user_name,
    u.surname as user_surname,
    u.phone as user_phone,
    t.amount as transaction_amount,
    cc.iban as user_credit_card_iban,
```

```
    c.company_name,
    c.phone as company_phone,
    c.country company_country,
    t.timestamp
FROM transaction t
INNER JOIN user as u ON t.user_id = u.id
INNER JOIN credit_card as cc ON t.credit_card_id = cc.id
INNER JOIN company as c ON t.company_id = c.id
WHERE t.declined = 0
AND amount > 0
```

**Resultado:**

```
SELECT * FROM InformeTecnico
ORDER BY transaction_id;
```



```
SELECT * FROM InformeTecnico
ORDER BY transaction_id;
```

Result Grid

| transaction_id | user_name | user_surname | user_phone | transaction_amount | user_credit_card_iban | company_name | company_phone | company_country | time |
|---|---|---|---|---|---|---|---|---|---|
| 00043A49-2949-494B-A5DD-A5BAE3BB19DD | Gxnmjn | Fjycossj | +87-307-6702 | 395.43 | XX6917990232547131536 61899 | Eget Tincidunt Dui Institute | 05 35 93 32 44 | Netherlands | 2024 |
| 00045D6B-ED2E-4F2F-8186-CEE074D875D0 | Wolake | Ukynumly | +63-443-9528 | 326.01 | XX7152198092627919352758 91 | Neque Tellus Imperdiet Corp. | 09 15 42 22 11 | Ireland | 2020 |
| 000481C3-1C26-4FEF-83A0-4CD0EB004BBD | Umhwoi | Ubmdxvmz | +38-316-6815 | 161.60 | XX7850228297131408807825 22 | Fusce Corp. | 08 14 97 58 85 | United States | 2017 |
| 00051AA4-9CBE-4268-B070-C38062A1B3E2 | Qpfyfa | Mtnpfdfq | +96-354-2022 | 148.91 | XX6346265645368759343234 85 | Mus Aenean Eget Foundation | 06 25 15 52 43 | Sweden | 2017 |
| 0008A312-EDFE-4A4F-BC99-E9C92EC3CA4D | Keegan | Watson | 058-771-3718 | 294.59 | RO76DAFO6583348580208155 | Aliquam Iaculis Lacus Corp. | 04 43 07 91 26 | Belgium | 2023 |
| 0009A151-9BCF-4E31-9053-A468FF77FAAB | Rreqrc | Jfdvcgne | +97-776-4675 | 383.63 | XX9865357781876389236583 36 | Lorem Ipsum Dolor Corp. | 09 03 14 76 02 | Sweden | 2023 |
| 0009D494-6245-4DF9-955D-2C084191CFFB | Novmmv | Boznhdmn | +63-921-3866 | 197.80 | XX7380741643115157172185 47 | Amet Luctus Vulputate Foundation | 03 18 54 24 19 | Canada | 2017 |
| 000A1DEC-CDB6-4AB2-A619-71DAB8D4A262 | Hxzzri | Mzchxymz | +79-835-2258 | 339.94 | XX7147418601050675292877 00 | Nulla Integer Vulputate Corp. | 04 57 50 84 48 | Sweden | 2018 |
| 000A1E64-1414-40B0-9D92-5678A4D958E2 | Ghsngl | Gkwhelrz | +73-636-5558 | 369.71 | XX3438339417839386531852 54 | Auctor Mauris Corp. | 05 62 87 14 41 | Germany | 2022 |
| 000A5879-3472-41D9-AF60-42D3503B543C | Lucy | Branch | (459) 164-9989 | 162.43 | DK3216331269627227 | Euismod Mauris Institute | 02 13 69 54 85 | Belgium | 2020 |
| 000AE0D4-F06E-4146-804A-5A2FC73110D7 | Evbikj | Prkykddd | +81-857-9762 | 188.94 | XX6076716020039932154 7880 | Pede Cum Ltd | 07 62 26 48 38 | Norway | 2017 |
| 000BCBF8-A4AB-4E8E-A148-2E7A04E1B385 | Wcklqx | Tdhtsmee | +94-459-6451 | 96.22 | XX4459013147394637291569 36 | Aliquam Iaculis Lacus Corp. | 04 43 07 91 26 | Belgium | 2019 |