N1E1

Creamos la base de datos y permitiremos la subida de archivos de datos:

```
1 •  CREATE DATABASE IF NOT EXISTS sprint4;
2 •  USE sprint4;

40 •  SET GLOBAL local_infile = TRUE;
41 •  SHOW GLOBAL VARIABLES LIKE 'local_infile';
42
```

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

Variable_name	Value
local_infile	ON

Result 4

Output

Action Output

#	Time	Action	Message
1	11:12:26	SET GLOBAL local_infile = TRUE	0 row(s) affected
2	11:12:28	SHOW GLOBAL VARIABLES LIKE 'local_infile'	1 row(s) returned

Una vez hecho, procederemos a la creación de las tablas e inserción de los datos:
(IMPORTANTE: PARA ESTA PARTE DE LA CREACIÓN DE TABLAS HAY QUE LEER EN EL ARCHIVO SQL. AÑADÍ LAS PRIMARY KEY A POSTERIORI YA QUE SE ME OLVIDÓ A LA HORA DE TOMAR LAS CAPTURAS)

```
21 •  CREATE TABLE company (
22        company_id VARCHAR(20),
23        company_name VARCHAR(255),
24        phone VARCHAR(15),
25        email VARCHAR(100),
26        country VARCHAR(100),
27        website VARCHAR(255)
28    );
29 •  LOAD DATA INFILE
30    'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/companies.csv'
31    INTO TABLE company
32    FIELDS TERMINATED BY ','
33    LINES TERMINATED BY '\n'
34    IGNORE 1 ROWS
35    (company_id, company_name, phone, email, country, website);
```

Output

Action Output

#	Time	Action	Message
1	11:56:39	CREATE TABLE company (company_id VARCHA...	0 row(s) affected
2	11:56:43	LOAD DATA INFILE 'C:/ProgramData/MySQL/MyS...	100 row(s) affected Records: 100 Deleted: 0 Skipp...

```sql
CREATE TABLE credit_card (
    id VARCHAR(20),
    user_id INT,
    iban VARCHAR(50),
    pan VARCHAR(50),
    pin VARCHAR(4),
    cvv INT,
    track1 VARCHAR(255),
    track2 VARCHAR(255),
    expiring_date VARCHAR(20)
);
LOAD DATA INFILE
'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/credit_cards.csv'
INTO TABLE credit_card
FIELDS TERMINATED BY ','
LINES TERMINATED BY '\n'
IGNORE 1 ROWS
(id, user_id, iban, pan, pin, cvv, track1, track2, expiring_date);
```

Action Output

	Time	Action	Message
1	12:04:22	CREATE TABLE credit_card (id VARCHAR(20), ...	0 row(s) affected
2	12:04:36	LOAD DATA INFILE 'C:/ProgramData/MySQL/MyS...	275 row(s) affected Records: 275 Deleted: 0 Skipp...

```sql
ALTER TABLE credit_card
DROP user_id;
```

Action Output

	Time	Action
1	13:33:35	ALTER TABLE credit_card DROP user_id

```sql
CREATE TABLE data_users (
    id INT,
    name VARCHAR(100),
    surname VARCHAR(100),
    phone VARCHAR(150),
    email VARCHAR(150),
    birth_date VARCHAR(100),
    country VARCHAR(150),
    city VARCHAR(150),
    postal_code VARCHAR(100),
    address VARCHAR(255)
);
LOAD DATA INFILE
'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/users_ca.csv'
INTO TABLE data_users
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
LINES TERMINATED BY '\r\n'
IGNORE 1 ROWS
(id, name, surname, phone, email, birth_date, country, city, postal_code, address);
LOAD DATA INFILE
'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/users_uk.csv'
```

Action Output

#	Time	Action	Message
1	12:29:56	CREATE TABLE data_users (id INT, name VA...	0 row(s) affected
2	12:29:58	LOAD DATA INFILE 'C:/ProgramData/MySQL/MyS...	75 row(s) affected Records: 75 Deleted: 0 Skipped:...
3	12:30:01	LOAD DATA INFILE 'C:/ProgramData/MySQL/MyS...	50 row(s) affected Records: 50 Deleted: 0 Skipped:...
4	12:30:03	LOAD DATA INFILE 'C:/ProgramData/MySQL/MyS...	150 row(s) affected Records: 150 Deleted: 0 Skipp...

```sql
CREATE TABLE products (
    id INT,
    product_name VARCHAR(100),
    currency VARCHAR(1),
    price VARCHAR(100),
    colour VARCHAR(10),
    weight FLOAT,
    warehouse_id VARCHAR(100)
);
LOAD DATA INFILE
'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/products.csv'
INTO TABLE products
FIELDS TERMINATED BY ','
LINES TERMINATED BY '\n'
IGNORE 1 ROWS
(id, product_name, price, colour, weight, warehouse_id);
UPDATE products
SET currency = LEFT(price, 1);
UPDATE products
SET price = substr(price, 2);
ALTER TABLE products
MODIFY price DECIMAL(10,2);
```

Action Output

	Time	Action	Message
1	13:19:58	CREATE TABLE products (id INT, product_na...	0 row(s) affected
2	13:20:01	LOAD DATA INFILE 'C:/ProgramData/MySQL/My...	100 row(s) affected Records
3	13:20:04	UPDATE products SET currency = LEFT(price, 1)	100 row(s) affected Rows m
4	13:20:06	UPDATE products SET price = substr(price, 2)	100 row(s) affected Rows m
5	13:20:09	ALTER TABLE products MODIFY price DECIMAL(1...	100 row(s) affected Records

```sql
LOAD DATA INFILE
'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/transactions.csv'
INTO TABLE transaction
FIELDS TERMINATED BY ';'
ENCLOSED BY '"'
LINES TERMINATED BY '\n'
IGNORE 1 ROWS
(id, card_id, business_id, timestamp, amount, declined, product_ids, user_id, lat, longitude);
CREATE TABLE transaction_product (
    transaction_id VARCHAR(255),
    product_id INT
);
INSERT INTO transaction_product (transaction_id, product_id)
WITH RECURSIVE SplitValues AS (
        SELECT id, SUBSTRING_INDEX(product_ids, ',', 1) AS split_value, IF(LOCATE(',', product
        FROM transaction
        UNION ALL
        SELECT id, SUBSTRING_INDEX(remaining_values, ',', 1) AS split_value, IF(LOCATE(',', re
        FROM SplitValues
        WHERE remaining_values IS NOT NULL)
SELECT id, split_value
FROM SplitValues;
ALTER TABLE transaction
DROP product_ids;
```

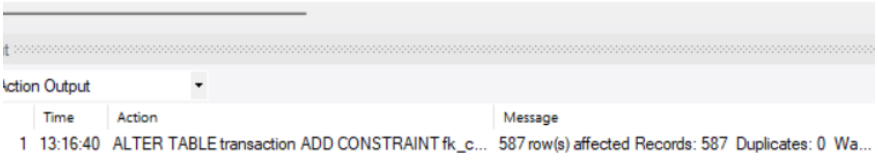
Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	11:51:01	CREATE TABLE transaction (id VARCHAR(255), ...	0 row(s) affected	0.031 sec
2	11:51:04	LOAD DATA INFILE 'C:/ProgramData/MySQL/My...	587 row(s) affected Records: 587 Deleted: 0 Skipp...	0.047 sec
3	11:51:07	CREATE TABLE transaction_product (transaction...	0 row(s) affected	0.047 sec
4	11:51:10	INSERT INTO transaction_product (transaction_id, p...	1457 row(s) affected Records: 1457 Duplicates: 0 ...	0.031 sec
5	11:51:13	ALTER TABLE transaction DROP product_ids	0 row(s) affected Records: 0 Duplicates: 0 Warning...	0.031 sec

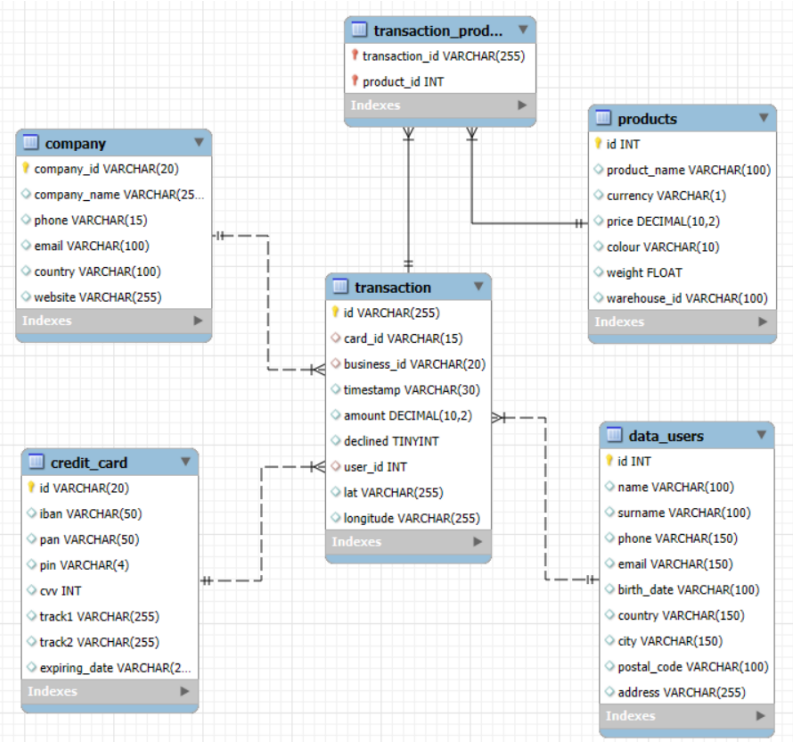
Con todas las tablas creadas, ahora crearemos las relaciones entre ellas.

```
ALTER TABLE transaction
ADD CONSTRAINT fk_card_id
FOREIGN KEY (card_id) REFERENCES credit_card(id),
ADD CONSTRAINT fk_business_id
FOREIGN KEY (business_id) REFERENCES company(company_id),
ADD CONSTRAINT fk_user_id
FOREIGN KEY (user_id) REFERENCES data_users(id);
```




```
ALTER TABLE transaction_product
ADD CONSTRAINT fk_transaction_id
FOREIGN KEY (transaction_id) REFERENCES transaction(id),
ADD CONSTRAINT fk_product_id
FOREIGN KEY (product_id) REFERENCES products(id);
```

Al final el esquema quedará parecido a esto:



N1E1

```
175 •  SELECT data_users.id as User, count(transaction.id) as NumTrans
176    FROM data_users
177    JOIN transaction
178    ON (data_users.id = user_id)
179    GROUP BY data_users.id
180    HAVING count(transaction.id) > 30
181    ORDER BY NumTrans desc;
```

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

User	NumTrans
272	76
267	52
275	48
92	39

Result 13

Output

Action Output

#	Time	Action
1	13:46:41	SELECT data_users.id as User, count(transaction.id) as NumTrans FROM data_users JOI

N1E2

```
    -- Mostra la mitjana d'amount per IBAN de les t
•   SELECT iban, round(avg(amount), 2) as Average
    FROM credit_card
    JOIN transaction
    ON (credit_card.id = card_id)
    JOIN company
    ON (company_id = business_id)
    WHERE company_name = "Donec Ltd"
    GROUP BY iban;
```

ult Grid | Filter Rows: | Export: | Wrap

iban	Average
PT87806228135092429456346	203.72

lt 19

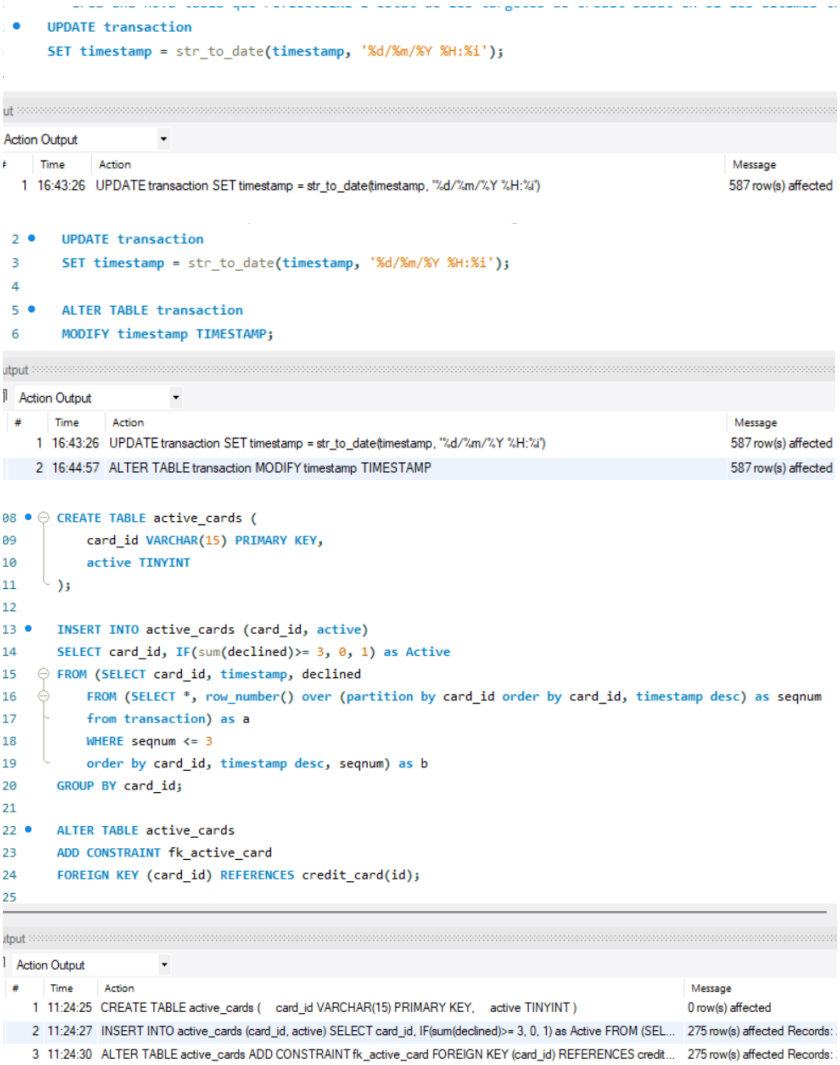
ut

Action Output

#	Time	Action
1	13:53:41	SELECT iban, round(avg(amount), 2) as Average FROM cre

N2

Primero cambiamos los datos de timestamp para que se puedan ordenar como fecha, i después creamos la tabla nueva active_cards, que se relaciona 1:1 con credit_card.



```
UPDATE transaction
SET timestamp = str_to_date(timestamp, '%d/%m/%Y %H:%i');
```

Action Output

#	Time	Action	Message
1	16:43:26	UPDATE transaction SET timestamp = str_to_date(timestamp, '%d/%m/%Y %H:%i')	587 row(s) affected

```
UPDATE transaction
SET timestamp = str_to_date(timestamp, '%d/%m/%Y %H:%i');

ALTER TABLE transaction
MODIFY timestamp TIMESTAMP;
```

Action Output

#	Time	Action	Message
1	16:43:26	UPDATE transaction SET timestamp = str_to_date(timestamp, '%d/%m/%Y %H:%i')	587 row(s) affected
2	16:44:57	ALTER TABLE transaction MODIFY timestamp TIMESTAMP	587 row(s) affected

```
CREATE TABLE active_cards (
    card_id VARCHAR(15) PRIMARY KEY,
    active TINYINT
);

INSERT INTO active_cards (card_id, active)
SELECT card_id, IF(sum(declined)>= 3, 0, 1) as Active
FROM (SELECT card_id, timestamp, declined
    FROM (SELECT *, row_number() over (partition by card_id order by card_id, timestamp desc) as seqnum
    from transaction) as a
    WHERE seqnum <= 3
    order by card_id, timestamp desc, seqnum) as b
GROUP BY card_id;

ALTER TABLE active_cards
ADD CONSTRAINT fk_active_card
FOREIGN KEY (card_id) REFERENCES credit_card(id);
```

Action Output

#	Time	Action	Message
1	11:24:25	CREATE TABLE active_cards (card_id VARCHAR(15) PRIMARY KEY, active TINYINT)	0 row(s) affected
2	11:24:27	INSERT INTO active_cards (card_id, active) SELECT card_id, IF(sum(declined)>= 3, 0, 1) as Active FROM (SEL...	275 row(s) affected Records:
3	11:24:30	ALTER TABLE active_cards ADD CONSTRAINT fk_active_card FOREIGN KEY (card_id) REFERENCES credit...	275 row(s) affected Records:

N2E1

En este hay dos formas de hacerlo según tengo la tabla creada, siendo o bien sumando o bien contando.

```
229 •   SELECT count(card_id) as ActiveCards
230     FROM active_cards
231     WHERE active = 1;
232
233 •   SELECT sum(active) as ActiveCards
234     FROM active_cards;
```

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

ActiveCards
275

Result 11

Output

Action Output

#	Time	Action
1	11:25:35	SELECT sum(active) as ActiveCards FROM active_cards LIMIT 0, 50000

N3E1

(La tabla ya ha sido creada en el N1)

```
3 •  SELECT products.id, count(transaction.id) as NumSales
4    FROM products
5    JOIN transaction_product AS tp
6    ON (products.id = tp.product_id)
7    JOIN transaction
8    ON (tp.transaction_id = transaction.id)
9    GROUP BY products.id
10   ORDER BY products.id;
```

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

id	NumSales
1	61
2	65
3	51
5	49
7	54
11	48
13	60
17	61

Result 4

Output

Action Output

#	Time	Action
1	19:02:41	SELECT products.id, count(transaction.id) as NumSales FROM products JOI

EL ESQUEMA FINAL QUEDA ASÍ