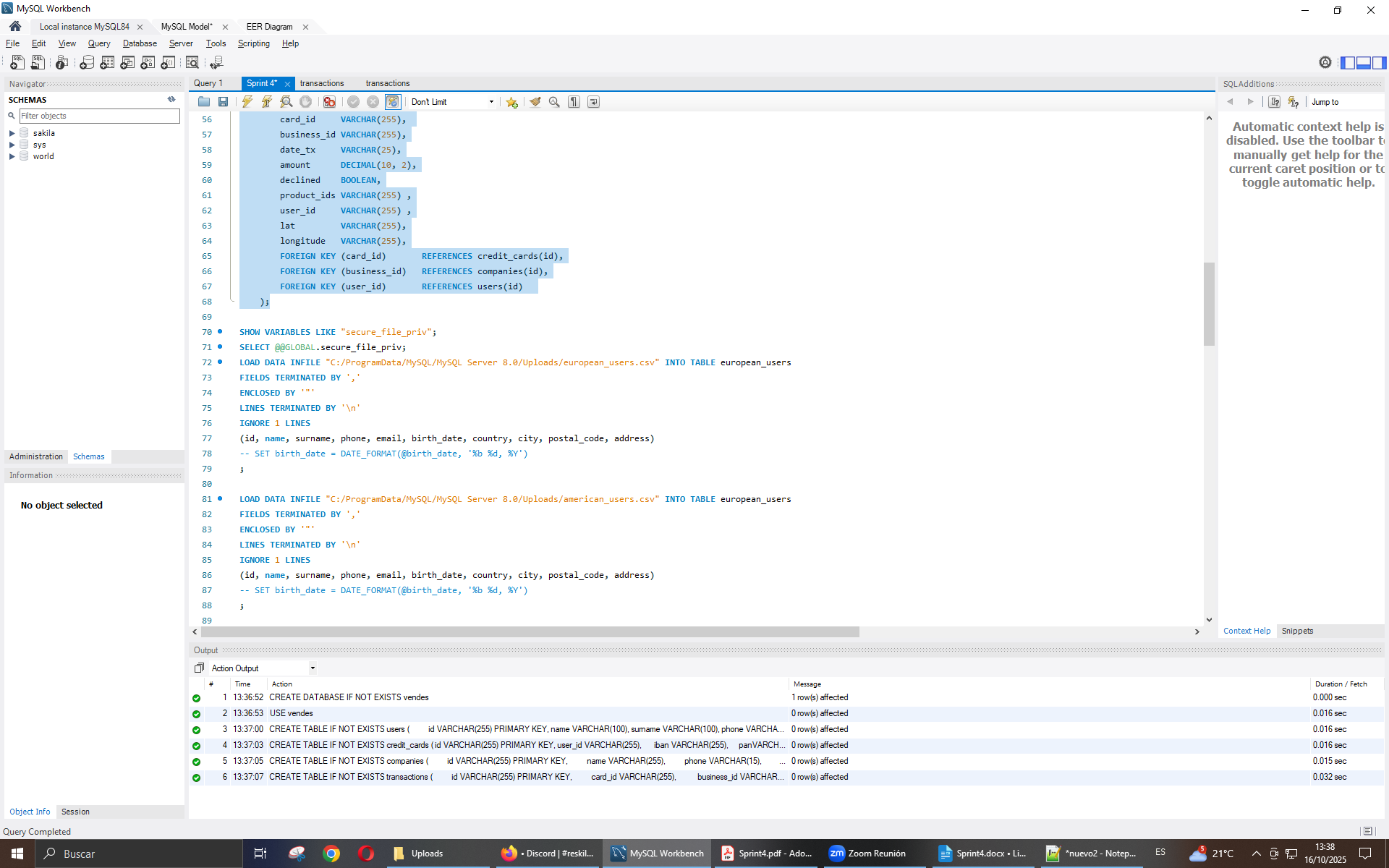
## Nivell 1

Descàrrega els arxius CSV, estudia'ls i dissenya una base de dades amb un esquema d'estrella que contingui, almenys 4 taules de les quals puguis realitzar les següents consultes:

He agafat les quatre taules seguents per incloure a l’esquema: users, credit\_cards, company I transaction

CREATE DATABASE IF NOT EXISTS vendes;  
 USE vendes;  
  
 CREATE TABLE IF NOT EXISTS users (  
 id VARCHAR(255) PRIMARY KEY,  
 name VARCHAR(100),  
 surname VARCHAR(100),  
 phone VARCHAR(30),  
 email VARCHAR(50),  
 birth\_date VARCHAR(25),  
 country VARCHAR(50),  
 city VARCHAR(50),  
 postal\_code VARCHAR(10),  
 address VARCHAR(255)   
 );   
 CREATE TABLE IF NOT EXISTS credit\_cards (  
 id VARCHAR(255) PRIMARY KEY,  
 user\_id VARCHAR(255),   
 iban VARCHAR(255),  
 pan VARCHAR(255),  
 pin VARCHAR(4),  
 cvv VARCHAR(3),  
 track1 VARCHAR(255),  
 track2 VARCHAR(255),  
 expiring\_date VARCHAR(25)  
);  
 -- Creamos la tabla company  
 CREATE TABLE IF NOT EXISTS companies (  
 id VARCHAR(255) PRIMARY KEY,  
 name VARCHAR(255),  
 phone VARCHAR(15),  
 email VARCHAR(50),  
 country VARCHAR(50),  
 website VARCHAR(255)  
 );  
  
   
 -- Creamos la tabla transactions  
 CREATE TABLE IF NOT EXISTS transactions (  
 id VARCHAR(255) PRIMARY KEY,  
 card\_id VARCHAR(255),   
 business\_id VARCHAR(255),  
 date\_tx VARCHAR(25),  
 amount DECIMAL(10, 2),  
 declined BOOLEAN,  
 product\_ids VARCHAR(255) ,  
 user\_id VARCHAR(255) ,  
 lat VARCHAR(255),  
 longitude VARCHAR(255),  
 FOREIGN KEY (card\_id) REFERENCES credit\_cards(id),  
 FOREIGN KEY (business\_id) REFERENCES companies(id),  
 FOREIGN KEY (user\_id) REFERENCES users(id)   
 );



LOAD DATA INFILE "C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/european\_users.csv" INTO TABLE users  
FIELDS TERMINATED BY ','  
ENCLOSED BY '"'  
LINES TERMINATED BY '\n'  
IGNORE 1 LINES  
(id, name, surname, phone, email, birth\_date, country, city, postal\_code, address)  
-- SET birth\_date = DATE\_FORMAT(@birth\_date, '%b %d, %Y');   
  
LOAD DATA INFILE "C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/american\_users.csv" INTO TABLE users  
FIELDS TERMINATED BY ','  
ENCLOSED BY '"'  
LINES TERMINATED BY '\n'  
IGNORE 1 LINES  
(id, name, surname, phone, email, birth\_date, country, city, postal\_code, address)  
-- SET birth\_date = DATE\_FORMAT(@birth\_date, '%b %d, %Y');   
  
LOAD DATA INFILE "C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/credit\_cards.csv" INTO TABLE credit\_cards  
FIELDS TERMINATED BY ','  
ENCLOSED BY '"'  
LINES TERMINATED BY '\n'  
IGNORE 1 LINES  
(`id`, `user\_id`, `iban`, `pan`, `pin`, `cvv`, `track1`, `track2`, `expiring\_date`);   
  
LOAD DATA INFILE "C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/companies.csv" INTO TABLE companies  
FIELDS TERMINATED BY ','  
ENCLOSED BY '"'  
LINES TERMINATED BY '\n'  
IGNORE 1 LINES  
(`id`, `name`, `phone`, `email`, `country`, `website`);

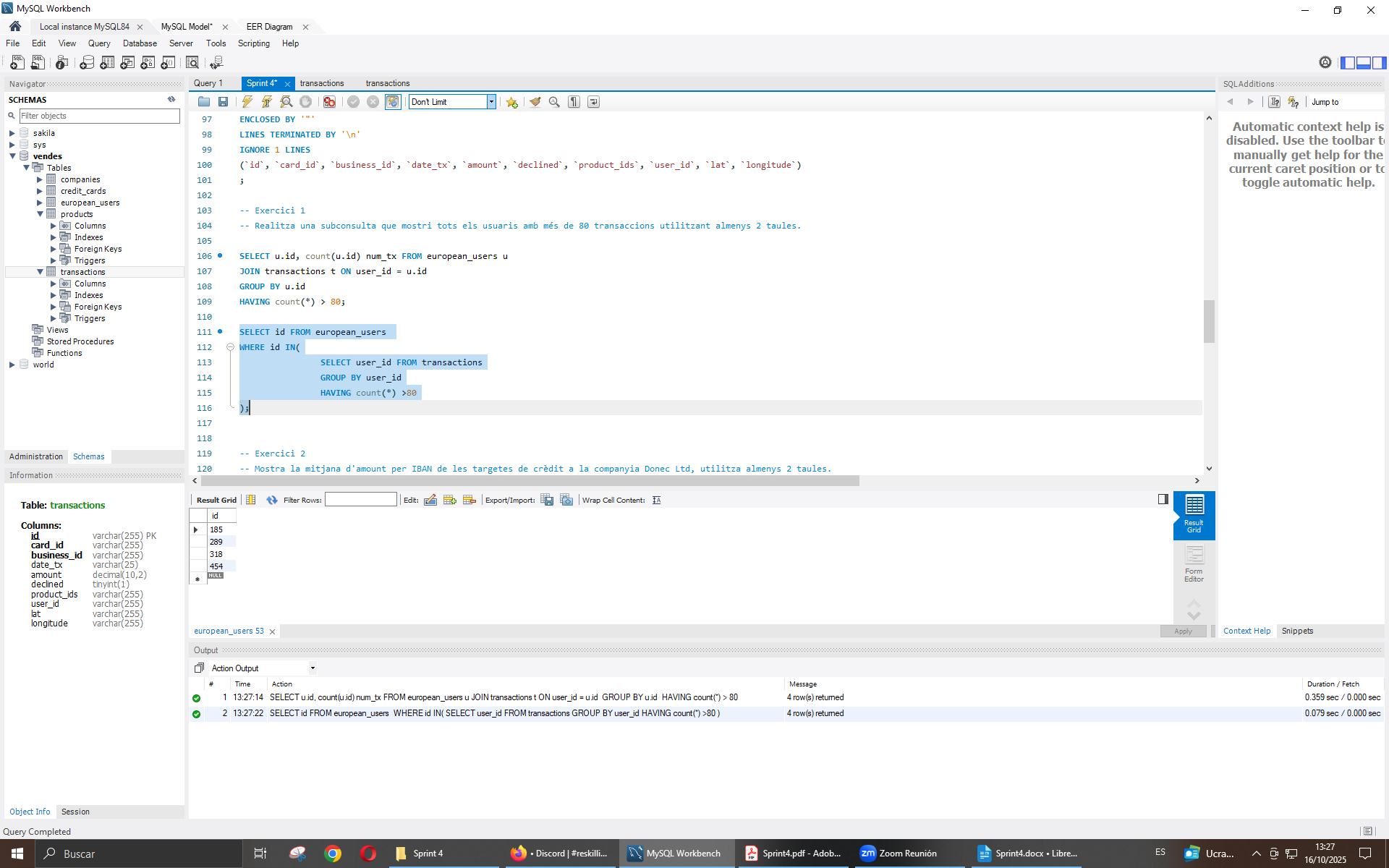
LOAD DATA INFILE "C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/transactions.csv" INTO TABLE transactions  
FIELDS TERMINATED BY ';'  
ENCLOSED BY '"'  
LINES TERMINATED BY '\n'  
IGNORE 1 LINES  
(`id`, `card\_id`, `business\_id`, `date\_tx`, `amount`, `declined`, `product\_ids`, `user\_id`, `lat`, `longitude`);

### 

### Exercici 1

Realitza una subconsulta que mostri tots els usuaris amb més de 80 transaccions utilitzant almenys 2 taules.

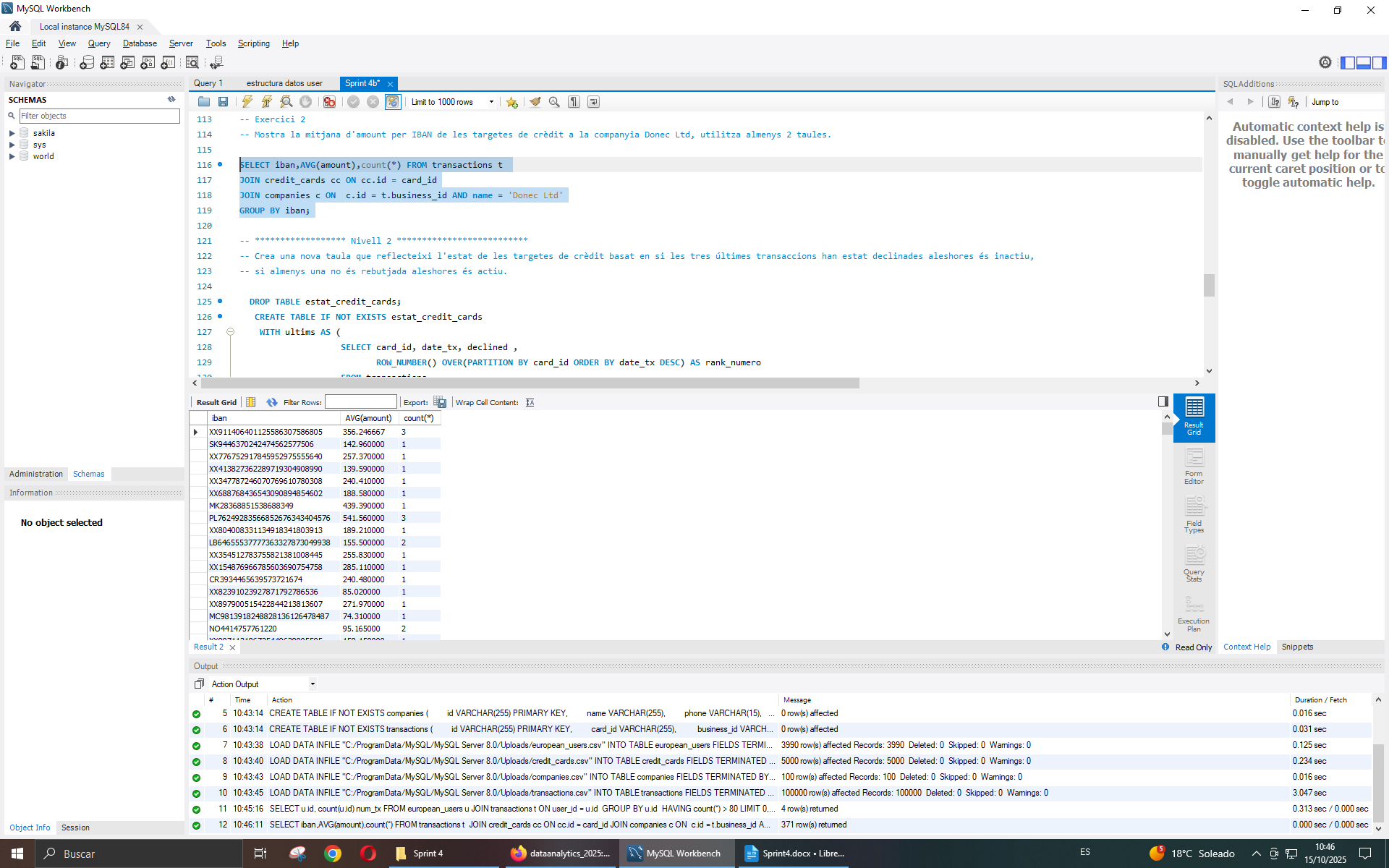
SELECT u.id, count(u.id) num\_tx FROM european\_users u  
JOIN transactions t ON user\_id = u.id   
GROUP BY u.id   
HAVING count(\*) > 80;  
  
SELECT id FROM european\_users   
WHERE id IN(  
 SELECT user\_id FROM transactions  
 GROUP BY user\_id  
 HAVING count(\*) >80  
);



### Exercici 2

Mostra la mitjana d'amount per IBAN de les targetes de crèdit a la companyia Donec Ltd, utilitza almenys 2 taules.

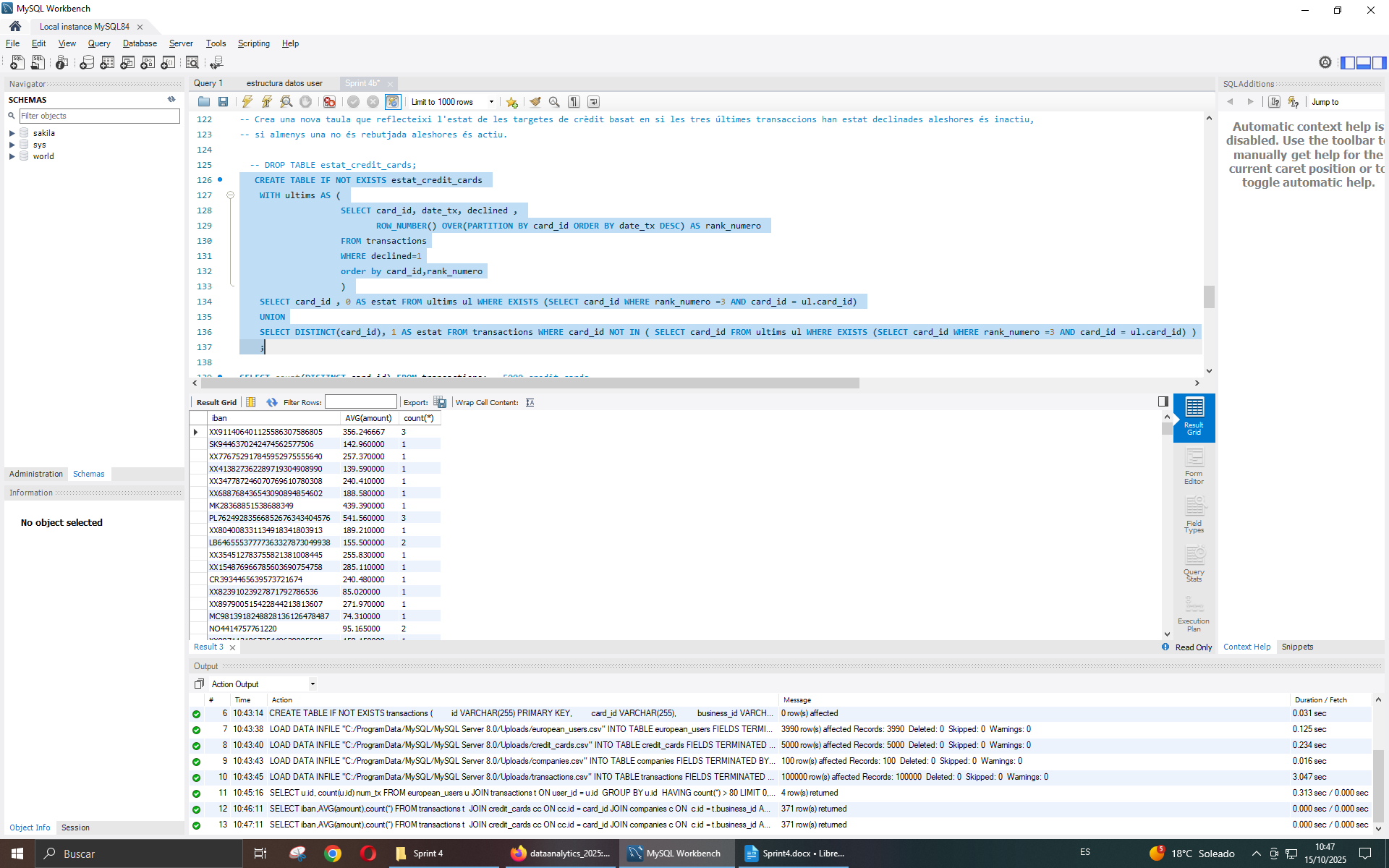
SELECT iban,AVG(amount),count(\*) FROM transactions t   
JOIN credit\_cards cc ON cc.id = card\_id  
JOIN companies c ON c.id = t.business\_id AND name = 'Donec Ltd'  
GROUP BY iban;



## Nivell 2

Crea una nova taula que reflecteixi l'estat de les targetes de crèdit basat en si les tres últimes transaccions han estat declinades aleshores és inactiu, si almenys una no és rebutjada aleshores és actiu.

CREATE TABLE IF NOT EXISTS estat\_credit\_cards   
 WITH ultims AS (   
 SELECT card\_id, date\_tx, declined ,   
 ROW\_NUMBER() OVER(PARTITION BY card\_id ORDER BY date\_tx DESC) AS rank\_numero   
 FROM transactions  
 WHERE declined=1  
 order by card\_id,rank\_numero  
 )   
 SELECT card\_id , 0 AS estat FROM ultims ul WHERE EXISTS (SELECT card\_id WHERE rank\_numero =3 AND card\_id = ul.card\_id)   
 UNION  
 SELECT DISTINCT(card\_id), 1 AS estat FROM transactions WHERE card\_id NOT IN ( SELECT card\_id FROM ultims ul WHERE EXISTS (SELECT card\_id WHERE rank\_numero =3 AND card\_id = ul.card\_id) )  
 ;



Partint d’aquesta taula respon:

### Exercici 1

Quantes targetes estan actives?

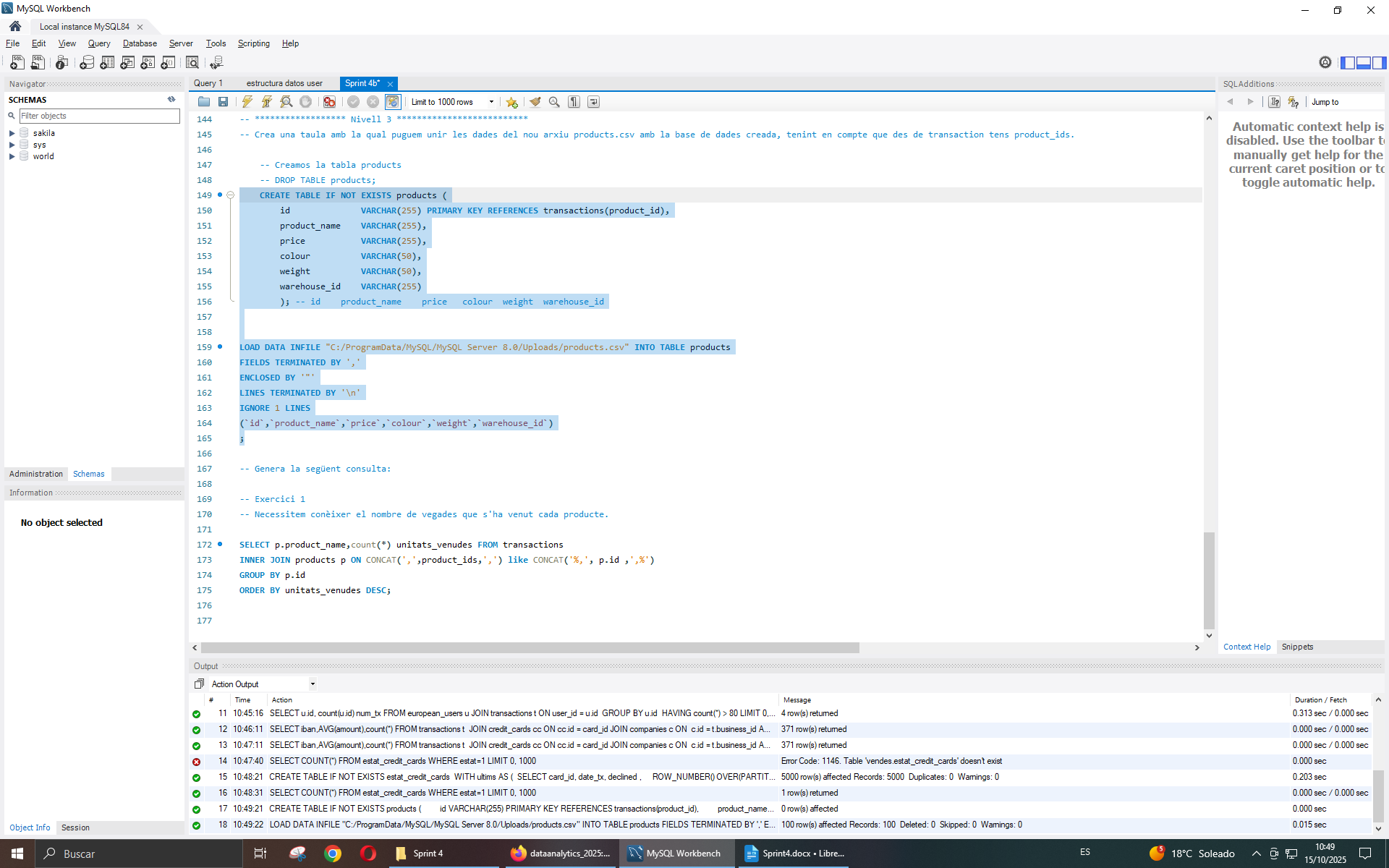
SELECT COUNT(\*) FROM estat\_credit\_cards WHERE estat=1;

## 

## Nivell 3

Crea una taula amb la qual puguem unir les dades del nou arxiu products.csv amb la base de dades creada, tenint en compte que des de transaction tens product\_ids. Genera la següent consulta:

CREATE TABLE IF NOT EXISTS products (  
 id VARCHAR(255) PRIMARY KEY REFERENCES transactions(product\_id),  
 product\_name VARCHAR(255),  
 price VARCHAR(255),  
 colour VARCHAR(50),  
 weight VARCHAR(50),  
 warehouse\_id VARCHAR(255)  
 );   
  
LOAD DATA INFILE "C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/products.csv" INTO TABLE products  
FIELDS TERMINATED BY ','  
ENCLOSED BY '"'  
LINES TERMINATED BY '\n'  
IGNORE 1 LINES  
(`id`,`product\_name`,`price`,`colour`,`weight`,`warehouse\_id`)  
;



### Exercici 1

Necessitem conèixer el nombre de vegades que s'ha venut cada producte.

SELECT p.id,count(\*) unitats\_venudes FROM transactions  
INNER JOIN products p ON CONCAT(', ',product\_ids,',') like CONCAT('%, ', p.id ,',%')  
GROUP BY p.id  
ORDER BY unitats\_venudes DESC;

