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:

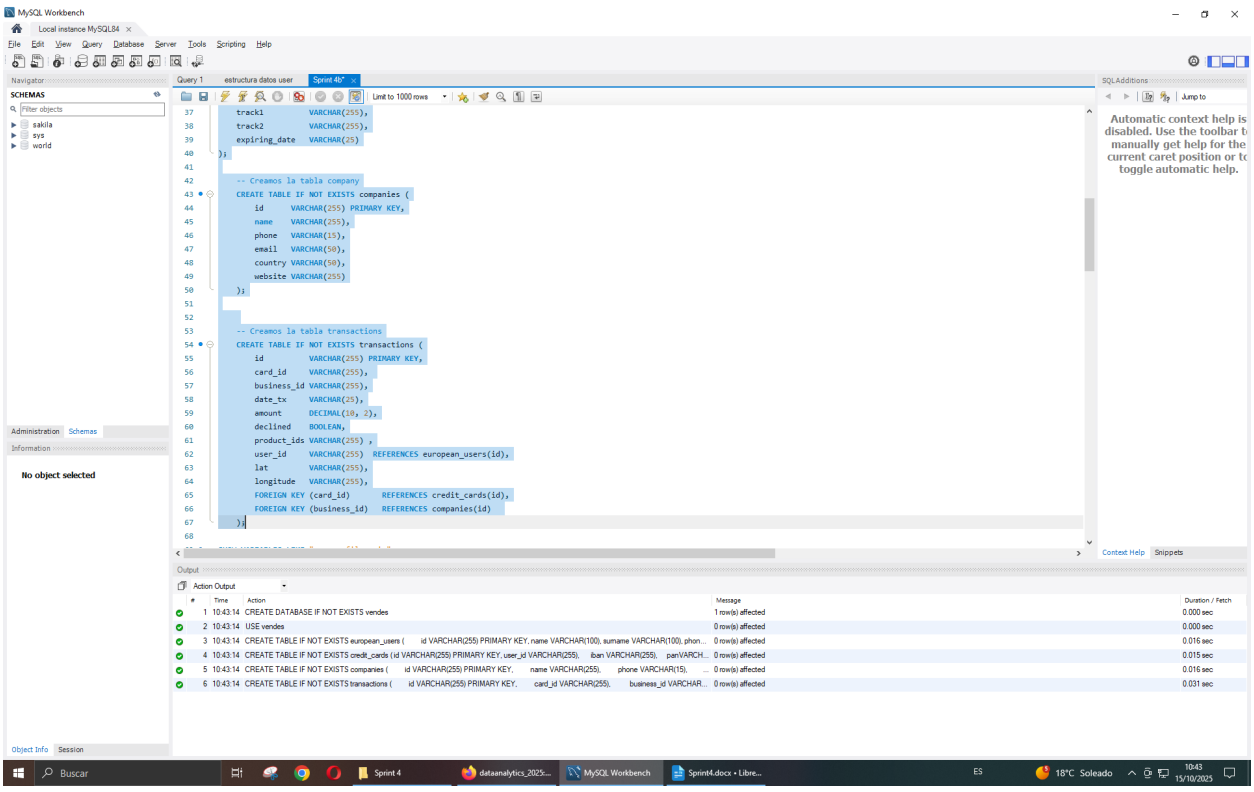
```
CREATE DATABASE IF NOT EXISTS vendes;
  USE vendes;

  -- Creamos las tablas

  CREATE TABLE IF NOT EXISTS european_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)  REFERENCES european_users(id),
    lat         VARCHAR(255),
    longitude   VARCHAR(255),
    FOREIGN KEY (card_id)               REFERENCES credit_cards(id),
    FOREIGN KEY (business_id)           REFERENCES companies(id)
);
```

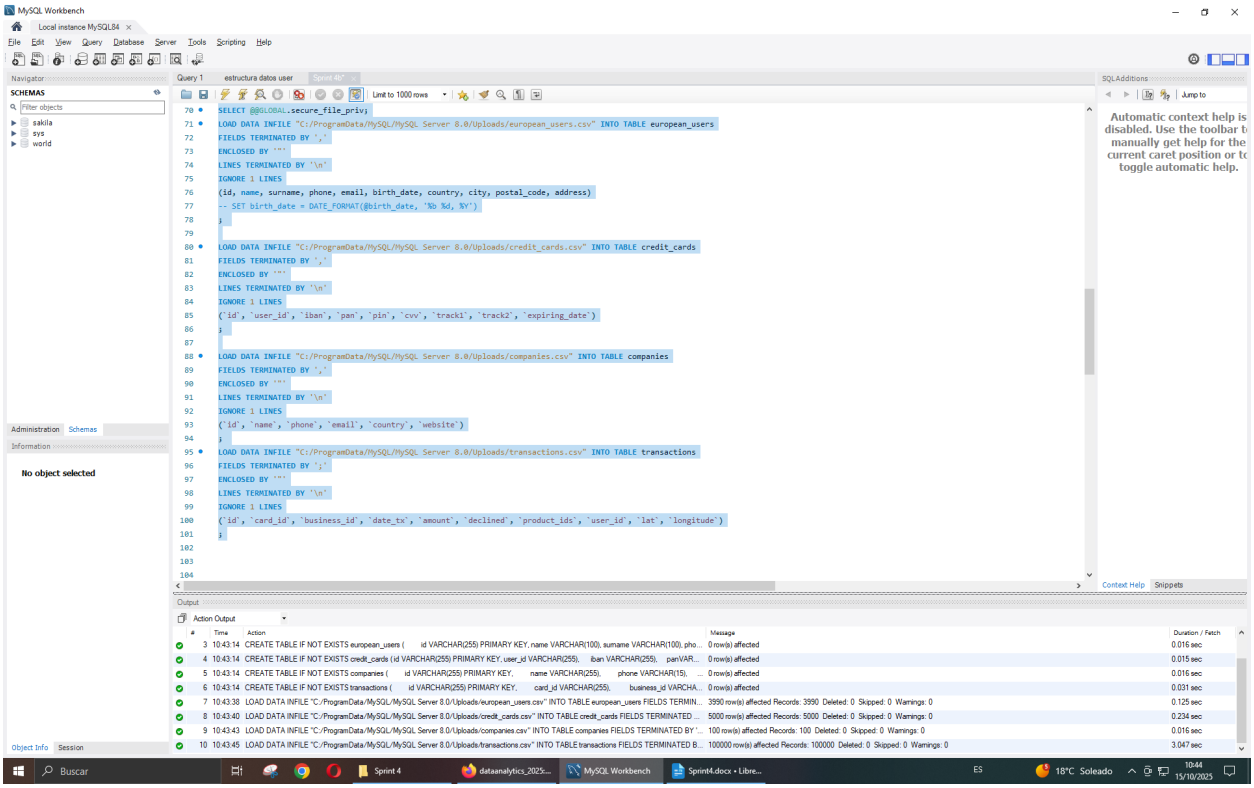


```
SHOW VARIABLES LIKE "secure_file_priv";
SELECT @@GLOBAL.secure_file_priv;
LOAD DATA INFILE "C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/european_users.csv" INTO
TABLE european_users
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
LINES TERMINATED BY '\n'
IGNORE 1 LINES
(id, name, surname, phone, email, 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`)
;
```


MySQL Workbench
Local instance MySQL84
File Edit View Query Database Server Tools Scripting Help
Navigator
SCHEMAS
Filter objects
sakila
sys
world
Administration Schemas
Information
No object selected
Object Info Session
Query 1 estructura datos user Sprint 4b*
Limit to 1000 rows
SELECT @@GLOBAL.secure_file_priv;
LOAD DATA INFILE "C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/european_users.csv" INTO TABLE european_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`)
;
SQLAdditions
Jump to
Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.
Context Help Snippets
Output
Action Output
Time Action Message Duration / Fetch
3 10:43:14 CREATE TABLE IF NOT EXISTS european_users (id VARCHAR(255) PRIMARY KEY, name VARCHAR(100), surname VARCHAR(100), pho... 0 row(s) affected 0.016 sec
4 10:43:14 CREATE TABLE IF NOT EXISTS credit_cards (id VARCHAR(255) PRIMARY KEY, user_id VARCHAR(255), iban VARCHAR(255), panVAR... 0 row(s) affected 0.015 sec
5 10:43:14 CREATE TABLE IF NOT EXISTS companies (id VARCHAR(255) PRIMARY KEY, name VARCHAR(255), phone VARCHAR(15), ... 0 row(s) affected 0.016 sec
6 10:43:14 CREATE TABLE IF NOT EXISTS transactions (id VARCHAR(255) PRIMARY KEY, card_id VARCHAR(255), business_id VARCHA... 0 row(s) affected 0.031 sec
7 10:43:38 LOAD DATA INFILE "C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/european_users.csv" INTO TABLE european_users FIELDS TERMIN... 3990 row(s) affected Records: 3990 Deleted: 0 Skipped: 0 Warnings: 0 0.125 sec
8 10:43:40 LOAD DATA INFILE "C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/credit_cards.csv" INTO TABLE credit_cards FIELDS TERMINATED ... 5000 row(s) affected Records: 5000 Deleted: 0 Skipped: 0 Warnings: 0 0.234 sec
9 10:43:43 LOAD DATA INFILE "C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/companies.csv" INTO TABLE companies FIELDS TERMINATED BY '... 100 row(s) affected Records: 100 Deleted: 0 Skipped: 0 Warnings: 0 0.016 sec
10 10:43:45 LOAD DATA INFILE "C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/transactions.csv" INTO TABLE transactions FIELDS TERMINATED B... 100000 row(s) affected Records: 100000 Deleted: 0 Skipped: 0 Warnings: 0 3.047 sec
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Sprint 4
dataanalytics_2025:...
MySQL Workbench
Sprint4.docx • Libre...
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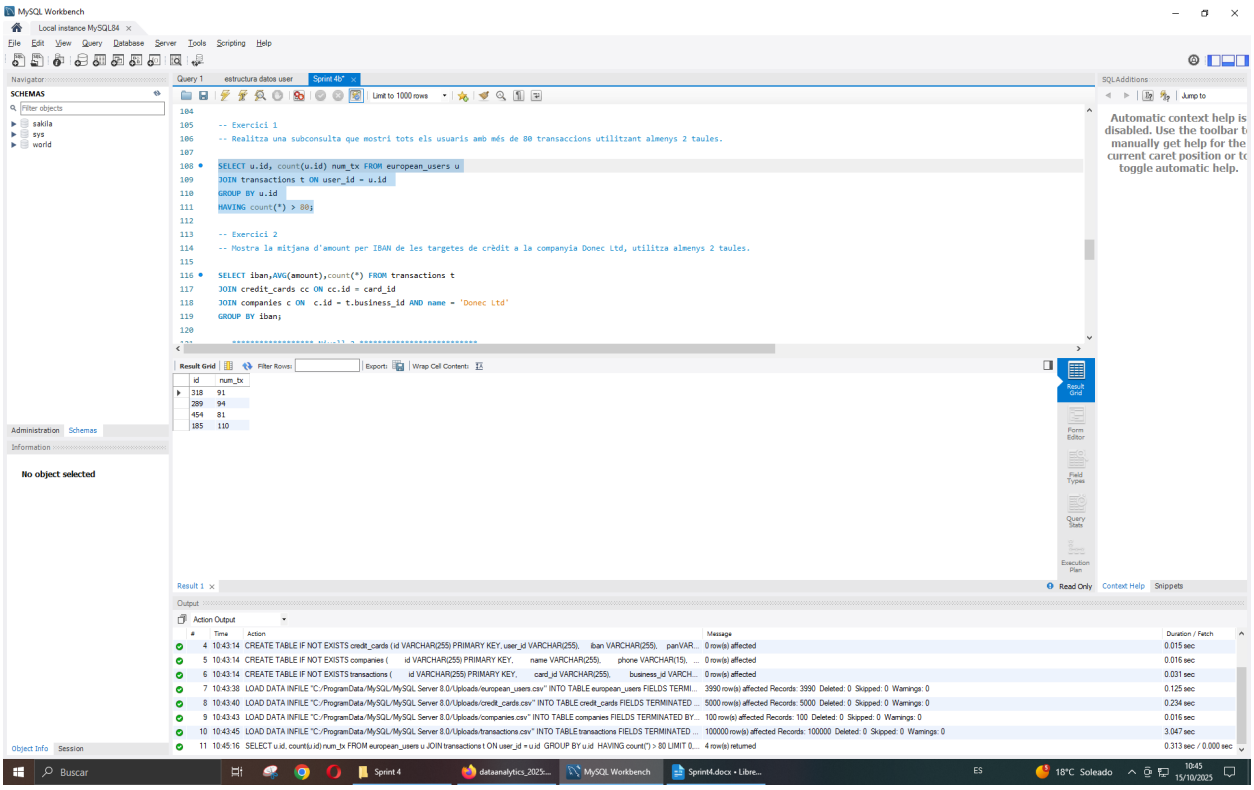
15/10/2025

Exercici 1

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

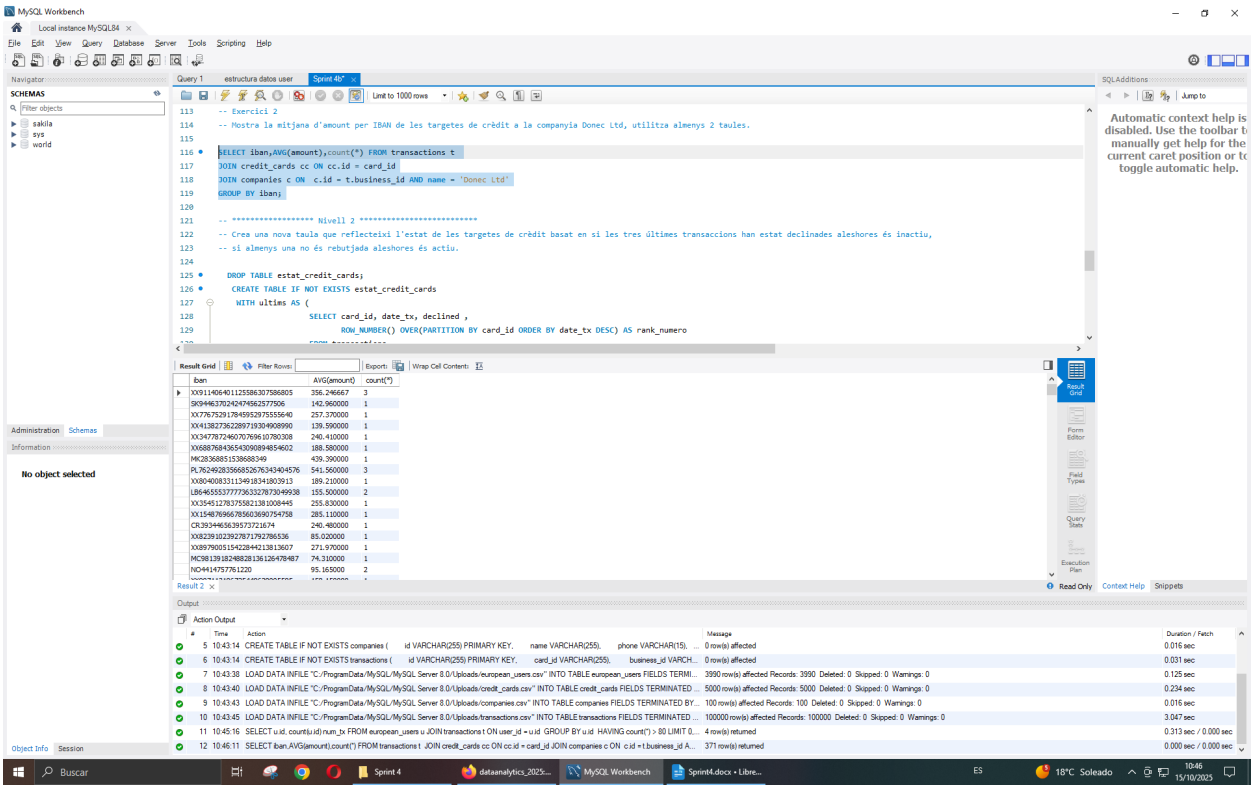
```
SELECT u.id, count(u.id) num_tx FROM european_users u
JOIN transactions t ON user_id = u.id
GROUP BY u.id
HAVING count(*) > 80;
```



Exercici 2

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

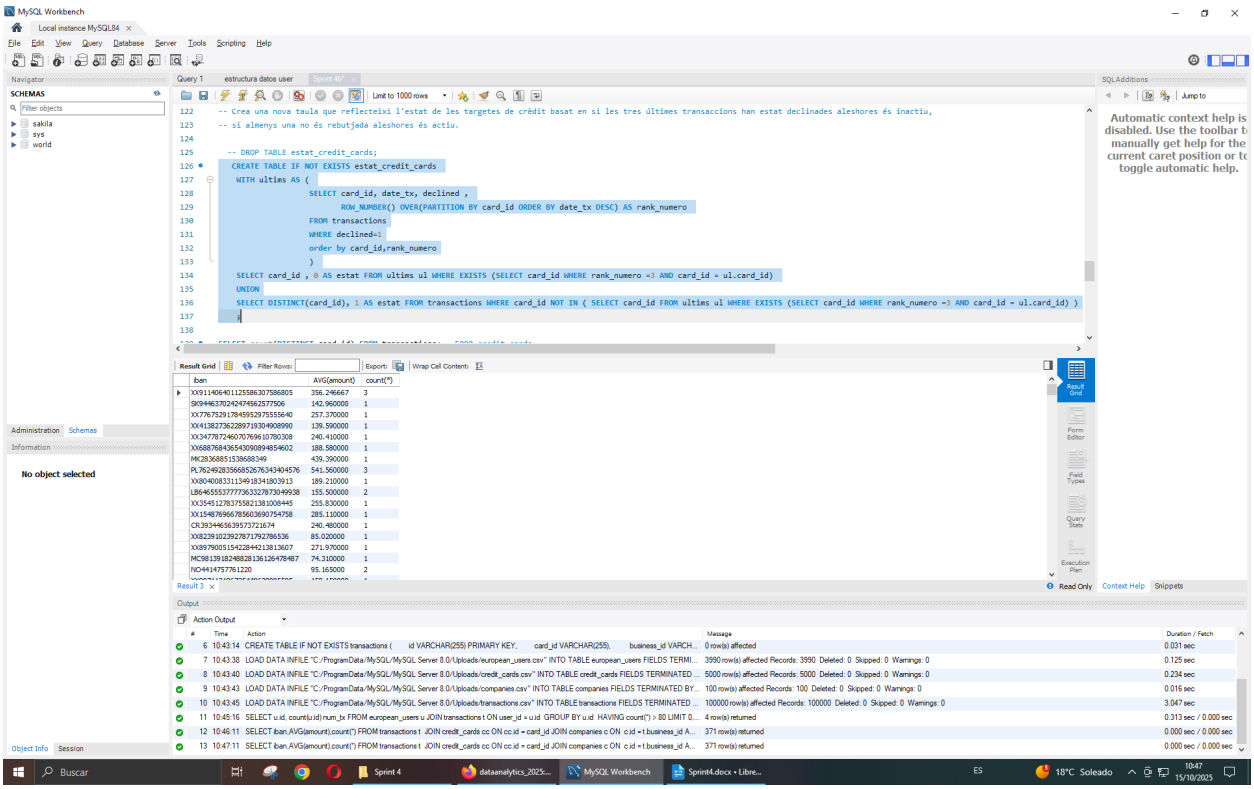
```
SELECT iban,AVG(amount),count(*) FROM transactions t
JOIN credit_cards cc ON cc.id = card_id
JOIN companies c ON  c.id = t.business_id AND name = 'Donec Ltd'
GROUP BY iban;
```



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) )
	;
```

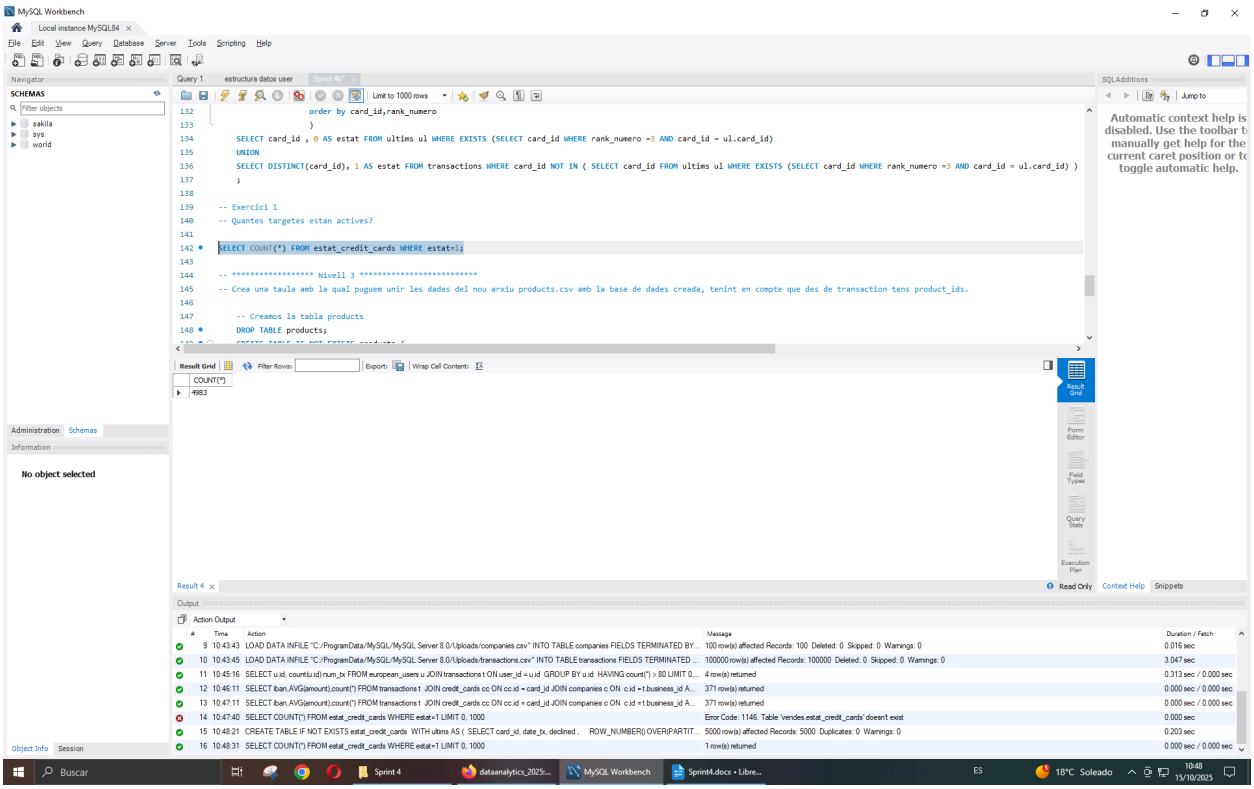


Partint d'aquesta taula respon:

Exercici 1

Quantes targetes estan actives?

SELECT COUNT(*) FROM estat_credit_cards WHERE estat=1;

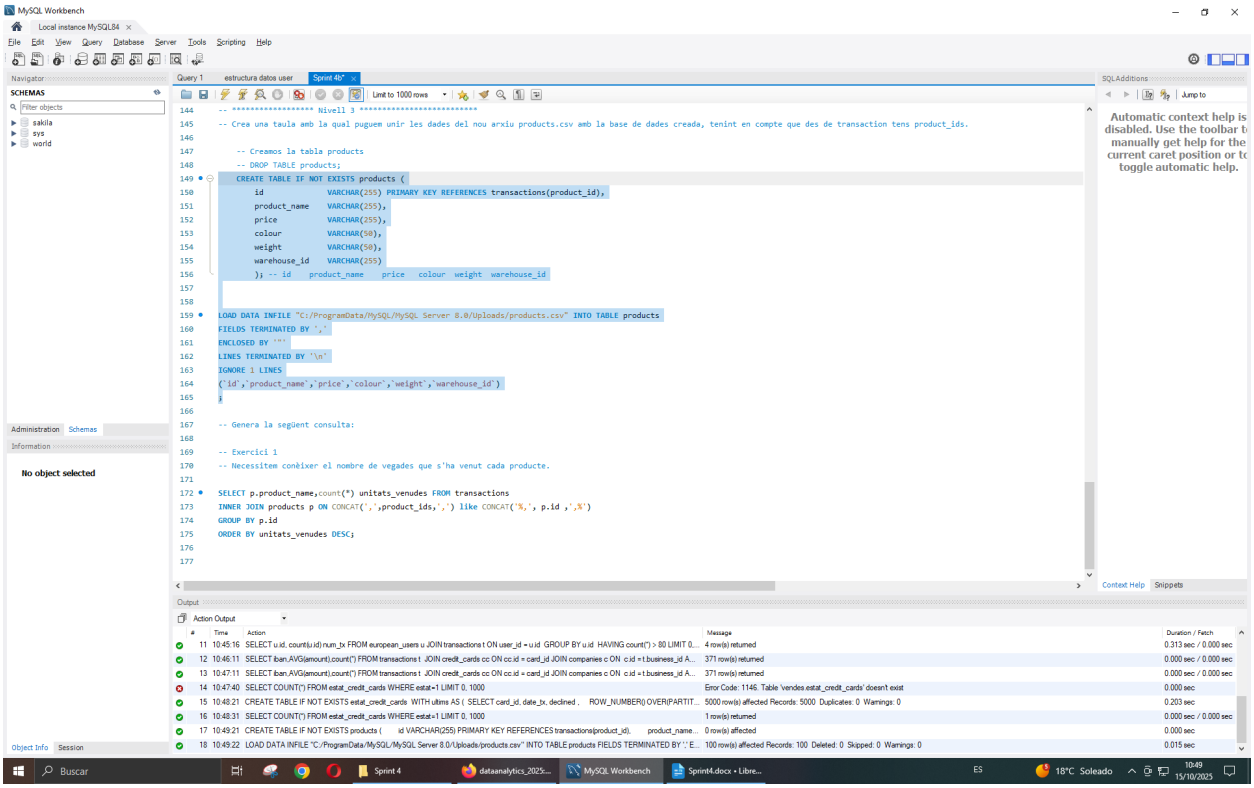


Nivell 3

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.product_name,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;
```