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

```sql
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)

);

```sql
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`);
```

Local instance MySQL84   MySQL Model*   EER Diagram

File   Edit   View   Query   Database   Server   Tools   Scripting   Help

Navigator

SCHEMAS

Filter objects
- sakila
- sys
- world

Administration   Schemas

Information

No object selected

Query 1   Sprint 4*   transactions   transactions

Don't Limit

```
 78    -- SET birth_date = DATE_FORMAT(@birth_date, '%b %d, %Y')
 79    ;
 80
 81  • LOAD DATA INFILE "C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/american_users.csv" INTO TABLE users
 82    FIELDS TERMINATED BY ','
 83    ENCLOSED BY '"'
 84    LINES TERMINATED BY '\n'
 85    IGNORE 1 LINES
 86    (id, name, surname, phone, email, birth_date, country, city, postal_code, address)
 87    -- SET birth_date = DATE_FORMAT(@birth_date, '%b %d, %Y')
 88    ;
 89
 90  • LOAD DATA INFILE "C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/credit_cards.csv" INTO TABLE credit_cards
 91    FIELDS TERMINATED BY ','
 92    ENCLOSED BY '"'
 93    LINES TERMINATED BY '\n'
 94    IGNORE 1 LINES
 95    (`id`, `user_id`, `iban`, `pan`, `pin`, `cvv`, `track1`, `track2`, `expiring_date`)
 96    ;
 97
 98  • LOAD DATA INFILE "C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/companies.csv" INTO TABLE companies
 99    FIELDS TERMINATED BY ','
100    ENCLOSED BY '"'
101    LINES TERMINATED BY '\n'
102    IGNORE 1 LINES
103    (`id`, `name`, `phone`, `email`, `country`, `website`)
104    ;
105  • LOAD DATA INFILE "C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/transactions.csv" INTO TABLE transactions
106    FIELDS TERMINATED BY ';'
107    ENCLOSED BY '"'
108    LINES TERMINATED BY '\n'
109    IGNORE 1 LINES
110    (`id`, `card_id`, `business_id`, `date_tx`, `amount`, `declined`, `product_ids`, `user_id`, `lat`, `longitude`)
111    ;
```

SQL Additions

Jump to

Context Help   Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
4	13:39:34	CREATE TABLE IF NOT EXISTS credit_cards (id VARCHAR(255) PRIMARY KEY, user_id VARCHAR(255), iban VARCHAR(255), panVAR…	0 row(s) affected	0.000 sec
5	13:39:37	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	13:39:40	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	13:39:45	LOAD DATA INFILE "C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/european_users.csv" INTO TABLE users FIELDS TERMINATED BY '…	3990 row(s) affected Records: 3990 Deleted: 0 Skipped: 0 Warnings: 0	0.219 sec
8	13:39:48	LOAD DATA INFILE "C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/american_users.csv" INTO TABLE users FIELDS TERMINATED BY '…	1010 row(s) affected Records: 1010 Deleted: 0 Skipped: 0 Warnings: 0	0.031 sec
9	13:39:50	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	0.140 sec
10	13:39:53	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
11	13:39:55	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	5.256 sec

Object Info   Session

Query Completed

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

    SELECT card_id, IF(sum(declined)=3,1,0) AS inactiu

        FROM

        (SELECT card_id,declined,

         ROW_NUMBER() OVER(PARTITION BY card_id ORDER BY date_tx DESC) AS rank_numero

        FROM transactions) rank_ultims

    WHERE rank_numero <=3

GROUP BY card_id;

Hi han 5 cards_id que estàn inactives
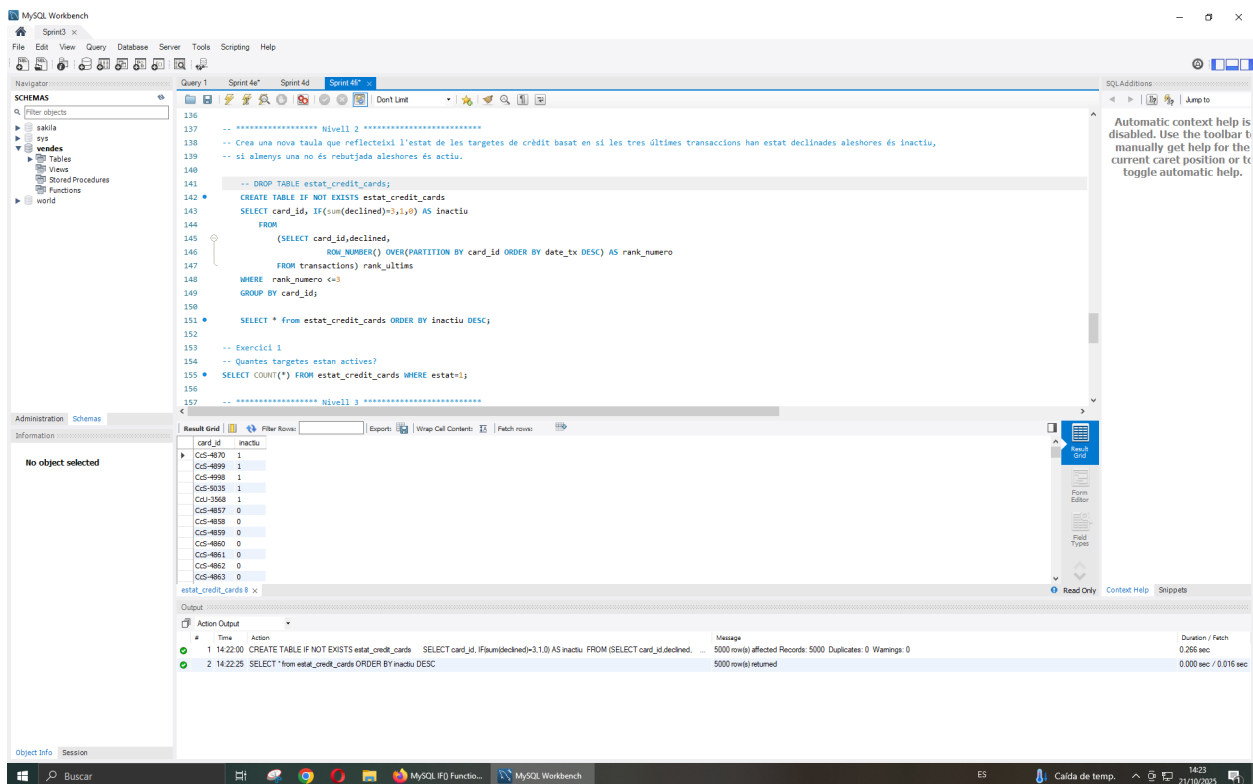
Partint d'aquesta taula respon:

Exercici 1

Quantes targetes estan actives?

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

```
132              order by card_id,rank_numero
133            )
134        SELECT card_id , 0 AS estat FROM ultims ul WHERE EXISTS (SELECT card_id WHERE rank_numero =3 AND card_id = ul.card_id)
135        UNION
136        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) )
137        ;
138
139    -- Exercici 1
140    -- Quantes targetes estan actives?
141
142    SELECT COUNT(*) FROM estat_credit_cards WHERE estat=1;
143
144    -- ***************** Nivell 3 ************************
145    -- 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.
146
147        -- Creamos la tabla products
148        DROP TABLE products;
```

Result Grid

COUNT(*)
4983

Output — Action Output

#	Time	Action	Message	Duration / Fetch
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...	100000 row(s) affected Records: 100000 Deleted: 0 Skipped: 0 Warnings: 0	3.047 sec
11	10:45:16	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 LIMIT 0...	4 row(s) returned	0.313 sec / 0.000 sec
12	10:46:11	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 A...	371 row(s) returned	0.000 sec / 0.000 sec
13	10:47:11	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 A...	371 row(s) returned	0.000 sec / 0.000 sec
14	10:47:40	SELECT COUNT(*) FROM estat_credit_cards WHERE estat=1 LIMIT 0, 1000	Error Code: 1146. Table 'vendes.estat_credit_cards' doesn't exist	0.000 sec
15	10:48:21	CREATE TABLE IF NOT EXISTS estat_credit_cards WITH ultims AS (SELECT card_id, date_tx, declined , ROW_NUMBER() OVER(PARTIT...	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	0.203 sec
16	10:48:31	SELECT COUNT(*) FROM estat_credit_cards WHERE estat=1 LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec

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`)
;
```
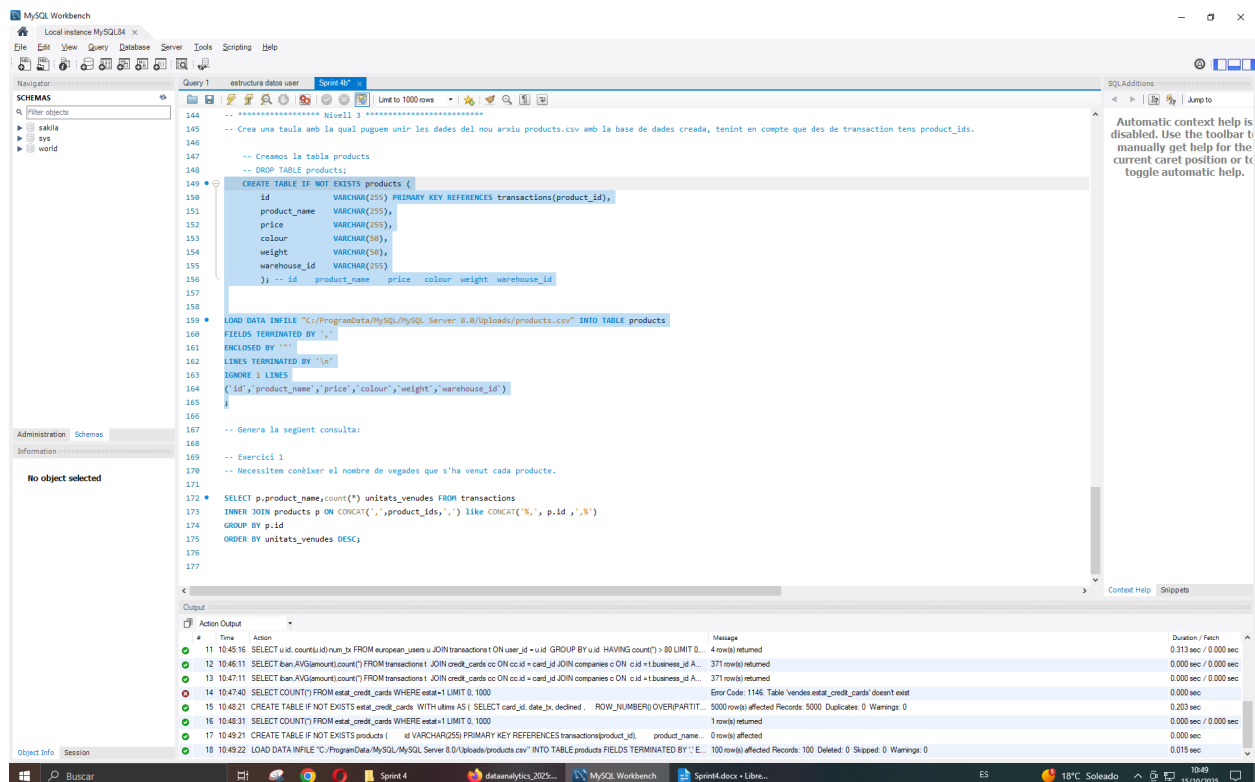
Exercici 1

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;