



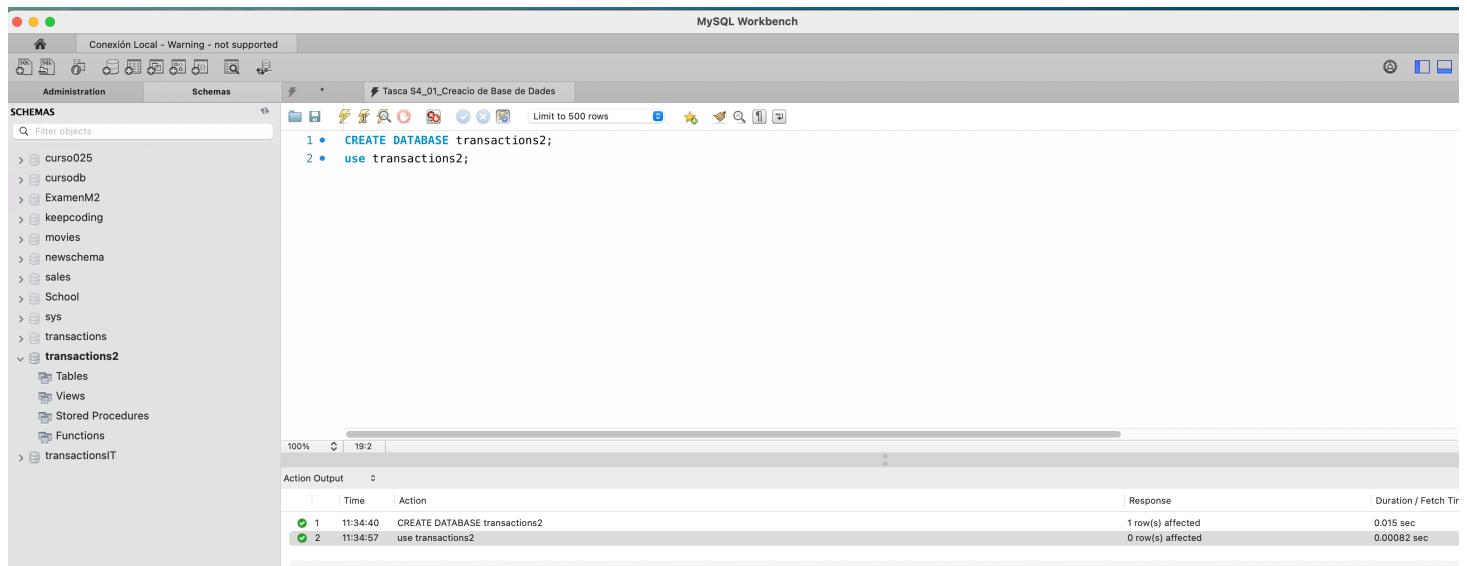
# SPRINT 4: CREACIÓ DE BASE DE DADES

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# 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:

## Creación base de datos



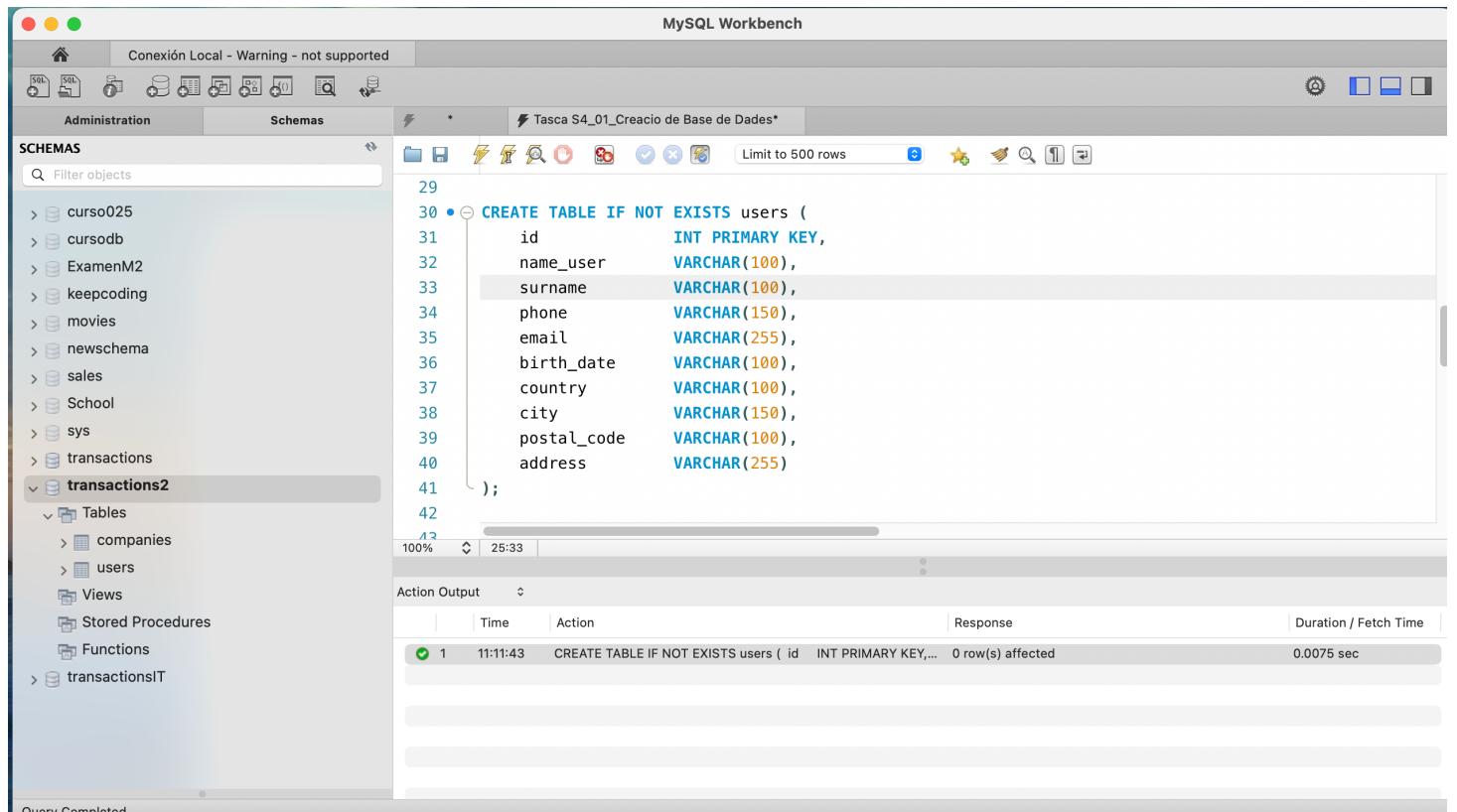
The screenshot shows the MySQL Workbench interface. In the top navigation bar, there is a warning message: "Conexión Local - Warning - not supported". The main area is titled "Tasca S4\_01\_Creacio de Base de Dades". The left sidebar shows the "Schemas" tree, which includes "curso025", "cursodb", "ExamenM2", "keepcoding", "movies", "newschema", "sales", "School", "sys", "transactions", and a selected schema "transactions2". The "Tables", "Views", "Stored Procedures", and "Functions" nodes under "transactions2" are also visible. The central pane displays the following SQL code:

```
1 • CREATE DATABASE transactions2;
2 • use transactions2;
```

Below the code, the "Action Output" pane shows the execution results:

Action	Time	Response	Duration / Fetch Time
CREATE DATABASE transactions2	11:34:40	1 row(s) affected	0.015 sec
use transactions2	11:34:57	0 row(s) affected	0.00082 sec

## Creación tabla users



The screenshot shows the MySQL Workbench interface. In the top navigation bar, there is a warning message: "Conexión Local - Warning - not supported". The main area is titled "Tasca S4\_01\_Creacio de Base de Dades\*". The left sidebar shows the "Schemas" tree, which includes "curso025", "cursodb", "ExamenM2", "keepcoding", "movies", "newschema", "sales", "School", "sys", "transactions", and a selected schema "transactions2". The "Tables" node under "transactions2" is expanded, showing "companies" and "users". The "Views", "Stored Procedures", and "Functions" nodes are also visible. The central pane displays the following SQL code:

```
29
30 • CREATE TABLE IF NOT EXISTS users (
31     id          INT PRIMARY KEY,
32     name_user   VARCHAR(100),
33     surname     VARCHAR(100),
34     phone       VARCHAR(150),
35     email       VARCHAR(255),
36     birth_date  VARCHAR(100),
37     country     VARCHAR(100),
38     city        VARCHAR(150),
39     postal_code VARCHAR(100),
40     address     VARCHAR(255)
41 );
42
```

Below the code, the "Action Output" pane shows the execution results:

Action	Time	Response	Duration / Fetch Time
CREATE TABLE IF NOT EXISTS users ( id INT PRIMARY KEY,...	11:11:43	0 row(s) affected	0.0075 sec

## Creación tabla credit\_card

MySQL Workbench

Conexión Local - Warning - not supported

Administration Schemas

SCHEMAS

Tasca S4\_01\_Creacio de Base de Dades\*

```

45
46 • CREATE TABLE IF NOT EXISTS credit_card (
47     id          VARCHAR(20) PRIMARY KEY UNIQUE,
48     user_id    INT,
49     iban        VARCHAR(100),
50     pan         VARCHAR(30),
51     pin         VARCHAR(4),
52     cvv         VARCHAR(3),
53     track1      VARCHAR(100),
54     track2      VARCHAR(100),
55     expiring_date VARCHAR(8),
56     FOREIGN KEY (user_id) REFERENCES users(id)
57 );
58

```

Action Output

	Time	Action	Response	Duration / Fetch Time
1	11:12:41	CREATE TABLE IF NOT EXISTS credit_card ( id VARCHAR(...	0 row(s) affected	0.011 sec

Query Completed

## Creación tabla transactions

MySQL Workbench

Conexión Local - Warning - not supported

Administration Schemas

SCHEMAS

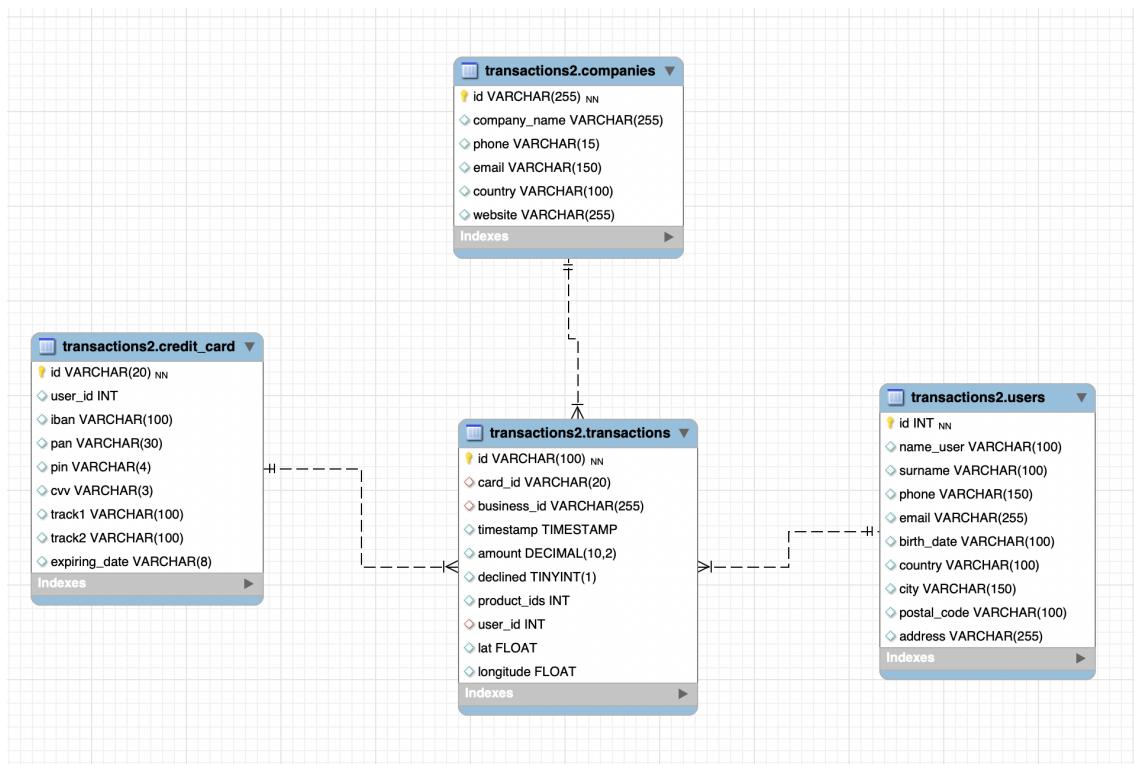
Tasca S4\_01\_Creacio de Base de Dades\*

```

41
42
43 • CREATE TABLE IF NOT EXISTS transactions (
44     id          VARCHAR(100) PRIMARY KEY UNIQUE,
45     card_id    VARCHAR(20),
46     business_id VARCHAR(255),
47     timestamp   TIMESTAMP,
48     amount      DECIMAL(10, 2),
49     declined   BOOLEAN,
50     product_ids VARCHAR(255),
51     user_id    INT,
52     lat         FLOAT,
53     longitude   FLOAT,
54     FOREIGN KEY (card_id) REFERENCES credit_card(id),
55     FOREIGN KEY (business_id) REFERENCES companies(id),
56     FOREIGN KEY (user_id) REFERENCES users(id)
57 );
58
59

```

## Diagrama Entidad Relación



- Exercici 1**

Realitza una subconsulta que mostri tots els usuaris amb més de 30 transaccions utilitzant almenys 2 taules.

```

60
61
62 ##### NIVEL 1 #####
63 # Exercici 1
64 # Realitza una subconsulta que mostri tots els usuaris amb més de 30 transaccions utilitzant almenys 2 taules.
65
66 • SELECT u.name_user
67   , u.surname
68   , u.country
69   ,COUNT(t.user_id) AS total_transacciones
70   FROM transactions t
71   INNER JOIN users u
72     ON t.user_id = u.id
73   GROUP BY t.user_id
74   HAVING total_transacciones > 30
75   ORDER BY total_transacciones DESC;
76
77
78
  
```

name_user	surname	country	total_transacciones
Hedwig	Gilbert	Canada	76
Ocean	Nelson	Canada	52
Kenyon	Hartman	Canada	48
Lynn	Riddle	United States	39

- Exercici 2**

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

```

80 # Exercici 2
81 # Mostra la mitjana d'amount per IBAN de les targetes de crèdit a la companyia Donec Ltd, utilitza almenys 2 taules.
82
83
84
85 • SELECT c.company_name AS Company_Name
86     , ROUND(AVG(t.amount),2) AS Media
87     FROM companies c
88     INNER JOIN transactions t
89         ON c.id = t.business_id
90     INNER JOIN credit_card cc
91         ON cc.id = t.card_id
92     WHERE c.company_name = "Donec Ltd"
93     GROUP BY cc.iban;
94

```

Company_Name	Media
Donec Ltd	203.72

Action Output

Time	Response	Duration / f
1 10:33:04	S 1 row(s) returned	0.0018 sec

## Nivell 2

**Crea una nova taula que reflecteixi l'estat de les targetes de crèdit basat en si les últimes tres transaccions van ser declinades i genera la següent consulta:**

MySQL Workbench

Conexión Local - Warning - not supported

Administration Schemas Query 1 Tasca\_S4\_01\_Creacio de Base de Dades\* Tasca\_S3\_01\_Manipulació\_de\_taules Tasca\_S2\_01\_Nociions\_SQL

**SCHEMAS**

Filter objects

```

99 ##### NIVEL 2 #####
100 ## Crea una nova taula que reflecteixi l'estat de les targetes de crèdit basat en si les últimes tres transaccions van ser declinades i genera la següent consulta:
101
102
103
104 #OBTENGO LAS TARGETAS EN ORDEN DESC DE FECHAS, LA COLUMNA DECLINES Y LA EL ID, AGRUPADAS POR CARD_ID
105
106 • CREATE TABLE estado_tarjetas AS
107   WITH ranking_transaction AS (
108     SELECT card_id
109       , credit_card.expiring_date
110       , declined
111       , timestamp
112     , ROW_NUMBER() OVER(PARTITION BY card_id ORDER BY timestamp DESC) AS ranking
113     FROM transactions
114     INNER JOIN credit_card
115       ON transactions.card_id = credit_card.id
116     GROUP BY card_id, timestamp, declined
117     ORDER BY card_id , timestamp DESC
118   )
119
120 # FILTRO SI ALGUNA DE LAS ULTIMAS 3 TRANSACCIONES HA SIDO RECHAZADA
121 SELECT card_id
122   , expiring_date
123   , IF (SUM(declined)>0, "Si", "No") AS Declinada
124   FROM ranking_transaction
125 WHERE ranking <=3
126   GROUP BY card_id
127   ORDER BY card_id DESC;
128
129
130
131
132
133
134
135
136
137 • SELECT COUNT(*) AS Tarjetas_Activas
138   FROM estado_tarjetas
139   WHERE STR_TO_DATE(expiring_date, '%d/%m/%y') > CURRENT_DATE();
140
141
142
143
144
145
146
147
148
149
150
151

```

Action Output

Action	Time	Action	Response
1	11:29:07	CREATE...	275 row(s) affected Records: 275 Duplicates: 0 Warnings: 0

Duration / Fetch Time 0.016 sec

## • Exercici 1

### Quantes targetes estan actives?

MySQL Workbench

Conexión Local - Warning - not supported

Administration Schemas Query 1 Tasca\_S4\_01\_Creacio de Base de Dades\* Tasca\_S3\_01\_Manipulació\_de\_taules Tasca\_S2\_01\_Nociions\_SQL

**SCHEMAS**

Filter objects

```

129
130
131 # Exercici 1
132 #Quantes targetes estan actives?
133
134     ## primero paso el formato de fecha actual a DATE (YYYY-MM-DD) con la función STR_TO_DATE, pasa de string a DATE
135     ## obtengo todas los campos mayor a CURRENT_DATE, que es la fecha actual
136
137 • SELECT COUNT(*) AS Tarjetas_Activas
138   FROM estado_tarjetas
139   WHERE STR_TO_DATE(expiring_date, '%d/%m/%y') > CURRENT_DATE();
140
141
142
143
144
145
146
147
148
149
150
151

```

Result Grid

Tarjetas_Activas
22

Result 35

Action Output

Action	Time	Action	Response
1	11:31:03	SELECT...	1 row(s) returned

Duration / Fetch Time 0.0035 sec / 0.00000...

# 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:

The screenshot shows the MySQL Workbench interface with the 'Transactions2' schema selected. A SQL query window displays the creation of a 'products' table:

```
143
144
145 ##### NIVEL 3 #####
146
147 #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:
148
149
150 • CREATE TABLE IF NOT EXISTS products (
151     id          INT PRIMARY KEY,
152     product_name VARCHAR(200),
153     price        VARCHAR(10),
154     colour       VARCHAR(7),
155     weight       DECIMAL(2,2),
156     warehouse_id VARCHAR(10)
157 );
158
159
160
```

The query was executed successfully, as shown in the 'Action Output' pane:

Action	Time	Response	Duration / Fetch Time
CREATE TABLE IF NOT EXISTS products ( id... 0 row(s) affected	11:37:33		0.0086 sec

The screenshot shows the MySQL Workbench interface with the 'Transactions2' schema selected. A SQL query window displays the creation of a 'transaction\_products' table and its insertion:

```
#La relación entre la tabla transactions y products es N:M, creo otra tabla intermedia para cada producto y transactions.
#Tengo en cuenta que en la tabla transactions hay un campo con más de un id de producto

# creo la tabla intermedia, la tabla que se crea de la relación N:M
CREATE TABLE IF NOT EXISTS transaction_products (
    transaction_id VARCHAR(100),
    product_id INT,
    PRIMARY KEY (transaction_id, product_id),
    FOREIGN KEY (transaction_id) REFERENCES transactions(id),
    FOREIGN KEY (product_id) REFERENCES products(id)
);

# Sepero los ids de productos, los trato como un registro por fila. Obtengo el id de transacción y un id de producto por cada fila
177 • INSERT INTO transaction_products (transaction_id, product_id)
SELECT id AS transaction_id
,      CAST(product_list.product_id AS UNSIGNED) AS product_id
FROM transactions
JOIN
    JSON_TABLE(
        CONCAT('["', REPLACE(product_ids, ',', '", "'), ']'), "$[*]" COLUMNS(product_id INT PATH "$")
    ) AS product_list;
```

The query was executed successfully, as shown in the 'Action Output' pane:

Action	Time	Response	Duration / Fetch Time
CREATE TABLE IF NOT EXISTS transaction_products... 0 row(s) affected	13:25:54		
INSERT INTO transaction_products (transaction_id, p... 1457 row(s) affected Records: 1457 Duplicates: 0 Warnings: 0	13:25:57		

## • Exercici 1

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

MySQL Workbench

Conexión Local - Warning - not supported

Administration Schemas Tasca\_S4\_01\_Creacio de Base de Dades\* Tasca\_S3\_01\_Manipulació\_de\_taules Tasca\_S2\_01\_Nociions\_SQL M2-AF6.3-SandyRodriguez

**SCHEMAS**

Filter objects

- curso025
- cursodb
- ExamenM2
- keepcoding
- movies
- newschema
- sales
- School
- sys
- transactions
- transactions2**
- Tables
  - companies
  - credit\_card
  - estado\_tarjetas
  - products
  - transaction\_products**
  - transactions
  - users
- Views
- Stored Procedures
- Functions
- transactionsIT

# Exercici 1

```

195
196 # Necessitem conèixer el nombre de vegades que s'ha venut cada producte.
197
198 • SELECT product_name
199   , COUNT(product_id) AS total_producto
200   FROM transaction_products tp
201   INNER JOIN transactions t
202     ON tp.transaction_id = t.id
203   INNER JOIN products p
204     ON tp.product_id = p.id
205   WHERE t.declined = 0
206   GROUP BY product_id
207   ORDER BY total_producto;
208

```

Result Grid

product_name	total_producto
Direwolf Stannis	35
Dorne bastard	39
Karstark Dorne	40
Lannister	40
skywalker ewok	42
duel tourney Lannister	43
Tully maester Tally	43
north of Castery	44
dooku solo	44
Tully Dome	44
Direwolf Littlefinger	45
duel tourney	46
skywalker ewok	46
Kingsblood Littlefing...	47
Lannister Baratheo...	48
Tully	50
Mindoril I annister	50

Result 79

Action Output

Time	Action	Response
13:44:08	SELECT product_name , COUNT(product_id) AS tot...	26 row(s) returned