



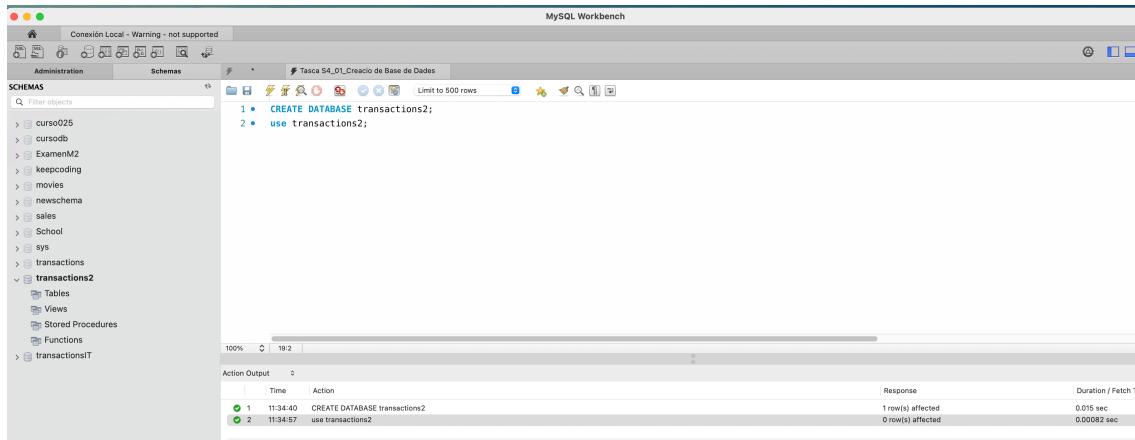
SPRINT 4: CREACIÓ DE BASE DE DADES

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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



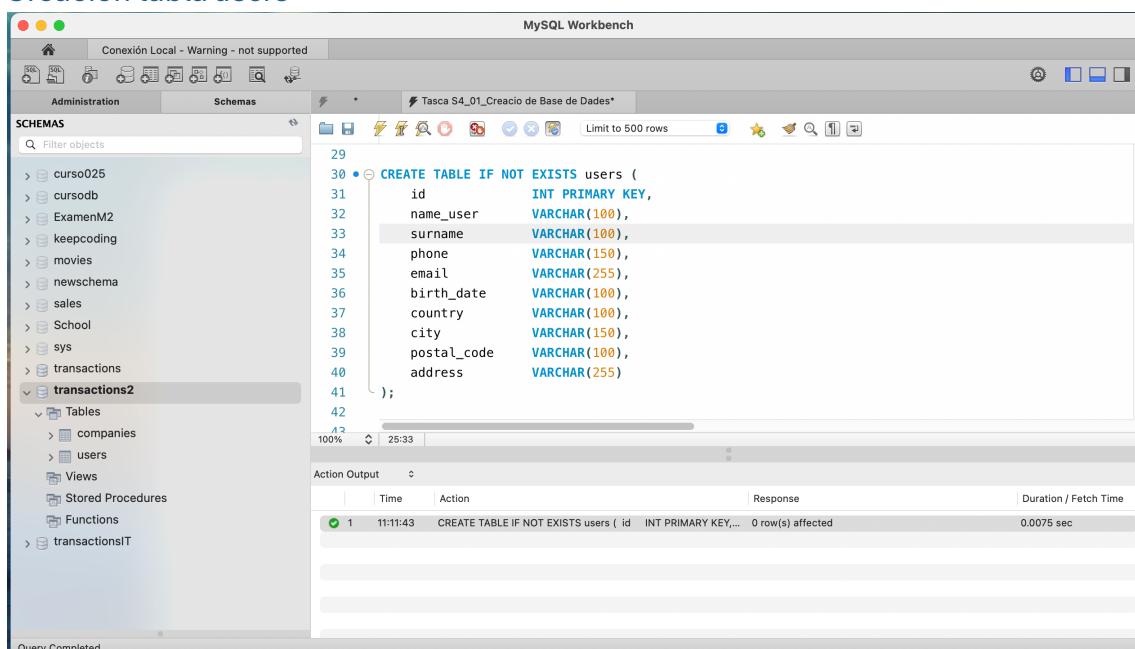
The screenshot shows the MySQL Workbench interface. In the left sidebar under 'SCHEMAS', there is a list of existing databases: curso025, cursodb, ExamenM2, keepcoding, movies, newschema, sales, School, sys, transactions, and transactions2. The 'transactions2' database is currently selected. In the main query editor window, the following SQL code is visible:

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

Below the code, the 'Action Output' pane shows the results of the execution:

Time	Action	Response	Duration / Fetch Time
1 11:34:40	CREATE DATABASE transactions2	1 row(s) affected	0.015 sec
2 11:34:57	use transactions2	0 row(s) affected	0.00082 sec

Creación tabla users



The screenshot shows the MySQL Workbench interface. In the left sidebar under 'SCHEMAS', the 'transactions2' database is selected. In the 'Tables' section, there are two tables: 'companies' and 'users'. The 'users' table is currently selected. In the main query editor window, the following SQL code is visible:

```
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 results of the execution:

Time	Action	Response	Duration / Fetch Time
1 11:11:43	CREATE TABLE IF NOT EXISTS users (id INT PRIMARY KEY,...	0 row(s) affected	0.0075 sec

Creación tabla credit_card

MySQL Workbench

Conexión Local - Warning - not supported

Administration Schemas

SCHEMAS Filter objects

- curso025
- cursodb
- ExamenM2
- keepcoding
- movies
- newschema
- sales
- School
- sys
- transactions
- transactions2**
- Tables
- Companies
- Credit_card
- Users
- Views
- Stored Procedures
- Functions
- TransactionsIT

```

43
44 • CREATE TABLE IF NOT EXISTS credit_card (
45     id          VARCHAR(20) PRIMARY KEY UNIQUE,
46     user_id    INT,
47     iban        VARCHAR(100),
48     pan         VARCHAR(30),
49     pin         VARCHAR(4),
50     cvv         VARCHAR(3),
51     track1     VARCHAR(100),
52     track2     VARCHAR(100),
53     expiring_date VARCHAR(8),
54     FOREIGN KEY (user_id) REFERENCES users(id)
55 );
56
57
58

```

100% 28:53

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 Filter objects

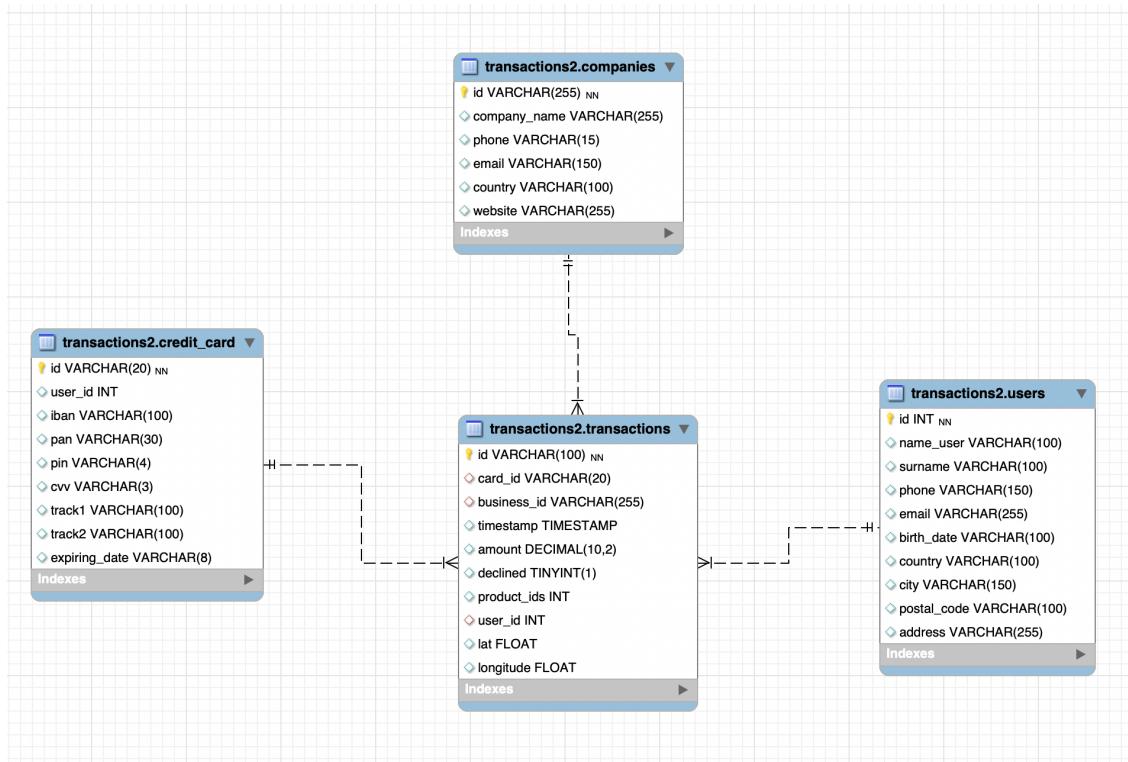
- curso025
- cursodb
- ExamenM2
- keepcoding
- movies
- newschema
- sales
- School
- sys
- transactions
- transactions2**
- Tables
- Companies
- Credit_card
- transactions**
- Users

```

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

```

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
    100% 1/82
    Result Grid Filter Rows: Search Export:
    name_user surname country total_transacciones
    Heslop Gilson Canada 76
    Ocean Nelson Canada 52
    Kenyon Hartman Canada 48
    Lynn Riddle United States 39
    Result B
    Action Output c
    Time Action
    1 11/12/07 SELECT u.name_user , u.surname , u.country ,COUNT(t.user_id) AS total_transacciones FROM transactions t INNER JOIN users u ON t.user_id=u.id GROUP BY t.user_id HAVING total_transacciones > 30 ORDER BY total_transacciones DESC LIMIT 0, 2000
    Response
    4 row(s) returned
  
```

- Exercici 2**

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

MySQL Workbench

Administration Schemas

SCHEMAS Filter objects

```

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

```

Result Grid

Company_Name	Media
Donec Ltd	203.72

Action Output

Time	Action	Response	Duration / Fetch Time
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

Administration Schemas

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

```

Action Output

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

Limit to 2000 rows

Filter objects

SCHEMAS

curso025
cursodb
ExamenM2
keepcoding
movies
newschema
sales
School
sys
transactions
transactions2

Tables
Companies
credit_card
estado_tarjetas
transactions
users
Views
Stored Procedures
Functions
TransactionsT

```

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 Filter Rows: Search Export:

Tarjetas_Activas
22

Result 35

Action Output Duration / Fetch Time

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

0.0035 sec / 0.00000...

Result Grid Form Editor Read Only

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:

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

Limit to 2000 rows

Filter objects

SCHEMAS

curso025
cursodb
ExamenM2
keepcoding
movies
newschema
sales
School
sys
transactions
transactions2

Tables
Companies
credit_card
estado_tarjetas
transactions
users
Views
Stored Procedures
Functions
TransactionsT

```

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.
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

```

Action Output Duration / Fetch Time

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

MySQL Workbench

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

```

#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
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;

```

Action Output

Time	Action	Response
1 13:25:54	CREATE TABLE IF NOT EXISTS transaction_products...	0 row(s) affected
2 13:25:57	INSERT INTO transaction_products (transaction_id, p... 1457 row(s) affected Records: 1457 Duplicates: 0 Warnings: 0	

• Exercici 1

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

MySQL Workbench

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
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sys
transactions
transactions2
Tables
companies
credit_card
estado_tarjetas
products
transaction_products
transactions
users
Views
Stored Procedures
Functions
transactionsIT

```

Exercici 1

```

# Necesitem conèixer el nombre de vegades que s'ha venut cada producte.
SELECT product_name
, COUNT(product_id) AS total_producto
FROM transaction_products tp
INNER JOIN transactions t
ON tp.transaction_id = t.id
INNER JOIN products p
ON tp.product_id = p.id
WHERE t.declined = 0
GROUP BY product_id
ORDER BY total_producto;

```

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 Tarly	43
north of Casterly	44
dooku solo	44
Tully Dorne	44
Direwolf Littlefinger	45
duel tourney	46
skywalker ewok	46
kingsblood Littlefing...	47
Lannister Barratheo...	48
Tully	50
Wintertroll I coniglio	50

Result 79

Action Output

Time	Action	Response
1 13:44:08	SELECT product_name , COUNT(product_id) AS tot...	26 row(s) returned