

Roser Blasco
Sprint 4
17 Desembre 2024
Corregit per Vanessa Marina Detto

Base de dades

Nivell 1

- Exercici 1: 30 transaccions
- Exercici 2: mitjana per iban

Nivell 2

- Exercici 1: targetes actives

Nivell 3

- Reemplaçar espais
- Carregar taula productes
- Llista de productes

Exercici 1: vendes per producte

Base de dades

Partint d'alguns arxius CSV dissenyaràs i crearàs la teva base de dades.

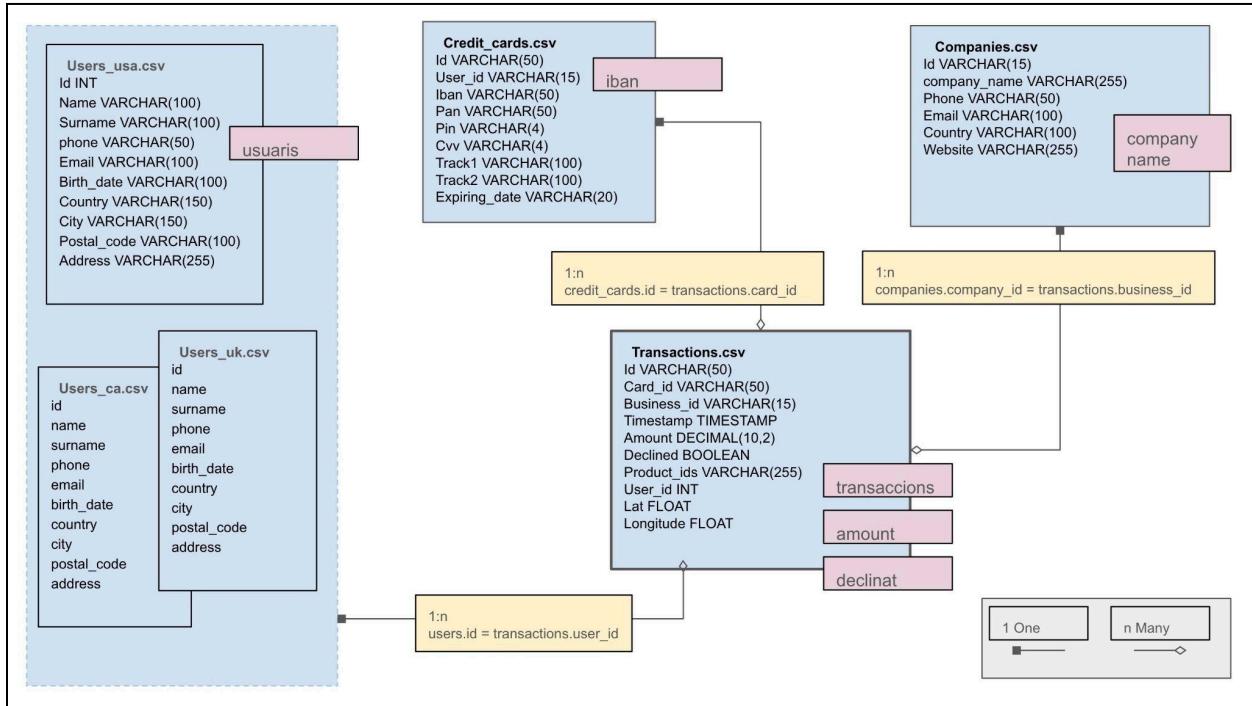
Nivell 1

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

De moment montarem la següent base de dades amb 4 taules amb un esquema d'estrella, on la taula de transaccions serà la taula de fets. Juntarem les taules de users per a simplificar la relació amb credit card i que a més a més, quan es crein nous usuaris, evitar duplicats en el id d'usuari. El usuari de la credit card de moment no el relacionarem perquè no ens interessa de qui és el usuari que fa la compra.

Deixarem de banda la taula de producte perquè és una relació molts a molts i ho solucionarem en el nivell 3.

Afegim en rosa les dades que ens demanaran després en els exercicis i en groc la relació entre taules. Hem fet el grafic en power point, per això hem hagut d'inventar els símbols per a 1 i n. Un usuari pot tenir moltes compres, una targeta de crèdit es pot fer servir multiples vegades i les empreses poden tenir moltes vendes. Per això les relacions amb la taula transactions són de 1 a molts.



Començarem per crear la base de dades i la taula companies

Local instance 3306 - Warning - not supported MySQL Model* EER Diagram

Schemas Administration Schemas

FUNCTIONS modelat_sql_roser2

Tables

Companies

Columns

id company_name phone email country website

Indexes

Foreign Keys

Triggers

Object Info Session

Connection Details

- Name: Local instance 3306
- Host: localhost
- Port: 3306
- Login: root
- User: root
- Current User: root@localhost
- SSL: TLS_AES_128_GCM_S
- Cipher: HA256

Server

- Product: Homebrew
- Version: 9.0.1

Connector

- Version: C++ 9.0.0

SQL File 48* SQL File 49* SQL File 50* SQL File 51* Sprint4-2* SQL File 53* SQL File 54

Don't Limit

```

1  ### NIVELL 1 ####
2  ### PREPARACIÓ BBDD ####
3
4  --- Creem una base de dades
5 • CREATE DATABASE IF NOT EXISTS modelat_sql_roser2;
6 • USE modelat_sql_roser2;
7
8 • CREATE TABLE IF NOT EXISTS companies (
9    id VARCHAR(15) PRIMARY KEY,
10   company_name VARCHAR(255),
11   phone VARCHAR(50),
12   email VARCHAR(100),
13   country VARCHAR(100),
14   website VARCHAR(255)
15 );

```

Action Output

	Time	Action	Response	Duration / Fetch Time
278	15:28:52	CREATE TABLE IF NOT EXISTS companies (id VARCHAR(15) PRIMARY KEY, company_name VARCHAR(255), phone VARCHAR(50), email VARCHAR(100), country VARCHAR(100), website VARCHAR(255));	0 row(s) affected	0.027 sec

Query Completed

La taula credit_cards

The screenshot shows the MySQL Workbench interface with the 'Schemas' tab selected. Under the 'modelat_sql_roser2' schema, the 'Tables' section contains 'companies' and 'credit_cards'. The 'credit_cards' table is currently selected. The SQL editor at the bottom displays the following SQL code:

```

1  ## NIVELL 1 ##
2  ### PREPARACIÓ BBDD ##
3
4  -- Creem una base de dades i les taules
5 • CREATE DATABASE IF NOT EXISTS modelat_sql_roser2;
6 • USE modelat_sql_roser2;
7
8 • CREATE TABLE IF NOT EXISTS companies (
9    id VARCHAR(15) PRIMARY KEY,
10   company_name VARCHAR(255),
11   phone VARCHAR(50),
12   email VARCHAR(100),
13   country VARCHAR(100),
14   website VARCHAR(255)
15 );
16
17 • CREATE TABLE IF NOT EXISTS credit_cards (
18    id VARCHAR(50) PRIMARY KEY,
19    user_id VARCHAR(15),
20    iban VARCHAR(50),
21    pan VARCHAR(50),
22    pin VARCHAR(4),
23    cvv VARCHAR(4),
24    track1 VARCHAR(100),
25    track2 VARCHAR(100),
26    expiring_date VARCHAR(20)
27 );

```

The 'Object Info' and 'Session' tabs are visible on the left. The 'Connection Details' pane shows the connection is to 'Local instance 3306' on 'localhost' with 'root' as the user. The 'Server' and 'Connector' panes show 'Homebrew' and 'C++ 9.0.0' respectively. The 'Action Output' pane at the bottom shows the execution of the 'CREATE TABLE' command.

La taula users

The screenshot shows the MySQL Workbench interface with the 'Schemas' tab selected. Under the 'modelat_sql_roser2' schema, the 'Tables' section contains 'companies' and 'credit_cards'. The 'users' table is currently selected. The SQL editor at the bottom displays the following SQL code:

```

12   email VARCHAR(100),
13   country VARCHAR(100),
14   website VARCHAR(255)
15 );
16
17 • CREATE TABLE IF NOT EXISTS credit_cards (
18    id VARCHAR(50) PRIMARY KEY,
19    user_id VARCHAR(15),
20    iban VARCHAR(50),
21    pan VARCHAR(50),
22    pin VARCHAR(4),
23    cvv VARCHAR(4),
24    track1 VARCHAR(100),
25    track2 VARCHAR(100),
26    expiring_date VARCHAR(20)
27 );
28
29 • CREATE TABLE IF NOT EXISTS users (
30    id INT PRIMARY KEY,
31    name VARCHAR(100),
32    surname VARCHAR(100),
33    phone VARCHAR(50),
34    email VARCHAR(100),
35    birth_date VARCHAR(100),
36    country VARCHAR(150),
37    city VARCHAR(150),
38    postal_code VARCHAR(100),
39    address VARCHAR(255)
40 );

```

The 'Object Info' and 'Session' tabs are visible on the left. The 'Connection Details' pane shows the connection is to 'Local instance 3306' on 'localhost' with 'root' as the user. The 'Server' and 'Connector' panes show 'Homebrew' and 'C++ 9.0.0' respectively. The 'Action Output' pane at the bottom shows the execution of the 'CREATE TABLE' command.

La taula transactions

The screenshot shows the MySQL Workbench interface. On the left, the 'Schemas' tree view shows the 'transactions' schema selected. Under 'Columns', the following fields are listed:

- id
- card_id
- business_id
- timestamp
- amount
- declined
- product_ids
- user_id
- lat
- longitude

The 'Script' tab displays the following SQL code:

```
36
37
38
39
40
41
42 • CREATE TABLE IF NOT EXISTS transactions (
43     id VARCHAR(50) PRIMARY KEY,
44     card_id VARCHAR(50),
45     business_id VARCHAR(15),
46     timestamp TIMESTAMP,
47     amount DECIMAL(10,2),
48     declined BOOLEAN,
49     product_ids VARCHAR(255),
50     user_id INT,
51     lat FLOAT,
52     longitude FLOAT
53 );
54
55 -- Afegir dades a les taules
56 • LOAD DATA INFILE 'companies.csv' INTO TABLE companies
57     FIELDS TERMINATED BY ',' OPTIONALLY ENCLOSED BY '"'
58     LINES TERMINATED BY '\r\n'
59     IGNORE 1 LINES;
```

The 'Object Info' and 'Session' tabs are also visible at the bottom of the interface.

Afegim les dades a la taula companies

Local instance 3306 - Warning - not supported MySQL Model* EER Diagram

Administration Schemas

SCHEMAS

Filter objects

modelat_sql_oser

- Tables
- Views
- Stored Procedures
- Functions

modelat_sql_oser2

- Tables
 - companies
 - credit_cards
 - transactions
 - Columns
 - id
 - card_id
 - business_id

Object Info Session

Connection Details

Name: Local instance 3306
Host: localhost
Port: 3306
Login User: root
Current User: root@localhost
SSL cipher: TLS_AES_128_GCM_SHA256

Server

Product: Homebrew
Version: 9.0.1

Connector

Version: C++ 9.0.0

```

34   email VARCHAR(100),
35   birth_date VARCHAR(100),
36   country VARCHAR(150),
37   city VARCHAR(150),
38   postal_code VARCHAR(100),
39   address VARCHAR(255)
40 );
41
42 • CREATE TABLE IF NOT EXISTS transactions (
43   id VARCHAR(15) PRIMARY KEY,
44   card_id VARCHAR(50),
45   business_id VARCHAR(15),
46   timestamp TIMESTAMP,
47   amount DECIMAL(10,2),
48   declined BOOLEAN,
49   product_id VARCHAR(255),
50   user_id INT,
51   lat FLOAT,
52   longitude FLOAT,
53   FOREIGN KEY (user_id) REFERENCES users (id),
54   FOREIGN KEY (card_id) REFERENCES credit_cards (id),
55   FOREIGN KEY (business_id) REFERENCES companies (id)
56 );
57
58 • LOAD DATA INFILE 'companies.csv' INTO TABLE companies
59   FIELDS TERMINATED BY ',' OPTIONALLY ENCLOSED BY '"'
60   LINES TERMINATED BY '\r\n'
61   IGNORE 1 LINES;
62

```

Action Output

Time	Action	Response	Duration / Fetch Time
320 15:55:27	LOAD	100 row(s) affected Records: 100 Deleted: 0 Skipped: 0 Warnings: 0	0.010 sec

Query Completed

I mirem que estigu bé

Local instance 3306 - Warning - not supported MySQL Model* EER Diagram

Administration Schemas

SCHEMAS

Filter objects

modelat_sql_oser

- Tables
- Views
- Stored Procedures
- Functions

modelat_sql_oser2

- Tables
 - companies
 - credit_cards
 - transactions
 - Columns
 - id
 - card_id
 - business_id

Object Info Session

Connection Details

Name: Local instance 3306
Host: localhost
Port: 3306
Login User: root
Current User: root@localhost
SSL cipher: TLS_AES_128_GCM_SHA256

Server

Product: Homebrew
Version: 9.0.1

Connector

Version: C++ 9.0.0

```

1 • SELECT *
2 FROM companies;

```

Result Grid

id	company_name	phone	email	country	website
b-2222	Ac Fermentum Incorporated	06 85 56 52 33	donec.portitor.tellus@yahoo.net	Germany	https://instagram.com/site
b-2226	Magna A Neque Industries	04 14 44 64 62	rius.donec.nibh@icloud.org	Australia	https://whatsapp.com/group/9
b-2230	Fusce Corp.	08 14 97 58 85	rius@protonmail.edu	United States	https://pinterest.com/sub/cars
b-2234	Convallis In Incorporated	06 66 57 29 50	mauris.ut@aol.co.uk	Germany	https://cnm.com/user/110
b-2238	Ante laculis Nec Foundation	08 23 04 99 53	sed.dictum.proin@outlook.ca	New Zealand	https://netflix.com/settings
b-2242	Donec Ltd	01 25 51 37 37	at.aculus@hotmail.co.uk	Norway	https://nytimes.com/user/110
b-2246	Sed Nunc Ltd	02 62 64 73 48	nibh@yahoo.org	United Kingdom	https://cnm.com/one
b-2250	Amet Nulla Donec Corporation	07 15 25 14 74	mattis.integer.eu@protonmail.net	Italy	https://netflix.com/sub/cars
b-2254	Nascetur Ridiculus Mus Inc.	06 26 87 61 84	suspendisse.dui@cloud.net	United States	https://ebay.com/sub
b-2258	Vestibulum Lorem PC	02 02 87 33 40	aenean.massa.integer@aol.net	Belgium	https://pinterest.com/sub/cars
b-2262	Gravida Sagittis LLP	03 81 28 33 97	turpis.vita@google.ca	Sweden	https://naver.com/site
b-2266	Mus Aenean Eget Foundation	06 25 15 52 43	mi.duis@hotmail.net	Sweden	https://instagram.com/group/9
b-2270	Diu Parturient Institute	05 36 29 78 74	pros@protonmail.org	Ireland	https://google.com/one
b-2274	Sed LLC	01 63 16 26 52	at@outlook.com	Belgium	https://reddit.com/fr
b-2278	Arcu LLP	06 46 04 41 45	dui@aol.ca	Norway	https://yahoo.com/sub
b-2282	Pretium Neque Corp.	07 77 48 55 28	eleifend.nec.malesuada@proto...	Australia	https://netflix.com/sub
b-2286	Fringilla LLC	08 29 15 93 57	gravida@protonmail.co.uk	New Zealand	https://reddit.com/user/110
b-2290	Quisque Libero LLC	01 45 48 71 11	sapien.molestie.orci@hotmail.c...	China	https://baidu.com/group/9
b-2294	Auctor Mauris Vel LLP	08 09 28 74 14	nec.tempus@icloud.co.uk	United States	https://instagram.com/fr
b-2298	Eti Etiam Laoreet Associates	07 69 74 17 45	ultrices@google.co.uk	Canada	https://yahoo.com/fr
b-2302	Nunc Intendum Incorporated	05 18 15 48 13	non@outlook.com	Germany	https://wikipedia.org/en-us
b-2306	Augue Foundation	06 88 43 15 63	mauris@yahoo.com	Germany	https://baidu.com/sub/cars
b-2310	Non Magna LLC	06 71 73 13 17	nisl.quisque.fringilla@hotmail.ca	United Kingdom	https://whatsapp.com/sites
b-2314	A Institute	03 34 91 68 65	metus.aliquam@google.edu	Belgium	https://reddit.com/fr
b-2318	Quam A Felis Industries	04 08 10 27 16	proin.velit@icloud.edu	Italy	https://ebay.com/settings
b-2322	Integer Mellis Corp.	03 12 20 45 24	eu.eros@protonmail.ca	Italy	https://netflix.com/group/9
b-2326	Enim Condimentum Ltd	09 05 51 66 25	imperdiet.non.vestibulum@yah...	United Kingdom	https://cnm.com/group/9
b-2330	Donec Fringilla PC	01 51 58 14 44	ut.lincident@hotmail.ca	France	https://google.com/fr

Action Output

Time	Action	Response	Duration
330 15:59:05	SELECT * FROM companies	100 row(s) returned	0.001

Query Completed

A la taula credit cards, en aquest cas només es carrega sense la r

Local Instance 3306 - Warning - not supported MySQL Model* EER Diagram

Administration Schemas

Filter objects

1 • LOAD DATA INFILE 'credit_cards.csv' INTO TABLE credit_cards
FIELDS TERMINATED BY ',' OPTIONALLY ENCLOSED BY '\"'
LINES TERMINATED BY '\n'
IGNORE 1 LINES;

Object Info Session

Connection Details
Name: Local instance 3306
Host: localhost
Port: 3306
Login User: root
Current User: root@localhost
SSL cipher: TLS_AES_128_GCM_SHA256

Server
Product: Homebrew
Version: 9.0.1
Connector
Version: C++ 9.0.0

Action Output Time Action Response Duration / Fetch Time
333 16:00:55 LOAD DATA INFILE 'credit_cards.csv' INTO TABLE credit_cards... 275 row(s) affected Records: 275 Deleted: 0 Skipped: 0 Warnings: 0 0.011 sec

Query Completed

I mirem que estan bé els resultats

Local Instance 3306 - Warning - not supported MySQL Model* EER Diagram

Administration Schemas

Filter objects

1 • SELECT *
2 FROM credit_cards;

Result Grid Edit: Export/Import: Result Grid Form Editor Field Types Query Stats Execution Plan

id	user_id	iban	pan	pin	cvv	track1	track2	expiring_date
CcU-2952 273	L05072166938416119234	4556 453 55287	4598 438	%#B21832851057287162%#9006859740077	%#B6778580257287162%#9006859740077	06/29/21		
CcU-2959 273	CR724247724435845135	372461377349375	3583 667	%#B7281111956795320%#XcooldjBkcecd%#090102...	%#B424615489281853-280522391679	02/24/23		
CcU-2966 271	BG72LK2705627628373783	44856 886747 4900 130	%#B4782893222756223%#hlgvsuFbmwq%#72022...	%#B2318571115959881-#09021578475	10/29/24			
CcU-2973 270	PT78062283590249456346	544 5865 5433 384	8760 887	%#B47614052372837%#JinjipodBlejr%#7108515...	%#B7816169831446746-13102727299	01/30/25		
CcU-2980 269	DE392418818630360277136	402400 7145845969	5075 596	%#B732043839370549%#OokxprHpsed%#49017...	%#B2474313962214151-041221913175	07/24/22		
CcU-2987 268	GE9868143483748781813	3763 747687 76666	2298 797	%#B4750646345146674%#JmymfGwfr%#830517...	%#B5441935173148165-10370453677	10/31/23		
CcU-2994 267	BE62714425680667657549	44283273252593	7545 595	%#B15375978405874%#GmoyhtUtgom%#25078...	%#B414167473024343-#0506800955074	02/28/22		
CcU-3001 266	CY49087426654714581268832110	51172294833 2244	9562 867	%#B6227288756%#28848%#uwlfcPfmgyd%#28088...	%#B3429355750963453-#30528830573	09/16/22		
CcU-3008 265	L05072166938416119234	4485744464433884	1854 740	%#B32494130529228%#NlcuytHtDvp%#17081...	%#B2523123731781369-#04056381667	04/05/25		
CcU-3015 264	PS11198921629514596805404568821	37092232387389 3246	822	%#B7782111956795320%#XcooldjBkcecd%#090102...	%#B2318571115959881-#09021578475	02/24/23		
CcU-3022 263	G17916943750590805423121857	5164 1378 4842 9551	984 342	%#B084568220510287%#YXwvzKwod%#1056...	%#B7782111956795320%#XcooldjBkcecd%#090102...	01/16/23		
CcU-3029 262	AD831741398241411812373748	129 279586 77631	9708 955	%#B0892325429383868%#HimmwRpm%#1902...	%#B43772671511918-#090245381976	09/02/23		
CcU-3036 261	A23930600295842665649841998	3768 451564 4636	2222 565	%#B491457645466431%#NotsazwEngph%#9202091...	%#B7298413452276515-#305246040573	10/27/23		
CcU-3043 260	TNG4914310514852179353	455676 6437463035	5989 196	%#B65468531888394%#VjixnyCblop%#440679...	%#B546932081168583-#2403868577	06/07/23		
CcU-3050 259	FRI1777443691758368310545477	4024007123722	4848 123	%#B774417722353790%#WuhwozExww%#91057...	%#B27786707351262-#04036024475	10/09/23		
CcU-3057 258	L0931822757469754821	3484 621767 21237	6805 848	%#B4513248319178918%#BmpmpehXplop%#71025...	%#B4513248319178918-#090245381976	09/14/23		
CcU-3064 257	P514696564544926337762727313	3467 732741 26810	3865 498	%#B7675544532775797%#XbxvhnPqgeek%#5103...	%#B252324414661722-#08123922827	06/02/23		
CcU-3071 256	N08923814763512	3464 789562 23352	6625 661	%#B815082679583217-#708165320671	%#B252324414661722-#08123922827	12/20/23		
CcU-3078 255	IS02512174588423279548733	4539 322 74 2377	9405 720	%#B8805305952767929%#YncrvuOohn%#6909...	%#B7847385332697301-#510445189471	03/08/23		
CcU-3085 254	BE63114732972437	5266 3346 1135 1687	7241 413	%#B4298286686837%#NaovghMalgv%#78069...	%#B2485202349754081-#608989779	05/10/23		
CcU-3092 253	R06GLSD01166122152447487	3488 754223 46253	9417 594	%#B280412368465462%#DolminDlykv%#61072...	%#B123754406214788-#040821384277	12/19/22		
CcU-3099 252	PT7810527535682370557218	448 55148 98683 789	5612 564	%#B58751325323639%#Sdyavpxeopeuj%#84034...	%#B724024880651978-#05099746877	01/22/23		
CcU-3106 251	AT784251637773592	3495471 46395283	9733 209	%#B149149487932598%#FhrgwNxkaop%#70015...	%#B982179521072281-#0303720777	01/27/24		
CcU-3113 250	IE26LCGT47732173752752	341834822877471	9011 287	%#B0395671333359126%#CwpwyAgsdpm%#5512...	%#B3438596027194536-#530658655373	06/12/21		
CcU-3120 249	R572655766666166237144	52764 533375 6577	7656 265	%#B38118528147385482%#CwpwyJgjhw%#70054...	%#B649687042095239-#5059165373	01/16/21		
CcU-3127 248	P78353461438644342818684	4716 443 46 4568	8038 924	%#B3061281355691188%#XboirwZppiw%#25063...	%#B3251465561823891-#7210196578871	01/16/23		
CcU-3134 247	BG23MYJ052686951824779	5146 3435 9768 2168	7260 935	%#B313474228305614%#lbllvDyry%#9010905...	%#B3656418879463739-#7602836175	08/24/25		
CcU-3141 246	CH4437040777669672438	3775 626726 45261	2923 330	%#B861137771625740%#CpqmvnuHoewp%#7711...	%#B503990562878303-#76018919876	05/11/24		

Action Output Time Action Response Duration / Fetch Time
334 16:01:58 SELECT * FROM credit_cards 275 row(s) returned 0.0017 sec / 0.00015...

Query Completed

Carreguem la taula transactions. Amb compte que aquí els valors no estan separats per una coma sinò per punt i coma

The screenshot shows the MySQL Workbench interface. The top menu bar includes 'Local instance 3306 - Warning - not supported', 'MySQL Model*', and 'EER Diagram'. The main window has tabs for 'Administration' and 'Schemas'. Under 'Schemas', there is a tree view for the 'transactions' table, showing columns: id, card_id, business_id, timestamp, amount, declined, product_ids, user_id, lat, and longitude. Below the schema tree is a SQL editor window containing the following code:

```
1 • LOAD DATA INFILE 'transactions.csv' INTO TABLE transactions
2   FIELDS TERMINATED BY ';' OPTIONALLY ENCLOSED BY '"'
3   LINES TERMINATED BY '\r\n'
4   IGNORE 1 LINES;
```

Below the code, the 'Object Info' tab is selected, showing 'Connection Details' and 'Server' information. The 'Connection Details' section includes fields like Name: Local Instance 3306, Host: localhost, Port: 3306, Login User: root, Current User: root@localhost, and SSL cipher: TLS_AES_128_GCM_SHA256. The 'Server' section includes Product: Homebrew, Version: 9.0.1, and Connector: C++ 9.0.0. At the bottom of the interface, a status bar indicates 'Query Completed'.

Mirem que estigui bé

The screenshot shows the MySQL Workbench interface. On the left, the 'Schemas' tree displays the 'transactions' schema with its tables ('business', 'card', 'transaction') and columns. The 'Indexes' and 'Foreign Keys' sections are also visible. The main workspace contains a query editor with the following content:

```
1 • Select *
2 FROM transactions;
```

The results grid shows the following data:

	id	card_id	business_id	timestamp	amount	declined	product_ids	user_id	lat	longitude
0	0466A4E-47FC-8D24-FD01-C0B689713128	Ccu-4219	b-2302	2021-07-26 07:29:18	49.53	0	47, 97, 43	170	-43.9695	-117.525
1	063FB479-99E8-66FB-D176A5	Ccu-2987	b-2250	2022-01-06 21:25:27	92.61	0	47, 67, 31, 5	275	-81.2227	-129.05
2	0668296-CDB9-A883-768C-2E4CAF48eA	Ccu-3743	b-2618	2022-01-26 02:07:14	394.18	0	89, 83, 79	265	-34.3593	-100.556
3	08CD9A5-9842-D848-DDDD-AE539FEBAA99	Ccu-2959	b-2346	2021-10-26 23:00:01	279.93	0	43, 31	92	33.7381	158.298
4	07A4648-31A3-7E87-65B9-09A20D109F	Ccu-3225	b-2386	2021-06-28 21:11:42	340.87	1	47, 23	272	38.8342	92.1905
5	09DE92CE-6F27-2B87-13B5-9365B23B8E2	Ccu-3071	b-2298	2021-05-11 20:40:06	303.05	1	67, 7	275	71.1706	10.5757
6	0BE8B0B7-9D66-1707-CE4B-9D7CE71914B5	Ccu-3141	b-2338	2022-03-04 14:54:35	288.81	1	19, 41, 29, 3	272	23.3264	-13.6037
7	0C7C6A3-9947-3BC1-8464-78E3J00D17598	Ccu-3309	b-2434	2021-04-10 20:58:41	103.44	1	89, 31	272	63.3615	-68.6667
8	0CE957A6-9A9A-2B7A-6B39-AB4B1B324853	Ccu-3435	b-2505	2022-02-02 07:29:36	428.69	1	83, 43, 73, ...	269	-69.3537	-10.26
9	0DD2E608-50C6-D1B3-4999-B9E943AD735A	Ccu-2958	b-2324	2021-04-17 05:30:17	252.47	1	7, 47, 17	275	9.68811	130.282
10	1050DA4-8993-3117-47D9ABD9A1D9	Ccu-3709	b-2380	2021-06-21 02:41:00	44.01	0	37, 13	267	44.0445	-140.554
11	1089D10-1D-5E2A-AT8C-55EF-C5C8E940A5D0	Ccu-2946	b-2346	2022-07-15 07:00:58	465.31	0	89, 11, 97, 79	92	36.0581	-140.147
12	10A9B07A-81C0-7E6B-D15-120CC282037	Ccu-3165	b-2346	2021-05-16 21:00:28	278.85	1	59, 57	275	53.7639	-179.85
13	11AEBD97-EA12-1BAA-98F0-A93A CC-72179	Ccu-3981	b-2363	2021-07-14 20:55:45	157.20	0	43, 83	272	-32.0556	-76.7281
14	122DC33-E119-D689-DCD8-95C45FEB9A	Ccu-4368	b-2303	2021-06-09 06:04:14	172.01	1	29, 68	272	78.8402	8.76182
15	133B82CC-D5E2-8620-2021-3DCC54A9E05F	Ccu-3407	b-2490	2021-04-02 05:17:46	348.88	1	1, 67, 19	21	29.6372	-166.173
16	135267BA-957C-C42E-6450A2B2E5D4	Ccu-4520	b-2303	2021-12-29 20:38:23	17.97	0	11, 71	210	20.6724	14.9732
17	13DCB69F-EA07-E52B-8309-D474C281E80	Ccu-3197	b-2370	2020-06-02 04:05:57	50.99	1	97, 29, 23	272	32.3746	165.016
18	13FB3B12-8823-7976-DA47-1998B68218A	Ccu-3365	b-2466	2021-10-30 13:42:44	80.58	1	11, 29, 43, 79	272	20.2369	-117.885
19	1479B3D-B7-B2-B7CA-4BCE-8D72C2D6B8B	Ccu-2999	b-2326	2020-08-09 05:07	309.45	0	89, 41, 59	133	66.2672	172.399
20	14CAE5B5-BF87-3EE4-4C85-BD74E167534F	Ccu-4849	b-2302	2021-12-31 20:42:38	388.04	0	2, 13, 53, 31	189	-53.6202	93.0533
21	1517E8A8-8A84-47C9-6691-6922C27D0D2C	Ccu-3505	b-2545	2023-03-21 05:58:34	259.51	1	83, 43	267	-70.0484	-44.5029
22	152598C2-02D8-D484-4B8D-9E3CE930BFF	Ccu-2998	b-2328	2021-07-05 03:10:00	395.43	0	23, 97	128	-67.0189	-141.672
23	156F1880-7E7D-65CF-727D-6AE03CEB250	Ccu-2959	b-2346	2024-01-29 07:06:01	404.16	0	5	92	-59.9778	172.731
24	1575F87A-7873-DADD-554C-A99D7E16246	Ccu-2944	b-2349	2022-01-14 04:18:31	37.55	0	61, 83, 37	235	64.5745	-79.63
25	158A3AC4-545A-4DCC-B689-637C7678E7C1	Ccu-1484	b-2303	2022-03-08 05:20:19	240.29	0	13, 41, 80	183	49.5424	-170.347

The bottom status bar shows 'transactions 3'.

I les dades de la taula users. Primer els de USA

The screenshot shows the MySQL Workbench interface. On the left, the schema browser displays a table named 'transactions' with various columns. The main area shows a SQL editor with the following code:

```
1 • LOAD DATA INFILE 'users_usa.csv' INTO TABLE users
2   FIELDS TERMINATED BY ',' OPTIONALLY ENCLOSED BY ...
3   LINES TERMINATED BY '\r\n'
4   IGNORE 1 LINES;
```

Mirem que estan bé

The screenshot shows the MySQL Workbench interface with the following details:

- Toolbar:** Local instance 3306 - Warning - not supported, MySQL Model*, EER Diagram.
- Schemas:** Administration, Schemas, Filter objects: transactions.
- Query Editor:** Sprint 4, SQL File 48*, Sprint4-2*, SQL File 57*, SQL File 53*, SQL File 56*. The query is:


```
1 • Select *
2   FROM users;
```
- Result Grid:** Shows the 'users' table with 27 rows of data. The columns are: id, name, surname, phone, email, birth_date, country, city, postal_code, address.
- Session Details:**
 - Connection Details:** Name: Local instance 3306, Host: localhost, Port: 3306, Login User: root, User: root@localhost, SSL cipher: TLS_AES_128_GCM_SHA256.
 - Server:** Product: Homebrew, Version: 9.0.1.
 - Connector:** Version: C++ 9.0.0.
- Action Output:** Shows the execution of the query: 381 rows returned in 0.0014 sec / 0.00006...

Li afegim les dades de UK

The screenshot shows the MySQL Workbench interface with the following details:

- Toolbar:** Local instance 3306 - Warning - not supported, MySQL Model*, EER Diagram.
- Schemas:** Administration, Schemas, Filter objects: transactions.
- Query Editor:** Sprint 4, SQL File 48*, Sprint4-2*, SQL File 57*, SQL File 53*, SQL File 56*. The query is:


```
1 • LOAD DATA INFILE 'users_uk.csv' INTO TABLE users
2   FIELDS TERMINATED BY ',' OPTIONALLY ENCLOSED BY ''
3   LINES TERMINATED BY '\r\n'
4   IGNORE 1 LINES;
```
- Action Output:** Shows the execution of the command: 382 rows affected in 0.0062 sec.

I mirem que estan bé

The screenshot shows the MySQL Workbench interface with a query results grid. The query executed is:

```

1 • Select *
2   FROM users;
  
```

The results grid displays 200 rows of user data from the 'users' table. The columns include: id, name, surname, phone, email, birth_date, country, city, and postal_code. The address column is derived from the postal_code. The results show various users from different countries like United Kingdom, United States, and Canada.

	id	name	surname	phone	email	birth_date	country	city	postal_code	address
175	Brent	Bates	0500 221383	ipsum.primis.in@aol.ca	Apr 8, 1996	United King...	Brodick	WJ10 2LP	P.O. Box 249,	1044 Erat Ave
176	Lucas	Stevenson	0800 1111	quis.pede.praesent@google.net	Sep 9, 1998	United King...	Dover	VU8 7QH	832-6324 Nunc Ave	
177	Lisandra	Carpenter	07624 223701	nunc@google.net	Aug 20, 2000	United King...	Keith	XAV5 0RZ	Ap #681-4983 Nec, Av.	
178	Guine...	Kemp	070 1590 7780	quiscipit@google.net	Jun 18, 1987	United King...	Kingsusie	XX8 1SH	Ap #601-3785 Lacus, St.	
179	Stuart	Small	(016977) 2504	sodales.elit.erat@icloud.net	Apr 21, 1983	United King...	Basingstoke	AG98 3SE	P.O. Box 484, 610 Et Ave	
180	Amelia	Valenzuela	(016977) 9972	ac.nulla@google.co.uk	Feb 27, 1986	United King...	Stockport	BK0M 3FQ	2729 Feugiat, Road	
181	Kermit	O'Brien	076 8212 1580	cursus@google.com	Jan 15, 1995	United King...	St. Andrews	D5 2TG	Ap #659-5780 Elit Rd.	
182	Dane	Sheridan	0975 985 5842	vehicula@hotmail.net	Oct 13, 1999	United King...	Selkirk	T8Q 7XU	P.O. Box 148, 5146 Placerat...	
183	Germ...	Whitehead	(016977) 7528	malesuada.malesuada.integer@ao...	Oct 20, 1982	United King...	Alva	GC6Y 2EW	895-5715 Ipsum, Road	
184	Ulla	Ramirez	055 1225 6227	phasellus.elit@icloud.co.uk	Oct 30, 1998	United King...	Stromness	ED0P 8YK	9746 Aliquet St.	
185	Molly	Gilliam	0800 120 8023	donec@outlook.co.uk	Dec 21, 1993	United King...	Banbury	UBH 7PH	P.O. Box 202, 5638 Mi Rd.	
186	Dawn	Gonzalez	0500 351083	vel@protonmail.org	Oct 25, 1994	United King...	Douglas	A0D 7WV	200-7000 Aliquam Ave	
187	David	Veronica	0500 351083	vel@protonmail.org	Aug 5, 1996	United King...	Region	T59A 1YW	P.O. Box 61, 3511 Tempus,...	
188	Keane	Mckinney	0345 629 4218	vel@protonmail.org	Jul 5, 1983	United King...	Lochmaben	QJ79 6UB	102-5374 Ac Rd	
189	Walter	Lamb	(016977) 7335	ut.est@hotmail.edu	Apr 23, 1998	United King...	Biggleswade	OA9M 7PV	592-7699 In Road	
190	Shellei	Valenzuela	0500 899670	dictum.phasellus.in@google.co.uk	Jun 27, 1998	United King...	Fort William	K6G 6S1	2508 Nataque St.	
191	Deirdre	Todd	056 3122 8029	purus.mauris.a@icloud.org	Dec 16, 1984	United King...	Millport	PR67 4CE	3423 A, Avenue	
192	Phoebe	Roth	076 5361 4786	arcu.eu@google.org	Feb 2, 1981	United King...	Buckie	RG6W 3JZ	9001 Ai Ave	
193	Minerva	Wilkins	07581 368219	aliquam.adipiscing@yahoo.edu	Aug 31, 2000	United King...	Shutesbury	NDR 8TC	437-5979 Et Ave	
194	Porter	Francis	0500 257479	quis.acumsan@aol.co.uk	Jul 20, 1991	United King...	Newtown A...	OH 2AL	132-7918 Elementum, Avenue	
195	Roslyn	Blake	(01590) 28451	integer@protonmail.net	Apr 25, 1984	United King...	Swindon	P4 6UJ	Ap #694-5758 Viverra, Av.	
196	Blaze	Duke	0800 060 8337	quis@hotmail.ca	Feb 12, 1992	United King...	March	V5 2UL	416-2357 Vel, Rd.	
197	Carly	Mathews	(024) 5216 7655	mauris@protonmail.edu	May 23, 1996	United King...	Bathgate	KHOE 3HR	8486 Nunc Ave	
198	Keely	Fox	0800 1111	id.mollis@google.net	Jul 1, 1989	United King...	Blairgowrie	N4 5WB	8716 M St.	
199	Lewis	Melendez	(016977) 5758	non@yahoo.net	Jul 8, 1990	United King...	March	JM6 4QS	Ap #615-7530 Nunc Av.	
200	Nero	Mills	056 4507 5712	adipiscing@protonmail.org	Aug 8, 1984	United King...	Newtown	KK80 6UC	Ap #809-8475 Donec Street	

Action Output: 200 row(s) returned

Duration / Fetch Time: 0.0011 sec / 0.00013...

Query Completed

Els de Canadà

The screenshot shows the MySQL Workbench interface with a query results grid. The query executed is:

```

1 • LOAD DATA INFILE 'users_ca.csv' INTO TABLE users
  
```

The results grid displays 75 rows of user data from the 'users' table. The columns include: id, name, surname, phone, email, birth_date, country, city, and postal_code. The address column is derived from the postal_code. The results show users from Canada, with names like John, Michael, and Sarah.

	id	name	surname	phone	email	birth_date	country	city	postal_code	address
1	John	Doe	010-123-4567	john.doe@example.ca	1990-01-01	Canada	Toronto	M1A 2B3	123 Main Street, Toronto, ON M1A 2B3	
2	Michael	Smith	010-123-4568	michael.smith@example.ca	1990-01-01	Canada	Vancouver	V5Z 4H2	123 Main Street, Vancouver, BC V5Z 4H2	
3	Sarah	Jones	010-123-4569	sarah.jones@example.ca	1990-01-01	Canada	Montreal	H3C 1J4	123 Main Street, Montreal, QC H3C 1J4	
4	David	Wilson	010-123-4570	dalwilson@example.ca	1990-01-01	Canada	Ottawa	K2B 5L7	123 Main Street, Ottawa, ON K2B 5L7	
5	Emily	Anderson	010-123-4571	emily.anderson@example.ca	1990-01-01	Canada	Calgary	T2N 2C6	123 Main Street, Calgary, AB T2N 2C6	
6	Robert	Greenwood	010-123-4572	robert.greenwood@example.ca	1990-01-01	Canada	Edmonton	T5J 4H7	123 Main Street, Edmonton, AB T5J 4H7	
7	Laura	Johnson	010-123-4573	laura.johnson@example.ca	1990-01-01	Canada	Gatineau	J8Y 4H7	123 Main Street, Gatineau, QC J8Y 4H7	
8	Matthew	Williams	010-123-4574	matthew.williams@example.ca	1990-01-01	Canada	Victoria	V8W 1V8	123 Main Street, Victoria, BC V8W 1V8	
9	Sarah	Jones	010-123-4575	sarah.jones@example.ca	1990-01-01	Canada	Winnipeg	W3C 1M7	123 Main Street, Winnipeg, MB W3C 1M7	
10	David	Wilson	010-123-4576	dalwilson@example.ca	1990-01-01	Canada	Quebec City	G1R 4H7	123 Main Street, Quebec City, QC G1R 4H7	
11	Emily	Anderson	010-123-4577	emily.anderson@example.ca	1990-01-01	Canada	Montreal	H3C 1J4	123 Main Street, Montreal, QC H3C 1J4	
12	Robert	Greenwood	010-123-4578	robert.greenwood@example.ca	1990-01-01	Canada	Edmonton	T5J 4H7	123 Main Street, Edmonton, AB T5J 4H7	
13	Laura	Johnson	010-123-4579	laura.johnson@example.ca	1990-01-01	Canada	Gatineau	J8Y 4H7	123 Main Street, Gatineau, QC J8Y 4H7	
14	Matthew	Williams	010-123-4580	matthew.williams@example.ca	1990-01-01	Canada	Victoria	V8W 1V8	123 Main Street, Victoria, BC V8W 1V8	
15	Sarah	Jones	010-123-4581	sarah.jones@example.ca	1990-01-01	Canada	Winnipeg	W3C 1M7	123 Main Street, Winnipeg, MB W3C 1M7	
16	David	Wilson	010-123-4582	dalwilson@example.ca	1990-01-01	Canada	Quebec City	G1R 4H7	123 Main Street, Quebec City, QC G1R 4H7	
17	Emily	Anderson	010-123-4583	emily.anderson@example.ca	1990-01-01	Canada	Montreal	H3C 1J4	123 Main Street, Montreal, QC H3C 1J4	
18	Robert	Greenwood	010-123-4584	robert.greenwood@example.ca	1990-01-01	Canada	Edmonton	T5J 4H7	123 Main Street, Edmonton, AB T5J 4H7	
19	Laura	Johnson	010-123-4585	laura.johnson@example.ca	1990-01-01	Canada	Gatineau	J8Y 4H7	123 Main Street, Gatineau, QC J8Y 4H7	
20	Matthew	Williams	010-123-4586	matthew.williams@example.ca	1990-01-01	Canada	Victoria	V8W 1V8	123 Main Street, Victoria, BC V8W 1V8	
21	Sarah	Jones	010-123-4587	sarah.jones@example.ca	1990-01-01	Canada	Winnipeg	W3C 1M7	123 Main Street, Winnipeg, MB W3C 1M7	
22	David	Wilson	010-123-4588	dalwilson@example.ca	1990-01-01	Canada	Quebec City	G1R 4H7	123 Main Street, Quebec City, QC G1R 4H7	
23	Emily	Anderson	010-123-4589	emily.anderson@example.ca	1990-01-01	Canada	Montreal	H3C 1J4	123 Main Street, Montreal, QC H3C 1J4	
24	Robert	Greenwood	010-123-4590	robert.greenwood@example.ca	1990-01-01	Canada	Edmonton	T5J 4H7	123 Main Street, Edmonton, AB T5J 4H7	
25	Laura	Johnson	010-123-4591	laura.johnson@example.ca	1990-01-01	Canada	Gatineau	J8Y 4H7	123 Main Street, Gatineau, QC J8Y 4H7	
26	Matthew	Williams	010-123-4592	matthew.williams@example.ca	1990-01-01	Canada	Victoria	V8W 1V8	123 Main Street, Victoria, BC V8W 1V8	
27	Sarah	Jones	010-123-4593	sarah.jones@example.ca	1990-01-01	Canada	Winnipeg	W3C 1M7	123 Main Street, Winnipeg, MB W3C 1M7	
28	David	Wilson	010-123-4594	dalwilson@example.ca	1990-01-01	Canada	Quebec City	G1R 4H7	123 Main Street, Quebec City, QC G1R 4H7	
29	Emily	Anderson	010-123-4595	emily.anderson@example.ca	1990-01-01	Canada	Montreal	H3C 1J4	123 Main Street, Montreal, QC H3C 1J4	
30	Robert	Greenwood	010-123-4596	robert.greenwood@example.ca	1990-01-01	Canada	Edmonton	T5J 4H7	123 Main Street, Edmonton, AB T5J 4H7	
31	Laura	Johnson	010-123-4597	laura.johnson@example.ca	1990-01-01	Canada	Gatineau	J8Y 4H7	123 Main Street, Gatineau, QC J8Y 4H7	
32	Matthew	Williams	010-123-4598	matthew.williams@example.ca	1990-01-01	Canada	Victoria	V8W 1V8	123 Main Street, Victoria, BC V8W 1V8	
33	Sarah	Jones	010-123-4599	sarah.jones@example.ca	1990-01-01	Canada	Winnipeg	W3C 1M7	123 Main Street, Winnipeg, MB W3C 1M7	
34	David	Wilson	010-123-4600	dalwilson@example.ca	1990-01-01	Canada	Quebec City	G1R 4H7	123 Main Street, Quebec City, QC G1R 4H7	

Action Output: 75 row(s) returned

Duration / Fetch Time: 0.0063 sec

Query Completed

I mirem que està bé

Screenshot of MySQL Workbench showing the results of a query:

```

1
2 • Select *
3 FROM users;

```

Result Grid

id	name	surname	phone	email	birth_date	country	city	postal_code	address
249	Rhea	Harvey	052-287-6524	rheaharvey@protonmail.org	Jul 2, 1991	Canada	Weyburn	7L 2S9	910-7903 Sabian Avenue
250	Hilda	Levy	052-287-2367	hilida.levy@yahoo.com	Dec 15, 1994	Canada	Bethelwood	JH+ 2G5	P.O. Box 496, 1835 At Street
251	Dore	Miller	098-545-1455	ld aliquet lobortis@icloud.com	Aug 25, 1989	Canada	Bethelwood	H4Y 6V2	P.O. Box 309, 103 Neque Str..
252	Zephia	Collins	021-817-1549	urna.vivamus@icloud.ca	Jun 29, 1994	Canada	Anviat	YX8 0E8	237-5522 Donec St.
253	Keara	Parks	048-303-4775	consectetur.adipiscing@google.edu	Oct 2, 1986	Canada	Town of Y...	T2R 4Z7	793-2778 Ornare St.
254	John	Cottos	085-253-4901	iam@yahoo.org	Sep 26, 1983	Canada	Colwood	53K 8S9	Ap #234-6329 Ipsum Road
255	Blaze	Daniel	087-870-8309	feliis@protonmail.org	Oct 11, 1998	Canada	Swan Hills	Y1N 5X1	811-6644 Id, Road
256	Lane	Paul	044-254-6877	necl@protonmail.ca	Aug 10, 1983	Canada	Saskatoon	TJ3 3X3	P.O. Box 850, 1002 Purus, Av.
257	Heather	Paul	044-254-6877	prentiss@protonmail.com	Oct 1, 1991	Canada	Dundas	9P9 6S6	Ap #123-4567 Ut, Street
258	Stacy	Robbins	076-226-5788	tempus.eu.ligula@google.edu	Jun 26, 1980	Canada	Calderon	R4H 8V3	416-9824 Quam Street
259	Slade	Downs	034-228-4880	nunc@protonmail.net	May 28, 1994	Canada	Miniflora	T2Y 5Z1	Ap #213-2963 Tristique Road
260	Grace	Rowe	071-756-4297	convallis.convallis@hotmail.edu	Mar 25, 1987	Canada	Abbotsford	Y7S 3W8	Ap #417-5793 Triculum Rd.
261	Violet	Weber	019-661-3744	aliquet.metus@hotmail.co.uk	Sep 23, 1984	Canada	Ucluelet	W4C 3H8	102-5355 Aliquet Av.
262	Brett	Kirby	076-166-2169	auctor.nunc.nula@outlook.org	Dec 12, 1988	Canada	Barf	S6V 7V5	Ap #431-3047 Adipiscing Rd.
263	Ima	Hendrick	044-254-6877	necl@protonmail.ca	Nov 6, 1991	Canada	Whitehorse	7V9 0B5	Ap #750-483 Lacinia, Rd.
264	Keiko	Guerre	034-254-6877	plam@outlook.ca	Dec 12, 1995	Canada	Bethurst	T7C 9N8	Ap #123-4567 Ut, Street
265	Elaine	Greene	026-178-1548	tempus.eu.ligula@protonmail.org	Jan 10, 1990	Canada	Oshawa	5P7 1M9	P.O. Box 309, 1103 Curseta St.
266	Aiko	Chaney	026-660-1876	ante.ipsum.primes@protonmail.ca	Oct 16, 1986	Canada	Vancouver	R8S 1E1	821-3499 Sapien Ave.
267	Ocean	Nelson	079-481-2745	enean@yahoo.com	Dec 26, 1991	Canada	Charlottet...	8S X3P4	Ap #732-8357 Pepe, Rd.
268	Clark	Olson	029-086-1867	nunc@cloud.net	Mar 15, 1987	Canada	Montague	SSY 1W6	1315 Est Rd.
269	Haley	Fitzpatrick	055-871-6684	in.aliquet@outlook.org	Jan 10, 1996	Canada	Pangnirtung	ROY 1E3	P.O. Box 914, 451 Nam Rd.
270	Elton	Robertson	098-166-2169	tristique.sagittis@google.net	Oct 20, 1990	Canada	McClure	2P9 1M9	200-5355 Aliquet Av.
271	Leandra	Wright	026-265-7010	dictum.sunt@protonmail.ca	Sep 25, 1982	Canada	Gander	H8S 6A9	854-8583 Sallituludin Av.
272	Hedwig	Gilbert	064-204-8788	sem.eget@icloud.edu	Aug 18, 1991	Canada	Tuktoyaktuk	C4C 3G7	P.O. Box 696, 5145 Sapien R...
273	Hilary	Ferguson	090-710-1604	sapien.molestie.orci@google.edu	Nov 3, 1981	Canada	Pangnirtung	12T 5G4	Ap #736-4628 Cras Sapien R...
274	Jame...	Hunt	024-732-2321	fringilla@protonmail.com	Jan 29, 1982	Canada	Township...	B6V 6N4	224-4927 Praesent Ave
275	Kenyon	Hartman	082-871-7248	convallis.ante.lectus@yahoo.com	Aug 3, 1982	Canada	Richmond	RBH 2K2	8564 Facilisi. St.

Action Output

Time	Action	Response	Duration / Fetch Time
275 row(s) returned	0.0017 sec / 0.00019...		

Query Completed

Ara afegim les relacions

Screenshot of MySQL Workbench showing the results of an ALTER TABLE command:

```

1
2
3 • ALTER TABLE transactions ADD CONSTRAINT fk_user_id foreign key (user_id)
4 REFERENCES users (id);
5
6 • ALTER TABLE transactions ADD CONSTRAINT fk_card_id foreign key (card_id)
7 REFERENCES credit_cards (id);
8
9 • ALTER TABLE transactions ADD CONSTRAINT fk_business_id foreign key (business_id)
10 REFERENCES companies (id);

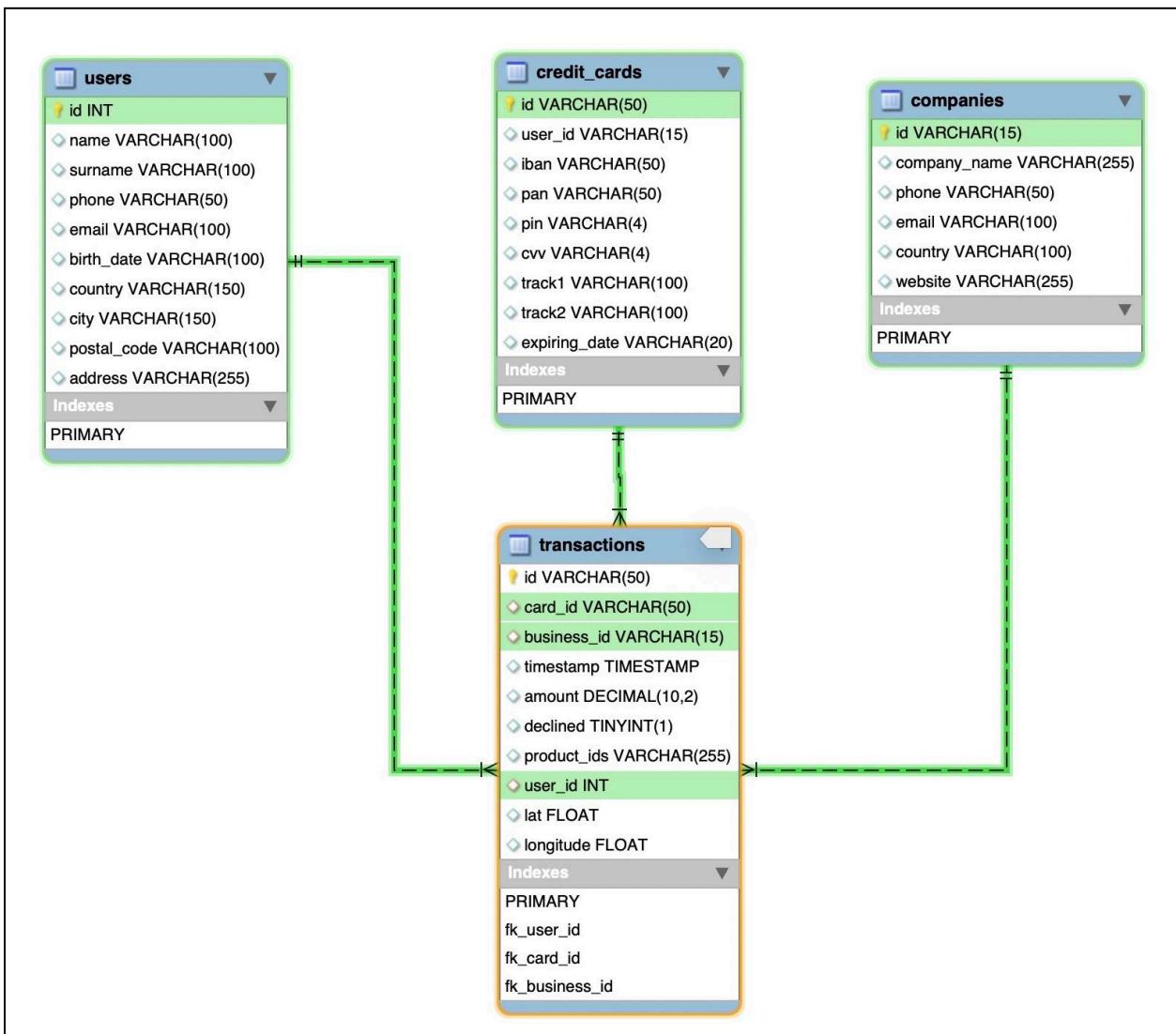
```

Action Output

Time	Action	Response	Duration / Fetch Time
587 row(s) affected Records: 587 Duplicates: 0 Warnings: 0	0.027 sec		

Query Completed

Li demanem que ens monti un grafic per a comprovar-ho



- Exercici 1: 30 transaccions

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

```
1  -- Usuaris amb més de 30 transaccions
2 •  SELECT users.id, users.name AS nom, users.surname AS cognom, COUNT(transactions.id) as numero_transaccions
3   FROM users
4   JOIN transactions ON users.id = transactions.user_id
5   GROUP BY user_id
6   HAVING numero_transaccions > 30
7   ORDER BY numero_transaccions DESC;
```

Result Grid | Filter Rows: Q Search | Export:

id	nom	cognom	numero_transaccions
272	Hedwig	Gilbert	76
287	Ocean	Nelson	52
275	Kenyon	Hartman	48
92	Lynn	Riddle	39

- Exercici 2: mitjana per iban

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

Busquem el id de la companyia Donec, i és b-2242

Local instance 3306 - Warning - not supported

Administration Schemas Sprint 4 SQL File 9* SQL File 10*

SCHEMAS Filter objects modelat_sql_roser Tables companies Columns id company_name phone email country website

Foreign Keys Triggers credit_cards Transactions Columns

Object Info Session Table: companies

Columns:

id	company_name	phone	email	country	website
b-2242	Donec Ltd	01 25 00 37 37	ut.aculus@hotmail.ca	Norway	https://rymnes.com/user/110
b-2254	Cras Consulting	07 50 10 85 63	sed.consequat@google.ca	Belgium	https://baidu.com/en-us
b-2554	Cras Vehicula Aliquet Industries	03 37 86 87 75	arci@hotmail.org	Netherlands	https://google.com/sub
b-2562	Dictum Eu Corp.	03 04 73 67 31	donec.vitae@icloud.ca	Canada	https://netflix.com/en-ca
b-2270	Dis Parturient Institute	05 36 29 78 74	purus@protonmail.org	Ireland	https://google.com/one
b-2502	Dolor Vitae Limited	06 53 60 43 60	purus.maecenas@yahoo.edu	France	https://whatsapp.com/user/110
b-2330	Donec Fringilla PC	01 51 56 04 04	ut.incidunt@hotmail.ca	France	https://google.com/fr
b-2242	Donec Ltd	01 25 00 37 37	ut.aculus@hotmail.ca	Norway	https://rymnes.com/user/110
b-2254	Cras Consulting	04 67 70 87 84	ut@aculus.com	Italy	https://yandex.com/it
b-2578	Dui Quis Institute	06 95 26 72 81	luctus.sit.amet@yahoo.co.uk	New Zealand	https://yahoo.com/en-nz
b-2610	Egestas Nunc Sed Limited	06 01 02 70 47	vitae@hotmail.edu	Italy	https://walmart.com/one
b-2398	Eget Ipsum Ltd	03 67 44 56 72	lacinia.at.aculus@hotmail.net	United States	https://whatsapp.com/settings
b-2458	Eget Tincidunt Duis Institute	05 35 93 32 44	egel.laoreet@hotmail.org	Netherlands	https://wikipedia.org/user/110
b-2298	Elit Etiam Laoreet Associate	07 69 74 17 45	ultrices@google.co.uk	Canada	https://yahoo.com/fr
b-2326	Enim Condimentum Ltd	09 55 51 66 25	imperdiet.non.vestibulum@yahoo.com	United Kingdom	https://cmi.com/group
b-2594	Et Magnis Ltd	03 18 88 77 79	non.vestibulum@protonmail.net	Netherlands	https://ebay.com/fr
b-2478	Etiam Bibendum Fermentum...	07 46 69 45 02	sem.magna@icloud.ca	France	https://youtube.com/one
b-2590	Euismod Mauris Institute	02 13 69 54 85	vivamus.molestie@icloud.ca	Belgium	https://ebay.com/en-ca

Action Output: Time Action Response Duration / Fetch Time

57 13:36:14 SELECT * FROM companies 100 row(s) returned 0.0026 sec / 0.00004...

Query Completed

I filtrarem els resultats

The screenshot shows the MySQL Workbench interface. On the left, the schema browser displays tables like 'credit_cards' and 'transactions'. The central pane shows a query editor with the following SQL code:

```

1 • SELECT card_id, AVG(amount)
2   FROM transactions
3  WHERE business_id = 'b-2242'
4  GROUP BY card_id
5 ORDER BY AVG(amount) DESC;
    
```

The results grid shows one row:

card_id	Avg(amount)
CcU-2973	203.715000

At the bottom, the action output shows the query was executed successfully in 0.0042 sec.

Ara reemplacem el ID per una subquery. M'ha agradat més fer-ho així que amb una join, em sembla que queda més clar.

The screenshot shows the MySQL Workbench interface. The schema browser and object info are similar to the previous screenshot. The query editor contains the following SQL code:

```

1 • SELECT card_id, AVG(amount)
2   FROM transactions
3  WHERE business_id = (SELECT id
4    FROM companies
5   WHERE company_name='Donec Ltd')
6  GROUP BY card_id
7 ORDER BY AVG(amount) DESC;
    
```

The results grid shows one row:

card_id	Avg(amount)
CcU-2973	203.715000

At the bottom, the action output shows the query was executed successfully in 0.0036 sec.

Li afegim els ibans

The screenshot shows the MySQL Workbench interface with a query editor and results grid.

Query Editor:

```
1 •  SELECT credit_cards.iban, AVG(amount) AS mitjana_transaccio_donec
2   FROM transactions
3   JOIN credit_cards ON credit_cards.id = transactions.card_id
4   WHERE business_id = (SELECT id
5     FROM companies
6     WHERE company_name='Donec Ltd')
7   GROUP BY credit_cards.iban
8   ORDER BY AVG(amount) DESC;
9
```

Result Grid:

iban	mitjana_transaccio_donec
PT87806228135092429456346	203.715000

Object Info:

Table: companies

Columns:

- id** varchar(15) PK
- company_name** varchar(255)
- phone** varchar(50)
- email** varchar(100)
- country** varchar(100)
- website** varchar(255)

Action Output:

Time	Action	Response	Duration / Fetch Time
65 13:51:15	SELECT credit_cards.iban, AVG(amount) AS mitjana_transaccio...	1 row(s) returned	0.0016 sec / 0.00000...

Query Completed

I ho posem bonic

```
1 -- Mitjana d'amount per IBAN de targetes a Donec Ltd
2 SELECT credit_cards.iban, ROUND(AVG(amount)) AS mitjana_transaccio_donec
3 FROM transactions
4 JOIN credit_cards ON credit_cards.id = transactions.card_id
5 WHERE business_id = (SELECT id
6   FROM companies
7   WHERE company_name='Donec Ltd')
8 GROUP BY credit_cards.iban
9 ORDER BY mitjana_transaccio_donec DESC;
```

100% 40:9

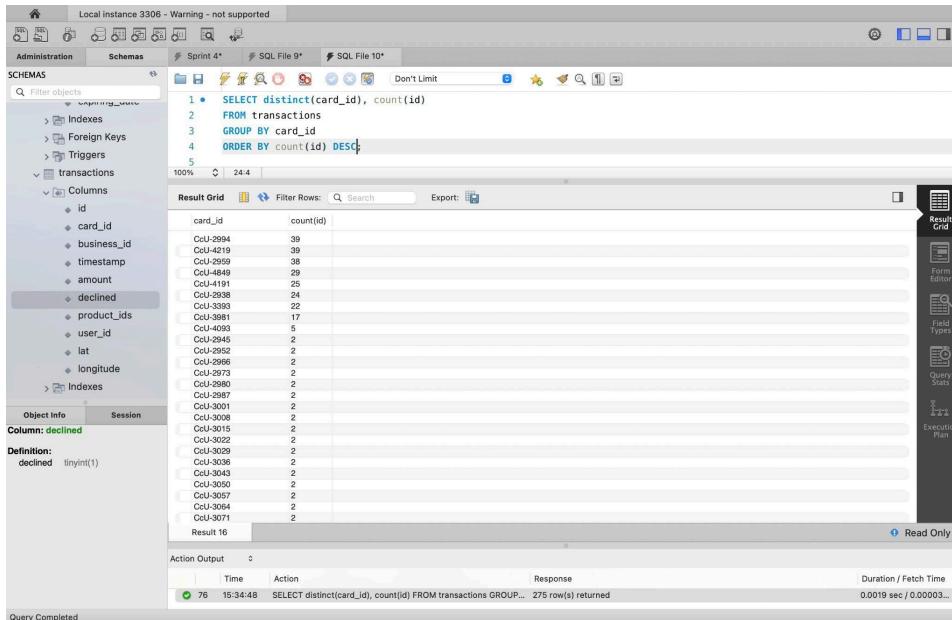
Result Grid Filter Rows: Search Export:

iban	mitjana_transaccio_donec
PT87806228135092429456346	204

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:

Entenem que les targetes que han segut declinades les últimes tres transaccions són tgt inactives i que la resta són actives. Comencem mirant quantes transaccions ha tingut cada targeta.



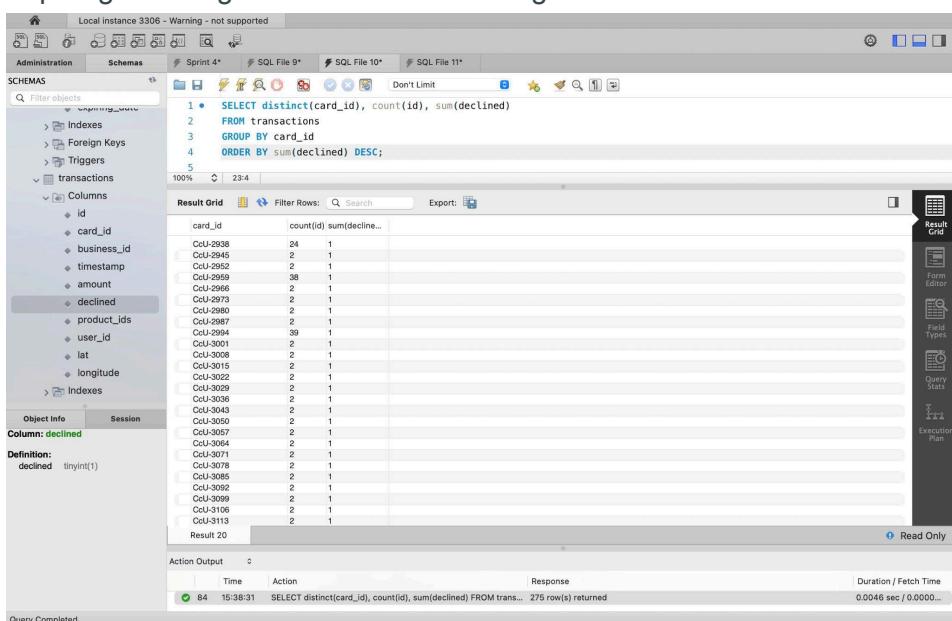
The screenshot shows the SQL Server Management Studio interface with a query window open. The query is:`1 • SELECT distinct(card_id), count(id)
2 FROM transactions
3 GROUP BY card_id
4 ORDER BY count(id) DESC;`

The result grid shows the following data:

card_id	count(id)
CcU-2994	39
CcU-4219	39
CcU-2959	38
CcU-4249	29
CcU-4191	25
CcU-2938	24
CcU-3393	22
CcU-3881	17
CcU-3035	5
CcU-3945	2
CcU-2952	2
CcU-2966	2
CcU-2973	2
CcU-3030	2
CcU-3987	2
CcU-3001	2
CcU-3008	2
CcU-3015	2
CcU-3022	2
CcU-3028	2
CcU-3036	2
CcU-3043	2
CcU-3050	2
CcU-3057	2
CcU-3064	2
CcU-3071	2

Action Output shows the query was executed at 15:34:48 and returned 275 rows in 0.0019 sec / 0.00003...

I quantes vegades en total s'ha declinat cada targeta, que no semblen moltes. Cap targeta s'hagi declinat més d'una vegada.



The screenshot shows the SQL Server Management Studio interface with a query window open. The query is:`1 • SELECT distinct(card_id), count(id), sum(declined)
2 FROM transactions
3 GROUP BY card_id
4 ORDER BY sum(declined) DESC;`

The result grid shows the following data:

card_id	count(id)	sum(declined)
CcU-2938	24	1
CcU-2945	2	1
CcU-2952	2	1
CcU-2959	38	1
CcU-2966	2	1
CcU-2973	2	1
CcU-3000	2	1
CcU-3087	2	1
CcU-3094	2	1
CcU-3095	2	1
CcU-3097	2	1
CcU-3098	2	1
CcU-3099	2	1
CcU-3106	2	1
CcU-3113	2	1

Action Output shows the query was executed at 15:38:31 and returned 275 rows in 0.0046 sec / 0.0000...

En qualsevol cas, segum. Ordenem les transaccions de més recents a més antigues

The screenshot shows the Oracle SQL Developer interface with the following details:

- SQL Editor:** Contains the following SQL code:


```

1 •  SELECT *
2   FROM transactions
3   ORDER BY timestamp DESC;
```
- Result Grid:** Displays the results of the query, showing columns: id, card_id, business_id, timestamp, amount, declined, product_ids, user_id, lat, longitude.
- Table Information:** Shows the structure of the transactions table, including columns: id (PK), card_id, business_id, timestamp, amount, declined, product_ids, user_id, lat, longitude.
- Action Output:** Shows the execution details:

Time	Action	Response	Duration / Fetch Time
112	15:55:36	SELECT * FROM transactions ORDER BY timestamp DESC	587 row(s) returned 0.0019 sec / 0.00054...

Però ens cal partir açò per targeta.

Experimentem una mica amb ROW_NUMBER i amb el partition by.

The screenshot shows the Oracle SQL Developer interface with the following details:

- SQL Editor:** Contains the following SQL code:


```

1
2 •  SELECT card_id, timestamp, ROW_NUMBER () over (partition by card_id order by timestamp)
3   FROM transactions;
```
- Result Grid:** Displays the results of the query, showing columns: card_id, timestamp, and the generated ROW_NUMBER.
- Table Information:** Shows the structure of the transactions table, including columns: id, card_id, business_id, timestamp, amount, declined, product_ids, user_id, lat, longitude.
- Action Output:** Shows the execution details:

Time	Action	Response	Duration / Fetch Time
112	15:55:36	SELECT card_id, timestamp, ROW_NUMBER () over (partition by card_id order by timestamp) ...	587 row(s) returned 0.0019 sec / 0.00054...

De la llista anterior, només ens interessen les tres últimes transaccions. Això vols dir que tenen un ROW NUMBER 3 o menor.

The screenshot shows the MySQL Workbench interface with a query editor and results grid. The query retrieves the last three transactions for each card_id:

```

1
2
3 • SELECT *
4   FROM (SELECT card_id, timestamp, declined, ROW_NUMBER () over (partition by card_id order by timestamp) AS ultimas_transacciones
5     FROM transactions) AS nr_transaccion
6   WHERE ultimas_transacciones <=3;
7

```

The results grid displays the following data:

card_id	timestamp	declined ultimas_transacciones
CcU-2938	2021-03-23 01:12:06	0 1
CcU-2938	2021-03-28 05:01:44	0 2
CcU-2938	2021-04-01 07:27:49	0 3
CcU-2945	2021-06-15 00:26:29	1 1
CcU-2945	2022-02-09 05:26:52	0 2
CcU-2952	2021-05-09 05:38:39	1 1
CcU-2952	2021-05-20 15:10:33	0 2
CcU-2959	2021-04-04 04:51:04	0 1
CcU-2959	2021-04-04 11:53:52	0 2
CcU-2959	2021-04-14 16:55:05	0 3
CcU-2966	2021-06-02 06:19:00	1 1
CcU-2966	2021-10-18 06:12:03	0 2
CcU-2973	2021-07-31 23:03:21	1 1
CcU-2973	2022-01-06 01:44:48	0 2
CcU-2980	2021-08-10 08:14:49	0 1
CcU-2980	2022-03-05 20:41:20	1 2
CcU-2987	2021-05-18 12:34:25	1 1
CcU-2987	2021-05-20 09:28:57	0 2
CcU-2994	2021-04-09 17:24:44	0 1
CcU-2994	2021-04-23 13:07:58	0 2
CcU-2994	2021-04-25 19:11:52	0 3
CcU-3001	2021-10-13 11:30:20	1 1
CcU-3001	2021-12-20 02:01:10	0 2
CcU-3008	2021-03-29 16:15:13	1 1
CcU-3008	2021-11-22 10:00:18	0 2

Result 11

Action Output

Time	Action	Response	Duration / Fetch Time
55 12:43:41	SELECT * FROM (SELECT card_id, timestamp, declined, ROW_NUMBER () over (partition by card_id order by timestamp) AS ultimas_transacciones) AS nr_transaccion WHERE ultimas_transacciones <=3;	376 row(s) returned	0.0052 sec / 0.00005...

Query Completed

D'aquesta llista, sumarem total dels resultats de declined per a cada targeta. Les que tinguin un 3 estaran Inactives i les que tinguin un nombre menor (totes) estan Actives.

The screenshot shows the MySQL Workbench interface with a query editor and results grid. The query calculates the total declined value for the last three transactions for each card_id:

```

1
2 • SELECT card_id, SUM(declined) AS total_declined_3ultimas_trans
3   FROM (SELECT card_id, timestamp, declined, ROW_NUMBER () over (partition by card_id order by timestamp) AS ultimas_transacciones
4     FROM transactions) AS nr_transaccion
5   WHERE ultimas_transacciones <=3;
6   GROUP BY card_id
7   ORDER BY card_id ASC;
8

```

The results grid displays the following data:

card_id	total_declined_3ultimas_trans
CcU-2938	0
CcU-2945	1
CcU-2952	1
CcU-2959	0
CcU-2966	1
CcU-2973	1
CcU-2980	1
CcU-2987	1
CcU-2994	0
CcU-3001	1
CcU-3008	1
CcU-3015	1
CcU-3022	1
CcU-3029	1
CcU-3036	1
CcU-3043	1
CcU-3050	1
CcU-3057	1
CcU-3064	1
CcU-3071	1
CcU-3078	1
CcU-3085	1

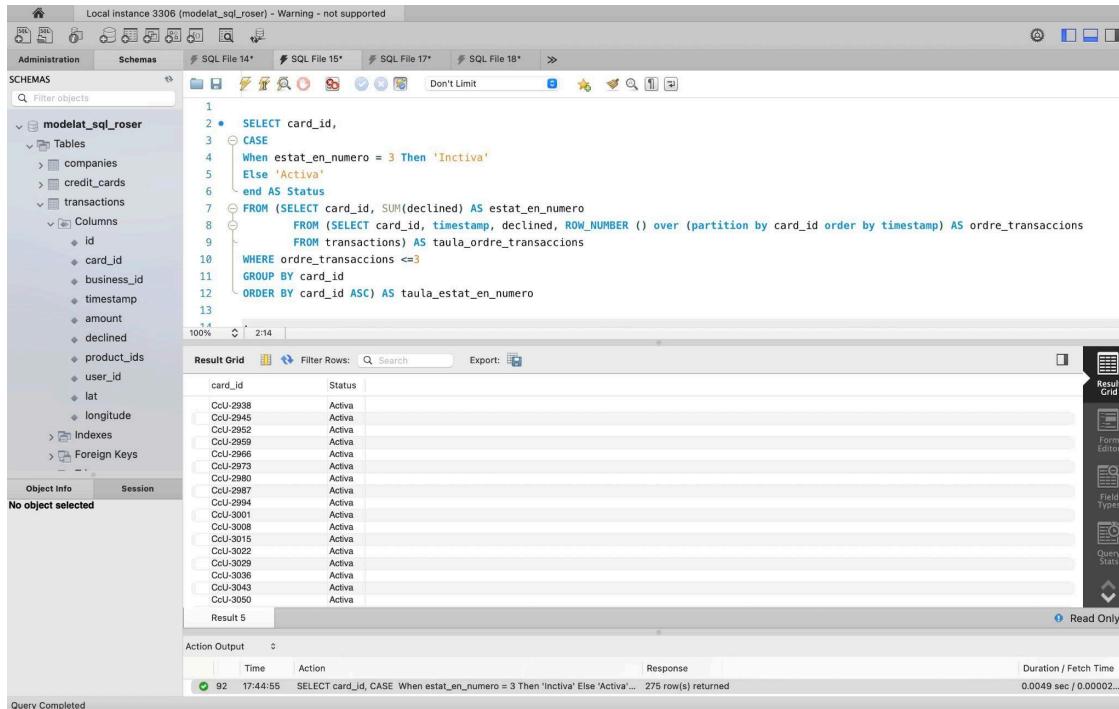
Result 22

Action Output

Time	Action	Response	Duration / Fetch Time
73 13:05:22	SELECT card_id, SUM(declined) AS total_declined_3ultimas_trans FROM (SELECT card_id, timestamp, declined, ROW_NUMBER () over (partition by card_id order by timestamp) AS ultimas_transacciones) AS nr_transaccion WHERE ultimas_transacciones <=3;	275 row(s) returned	0.0074 sec / 0.00004...

Query Completed

Ara reemplacem la columna amb l'estat en número per una columna amb l'estat com a paraula, utilitzant el case.



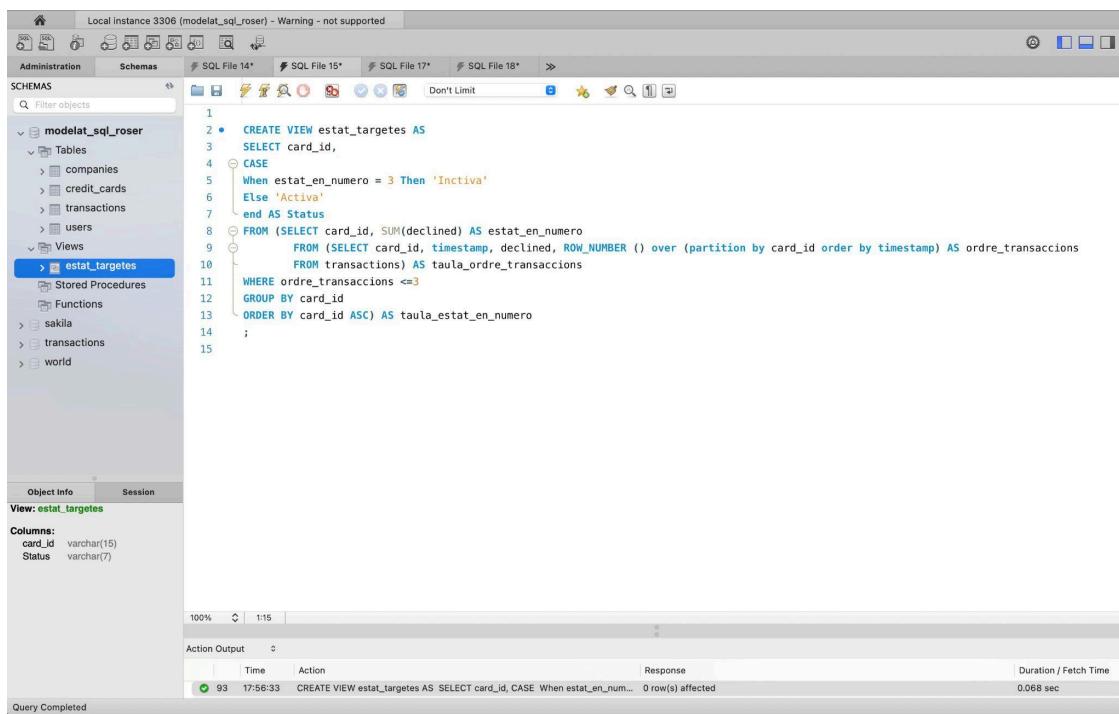
```

1
2 •  SELECT card_id,
3   CASE
4     WHEN estat_en_numero = 3 THEN 'Inactiv'
5     ELSE 'Activa'
6   END AS Status
7
8   FROM (SELECT card_id, SUM(declined) AS estat_en_numero
9         FROM (SELECT card_id, timestamp, declined, ROW_NUMBER () over (partition by card_id order by timestamp) AS ordre_transaccions
10           FROM transactions) AS taula_ordre_transaccions
11         WHERE ordre_transaccions <=3
12       GROUP BY card_id
13     ORDER BY card_id ASC) AS taula_estat_en_numero
14
15

```

The screenshot shows the MySQL Workbench interface with a query editor containing a complex SQL SELECT statement. The statement uses a CASE expression to map the numeric value from the 'estat_en_numero' column to the string 'Inactiv' or 'Activa'. The result grid displays the 'card_id' and 'Status' columns for various records. The status column shows the mapped values: Inactiv for card_ids 2938, 2945, 2952, 2959, 2966, 2973, 2980, 2987, 2994, 3001, 3008, 3015, 3022, 3029, 3036, 3043, and 3050, while all others are 'Activa'. The bottom status bar indicates the query completed successfully with a duration of 0.0049 sec / 0.00002...

Finalment, ho convertirem en una vista en comptes de taula.
Així, si s'afegeixen transaccions s'actualitzaran els estatus automàticament



```

1
2 •  CREATE VIEW estat_targetes AS
3   SELECT card_id,
4   CASE
5     WHEN estat_en_numero = 3 THEN 'Inactiv'
6     ELSE 'Activa'
7   END AS Status
8
9   FROM (SELECT card_id, SUM(declined) AS estat_en_numero
10           FROM (SELECT card_id, timestamp, declined, ROW_NUMBER () over (partition by card_id order by timestamp) AS ordre_transaccions
11             FROM transactions) AS taula_ordre_transaccions
12           WHERE ordre_transaccions <=3
13         GROUP BY card_id
14       ORDER BY card_id ASC) AS taula_estat_en_numero
15

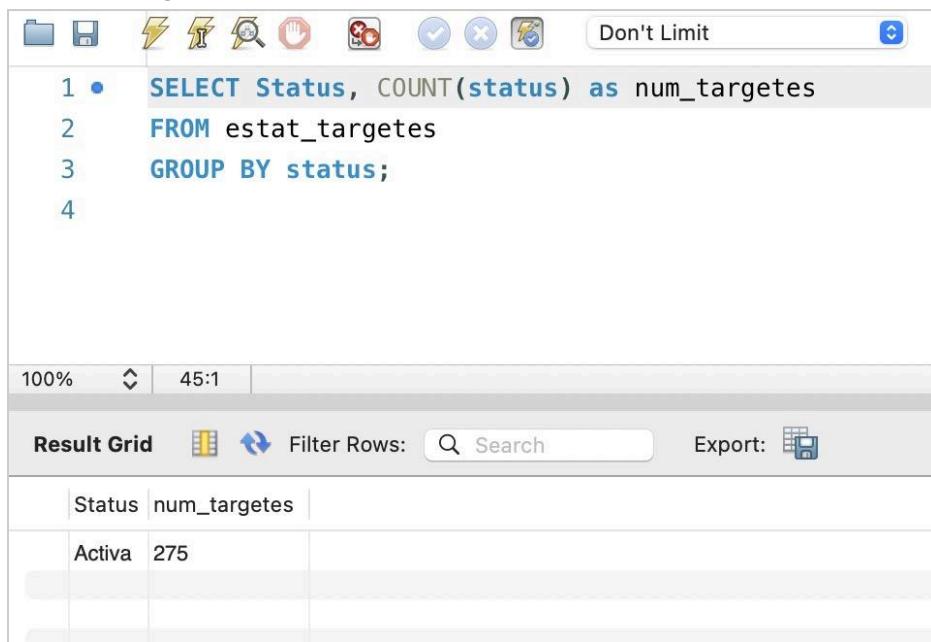
```

The screenshot shows the MySQL Workbench interface with a query editor containing a CREATE VIEW statement named 'estat_targetes'. The view selects the 'card_id' and 'Status' columns. The 'Status' column is defined using a CASE expression based on the 'estat_en_numero' value. The results show the same mapping as the previous query. The bottom status bar indicates the view was created successfully with a duration of 0.068 sec.

- Exercici 1: targetes actives

Quantes targetes estan actives?

Totes les targetes estan actives, 275.



The screenshot shows a MySQL Workbench interface. At the top, there are several icons for file operations (New, Open, Save, etc.) and a dropdown menu set to "Don't Limit". Below the toolbar is a code editor window containing the following SQL query:

```
1 • SELECT Status, COUNT(status) as num_targetes
2 FROM estat_targetes
3 GROUP BY status;
4
```

Below the code editor is a progress bar indicating "100%" completion and a timestamp "45:1". Underneath the progress bar is a "Result Grid" section. It includes buttons for "Result Grid" (selected), "Filter Rows", "Search" (with a magnifying glass icon), and "Export" (with a disk icon). The result grid displays one row of data:

Status	num_targetes
Activa	275

A PARTIR D'AQUI TINC PROBLEMES DE CÀRREGA DE LA TAULA

ESTIC ARREGLANT-HO

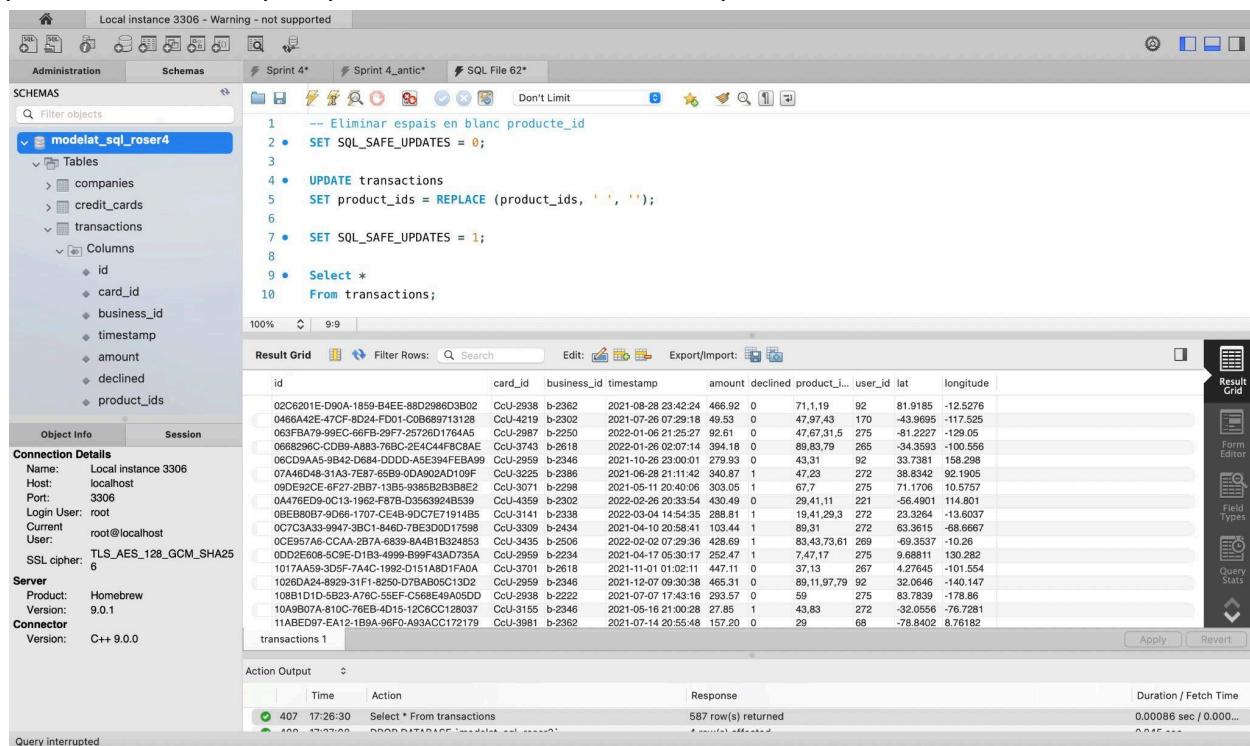
Nivell 3

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:

Com que cada transacció té molts productes, si carreguem directament la taula de products tindrem una relació de molts a molts que ens complicarà el model. La solució per a poder unir el nou arxiu, és una taula pont que llisti les relacions de cada transacció amb cada producte.

Reemplaçar espais

Començarem preparant la taula de transaccions, treient els espais en blanc de la columna de productes. Així, després podrem buscar cada número que hi ha entre les comes.



The screenshot shows the MySQL Workbench interface. The left sidebar displays the schema 'modelat_sql_roser4' with tables 'companies', 'credit_cards', and 'transactions'. The 'transactions' table has columns: id, card_id, business_id, timestamp, amount, declined, product_ids. The SQL editor window contains the following code:

```
1 -- Eliminar espais en blanc producte_id
2 • SET SQL_SAFE_UPDATES = 0;
3
4 • UPDATE transactions
5   SET product_ids = REPLACE (product_ids, ' ', '');
6
7 • SET SQL_SAFE_UPDATES = 1;
8
9 • Select *
10 From transactions;
```

The Result Grid shows the 'transactions' table with the following data:

id	card_id	business_id	timestamp	amount	declined	product_ids	user_id	lat	longitude
02C6201E-D90A-1859-B4EE-88D2986D3B02	CcU-2938	b-2362	2021-08-28 23:42:24	466.92	0	71,1,19	92	81.9185	-12.5276
0466A42E-47CF-8D24-FD01-C0B689713128	CcU-4219	b-2300	2021-07-26 07:29:18	49.60	0	47,97,43	170	-43.9695	-117.525
063FB479-99EC-66FB-25726D1764A5	CcU-2987	b-2250	2022-01-06 21:25:27	92.61	0	47,67,31,5	275	-81.2227	-129.05
0665994C-CDB9-A883-76BC-2E4CAF9BC8AE	CcU-3748	b-2618	2022-01-26 02:07:14	394.18	0	89,83,79	265	-34.3593	-100.556
0687D909-0001-400F-9001-000000000000	CcU-3559	b-2346	2021-06-26 23:00:14	230.00	0	43,31	92	33.3333	158.298
07A4B046-31A3-7E87-0589-0DA902AD10F9	CcU-3226	b-2266	2021-06-26 21:11:42	420.87	1	47,23	272	38.6242	92.0005
080E59CE-6F27-2B91-13B5-9085B2d3B0E2	CcU-3071	b-2328	2021-05-11 20:40:05	303.05	1	57,1,19	275	71.1706	-10.5797
09478ED9-0013-1962-F97B-D0580824B539	CcU-4359	b-2302	2022-02-26 20:33:54	430.49	0	29,41,11	221	-56.4901	114.601
0BEfB007-7906-1707-C540-90C7E7191485	CcU-3141	b-2338	2022-03-04 14:54:35	288.81	1	19,41,29,3	272	23.3264	-13.6037
0C7C3A32-0047-3B1C-846D-7B5200017598	CcU-3309	b-2434	2021-04-19 20:58:41	103.44	1	80,31	272	63.3615	-68.6087
0CE95746-CCAA-2B7A-4974-8A4B1B324853	CcU-3435	b-2506	2022-03-02 07:29:36	428.69	1	83,43,73,61	269	-69.3537	-10.26
0DD2E60B-5C9E-D1B9-4999-B99F43AD735A	CcU-2959	b-2234	2021-04-17 06:30:17	252.47	1	7,47,17	275	9.68811	130.282
1017A459-0D5F-7A4C-1992-D151ABD1FA04	CcU-3701	b-2618	2021-11-01 01:02:11	447.11	0	37,13	267	4.27645	-101.554
1026D42A-8929-31F1-8250-D7BAB05C13D2	CcU-2959	b-2346	2021-12-07 09:30:38	465.31	0	89,11,97,79	92	32.0646	-140.147
108B1D1D-5823-A76C-55EF-C568EA9A05D0	CcU-2935	b-2222	2021-07-07 17:43:16	293.57	0	59	275	83.7839	-178.86
10A9B07A-810C-76EB-AD15-12C6CC128037	CcU-3155	b-2346	2021-05-16 21:00:28	27.85	1	43,83	272	-32.0556	-76.7281
11ABED97-EA12-1B9A-96F0-A93ACC172172	CcU-3981	b-2362	2021-07-14 20:55:48	157.20	0	29	68	-78.8402	8.76182

The Action Output table shows the following results:

Action	Time	Response	Duration / Fetch Time
Select * From transactions	407 17:26:30	587 row(s) returned	0.00086 sec / 0.000...
Drop DATABASE modelat_sql_roser4	408 17:27:00	1 row(s) affected	0.005 sec

Carregar taula productes

Creem la taula productes i les seves columnes

The screenshot shows the MySQL Workbench interface. On the left, under the 'products' table, the 'Columns' section lists the following fields:

- id
- product_name
- price
- colour
- weight
- warehouse_id

On the right, the SQL code for creating the 'products' table is displayed:

```
177
178      -- Carregar la taula products
179  • CREATE TABLE IF NOT EXISTS products (
180      id VARCHAR(15) PRIMARY KEY,
181      product_name VARCHAR(50),
182      price VARCHAR(15),
183      colour VARCHAR(15),
184      weight FLOAT,
185      warehouse_id VARCHAR(15)
186 );
```

I insertem les dades

The screenshot shows the MySQL Workbench interface with the following details:

- Toolbar:** Standard MySQL Workbench icons for file operations.
- Navigation:** Administration tab selected, showing Schemas, Tables, and Views.
- Schemas List:** Shows the 'products' schema expanded, displaying columns (id, product_name, price, colour, weight, warehouse_id).
- Query Editor:** A script window titled "SQL File 11*" containing the following SQL code:

```
1 -- Carregar les dades de la taula products
2 • LOAD DATA INFILE 'products.csv' INTO TABLE products
3   FIELDS TERMINATED BY ',' OPTIONALLY ENCLOSED BY '\"'
4   LINES TERMINATED BY '\n'
5 IGNORE 1 LINES;
```
- Results:** The status bar at the bottom shows the execution results:

Action	Time	Response	Duration / Fetch Time
13	10:52:55	LOAD DATA INFILE 'products.csv' INTO TABLE products	100 row(s) affected Records: 100 Deleted: 0 Skipped: 0 Warnings: 0

Time: 0.0048 sec
- Status:** "Query Completed".

Llista de productes

Treiem la llista de productes, hi ha 100

The screenshot shows the MySQL Workbench interface with the following details:

- Toolbar:** Includes icons for file operations (Save, Open, Print, etc.), schema browser, and search.
- Tab Bar:** Shows four tabs: Sprint 4*, SQL File 11*, Sprint 4_antic, and SQL File 16*.
- Schemas Panel:** Displays the database structure. The "products" schema is selected, showing its tables (Columns, Indexes, Foreign Keys, Triggers, transactions, users, Views, Stored Procedures), and its columns (id, product_name, price, colour, weight, warehouse_id).
- Query Editor:** Contains the following SQL code:

```
1 •   SELECT id
2     FROM products
3    ORDER BY id ASC;
```
- Result Grid:** A table showing the results of the query. The "id" column contains values from 1 to 27. The table has a header row and 27 data rows.
- Action Output:** A log showing the execution details:

Time	Action	Response
16 10:57:04	SELECT id FROM pro...	100 row(s) returned

Ara el que volem és que busqui aquests IDs entre cometes en cada transacció. Per a això fem servir la funció FIND_IN_SET() i juntem les taules de productes i de transaccions a través d'aquests IDs. Veurem que aquí surtiran les transaccions una vegada per cada produt.

id	product_name	price	colour	weight	warehouse_id	card_id	business_id	timestamp	amount	declined	product_id	user_id	
67	Winterfell	\$105.94	#1fc1c0	0.6	WH-62	60D00229-AD26-48C3-5AAF-8D332D8B3E62	Ccu-2969	b-2362	2022-03-16 14:01:36	329.03	0	67.29	92
70	Tully maester Tarly	\$167.20	#111111	3.2	WH-24	60D00229-AD26-48C3-5AAF-8D332D8B3E62	Ccu-2969	b-2362	2022-03-18 14:01:36	329.03	0	67.29	92
73	Dorne bastard	\$114.09	#848484	1	WH-68	FD89051B-AEBD-77DC-E450-B8083FB03187	Ccu-3960	b-2494	2022-03-16 02:35:05	200.72	0	3,2,73,	250
3	duel tourney Lannister	\$11.13	#8dbd88	1.5	WH-2	FD89051B-AEBD-77DC-E450-B8083FB03187	Ccu-3960	b-2494	2022-03-16 02:35:05	200.72	0	3,2,73,	250
2	Tarly Stark	\$9.24	#919191	2	WH-3	FD89051B-AEBD-77DC-E450-B8083FB03187	Ccu-3960	b-2494	2022-03-16 02:35:05	200.72	0	3,2,73,	250
1	Direwolf Stannis	\$161.11	#7C767C	1	WH-1	FD89051B-AEBD-77DC-E450-B8083FB03187	Ccu-3960	b-2494	2022-03-16 02:35:05	200.72	0	3,2,73,	250
2	Tarly Stark	\$9.24	#919191	2	WH-3	CA515AD3-5A34-6966-0738-1D231CE5678	Ccu-4709	b-2278	2022-03-15 16:24:37	25.78	0	2	206
73	Dorne bastard	\$114.09	#848484	1	WH-68	DC5ABC81-6D3F-E8CF-29A9-CC136D6EADDB	Ccu-3799	b-2618	2022-03-15 02:15:32	101.32	0	73.31	261
31	Lannister	\$65.02	#3f3f3f	0.6	WH-26	DC5ABC81-6D3F-E8CF-29A9-CC136D6EADDB	Ccu-3799	b-2618	2022-03-15 02:15:32	101.32	0	73.31	261
89	skywalker ewok	\$172.78	#636363	3.2	WH-84	2E8E1D7D-9097-9E48-E758-2CD8994497A5	Ccu-4191	b-2346	2022-03-14 13:51:53	305.47	0	89,53,59	96
59	Direwolf Stannis	\$114.77	#bbdbdb	2.7	WH-54	2E8E1D7D-9097-9E48-E758-2CD8994497A5	Ccu-4191	b-2346	2022-03-14 13:51:53	305.47	0	89,53,59	96
53	kingbird Littlefinger	\$17.81	#939393	3.2	WH-48	2E8E1D7D-9097-9E48-E758-2CD8994497A5	Ccu-4191	b-2346	2022-03-14 13:51:53	305.47	0	89,53,59	96
3	Dorne bastard	\$111.13	#8dbd88	1.5	WH-2	6A0786D9-D033-B085-D187-9C836975E87	Ccu-4493	b-2302	2022-03-14 09:23:10	30.33	0	1	100
3	duel tourney Lannister	\$171.13	#8dbd88	1.5	WH-2	FD2E8957-414B-BEEC-E9AD-59A7A7A8A6290	Ccu-4471	b-2302	2022-03-13 10:37:34	164.32	0	3	213
89	skywalker ewok	\$172.78	#636363	3.2	WH-84	FD2E8957-414B-BEEC-E9AD-59A7A7A8A6290	Ccu-3232	b-2390	2022-03-13 02:27:34	78.99	0	88,7,17,89	272
83	dou duetroy	\$26.51	#cccccc	2.7	WH-78	FD2E8957-414B-BEEC-E9AD-59A7A7A8A6290	Ccu-3232	b-2390	2022-03-13 02:27:34	78.99	0	88,7,17,89	272
7	north of Casterly	\$63.33	#b7b7b7	0.6	WH-2	FD2E8957-414B-BEEC-E9AD-59A7A7A8A6290	Ccu-3232	b-2390	2022-03-13 02:27:34	78.99	0	88,7,17,89	272
17	skywalker ewok with	\$91.89	#7c7c7c	3.2	WH-12	FD2E8957-414B-BEEC-E9AD-59A7A7A8A6290	Ccu-3232	b-2390	2022-03-13 02:27:34	78.99	0	88,7,17,89	272
3	duel tourney Lannister	\$171.13	#8dbd88	1.5	WH-2	AB08A7A8-8829-5746-93AD-887A792EBC18	Ccu-2938	b-2362	2022-03-12 09:23:10	263.59	0	2,3,29	92
29	Tully maester Tarly	\$167.20	#111111	3.2	WH-24	AB08A7A8-8829-5746-93AD-887A792EBC18	Ccu-2938	b-2362	2022-03-12 09:23:10	263.59	0	2,3,29	92
2	Tarly Stark	\$9.24	#919191	2	WH-3	AB08A7A8-8829-5746-93AD-887A792EBC18	Ccu-2938	b-2362	2022-03-12 09:23:10	263.59	0	2,3,29	92
5	skywalker ewok	\$171.22	#bdbdbd	3.2	WH-0	D1389977-A7AD-1B59-1DE4-E2E94741D40C	Ccu-2994	b-2236	2022-03-10 03:43:25	226.10	0	1,5	127
1	Direwolf Stannis	\$161.11	#7C767C	1	WH-4	D1389977-A7AD-1B59-1DE4-E2E94741D40C	Ccu-2994	b-2236	2022-03-10 03:43:25	226.10	0	1,5	127
79	Direwolf riverlands the	\$128.00	#b2b2b2	0.6	WH-74	F1A598A2-86C5-5A09-F1CE-FB1D69866C39	Ccu-2938	b-2362	2022-03-09 20:53:59	229.65	0	79,73	84
73	Dome bastard	\$114.09	#848484	1	WH-68	F1A598A2-86C5-5A09-F1CE-FB1D69866C39	Ccu-2938	b-2362	2022-03-09 20:53:59	229.65	0	79,73	84
7	north of Casterly	\$63.33	#b7b7b7	0.6	WH-2	55B6A583-1E05-B81F-BE39-36F4476BEFE	Ccu-3463	b-2522	2022-03-09 04:15:58	470.03	1	17,7	267
17	skywalker ewok with	\$91.89	#7c7c7c	3.2	WH-12	55B6A583-1E05-B81F-BE39-36F4476BEFE	Ccu-3463	b-2522	2022-03-09 04:15:58	470.03	1	17,7	267

Ara deixem només les columnes que ens interessen que són el id de transacció i el de producte

transaccio	producte
60D00229-AD26-48C3-5AAF-8D332D8B3E62	67
60D00229-AD26-48C3-5AAF-8D332D8B3E62	29
FD89051B-AEBD-77DC-E450-B8083FB03187	73
FD89051B-AEBD-77DC-E450-B8083FB03187	3
FD89051B-AEBD-77DC-E450-B8083FB03187	2
FD89051B-AEBD-77DC-E450-B8083FB03187	1
CA515AD3-5A34-6966-0738-1D231CE5678	2
DC5ABC81-6D3F-E8CF-29A9-CC136D6EADBB	73
DC5ABC81-6D3F-E8CF-29A9-CC136D6EADBB	31
2E8E1D7D-9097-9E48-E758-2CD8994497A5	89
2E8E1D7D-9097-9E48-E758-2CD8994497A5	59
6A0786D9-D033-B085-D187-9C836975E87	53
55B6A583-1E05-B81F-BE39-36F4476BEFE	3
FD2E8957-414B-BEEC-E9AD-59A7A7A8A6290	89
FD2E8957-414B-BEEC-E9AD-59A7A7A8A6290	83
FD2E8957-414B-BEEC-E9AD-59A7A7A8A6290	7
FD2E8957-414B-BEEC-E9AD-59A7A7A8A6290	17
AD85A78A-8829-5746-93AD-887A792EBC18	3
AD85A78A-8829-5746-93AD-887A792EBC18	29
AD85A78A-8829-5746-93AD-887A792EBC18	2
D1389977-A7AD-1B59-1DE4-E2E94741D40C	5
D1389977-A7AD-1B59-1DE4-E2E94741D40C	1
F1A598A2-86C5-5A09-F1CE-FB1D69866C39	79
F1A598A2-86C5-5A09-F1CE-FB1D69866C39	73
55B6A583-1E05-B81F-BE39-36F4476BEFE	7
55B6A583-1E05-B81F-BE39-36F4476BEFE	17

I creem una taula del resultat

The screenshot shows the MySQL Workbench interface with the following details:

- Administration Tab:** Local instance 3306 - Warning - not supported.
- Schemas Tab:** Shows the schema modelat_sql_roser4 containing tables companies, credit_cards, products, transactions, and users.
- SQL Editor:** Contains the following SQL code:


```

1 • CREATE TABLE IF NOT EXISTS pont_trans_prod AS
2   SELECT transactions.id AS transaccio, products.id AS produkte
3   FROM products
4   JOIN transactions ON FIND_IN_SET(products.id, transactions.product_ids)
5   ORDER BY timestamp DESC;
6
7 • SELECT *
8   FROM pont_trans_prod;
9
      
```
- Result Grid:** Displays the results of the query, showing columns transaccio and produkte. The first few rows are:

transaccio	produkte
69080229-AD26-43C3-5AAF-8D332D3B3E62	67
69080229-AD26-43C3-5AAF-8D332D3B3E62	20
FD89051B-AEBD-77DC-E450-B8083FB03187	73
FD89051B-AEBD-77DC-E450-B8083FB03187	3
FD89051B-AEBD-77DC-E450-B8083FB03187	2
FD89051B-AEBD-77DC-E450-B8083FB03187	1
CA515AD3-A3A4-6666-073E-1D231CE5678	2
DC5ABC81-603F-E8CF-29A9-C1C13606EADBB	73
DC5ABC81-603F-E8CF-29A9-C1C13606EADBB	31
2EBE1D7D-9097-4E40-B758-2CD099A4497A	89
2EBE1D7D-9097-4E40-B758-2CD099A4497A	59
2EBE1D7D-9097-4E40-B758-2CD099A4497A	53
6ADF90D5-D032-B0B7-D157-8C3095F5BEF7	
6BA1851206160A806B-E1F412059083	3
F02E8957-414B-BEEC-E9AD-59AA7A8A6290	89
F02E8957-414B-BEEC-E9AD-59AA7A8A6290	83
F02E8957-414B-BEEC-E9AD-59AA7A8A6290	7
F02E8957-414B-BEEC-E9AD-59AA7A8A6290	17
AD85A78A-8829-5746-93A0-887A792EBC18	3
AD85A78A-8829-5746-93A0-887A792EBC18	26
- Action Output:** Shows the execution of the query at 11:13:55, returning 1457 rows.

Afegim les relacions a les altres taules

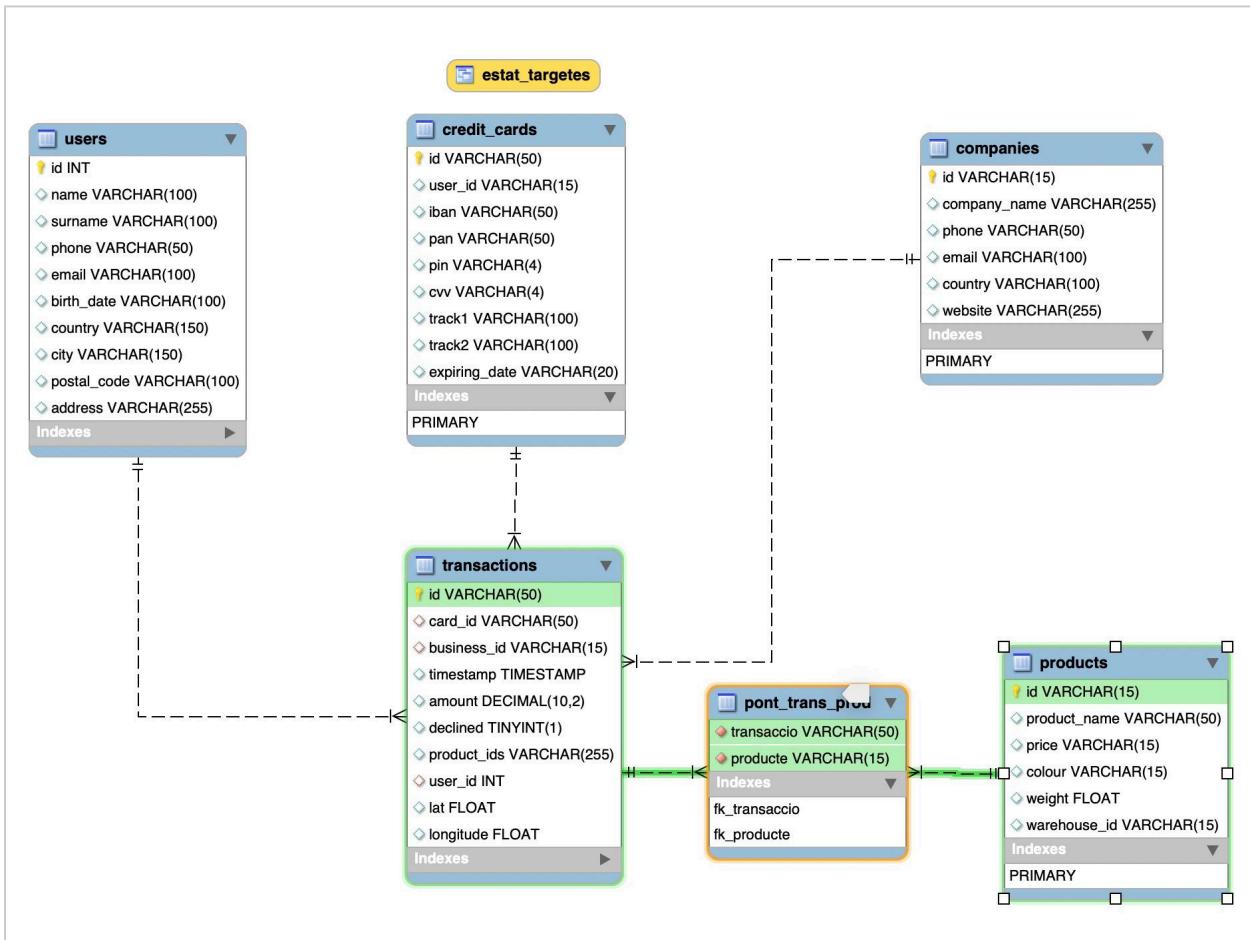
The screenshot shows the MySQL Workbench interface with the following details:

- Administration Tab:** Local instance 3306 - Warning - not supported.
- Schemas Tab:** Shows the schema modelat_sql_roser4 containing tables companies, credit_cards, products, transactions, and users.
- SQL Editor:** Contains the following SQL code:


```

1 • ALTER TABLE pont_trans_prod ADD CONSTRAINT fk_transaccio foreign key (transaccio)
2   REFERENCES transactions (id) ON DELETE CASCADE ON UPDATE CASCADE;
3
4 • ALTER TABLE pont_trans_prod ADD CONSTRAINT fk_produkte foreign key (produkte)
5   REFERENCES products (id) ON DELETE CASCADE ON UPDATE CASCADE;
6
      
```
- Action Output:** Shows the execution of the alter table command at 11:14:53, affecting 1457 rows.

I comprovem que les relacions estan ok. En la nostra taula pont, els productes apareixeran multiples vegades, ja que es poden vendre en diferent transaccions. Però també cada transacció pot aparèixer més d'una vegada, quan s'han venut varis productes.

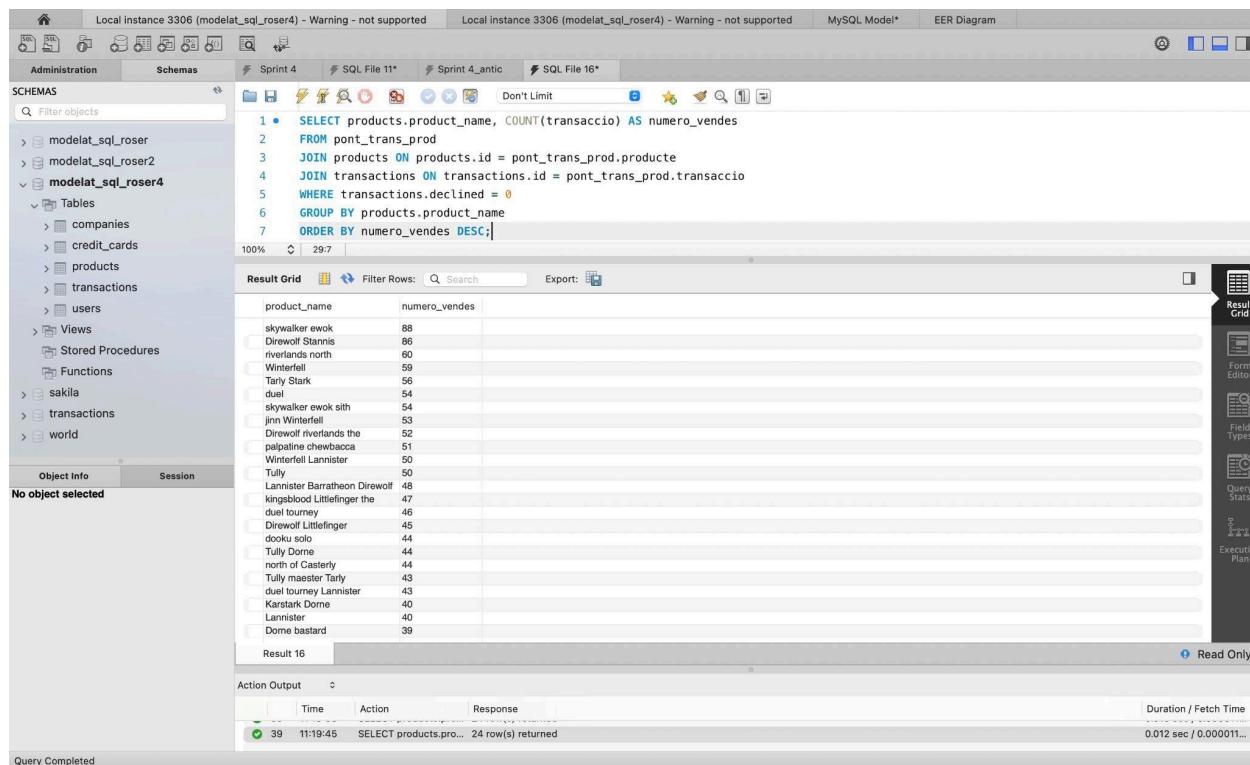


- Exercici 1: vendes per producte

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

Aquí ja podem fer la nostra consulta. Volem el nom del producte, que ve de la taula products. També volem el número de vendes, de la taula de transactions, on ens diu si la transacció està declinada.

Unirem aquestes dues taules a través de la taula pont que hem creat i que ens soluciona aquesta relació de molts a molts.



The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'Schemas' tree, which includes 'modelat_sql_roser' and 'modelat_sql_roser4' schemas. The 'Tables' node under 'modelat_sql_roser4' lists 'companies', 'credit_cards', 'products', 'transactions', and 'users'. The 'Transactions' node lists 'sakila' and 'world'. The central area shows a SQL query editor with the following code:

```
1 • SELECT products.product_name, COUNT(transaccion) AS numero_vendes
2   FROM pont_trans_prod
3   JOIN products ON products.id = pont_trans_prod.producte
4   JOIN transactions ON transactions.id = pont_trans_prod.transaccion
5   WHERE transactions.declined = 0
6   GROUP BY products.product_name
7   ORDER BY numero_vendes DESC;
```

The results grid displays the following data:

product_name	numero_vendes
skywalker ewok	88
Direwolf Stannis	86
riverlands north	60
Winterfell	59
Tarly Stark	56
duel	54
skywalker ewok sith	54
direwolf Winterfell	53
Direwolf riverlands the	52
palpatine chewbacca	51
Winterfell Lannister	50
Tully	50
Lannister Baratheon Direwolf	48
kingsblood Littlefinger the	47
duel tourney	46
Direwolf Littlefinger	45
dooku solo	44
Tully Dorne	44
north of Casterly	44
Tully maester Tarly	43
duel tourney Lannister	43
Karstark Dorne	40
Lannister	40
Dome bastard	39

The bottom status bar indicates 'Query Completed'.