SPRINT 4: Creació de Base de Dades

Elaborat per:

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Data: 08/10/2025

Nivell 1

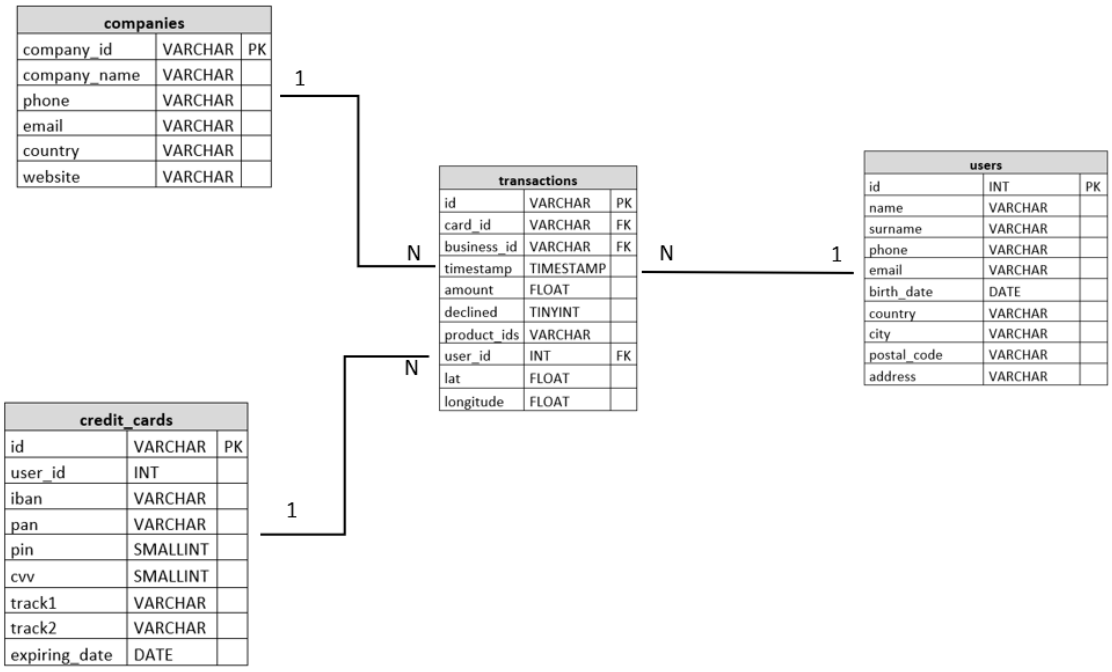
Descàrrega els arxius CSV, estudia'ls i dissenya una base de dades amb un esquema d'estrella que contingui, almenys 4 taules de les quals puguis realitzar les següents consultes:

Per crear la base de dades des de arxius .csv seguiré les indicacion de la article que ens han proporcionat a l'sprint 4 del present curs:
https://www.delftstack.com/es/howto/mysql/mysql-import-csv/

Primer he revisat cada un dels arxius i per la informació que obtinc el disseny previ de la base de dades que he fet és, el lenght dels tipus de dades el determinaré en funció de les dades que obtindré un cop carregat els arxius. Per altra banda, ajuntaré les taules american_users i european_users carregant les dades de cada taula a una nova taula que anomenaré users, per tenir tots els users a la mateixa taula, sí no es fes així la fk amb la taula transactions no es vincularia amb les taules del users de cada continent, donaria error perque haurien id a transactions que no existirian a les taules americans o europeans.

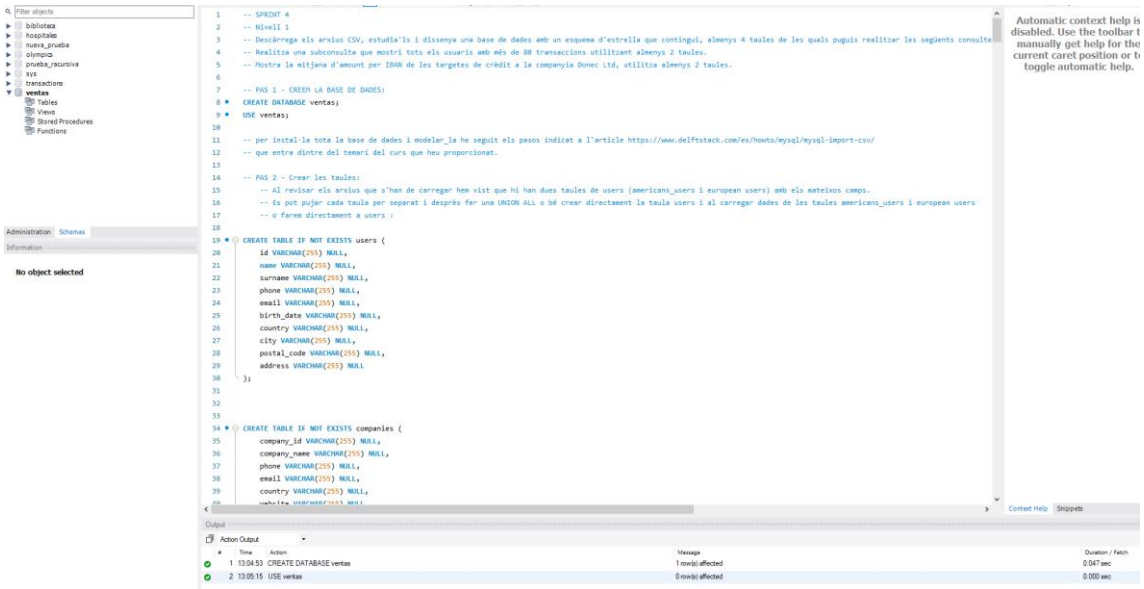
- **Elaboració prèvia del model.**

El model previst es visualitza de la següent forma:



- **<u>Creació de la base de dades:</u>**

Es crea la base de dades nova, el seu nom serà ventas i es selcciona com a BBDD amb la que anem a treballar:



```
-- SPRINT 4
-- 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:
-- Realitza una subconsulta que mostri tots els usuaris amb més de 80 transaccions utilitzant almenys 2 taules.
-- Mostra la mitjana d'amount per IBAN de les targetes de crèdit a la companyia Donec Ltd, utilitza almenys 2 taules.

-- PAS 1 - CREEM LA BASE DE DADES:
CREATE DATABASE ventas;
USE ventas;

-- per instal·la tota la base de dades i modelar_la he seguit els pasos indicat a l'article https://www.delftstack.com/es/howto/mysql/mysql-import-csv/
-- que entra dintre del temari del curs que heu proporcionat.

-- PAS 2 - Crear les taules:
    -- Al revisar els arxius que s'han de carregar hem vist que hi han dues taules de users (americans_users i european users) amb els mateixos camps.
    -- Es pot pujar cada taula per separat i després fer una UNION ALL o bé crear directament la taula users i al carregar dades de les taules americans_users i european users
    -- o farem directament a users :

CREATE TABLE IF NOT EXISTS users (
    id VARCHAR(255) NULL,
    name VARCHAR(255) NULL,
    surname VARCHAR(255) NULL,
    phone VARCHAR(255) NULL,
    email VARCHAR(255) NULL,
    birth_date VARCHAR(255) NULL,
    country VARCHAR(255) NULL,
    city VARCHAR(255) NULL,
    postal_code VARCHAR(255) NULL,
    address VARCHAR(255) NULL
);


CREATE TABLE IF NOT EXISTS companies (
    company_id VARCHAR(255) NULL,
    company_name VARCHAR(255) NULL,
    phone VARCHAR(255) NULL,
    email VARCHAR(255) NULL,
    country VARCHAR(255) NULL,
```

- **<u>Creació de taules</u>**

Es creen les taules: users, companyies, crèdit_cards i transactions. Al seguir les indicacions de l'article llegit, per carregar les dades es fa toto en VARCHAR (255) i un cop carregades modificarem el tipus de dades i les dades si cal.

```sql
CREATE TABLE IF NOT EXISTS users (
    id VARCHAR(255) NULL,
    name VARCHAR(255) NULL,
    surname VARCHAR(255) NULL,
    phone VARCHAR(255) NULL,
    email VARCHAR(255) NULL,
    birth_date VARCHAR(255) NULL,
    country VARCHAR(255) NULL,
    city VARCHAR(255) NULL,
    postal_code VARCHAR(255) NULL,
    address VARCHAR(255) NULL
);



CREATE TABLE IF NOT EXISTS companies (
    company_id VARCHAR(255) NULL,
    company_name VARCHAR(255) NULL,
    phone VARCHAR(255) NULL,
    email VARCHAR(255) NULL,
    country VARCHAR(255) NULL,
    website VARCHAR(255) NULL
);

CREATE TABLE IF NOT EXISTS credit_cards (
    id VARCHAR(255) NULL,
    user_id VARCHAR(255) NULL,
    iban VARCHAR(255) NULL,
    pan VARCHAR(255) NULL,
    pin VARCHAR(255) NULL,
    cvv VARCHAR(255) NULL,
    track1 VARCHAR(255) NULL,
    track2 VARCHAR(255) NULL,
    expiring_date VARCHAR(255) NULL
);
```

```sql
CREATE TABLE IF NOT EXISTS companies (
    company_id VARCHAR(255) NULL,
    company_name VARCHAR(255) NULL,
    phone VARCHAR(255) NULL,
    email VARCHAR(255) NULL,
    country VARCHAR(255) NULL,
    website VARCHAR(255) NULL
);

CREATE TABLE IF NOT EXISTS credit_cards (
    id VARCHAR(255) NULL,
    user_id VARCHAR(255) NULL,
    iban VARCHAR(255) NULL,
    pan VARCHAR(255) NULL,
    pin VARCHAR(255) NULL,
    cvv VARCHAR(255) NULL,
    track1 VARCHAR(255) NULL,
    track2 VARCHAR(255) NULL,
    expiring_date VARCHAR(255) NULL
);


CREATE TABLE IF NOT EXISTS transactions (
    id VARCHAR(255) NULL,
    card_id VARCHAR(255) NULL,
    business_id VARCHAR(255) NULL,
    timestamp VARCHAR(255) NULL,
    amount VARCHAR(255) NULL,
    declined VARCHAR(255) NULL,
    product_ids VARCHAR(255) NULL,
    user_id VARCHAR(255) NULL,
    lat VARCHAR(255) NULL,
    longitude VARCHAR(255) NULL
);
```

toggle automatic help.

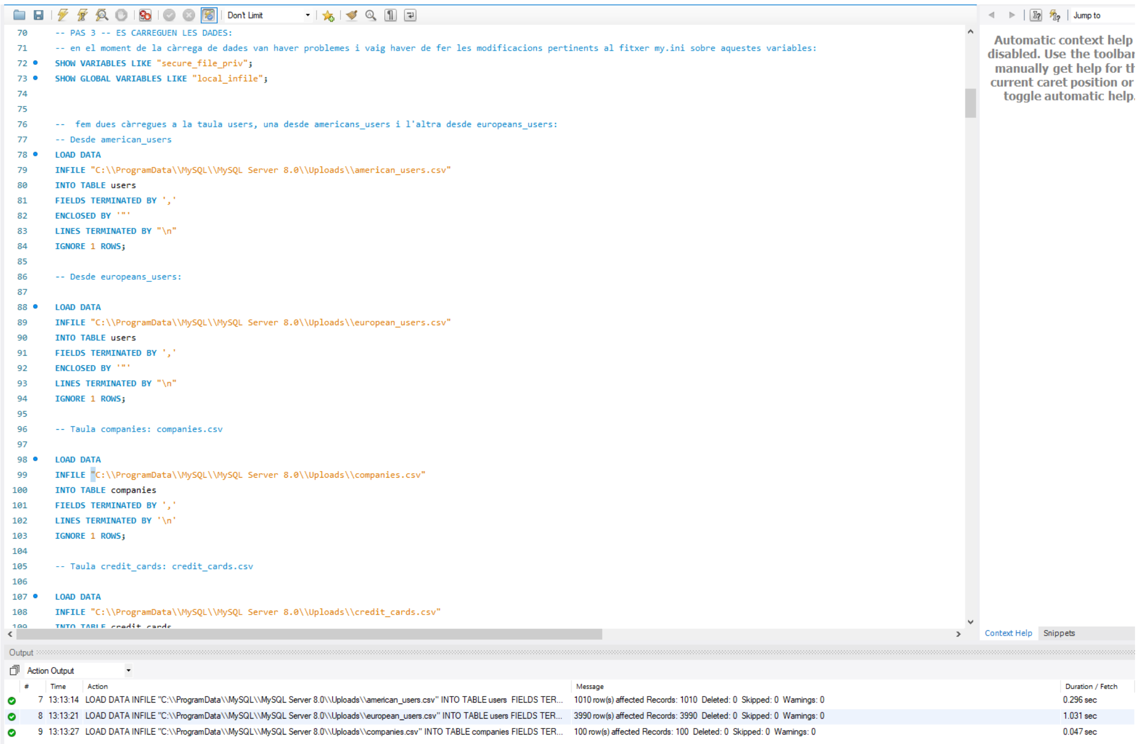
Context Help Snippets

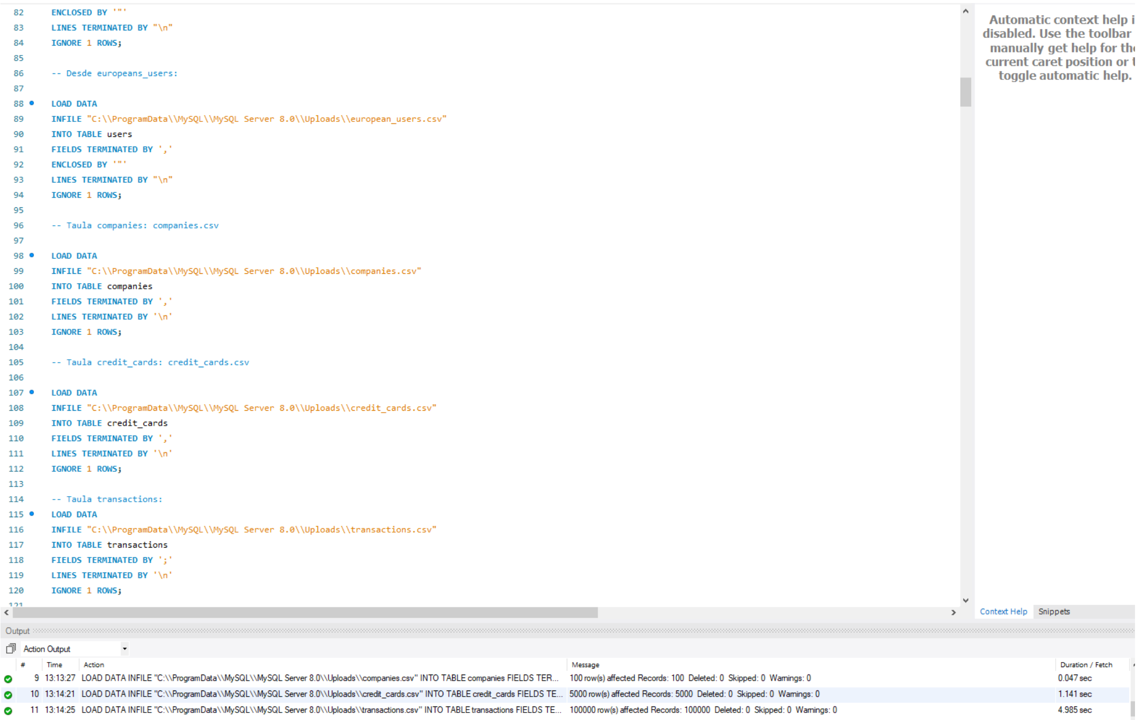
Output

Action Output

#	Time	Action	Message	Duration / Fetch
4	13:08:04	CREATE TABLE IF NOT EXISTS companies (company_id VARCHAR(255) NULL, company_name VARCHAR(255) NULL, phone VARCH...	0 row(s) affected	0.406 sec
5	13:08:08	CREATE TABLE IF NOT EXISTS credit_cards (id VARCHAR(255) NULL, user_id VARCHAR(255) NULL, iban VARCHAR(255) NULL, pa...	0 row(s) affected	0.219 sec
6	13:09:12	CREATE TABLE IF NOT EXISTS transactions (id VARCHAR(255) NULL, card_id VARCHAR(255) NULL, business_id VARCHAR(255) NU...	0 row(s) affected	0.500 sec

- **<u>Càrrega de les dades a totes les taules:</u>**





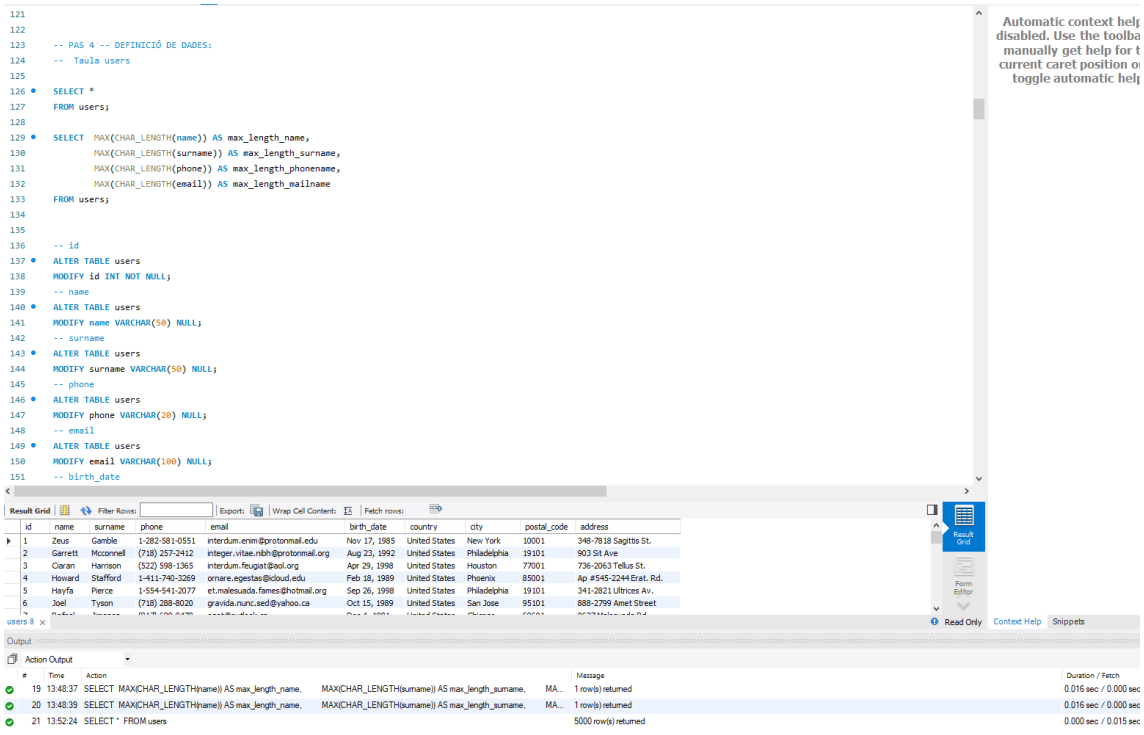
- **<u>Modificació de dades de les taules:</u>**

Un cop carregades les dades comencem a modificar-les per posar el tipus de dades corresponents. El que faré és mirar el tipus de dada i el max(lenght()) de les dades string i a través de l'UPDATE modificaré cada columna .

Com si ho mostro dada per dada no és aclaratori, el que faré és posar dos exemples de modificació de dades i a les columnes que s'hagi de tenir en compte algun detall important o posaré

- **Taula users:**

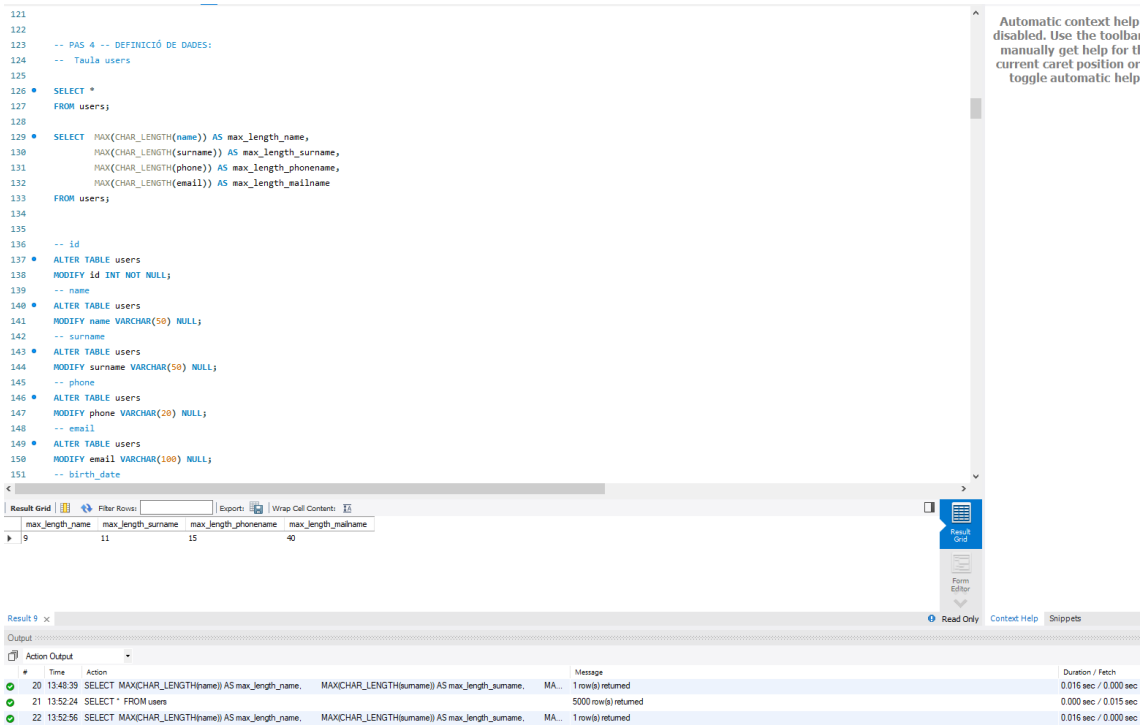
Es fa un select * per veure totes les dades i es busca el max lenght de les dades:



```
-- PAS 4 -- DEFINICIÓ DE DADES:
--  Taula users

SELECT *
FROM users;

SELECT  MAX(CHAR_LENGTH(name)) AS max_length_name,
        MAX(CHAR_LENGTH(surname)) AS max_length_surname,
        MAX(CHAR_LENGTH(phone)) AS max_length_phonename,
        MAX(CHAR_LENGTH(email)) AS max_length_mailname
FROM users;


-- id
ALTER TABLE users
MODIFY id INT NOT NULL;
-- name
ALTER TABLE users
MODIFY name VARCHAR(50) NULL;
-- surname
ALTER TABLE users
MODIFY surname VARCHAR(50) NULL;
-- phone
ALTER TABLE users
MODIFY phone VARCHAR(20) NULL;
-- email
ALTER TABLE users
MODIFY email VARCHAR(100) NULL;
-- birth_date
```

id	name	surname	phone	email	birth_date	country	city	postal_code	address
1	Zeus	Gamble	1-282-581-0551	interdum.enim@protonmail.edu	Nov 17, 1985	United States	New York	10001	348-7818 Sagittis St.
2	Garrett	Mcconnell	(718) 257-2412	integer.vitae.nibh@protonmail.org	Aug 23, 1992	United States	Philadelphia	19101	903 Sit Ave
3	Ciaran	Harrison	(522) 598-1365	interdum.feugiat@aol.org	Apr 29, 1998	United States	Houston	77001	736-2063 Tellus St.
4	Howard	Stafford	1-411-740-3269	ornare.egestas@icloud.edu	Feb 18, 1989	United States	Phoenix	85001	Ap #545-2244 Erat. Rd.
5	Hayfa	Pierce	1-554-541-2077	et.malesuada.fames@hotmail.org	Sep 26, 1998	United States	Philadelphia	19101	341-2821 Ultrices Av.
6	Joel	Tyson	(718) 288-8020	gravida.nunc.sed@yahoo.ca	Oct 15, 1989	United States	San Jose	95101	888-2799 Amet Street

#	Time	Action	Message	Duration / Fetch
19	13:48:37	SELECT MAX(CHAR_LENGTH(name)) AS max_length_name, MAX(CHAR_LENGTH(surname)) AS max_length_surname, MA...	1 row(s) returned	0.016 sec / 0.000 sec
20	13:48:39	SELECT MAX(CHAR_LENGTH(name)) AS max_length_name, MAX(CHAR_LENGTH(surname)) AS max_length_surname, MA...	1 row(s) returned	0.016 sec / 0.000 sec
21	13:52:24	SELECT * FROM users	5000 row(s) returned	0.000 sec / 0.015 sec



```
-- PAS 4 -- DEFINICIÓ DE DADES:
--  Taula users

SELECT *
FROM users;

SELECT  MAX(CHAR_LENGTH(name)) AS max_length_name,
        MAX(CHAR_LENGTH(surname)) AS max_length_surname,
        MAX(CHAR_LENGTH(phone)) AS max_length_phonename,
        MAX(CHAR_LENGTH(email)) AS max_length_mailname
FROM users;


-- id
ALTER TABLE users
MODIFY id INT NOT NULL;
-- name
ALTER TABLE users
MODIFY name VARCHAR(50) NULL;
-- surname
ALTER TABLE users
MODIFY surname VARCHAR(50) NULL;
-- phone
ALTER TABLE users
MODIFY phone VARCHAR(20) NULL;
-- email
ALTER TABLE users
MODIFY email VARCHAR(100) NULL;
-- birth_date
```

max_length_name	max_length_surname	max_length_phonename	max_length_mailname
9	11	15	40

#	Time	Action	Message	Duration / Fetch
20	13:48:39	SELECT MAX(CHAR_LENGTH(name)) AS max_length_name, MAX(CHAR_LENGTH(surname)) AS max_length_surname, MA...	1 row(s) returned	0.016 sec / 0.000 sec
21	13:52:24	SELECT * FROM users	5000 row(s) returned	0.000 sec / 0.015 sec
22	13:52:56	SELECT MAX(CHAR_LENGTH(name)) AS max_length_name, MAX(CHAR_LENGTH(surname)) AS max_length_surname, MA...	1 row(s) returned	0.016 sec / 0.000 sec

Les decisions preses de modificació:

Id: INT acabarà sent la Primary Key per tant NOT NULL

Name: mirem la max longitud de l'string, i decideixo posar 50. Es un string i poso VARCHAR (50)

Surname: aplico la mateixa lògica que a name.

Phone: al mirar les dades phone veiem que hi ha una barreja de números i caràcters per tant les dades seran VARCHAR. El lenght màxim es 14 , posarem un VARCHAR (20)

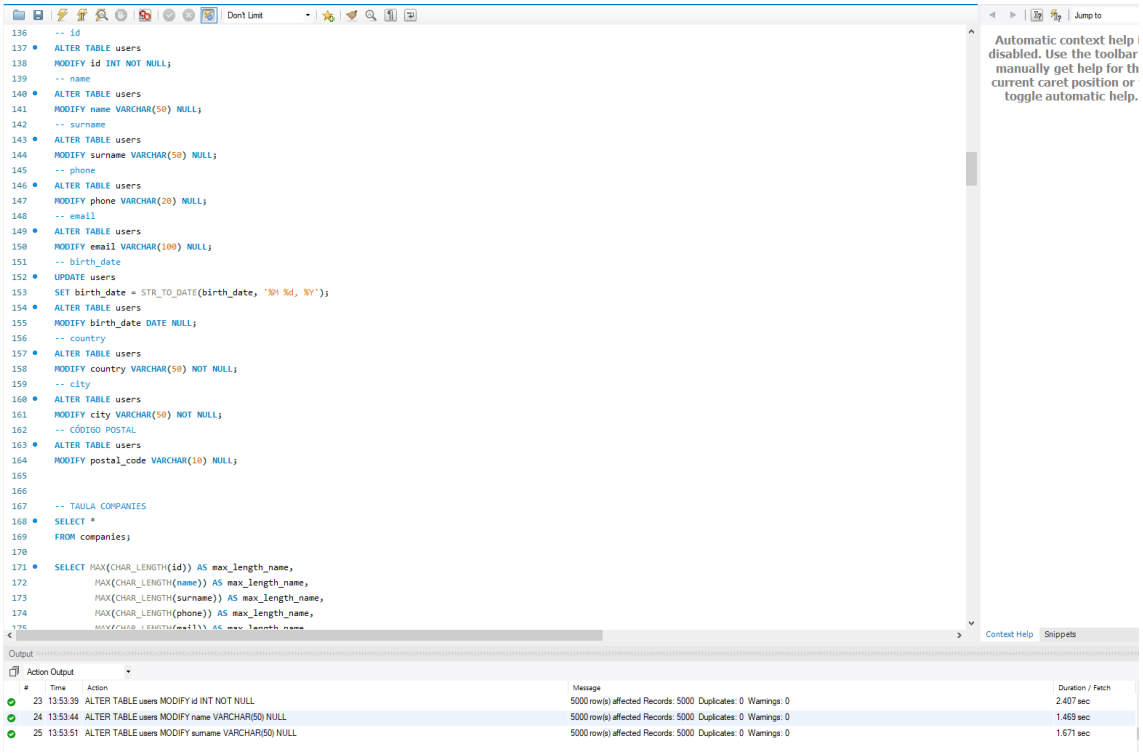
Mail: podem veure que es un string i que la longitud màxima es de 40 caracters, però decideixo canvia a un VARCHAR (100) com a tipus de valor, ja que el emails poden ser encara mes llargs.

Birth_date: quan observem les dates veiem que es un format string. He fet la proba de passar-ho a DATE i no deixa no detecta el format, per tant, hem de modificar la columna birth_date per tal d'arribar a tenir les dates de naixement en un format DATE. El que he fet és modificar la columna per a que el format de string sigui un fomat de data y he substituït (UPDATE).

Country: ho modifiquem seguint el procés que hem dut a terme amb el camp mail:

Postal_code: ho modifiquem seguint el procés que hem dut a terme amb el camp mail:

Adress: ho deizarem com està ja que les adresses són molt diverses.



SPRINT4

```sql
-- surname
ALTER TABLE users
MODIFY surname VARCHAR(50) NULL;
-- phone
ALTER TABLE users
MODIFY phone VARCHAR(20) NULL;
-- email
ALTER TABLE users
MODIFY email VARCHAR(100) NULL;
-- birth_date
UPDATE users
SET birth_date = STR_TO_DATE(birth_date, '%M %d, %Y');
ALTER TABLE users
MODIFY birth_date DATE NULL;
-- country
ALTER TABLE users
MODIFY country VARCHAR(50) NOT NULL;
-- city
ALTER TABLE users
MODIFY city VARCHAR(50) NOT NULL;
-- CÓDIGO POSTAL
ALTER TABLE users
MODIFY postal_code VARCHAR(10) NULL;


-- TAULA COMPANIES
SELECT *
FROM companies;

SELECT MAX(CHAR_LENGTH(id)) AS max_length_name,
       MAX(CHAR_LENGTH(name)) AS max_length_name,
       MAX(CHAR_LENGTH(surname)) AS max_length_name,
       MAX(CHAR_LENGTH(phone)) AS max_length_name,
       MAX(CHAR_LENGTH(mail)) AS max_length_name,
       MAX(CHAR_LENGTH(birth_day)) AS max_length_name
FROM companies;
```

Automatic context help disabled. Use the toolbar manually get help for th current caret position or toggle automatic help.

Context Help | Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
25	13:53:51	ALTER TABLE users MODIFY surname VARCHAR(50) NULL	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.671 sec
26	13:58:45	ALTER TABLE users MODIFY phone VARCHAR(20) NULL	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.953 sec
27	13:58:49	ALTER TABLE users MODIFY email VARCHAR(100) NULL	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.984 sec

```sql
-- surname
ALTER TABLE users
MODIFY surname VARCHAR(50) NULL;
-- phone
ALTER TABLE users
MODIFY phone VARCHAR(20) NULL;
-- email
ALTER TABLE users
MODIFY email VARCHAR(100) NULL;
-- birth_date
UPDATE users
SET birth_date = STR_TO_DATE(birth_date, '%M %d, %Y');
ALTER TABLE users
MODIFY birth_date DATE NULL;
-- country
ALTER TABLE users
MODIFY country VARCHAR(50) NOT NULL;
-- city
ALTER TABLE users
MODIFY city VARCHAR(50) NOT NULL;
-- CÓDIGO POSTAL
ALTER TABLE users
MODIFY postal_code VARCHAR(10) NULL;


-- TAULA COMPANIES
SELECT *
FROM companies;

SELECT MAX(CHAR_LENGTH(id)) AS max_length_name,
       MAX(CHAR_LENGTH(name)) AS max_length_name,
       MAX(CHAR_LENGTH(surname)) AS max_length_name,
       MAX(CHAR_LENGTH(phone)) AS max_length_name,
       MAX(CHAR_LENGTH(mail)) AS max_length_name,
       MAX(CHAR_LENGTH(birth_day)) AS max_length_name
FROM companies;
```

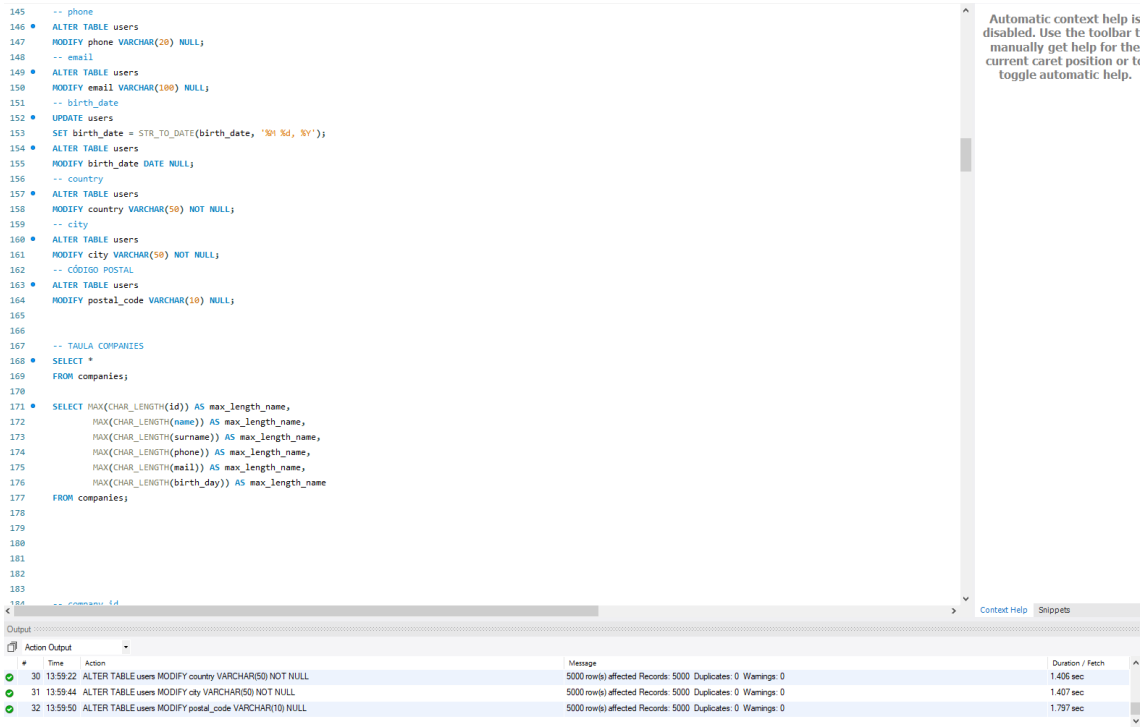
Automatic context help disabled. Use the toolbar manually get help for th current caret position or toggle automatic help.

Context Help | Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
28	13:59:14	UPDATE users SET birth_date = STR_TO_DATE(birth_date, '%M %d, %Y')	5000 row(s) affected Rows matched: 5000 Changed: 5000 Warnings: 0	0.281 sec
29	13:59:20	ALTER TABLE users MODIFY birth_date DATE NULL	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.860 sec
30	13:59:22	ALTER TABLE users MODIFY country VARCHAR(50) NOT NULL	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.406 sec



```sql
-- phone
ALTER TABLE users
MODIFY phone VARCHAR(20) NULL;
-- email
ALTER TABLE users
MODIFY email VARCHAR(100) NULL;
-- birth_date
UPDATE users
SET birth_date = STR_TO_DATE(birth_date, '%M %d, %Y');
ALTER TABLE users
MODIFY birth_date DATE NULL;
-- country
ALTER TABLE users
MODIFY country VARCHAR(50) NOT NULL;
-- city
ALTER TABLE users
MODIFY city VARCHAR(50) NOT NULL;
-- CÓDIGO POSTAL
ALTER TABLE users
MODIFY postal_code VARCHAR(10) NULL;


-- TAULA COMPANIES
SELECT *
FROM companies;

SELECT MAX(CHAR_LENGTH(id)) AS max_length_name,
       MAX(CHAR_LENGTH(name)) AS max_length_name,
       MAX(CHAR_LENGTH(surname)) AS max_length_name,
       MAX(CHAR_LENGTH(phone)) AS max_length_name,
       MAX(CHAR_LENGTH(mail)) AS max_length_name,
       MAX(CHAR_LENGTH(birth_day)) AS max_length_name
FROM companies;
```

Automatic context help is disabled. Use the toolbar t manually get help for the current caret position or t toggle automatic help.

Context Help | Snippets

Output

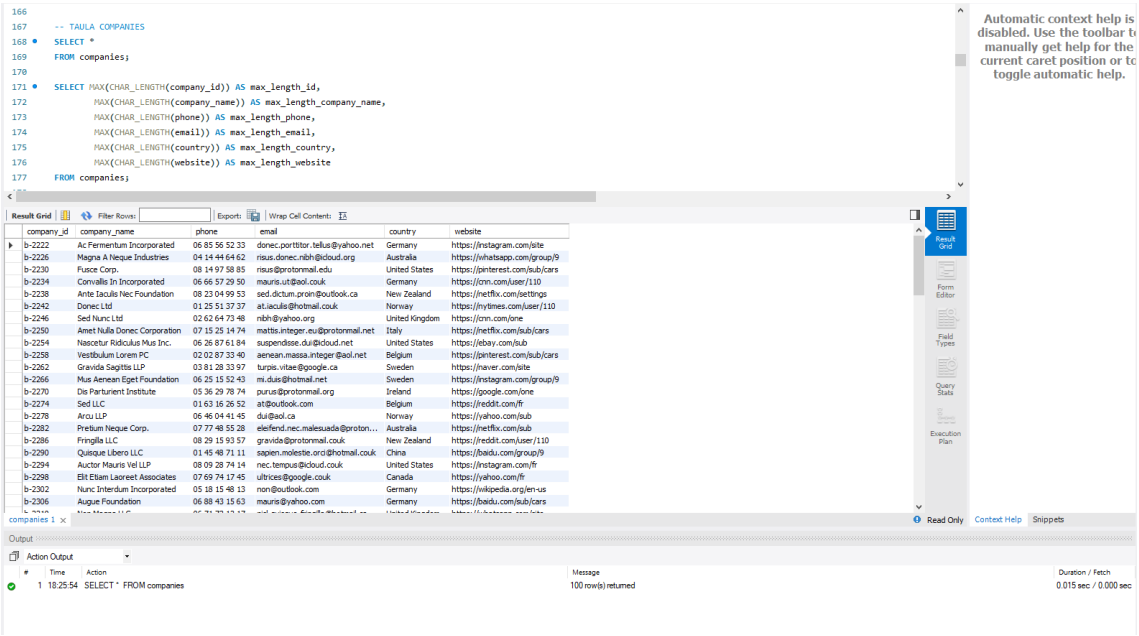
Action Output

#	Time	Action	Message	Duration / Fetch
30	13:59:22	ALTER TABLE users MODIFY country VARCHAR(50) NOT NULL	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.406 sec
31	13:59:44	ALTER TABLE users MODIFY city VARCHAR(50) NOT NULL	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.407 sec
32	13:59:50	ALTER TABLE users MODIFY postal_code VARCHAR(10) NULL	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.797 sec

- **<u>Taula companies:</u>**

Seguirem el mateix procés que amb les altres taules:

Estudiar les dades:



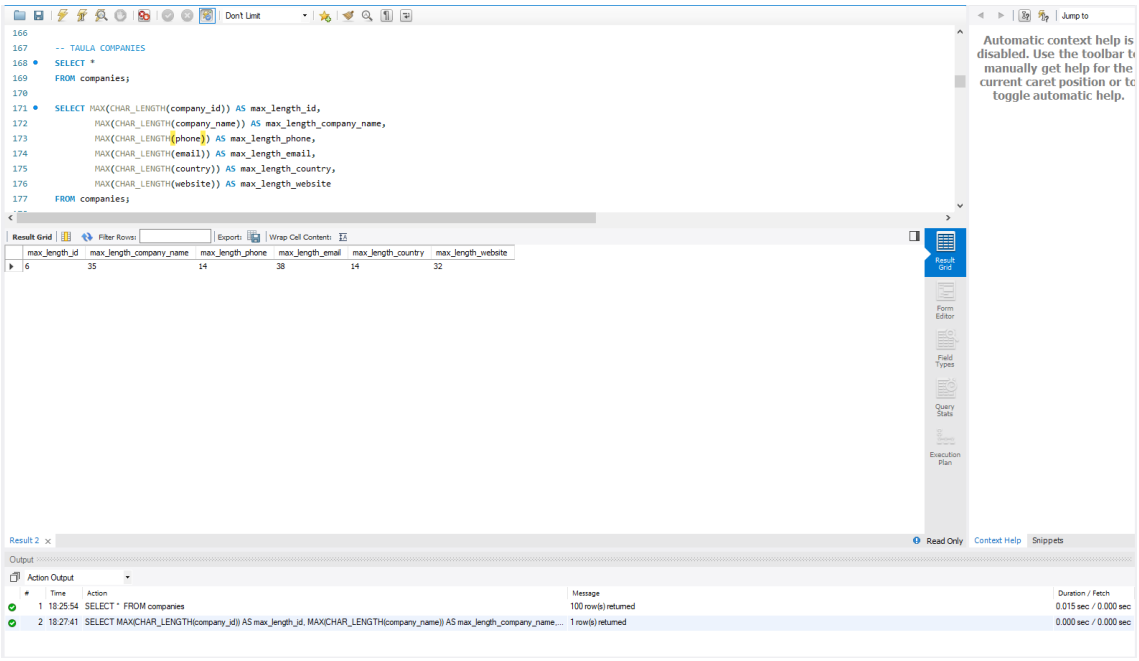
```
-- TAULA COMPANIES
SELECT *
FROM companies;

SELECT MAX(CHAR_LENGTH(company_id)) AS max_length_id,
       MAX(CHAR_LENGTH(company_name)) AS max_length_company_name,
       MAX(CHAR_LENGTH(phone)) AS max_length_phone,
       MAX(CHAR_LENGTH(email)) AS max_length_email,
       MAX(CHAR_LENGTH(country)) AS max_length_country,
       MAX(CHAR_LENGTH(website)) AS max_length_website
FROM companies;
```

company_id	company_name	phone	email	country	website
b-2222	Ac Fermentum Incorporated	06 85 56 52 33	donec.porttitor.tellus@yahoo.net	Germany	https://instagram.com/site
b-2226	Magna A Neque Industries	04 14 44 64 62	risus.donec.nibh@icloud.org	Australia	https://whatsapp.com/group/9
b-2230	Fusce Corp.	08 14 97 58 85	risus@protonmail.edu	United States	https://pinterest.com/sub/cars
b-2234	Convallis In Incorporated	06 66 57 29 50	mauris.ut@aol.couk	Germany	https://cnn.com/user/110
b-2238	Ante Iaculis 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.iaculis@hotmail.couk	Norway	https://nytimes.com/user/110
b-2246	Sed Nunc Ltd	02 62 64 73 48	nibh@yahoo.org	United Kingdom	https://cnn.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@icloud.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.vitae@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	Dis Parturient Institute	05 36 29 78 74	purus@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@proton...	Australia	https://netflix.com/sub
b-2286	Fringilla LLC	08 29 15 93 57	gravida@protonmail.couk	New Zealand	https://reddit.com/user/110
b-2290	Quisque Libero LLC	01 45 48 71 11	sapien.molestie.orci@hotmail.couk	China	https://baidu.com/group/9
b-2294	Auctor Mauris Vel LLP	08 09 28 74 14	nec.tempus@icloud.couk	United States	https://instagram.com/fr
b-2298	Elit Etiam Laoreet Associates	07 69 74 17 45	ultrices@google.couk	Canada	https://yahoo.com/fr
b-2302	Nunc Interdum 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

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

#	Time	Action	Message	Duration / Fetch
1	18:25:54	SELECT * FROM companies	100 row(s) returned	0.015 sec / 0.000 sec

Veure el Max(length()) de les dades:



```
-- TAULA COMPANIES
SELECT *
FROM companies;

SELECT MAX(CHAR_LENGTH(company_id)) AS max_length_id,
       MAX(CHAR_LENGTH(company_name)) AS max_length_company_name,
       MAX(CHAR_LENGTH(phone)) AS max_length_phone,
       MAX(CHAR_LENGTH(email)) AS max_length_email,
       MAX(CHAR_LENGTH(country)) AS max_length_country,
       MAX(CHAR_LENGTH(website)) AS max_length_website
FROM companies;
```

max_length_id	max_length_company_name	max_length_phone	max_length_email	max_length_country	max_length_website
6	35	14	38	14	32

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

#	Time	Action	Message	Duration / Fetch
1	18:25:54	SELECT * FROM companies	100 row(s) returned	0.015 sec / 0.000 sec
2	18:27:41	SELECT MAX(CHAR_LENGTH(company_id)) AS max_length_id, MAX(CHAR_LENGTH(company_name)) AS max_length_company_name,...	1 row(s) returned	0.000 sec / 0.000 sec

Company_id

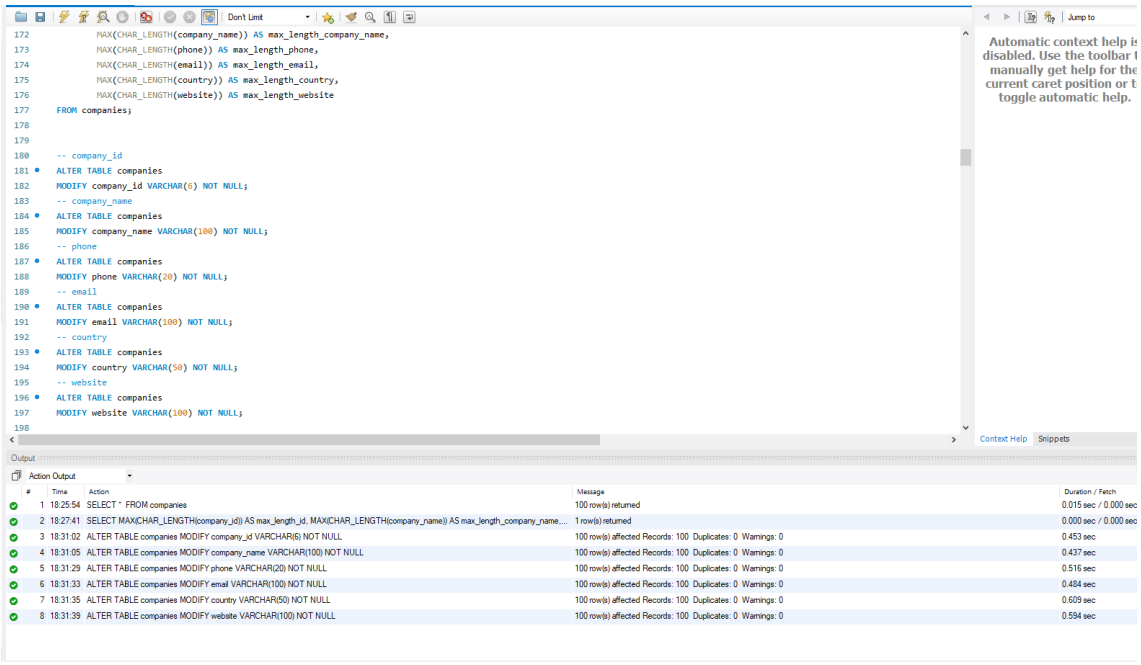
Company_name

Phone: He decidit posar el mateix tipus de dada que el telèfon del users per unificar criteris. Encara que en aquesta taula són tots de la mateixa longitud i la mateixa estructura, podíem haver posar INT però he preferid unificar criteris així que he posat VARCHAR(20):

Email: he unificat criteris i he posat el mateix tipus de dades que a la taula users

Country: he unificat criteris i he posat el mateix tipus de dades que a la taula users

Website



```
172             MAX(CHAR_LENGTH(company_name)) AS max_length_company_name,
173             MAX(CHAR_LENGTH(phone)) AS max_length_phone,
174             MAX(CHAR_LENGTH(email)) AS max_length_email,
175             MAX(CHAR_LENGTH(country)) AS max_length_country,
176             MAX(CHAR_LENGTH(website)) AS max_length_website
177     FROM companies;
178
179
180     -- company_id
181     ALTER TABLE companies
182     MODIFY company_id VARCHAR(6) NOT NULL;
183     -- company_name
184     ALTER TABLE companies
185     MODIFY company_name VARCHAR(100) NOT NULL;
186     -- phone
187     ALTER TABLE companies
188     MODIFY phone VARCHAR(20) NOT NULL;
189     -- email
190     ALTER TABLE companies
191     MODIFY email VARCHAR(100) NOT NULL;
192     -- country
193     ALTER TABLE companies
194     MODIFY country VARCHAR(50) NOT NULL;
195     -- website
196     ALTER TABLE companies
197     MODIFY website VARCHAR(100) NOT NULL;
198
```

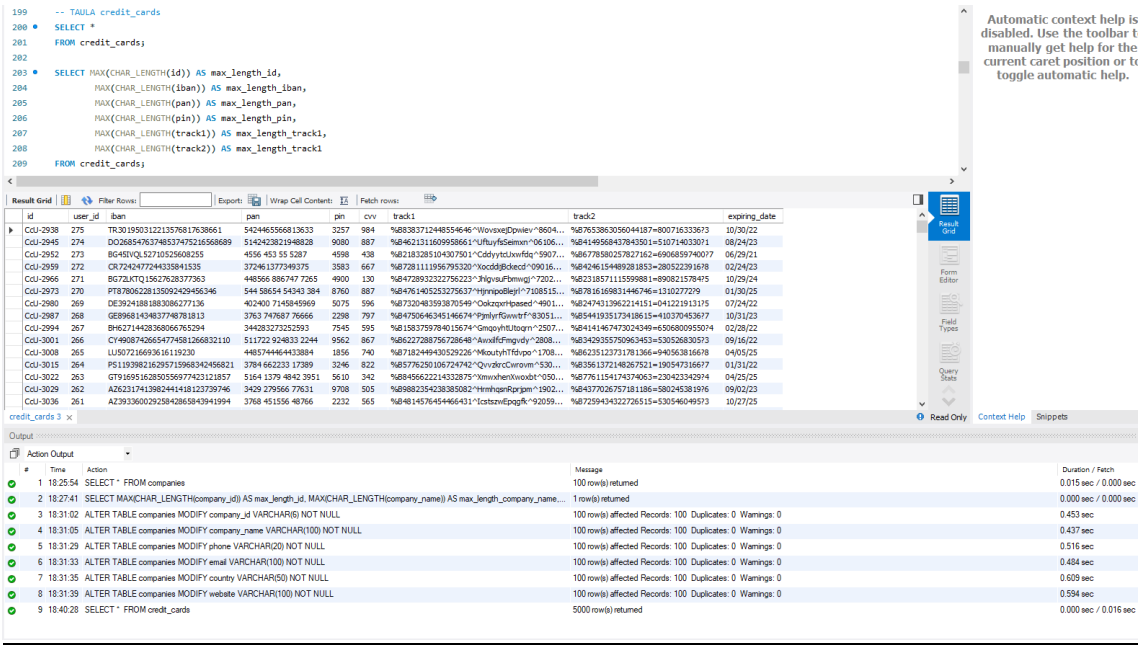
Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	18:25:54	SELECT * FROM companies	100 row(s) returned	0.015 sec / 0.000 sec
2	18:27:41	SELECT MAX(CHAR_LENGTH(company_id)) AS max_length_id, MAX(CHAR_LENGTH(company_name)) AS max_length_company_name,...	1 row(s) returned	0.000 sec / 0.000 sec
3	18:31:02	ALTER TABLE companies MODIFY company_id VARCHAR(6) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.453 sec
4	18:31:05	ALTER TABLE companies MODIFY company_name VARCHAR(100) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.437 sec
5	18:31:29	ALTER TABLE companies MODIFY phone VARCHAR(20) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.516 sec
6	18:31:33	ALTER TABLE companies MODIFY email VARCHAR(100) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.484 sec
7	18:31:35	ALTER TABLE companies MODIFY country VARCHAR(50) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.609 sec
8	18:31:39	ALTER TABLE companies MODIFY website VARCHAR(100) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.594 sec

- **<u>Taula crèdit_cards:</u>**
- Seguirem el mateix procés que amb les altres taules:
- Estudiar les dades:



```
199     -- TAULA credit_cards
200     SELECT *
201     FROM credit_cards;
202
203     SELECT MAX(CHAR_LENGTH(id)) AS max_length_id,
204            MAX(CHAR_LENGTH(iban)) AS max_length_iban,
205            MAX(CHAR_LENGTH(pan)) AS max_length_pan,
206            MAX(CHAR_LENGTH(pin)) AS max_length_pin,
207            MAX(CHAR_LENGTH(track1)) AS max_length_track1,
208            MAX(CHAR_LENGTH(track2)) AS max_length_track2
209     FROM credit_cards;
```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

id	user_id	iban	pan	pin	cvv	track1	track2	expiring_date
CcU-2938	275	TR301950312213576817638661	542446556681633	3257	984	%B833712448554646^WovsxejDpwiev^8604...	%B765386305604418?=800716333673	10/30/22
CcU-2945	274	DO2685476374853747521656868 9	5142423821948828	9080	887	%B462131160995866 1^UftuyfsSeimxn^06106...	%B414956843784350 1=510714033071	08/24/23
CcU-2952	273	BG45IVQL52710525608255	4556 453 55 5287	4598	438	%B218328510430750 1^Cddyytcl Jxwfdq^5907...	%B677858025782716 2=690685974007 7	06/29/21
CcU-2959	272	CR724247724433584153 5	372461377349375	3583	667	%B728111195679532 0^KocdddjBckecd^09016...	%B424615448928185 3=280522391678	02/24/23
CcU-2966	271	BG72LKTQ1562762837736 3	448566 886747 7265	4900	130	%B472893232275622 3^JhlgvsuFbmwgj^7202...	%B231857111559988 1=890821578475	10/29/24
CcU-2973	270	PT8780622815092429456346	544 58654 54343 384	8760	887	%B476140525327563 7^HjmnpoBlejrl^7108515...	%B781616983144674 6=131027722 9	01/30/25
CcU-2980	269	DE392418818830862771 36	402400 7145845969	5075	596	%B712048359387054 9^OskzqxrHpased^4901...	%B247431396221415 1=041221911375	07/24/22
CcU-2987	268	GE896814348377478781813	3763 747687 76666	2298	797	%B475064634514667 4^PjmlyrRSwvtrF^83051...	%B544193517341861 5=410370453677	10/31/23
CcU-2994	267	BH627144283680667652 94	344283273252593	7545	595	%B158375978401567 4^GmqoyhtUtoqrn^2507...	%B414146747302434 9=650680095507 4	02/28/22
CcU-3001	266	CY490874266547745812166832110	511722 924833 2244	9562	867	%B622728875672864 8^AwxlifcFmgvdy^2808...	%B342935575096345 3=530526830573	09/16/22
CcU-3008	265	LU507216693616119230	448574446443884	1856	740	%B718244943052922 6^MkoutyhTfdvpo^1708...	%B623512373178136 6=940563816678	04/05/25
CcU-3015	264	PS1193982162957159683 42566821	3784 662233 17389	3246	822	%B577625010672474 2^QvvzkrcCwrovm^530...	%B356137214826752 1=190547316677	01/31/22
CcU-3022	263	GT9169516285055697742312185 7	5164 1379 4842 3951	5610	342	%B845662221433287 5^XmwxhenXwoxbt^050...	%B776115417437406 3=230423342974	04/25/25
CcU-3029	262	AZ623174139824414182373974 6	3429 279566 77631	9708	505	%B988235423838508 2^HmhqsnRprjqm^1902...	%B437702675718118 6=580245381976	09/02/23
CcU-3036	261	AZ393360029258428658439419 94	3768 451556 48766	2232	565	%B481457645446643 1^IcstszwEpqqfk^92059...	%B725943432272651 5=530546049573	10/27/25

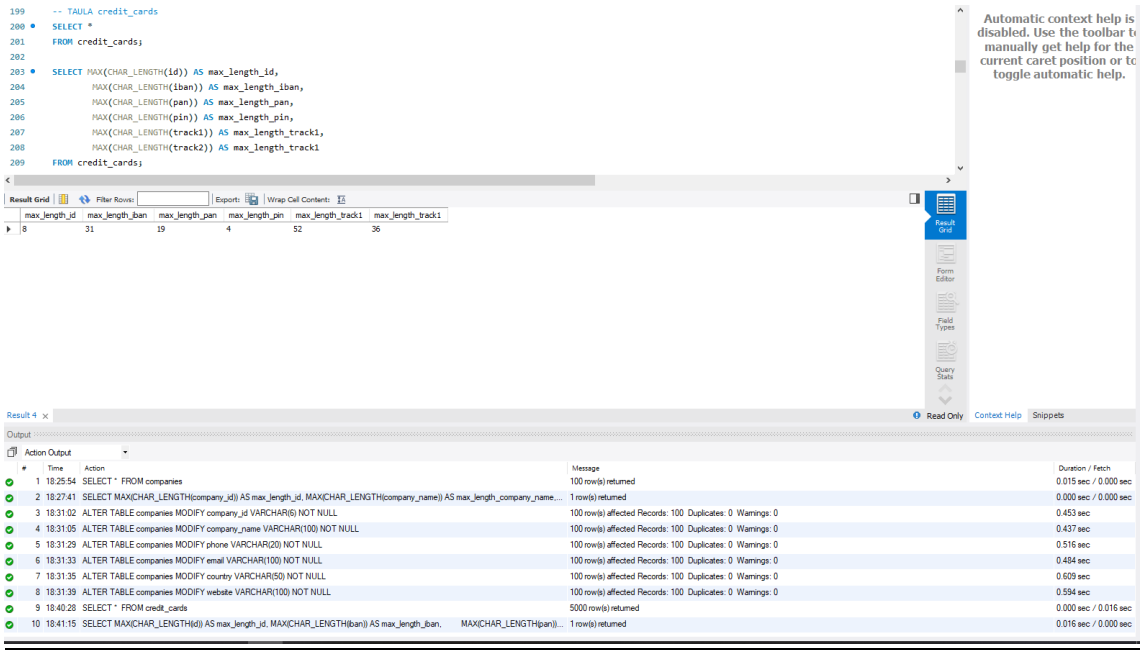
credit_cards 3 | Read Only | Context Help | Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	18:25:54	SELECT * FROM companies	100 row(s) returned	0.015 sec / 0.000 sec
2	18:27:41	SELECT MAX(CHAR_LENGTH(company_id)) AS max_length_id, MAX(CHAR_LENGTH(company_name)) AS max_length_company_name,...	1 row(s) returned	0.000 sec / 0.000 sec
3	18:31:02	ALTER TABLE companies MODIFY company_id VARCHAR(6) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.453 sec
4	18:31:05	ALTER TABLE companies MODIFY company_name VARCHAR(100) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.437 sec
5	18:31:29	ALTER TABLE companies MODIFY phone VARCHAR(20) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.516 sec
6	18:31:33	ALTER TABLE companies MODIFY email VARCHAR(100) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.484 sec
7	18:31:35	ALTER TABLE companies MODIFY country VARCHAR(50) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.609 sec
8	18:31:39	ALTER TABLE companies MODIFY website VARCHAR(100) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.594 sec
9	18:40:28	SELECT * FROM credit_cards	5000 row(s) returned	0.000 sec / 0.016 sec

Veure el Max(length()) de les dades:



```
-- TAULA credit_cards
SELECT *
FROM credit_cards;

SELECT MAX(CHAR_LENGTH(id)) AS max_length_id,
       MAX(CHAR_LENGTH(iban)) AS max_length_iban,
       MAX(CHAR_LENGTH(pan)) AS max_length_pan,
       MAX(CHAR_LENGTH(pin)) AS max_length_pin,
       MAX(CHAR_LENGTH(track1)) AS max_length_track1,
       MAX(CHAR_LENGTH(track2)) AS max_length_track1
FROM credit_cards;
```

Result Grid

max_length_id	max_length_iban	max_length_pan	max_length_pin	max_length_track1	max_length_track1
8	31	19	4	52	36

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Result 4 | Read Only | Context Help | Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	18:25:54	SELECT * FROM companies	100 row(s) returned	0.015 sec / 0.000 sec
2	18:27:41	SELECT MAX(CHAR_LENGTH(company_id)) AS max_length_id, MAX(CHAR_LENGTH(company_name)) AS max_length_company_name...	1 row(s) returned	0.000 sec / 0.000 sec
3	18:31:02	ALTER TABLE companies MODIFY company_id VARCHAR(6) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.453 sec
4	18:31:05	ALTER TABLE companies MODIFY company_name VARCHAR(100) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.437 sec
5	18:31:29	ALTER TABLE companies MODIFY phone VARCHAR(20) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.516 sec
6	18:31:33	ALTER TABLE companies MODIFY email VARCHAR(100) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.484 sec
7	18:31:35	ALTER TABLE companies MODIFY country VARCHAR(50) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.609 sec
8	18:31:39	ALTER TABLE companies MODIFY website VARCHAR(100) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.594 sec
9	18:40:28	SELECT * FROM credit_cards	5000 row(s) returned	0.000 sec / 0.016 sec
10	18:41:15	SELECT MAX(CHAR_LENGTH(id)) AS max_length_id, MAX(CHAR_LENGTH(iban)) AS max_length_iban, MAX(CHAR_LENGTH(pan))...	1 row(s) returned	0.016 sec / 0.000 sec

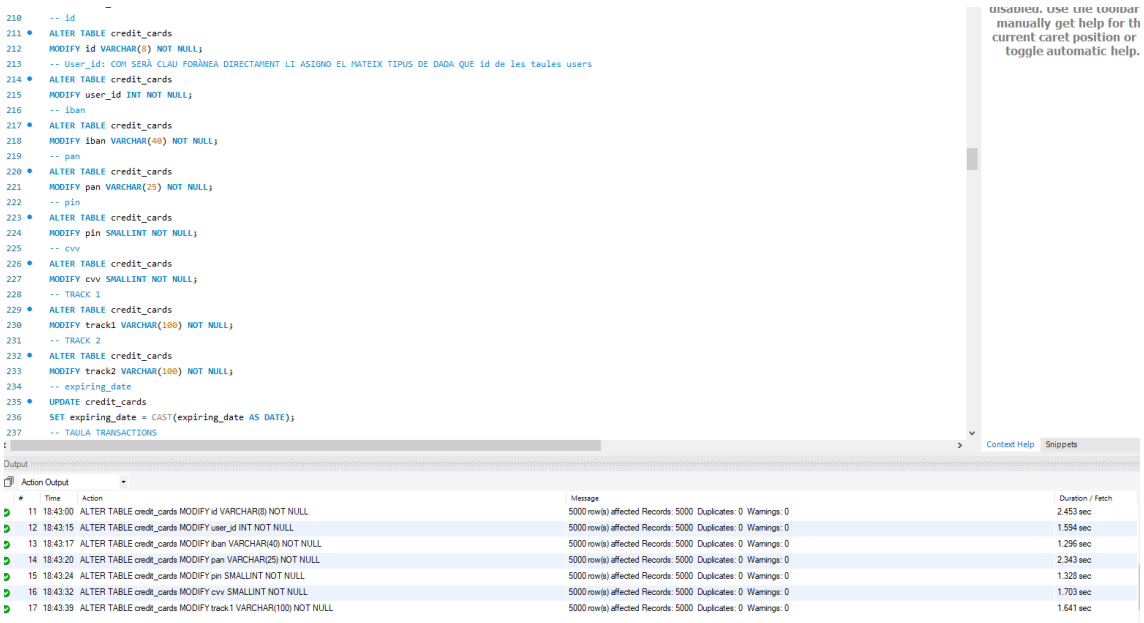
Id

User_id: com serà FK de les taultes users poso directament el tipus de dades d'aquell camp.

IBAN: He seguit el procés.

Pan: era sèrie de números amb espais he posat VARCHAR. Havía fet la proba de treure els espais i posar un BIGINT però finalment he decidit que si s'actualitzan les dades amb bases que vinguin de fora i limito a BIGINT potser que donés problemes.

Expiring_date: he pasat el valor de STR TO DATE i després ho he modificat a date.



```
-- id
ALTER TABLE credit_cards
MODIFY id VARCHAR(8) NOT NULL;
-- User_id: COM SERÀ CLAU FORÀNEA DIRECTAMENT LI ASIGNO EL MATEIX TIPUS DE DADA QUE id de les taules users
ALTER TABLE credit_cards
MODIFY user_id INT NOT NULL;
-- iban
ALTER TABLE credit_cards
MODIFY iban VARCHAR(40) NOT NULL;
-- pan
ALTER TABLE credit_cards
MODIFY pan VARCHAR(25) NOT NULL;
-- pin
ALTER TABLE credit_cards
MODIFY pin SMALLINT NOT NULL;
-- cvv
ALTER TABLE credit_cards
MODIFY cvv SMALLINT NOT NULL;
-- TRACK 1
ALTER TABLE credit_cards
MODIFY track1 VARCHAR(100) NOT NULL;
-- TRACK 2
ALTER TABLE credit_cards
MODIFY track2 VARCHAR(100) NOT NULL;
-- expiring_date
UPDATE credit_cards
SET expiring_date = CAST(expiring_date AS DATE);
-- TAULA TRANSACTIONS
```

disabled. Use the toolbar manually get help for th current caret position or toggle automatic help.

Context Help | Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
11	18:43:00	ALTER TABLE credit_cards MODIFY id VARCHAR(8) NOT NULL	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	2.453 sec
12	18:43:15	ALTER TABLE credit_cards MODIFY user_id INT NOT NULL	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.594 sec
13	18:43:17	ALTER TABLE credit_cards MODIFY iban VARCHAR(40) NOT NULL	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.296 sec
14	18:43:20	ALTER TABLE credit_cards MODIFY pan VARCHAR(25) NOT NULL	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	2.343 sec
15	18:43:24	ALTER TABLE credit_cards MODIFY pin SMALLINT NOT NULL	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.328 sec
16	18:43:32	ALTER TABLE credit_cards MODIFY cvv SMALLINT NOT NULL	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.703 sec
17	18:43:39	ALTER TABLE credit_cards MODIFY track1 VARCHAR(100) NOT NULL	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.641 sec

```
UPDATE credit_cards
SET expiring_date = STR_TO_DATE(expiring_date, "%m/%d/%y");
ALTER TABLE credit_cards
MODIFY expiring_date DATE NULL;
```

Output

#	Time	Action	Message	Duration / Fetch
1	18:53:19	UPDATE credit_cards SET expiring_date = STR_TO_DATE(expiring_date, "%m/%d/%y")	5000 row(s) affected Rows matched: 5000 Changed: 5000 Warnings: 0	0.375 sec
2	18:53:23	ALTER TABLE credit_cards MODIFY expiring_date DATE NULL	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.625 sec

- **<u>Taula transactions:</u>**
- Seguirem el mateix procés que amb les altres taules:
- Estudiar les dades:

```
-- TAULA TRANSACTIONS
SELECT *
FROM transactions;
```

Result Grid

id	card_id	business_id	timestamp	amount	declined	product_ids	user_id	lat	longitude
CDDA7E40-544D-47B8-A4ED-671DD8A950D9	CcS-6894	b-2466	2018-12-12 08:05:17	161.88	0	75, 73, 98	2313	59.6205097435614	16.559977155728436
09456357-8E9B-475A-8257-87A023699964	CcS-5135	b-2342	2024-05-20 22:49:08	171.13	0	3	554	45.76458841901318	4.843056518287656
C47C7C84-C174-4973-A76B-825A9DB5582A	CcS-8415	b-2250	2018-11-04 23:16:18	497.29	0	92, 85, 36, 23	3834	52.06849608409912	4.301099382555438
2FB526AA-3844-4DDF-AC09-2EBCC255EE76	CcS-6553	b-2610	2022-06-17 09:17:25	344.15	0	5, 27	1972	39.47598513179192	-0.3764194439184784
0D877407-B85E-40D2-9229-6BD6F2B8DF0A	CcS-7678	b-2454	2020-11-29 07:29:16	435.1	0	38, 32, 82, 62	3097	51.43656985032189	5.478525648707596
A0BD09EE-7199-41CF-9CB5-3205509FA02F	CcS-6416	b-2438	2021-05-24 22:28:26	364.11	0	92, 64	1835	51.4959189047599	18.88912480174568
29322BF7-84F4-4A6C-9FFC-C60B68BD8DCD	CcS-5036	b-2222	2022-05-19 04:50:50	678.61	0	6, 12, 100, 22, 23	455	51.609077736775525	19.160038756363225
3F614E9B-1EEC-4FB7-8B88-ABCD6C519BED	CcS-8216	b-2526	2019-08-18 21:09:25	207.52	0	69, 97, 31	3635	33.458167496565129	-112.08289579719126
13353F1-81E5-4688-B4AF-54E51650E9E	CcS-7160	b-2614	2021-12-23 23:58:33	368.64	0	51, 3, 68	2579	60.481217507242114	18.810024018503643
185D9EC6-9540-4E4F-B38D-395B26C467AC	CcS-5819	b-2550	2019-03-23 19:42:15	57.25	0	69	1238	42.14540699947335	12.2124535636445
F080DCF5-21EE-4461-A5B6-F346F244DB6E	CcS-5956	b-2466	2019-06-16 03:39:38	613.68	0	68, 6, 73, 64	1375	45.769936487258896	4.8396603170046
AB0D4B08-F26A-41D1-9925-E819B6305A46	CcS-6872	b-2458	2016-10-09 10:40:30	333.57	0	53, 75, 74, 61	2291	41.15914776950484	-8.630768456777114
ED8865B5-E4D5-46AA-A43C-9C7460B1E16B	CcS-5783	b-2466	2017-11-28 00:18:28	149.56	0	94, 97, 8	1202	40.4214348789062	-3.8015630627075216
44CD5F49-4D07-4EBC-B87E-DE51EB730676	CcS-6410	b-2422	2015-05-29 03:12:04	568.34	0	7, 64, 16, 34	1829	46.81251919908033	-71.21595539526966
8EA91C7B-510C-47DC-8A5B-4DFE1E8D44DA	CcS-8575	b-2330	2018-06-26 17:31:05	232.07	0	100, 46, 79	3994	59.95183614209106	18.77178579987153
C44DE83C-0E04-4E4D-8F20-61B862A6A4E	CcS-6915	b-2222	2016-06-07 00:53:27	374.27	0	91, 65, 93	2334	41.936604894881 31	12.121276425657255
11654E83-A709-4950-B5E4-0E7752AD65DF	CcU-4681	b-2242	2018-08-17 03:10:01	195.62	0	64	26	39.95197015763750 4	-75.16002913954009
BB554AF3-7E92-402C-A771-E15D69D70038	CcS-8853	b-2466	2016-10-28 19:58:56	320.06	0	91, 28, 79	4272	41.91549066871561	12.716897556236331
7132FE26-EE50-48E6-B373-9DFF7F8588EE	CcS-5324	b-2442	2024-03-11 00:26:10	3.83	0	55	743	55.35291194504507	-3.489818883158656
2BF04606-685E-4352-AF0B-9CF450ADD464	CcS-5711	b-2454	2020-01-11 06:57:03	231.0	0	92, 51, 8	1130	39.4087116587853	-8.231122402213716
4CD516BF-2885-45DF-B51C-038C465B5C93	CcS-2981	b-2442	2023-07-31 05:59:34	220.03	0	7, 93, 80	3490	51.67048659371886	19.433642873388276

transactions 1

Output

#	Time	Action	Message	Duration / Fetch
1	18:53:19	UPDATE credit_cards SET expiring_date = STR_TO_DATE(expiring_date, "%m/%d/%y")	5000 row(s) affected Rows matched: 5000 Changed: 5000 Warnings: 0	0.375 sec
2	18:53:23	ALTER TABLE credit_cards MODIFY expiring_date DATE NULL	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.625 sec
3	18:58:31	SELECT * FROM transactions	100000 row(s) returned	0.000 sec / 0.312 sec

Veure el Max(length()) de les dades:

```
SELECT MAX(CHAR_LENGTH(id)) AS max_length_id,
       MAX(CHAR_LENGTH(product_ids)) AS max_length_product_ids,
       MAX(CHAR_LENGTH(lat)) AS max_length_lat,
       MAX(CHAR_LENGTH(longitude)) AS max_length_longitude
FROM transactions;
```

Result Grid

max_length_id	max_length_product_ids	max_length_lat	max_length_longitude
36	19	18	19

Result 2

Output

#	Time	Action	Message	Duration / Fetch
1	18:53:19	UPDATE credit_cards SET expiring_date = STR_TO_DATE(expiring_date, "%m/%d/%y")	5000 row(s) affected Rows matched: 5000 Changed: 5000 Warnings: 0	0.375 sec
2	18:53:23	ALTER TABLE credit_cards MODIFY expiring_date DATE NULL	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.625 sec
3	18:58:31	SELECT * FROM transactions	100000 row(s) returned	0.000 sec / 0.312 sec
4	19:00:10	SELECT MAX(CHAR_LENGTH(id)) AS max_length_id, MAX(CHAR_LENGTH(product_ids)) AS max_length_product_ids, MAX(CHAR_...	1 row(s) returned	0.203 sec / 0.000 sec

Id

Card_id: al ser FK el tipus de dades serà el mateix que id a credit_cards

Business_id: al ser FK el tipus de dades serà el mateix que id a companies

Product_ids: ho deixo com està per tal de no limitar les compres

User_id: FK per tant serà el mateix tipus de dades que a les taules de users

Lat

Longitude

```
250     -- id
251 •  ALTER TABLE transactions
252     MODIFY id VARCHAR(36);
253     -- card_id: al ser FK el tipus de dades serà el mateix que id a credit_cards
254 •  ALTER TABLE transactions
255     MODIFY card_id VARCHAR(8) NOT NULL;
256     -- business_id: al ser FK el tipus de dades serà el mateix que id a companies
257     -- timestamp
258 •  ALTER TABLE transactions
259     MODIFY timestamp TIMESTAMP;
260     -- amount
261 •  ALTER TABLE transactions
262     MODIFY amount FLOAT NOT NULL;
263     -- declined
264 •  ALTER TABLE transactions
265     MODIFY declined TINYINT NOT NULL;
266     -- product_ids: HO DEIXO COM ESTÀ PER TAL DE NO LIMITAR LES COMPRES
267
268     -- user_id: FK per tant serà el mateix tipus de dades que a les taules de users
269 •  ALTER TABLE transactions
270     MODIFY user_id INT NOT NULL;
271     -- lat
272 •  ALTER TABLE transactions
273     MODIFY lat FLOAT NULL;
274     -- longitude
275 •  ALTER TABLE transactions
276     MODIFY longitude FLOAT NULL;
```

Context Help | Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
5	19:04:07	ALTER TABLE transactions MODIFY id VARCHAR(36)	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	3.125 sec
6	19:04:11	ALTER TABLE transactions MODIFY card_id VARCHAR(8) NOT NULL	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	4.844 sec
7	19:04:17	ALTER TABLE transactions MODIFY business_id VARCHAR(255) NOT NULL	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	15.187 sec
8	19:04:40	ALTER TABLE transactions MODIFY timestamp TIMESTAMP	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	7.625 sec
9	19:05:04	ALTER TABLE transactions MODIFY amount FLOAT NOT NULL	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	3.891 sec
10	19:05:09	ALTER TABLE transactions MODIFY declined TINYINT NOT NULL	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	4.735 sec
11	19:05:40	SELECT product_ids FROM transactions	100000 row(s) returned	0.000 sec / 0.094 sec

```
266     -- product_ids: HO DEIXO COM ESTÀ PER TAL DE NO LIMITAR LES COMPRES
267
268     -- user_id: FK per tant serà el mateix tipus de dades que a les taules de users
269 •  ALTER TABLE transactions
270     MODIFY user_id INT NOT NULL;
271     -- lat
272 •  ALTER TABLE transactions
273     MODIFY lat FLOAT NULL;
274     -- longitude
275 •  ALTER TABLE transactions
276     MODIFY longitude FLOAT NULL;
```

Context Help | Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
9	19:05:04	ALTER TABLE transactions MODIFY amount FLOAT NOT NULL	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	3.891 sec
10	19:05:09	ALTER TABLE transactions MODIFY declined TINYINT NOT NULL	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	4.735 sec
11	19:05:40	SELECT product_ids FROM transactions	100000 row(s) returned	0.000 sec / 0.094 sec
12	19:07:02	ALTER TABLE transactions MODIFY user_id INT NOT NULL	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	3.188 sec
13	19:08:09	ALTER TABLE transactions MODIFY user_id INT NOT NULL	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.046 sec
14	19:08:12	ALTER TABLE transactions MODIFY lat FLOAT NULL	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	3.235 sec
15	19:08:17	ALTER TABLE transactions MODIFY longitude FLOAT NULL	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	3.781 sec

- **<u>Creació de les PK a cada taula:</u>**

```
278     -- PAS 4: CREEM LES PK DE LES TAULES:
279
280     -- PK USERS
281 •  ALTER TABLE users
282     ADD PRIMARY KEY (id);
283     -- PK transactions
284 •  ALTER TABLE transactions
285     ADD PRIMARY KEY (id);
286     -- PK credit_cards
287 •  ALTER TABLE credit_cards
288     ADD PRIMARY KEY (id);
289     -- PK companies
290 •  ALTER TABLE companies
291     ADD PRIMARY KEY (company_id);
292
293     -- PAS 5: AFEGIM LES FK
294
295 •  ALTER TABLE transactions
296     ADD CONSTRAINT fk_card_id_credit_cards
297     FOREIGN KEY (card_id) REFERENCES credit_cards(id)
298     ON DELETE RESTRICT
299     ON UPDATE CASCADE;
300
301 •  ALTER TABLE transactions
302     ADD CONSTRAINT fk_business_id_companies
303     FOREIGN KEY (business_id) REFERENCES companies(company_id)
304     ON DELETE RESTRICT
305     ON UPDATE CASCADE;
306
```

Context Help | Snippets

Output

Action Output

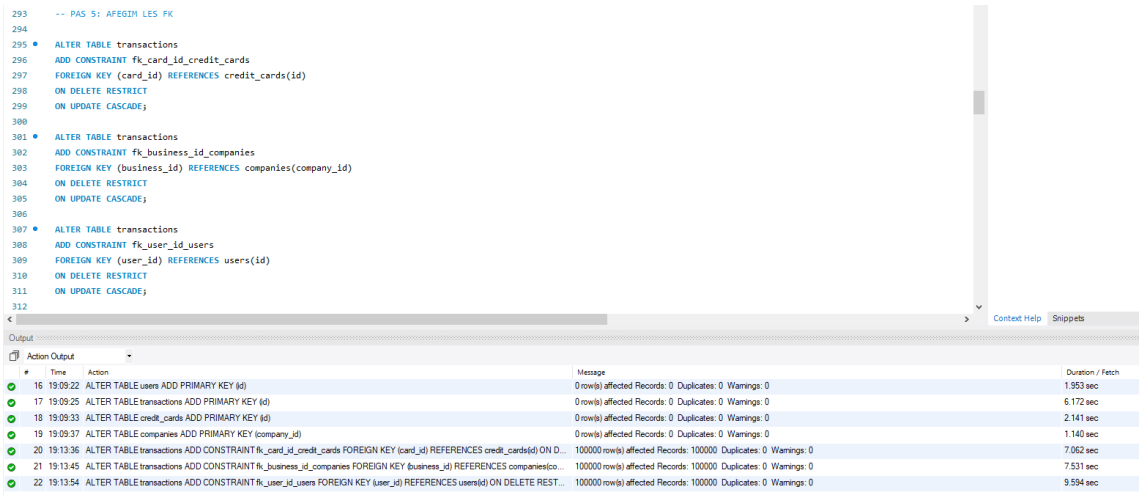
#	Time	Action	Message	Duration / Fetch
13	19:08:09	ALTER TABLE transactions MODIFY user_id INT NOT NULL	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.046 sec
14	19:08:12	ALTER TABLE transactions MODIFY lat FLOAT NULL	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	3.235 sec
15	19:08:17	ALTER TABLE transactions MODIFY longitude FLOAT NULL	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	3.781 sec
16	19:09:22	ALTER TABLE users ADD PRIMARY KEY (id)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	1.953 sec
17	19:09:25	ALTER TABLE transactions ADD PRIMARY KEY (id)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	6.172 sec
18	19:09:33	ALTER TABLE credit_cards ADD PRIMARY KEY (id)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	2.141 sec
19	19:09:37	ALTER TABLE companies ADD PRIMARY KEY (company_id)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	1.140 sec

- **<u>Creació de les PK a cada taula:</u>**

Afegim les Foreing Key a la taula de fets transactions. Les Foreing Key son:

- card_id amb la taula crèdit_cards
- business_id amb la taula company
- user_id amb la taula users

Durant la creació de les PK decideixo que en el cas de que es faci un UPDATE a la PK de les taules mare aquesta actualització es traslladi a les taules filles i que en cas de que es vulguin liminar registres de PK no s'eliminin.



```
-- PAS 5: AFEGIM LES FK

ALTER TABLE transactions
ADD CONSTRAINT fk_card_id_credit_cards
FOREIGN KEY (card_id) REFERENCES credit_cards(id)
ON DELETE RESTRICT
ON UPDATE CASCADE;

ALTER TABLE transactions
ADD CONSTRAINT fk_business_id_companies
FOREIGN KEY (business_id) REFERENCES companies(company_id)
ON DELETE RESTRICT
ON UPDATE CASCADE;

ALTER TABLE transactions
ADD CONSTRAINT fk_user_id_users
FOREIGN KEY (user_id) REFERENCES users(id)
ON DELETE RESTRICT
ON UPDATE CASCADE;
```

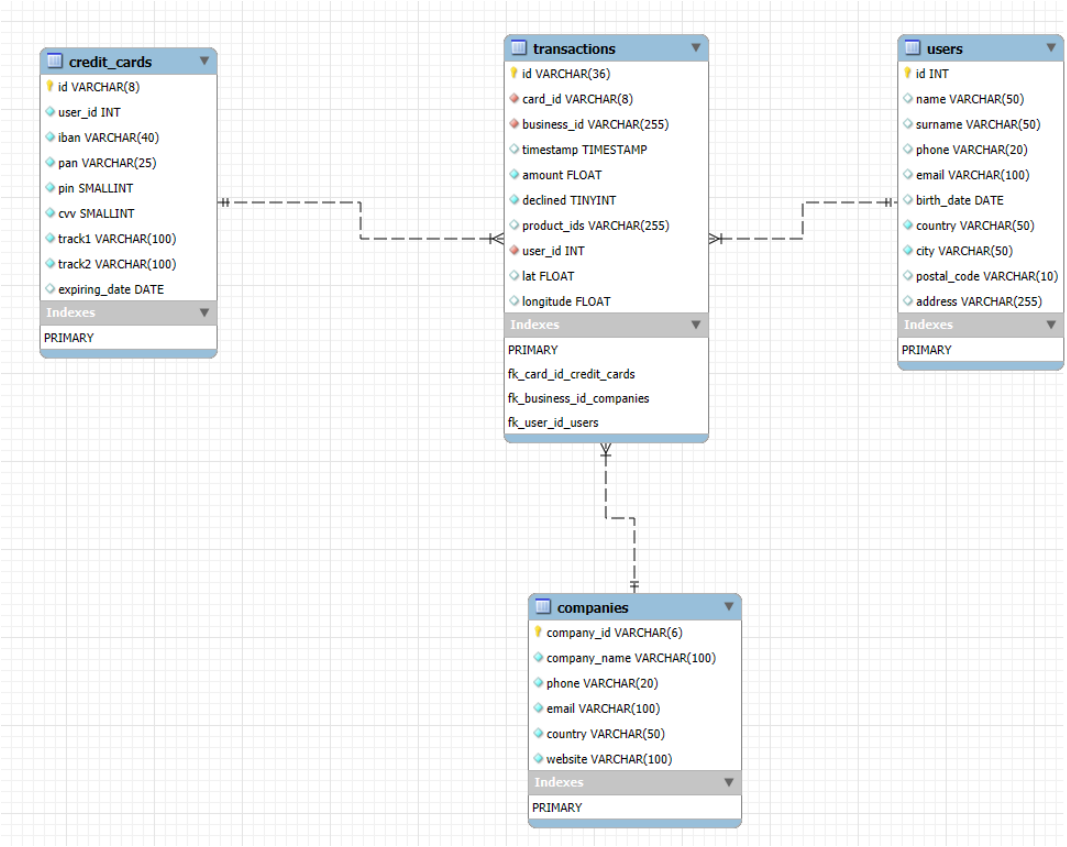
Context Help | Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
16	19:09:22	ALTER TABLE users ADD PRIMARY KEY (id)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	1.953 sec
17	19:09:25	ALTER TABLE transactions ADD PRIMARY KEY (id)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	6.172 sec
18	19:09:33	ALTER TABLE credit_cards ADD PRIMARY KEY (id)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	2.141 sec
19	19:09:37	ALTER TABLE companies ADD PRIMARY KEY (company_id)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	1.140 sec
20	19:13:36	ALTER TABLE transactions ADD CONSTRAINT fk_card_id_credit_cards FOREIGN KEY (card_id) REFERENCES credit_cards(id) ON D...	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	7.062 sec
21	19:13:45	ALTER TABLE transactions ADD CONSTRAINT fk_business_id_companies FOREIGN KEY (business_id) REFERENCES companies(co...	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	7.531 sec
22	19:13:54	ALTER TABLE transactions ADD CONSTRAINT fk_user_id_users FOREIGN KEY (user_id) REFERENCES users(id) ON DELETE REST...	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	9.594 sec

Finalment, el diagrama que ha quedat ha sigut el següent:

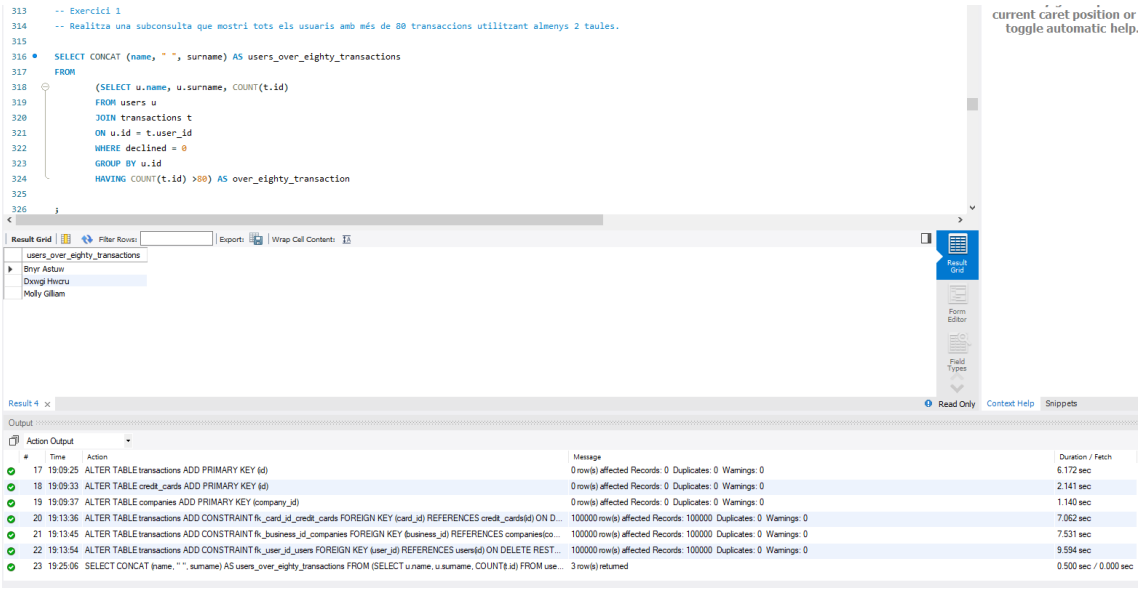


Observem que les taules companies, crèdit_cards i users estan relacionades a través de la seva PK amb la taula transactions i que les relacions que se estableixen són de 1:N

Exercici 1

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

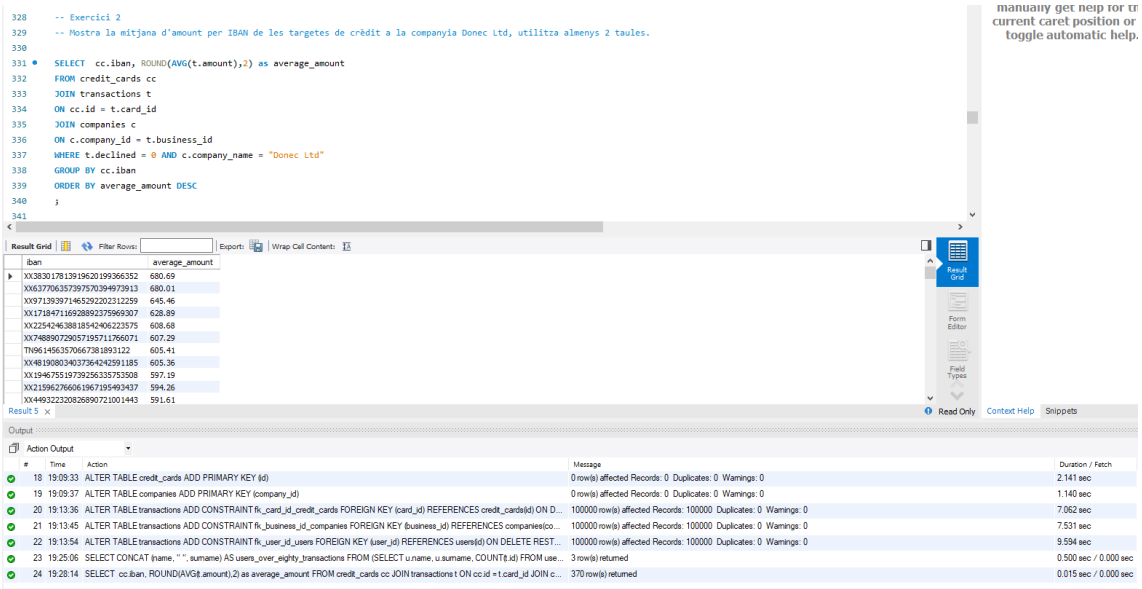
A la subconsulta s'utilitzen dues taules i mostra els usuaris amb més transaccions.Si la he de transformar en subconsulta que és el que demana l'enunciat de l'exercici, el que faré es crear una consulta que concateni nom i cognom i en el FROM posaré la subconsulta:



Exercici 2

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

Faig un GROUP BY per iban amb la funció d'agregació AVG() i en utilitzo tres taules fent JOIN, he decidit ordenar pels valors de mitjana de major a menor:



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:

He creat la nova taula desde credit_card selección les id de les credit cards.

```
344     -- Nivell 2
345     -- 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:
346
347 •   CREATE TABLE credit_cards_declinated AS (
348         (SELECT id
349         FROM credit_cards));
350
```

Context Help | Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
19	19:09:37	ALTER TABLE companies ADD PRIMARY KEY (company_id)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	1.140 sec
20	19:13:36	ALTER TABLE transactions ADD CONSTRAINT fk_card_id_credit_cards FOREIGN KEY (card_id) REFERENCES credit_cards(id) ON D...	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	7.062 sec
21	19:13:45	ALTER TABLE transactions ADD CONSTRAINT fk_business_id_companies FOREIGN KEY (business_id) REFERENCES companies(co...	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	7.531 sec
22	19:13:54	ALTER TABLE transactions ADD CONSTRAINT fk_user_id_users FOREIGN KEY (user_id) REFERENCES users(id) ON DELETE REST...	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	9.594 sec
23	19:25:06	SELECT CONCAT (name, " ", surname) AS users_over_eighty_transactions FROM (SELECT u.name, u.surname, COUNT(t.id) FROM use...	3 row(s) returned	0.500 sec / 0.000 sec
24	19:28:14	SELECT cc.iban, ROUND(AVG(t.amount),2) as average_amount FROM credit_cards cc JOIN transactions t ON cc.id = t.card_id JOIN c...	370 row(s) returned	0.015 sec / 0.000 sec
25	19:29:20	CREATE TABLE credit_cards_declinated AS ((SELECT id FROM credit_cards))	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	0.500 sec

He afegit la columna status a on s'indicaran si las targetes están actives o inactives

```
350
351 •   ALTER TABLE credit_cards_declinated
352     ADD status varchar(8);
353
```

Context Help | Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
20	19:13:36	ALTER TABLE transactions ADD CONSTRAINT fk_card_id_credit_cards FOREIGN KEY (card_id) REFERENCES credit_cards(id) ON D...	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	7.062 sec
21	19:13:45	ALTER TABLE transactions ADD CONSTRAINT fk_business_id_companies FOREIGN KEY (business_id) REFERENCES companies(co...	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	7.531 sec
22	19:13:54	ALTER TABLE transactions ADD CONSTRAINT fk_user_id_users FOREIGN KEY (user_id) REFERENCES users(id) ON DELETE REST...	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	9.594 sec
23	19:25:06	SELECT CONCAT (name, " ", surname) AS users_over_eighty_transactions FROM (SELECT u.name, u.surname, COUNT(t.id) FROM use...	3 row(s) returned	0.500 sec / 0.000 sec
24	19:28:14	SELECT cc.iban, ROUND(AVG(t.amount),2) as average_amount FROM credit_cards cc JOIN transactions t ON cc.id = t.card_id JOIN c...	370 row(s) returned	0.015 sec / 0.000 sec
25	19:29:20	CREATE TABLE credit_cards_declinated AS ((SELECT id FROM credit_cards))	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	0.500 sec
26	19:30:00	ALTER TABLE credit_cards_declinated ADD status varchar(8)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.187 sec

He creat la PK

```
354 •   ALTER TABLE credit_cards_declinated
355     ADD PRIMARY KEY (id);
356
```

Context Help | Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
21	19:13:45	ALTER TABLE transactions ADD CONSTRAINT fk_business_id_companies FOREIGN KEY (business_id) REFERENCES companies(co...	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	7.531 sec
22	19:13:54	ALTER TABLE transactions ADD CONSTRAINT fk_user_id_users FOREIGN KEY (user_id) REFERENCES users(id) ON DELETE REST...	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	9.594 sec
23	19:25:06	SELECT CONCAT (name, " ", surname) AS users_over_eighty_transactions FROM (SELECT u.name, u.surname, COUNT(t.id) FROM use...	3 row(s) returned	0.500 sec / 0.000 sec
24	19:28:14	SELECT cc.iban, ROUND(AVG(t.amount),2) as average_amount FROM credit_cards cc JOIN transactions t ON cc.id = t.card_id JOIN c...	370 row(s) returned	0.015 sec / 0.000 sec
25	19:29:20	CREATE TABLE credit_cards_declinated AS ((SELECT id FROM credit_cards))	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	0.500 sec
26	19:30:00	ALTER TABLE credit_cards_declinated ADD status varchar(8)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.187 sec
27	19:30:28	ALTER TABLE credit_cards_declinated ADD PRIMARY KEY (id)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.765 sec

He creat la FK amb la taula credit cards:

```
357 •   ALTER TABLE credit_cards_declinated
358     ADD CONSTRAINT fk_declinated__credit_cards
359     FOREIGN KEY (id) REFERENCES credit_cards(id)
360     ON DELETE CASCADE
361     ON UPDATE CASCADE;
362
```

Context Help | Snippets

Output

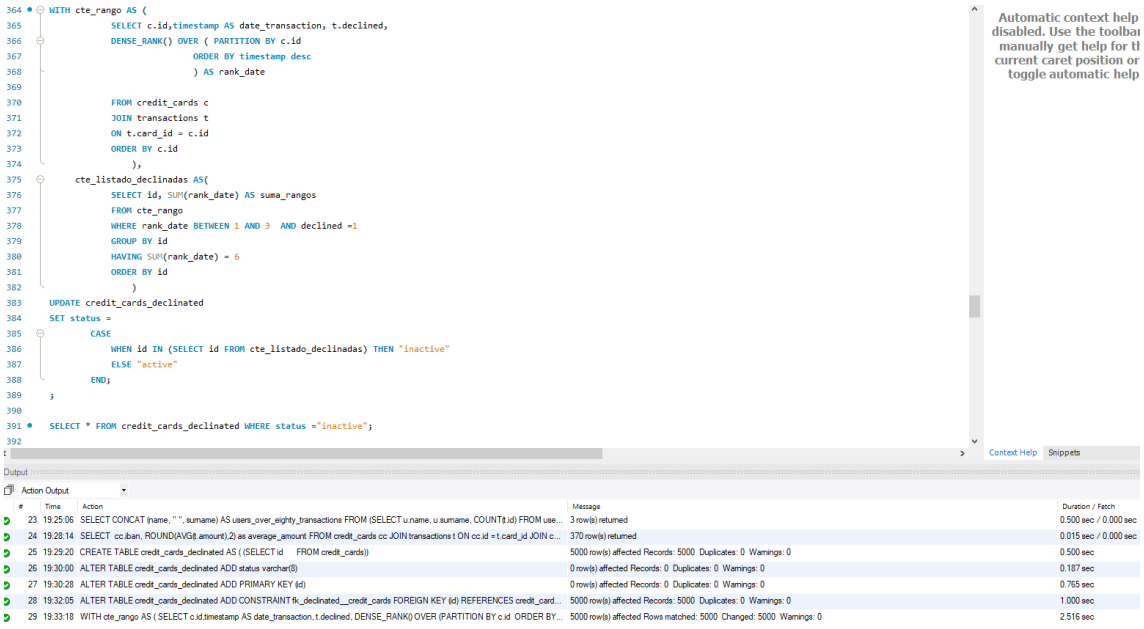
Action Output

#	Time	Action	Message	Duration / Fetch
22	19:13:54	ALTER TABLE transactions ADD CONSTRAINT fk_user_id_users FOREIGN KEY (user_id) REFERENCES users(id) ON DELETE REST...	100000 row(s) affected Records: 100000 Duplicates: 0 Warnings: 0	9.594 sec
23	19:25:06	SELECT CONCAT (name, " ", surname) AS users_over_eighty_transactions FROM (SELECT u.name, u.surname, COUNT(t.id) FROM use...	3 row(s) returned	0.500 sec / 0.000 sec
24	19:28:14	SELECT cc.iban, ROUND(AVG(t.amount),2) as average_amount FROM credit_cards cc JOIN transactions t ON cc.id = t.card_id JOIN c...	370 row(s) returned	0.015 sec / 0.000 sec
25	19:29:20	CREATE TABLE credit_cards_declinated AS ((SELECT id FROM credit_cards))	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	0.500 sec
26	19:30:00	ALTER TABLE credit_cards_declinated ADD status varchar(8)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.187 sec
27	19:30:28	ALTER TABLE credit_cards_declinated ADD PRIMARY KEY (id)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.765 sec
28	19:32:05	ALTER TABLE credit_cards_declinated ADD CONSTRAINT fk_declinated__credit_cards FOREIGN KEY (id) REFERENCES credit_card...	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.000 sec

Per afegir les dades a la columnes he creat una cosulta Update amb cte's:

- cte_rango: a on poso rank a les dates de transaccions per id, ho he fet amb una finestra de dense_rank i amb PARTITION BY, l'ordre de resultat es per id i per rank_date.
- cte_listado_declinadas: una consulta que em dona el llista de les targetes declinades en les tres darreres transaccions, que són a les que els hi posaré l'estatus de inactiva.
  En aquesta CTE per poder filtrar les id's he filtrat per rank i per declined = 0 y he fet un group by de les id's en les que es sumen el ranks que apareixen del filtre, i he posat un filtre having al group by en el que filtro que si la suma dels valors del rank son 6. La lògica que he aplicat es que si una targeta ha sigut declinada les tres darreres dates s'ha desactivat per tant la suma de tres ranks desactivats son 6.
  En aquest cas, he utilitzat la cte_rango per fer els filtres

- Per finalitzar, faré la consulta d' UPDATE en la que li diré que en el cas en el que l'id estigui inclòs al llistat de id en el que les targetes estan fora de servei (cte_listado_declinadas) posi inactive i en el cas contrari posi active.



```
WITH cte_rango AS (
        SELECT c.id,timestamp AS date_transaction, t.declined,
        DENSE_RANK() OVER ( PARTITION BY c.id
                    ORDER BY timestamp desc
                    ) AS rank_date

        FROM credit_cards c
        JOIN transactions t
        ON t.card_id = c.id
        ORDER BY c.id
            ),
    cte_listado_declinadas AS(
        SELECT id, SUM(rank_date) AS suma_rangos
        FROM cte_rango
        WHERE rank_date BETWEEN 1 AND 3  AND declined =1
        GROUP BY id
        HAVING SUM(rank_date) = 6
        ORDER BY id
            )
UPDATE credit_cards_declinated
SET status =
    CASE
        WHEN id IN (SELECT id FROM cte_listado_declinadas) THEN "inactive"
        ELSE "active"
    END;
;

SELECT * FROM credit_cards_declinated WHERE status ="inactive";
```

Automatic context help disabled. Use the toolbar manually get help for the current caret position or toggle automatic help

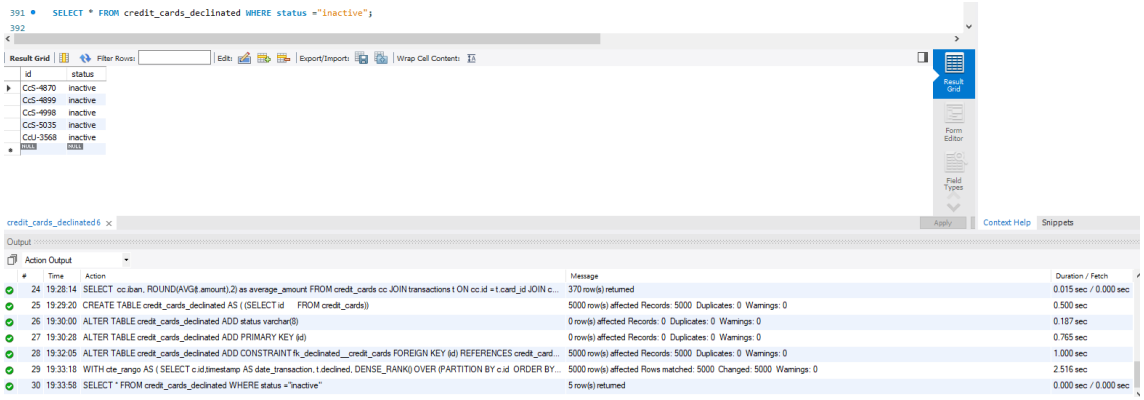
Context Help | Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
23	19:25:06	SELECT CONCAT (name, " ", surname) AS users_over_eighty_transactions FROM (SELECT u.name, u.surname, COUNT(t.id) FROM use...	3 row(s) returned	0.500 sec / 0.000 sec
24	19:28:14	SELECT cc.iban, ROUND(AVG(t.amount),2) as average_amount FROM credit_cards cc JOIN transactions t ON cc.id = t.card_id JOIN c...	370 row(s) returned	0.015 sec / 0.000 sec
25	19:29:20	CREATE TABLE credit_cards_declinated AS ((SELECT id FROM credit_cards))	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	0.500 sec
26	19:30:00	ALTER TABLE credit_cards_declinated ADD status varchar(8)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.187 sec
27	19:30:28	ALTER TABLE credit_cards_declinated ADD PRIMARY KEY (id)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.765 sec
28	19:32:05	ALTER TABLE credit_cards_declinated ADD CONSTRAINT fk_declinated__credit_cards FOREIGN KEY (id) REFERENCES credit_card...	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.000 sec
29	19:33:18	WITH cte_rango AS (SELECT c.id,timestamp AS date_transaction, t.declined, DENSE_RANK() OVER (PARTITION BY c.id ORDER BY...	5000 row(s) affected Rows matched: 5000 Changed: 5000 Warnings: 0	2.516 sec

Ho comprovo:



```
SELECT * FROM credit_cards_declinated WHERE status ="inactive";
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

id	status
CcS-4870	inactive
CcS-4899	inactive
CcS-4998	inactive
CcS-5035	inactive
CcU-3568	inactive
NULL	NULL

Result Grid | Form Editor | Field Types

credit_cards_declinated 6

Apply | Context Help | Snippets

Output

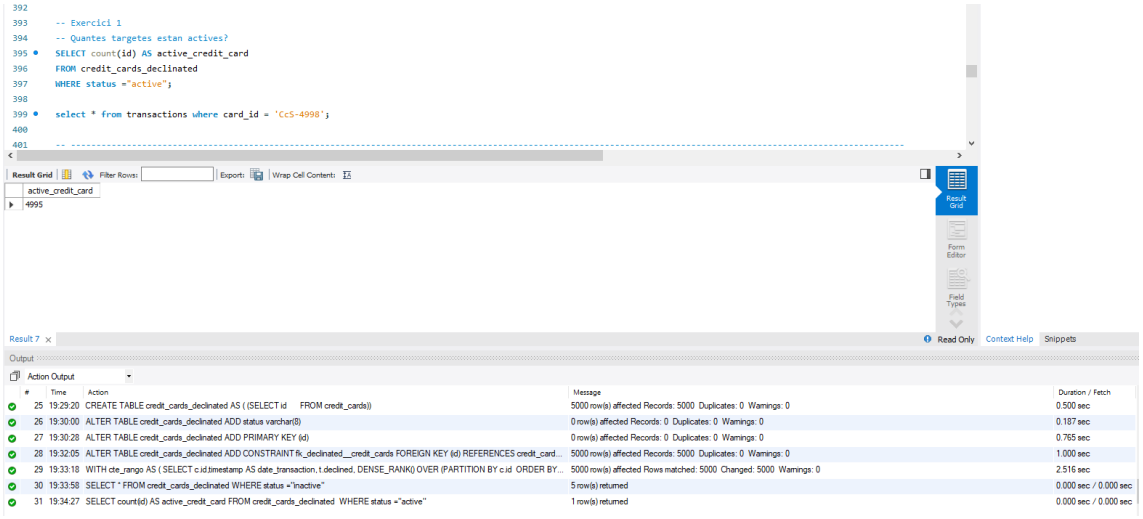
Action Output

#	Time	Action	Message	Duration / Fetch
24	19:28:14	SELECT cc.iban, ROUND(AVG(t.amount),2) as average_amount FROM credit_cards cc JOIN transactions t ON cc.id = t.card_id JOIN c...	370 row(s) returned	0.015 sec / 0.000 sec
25	19:29:20	CREATE TABLE credit_cards_declinated AS ((SELECT id FROM credit_cards))	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	0.500 sec
26	19:30:00	ALTER TABLE credit_cards_declinated ADD status varchar(8)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.187 sec
27	19:30:28	ALTER TABLE credit_cards_declinated ADD PRIMARY KEY (id)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.765 sec
28	19:32:05	ALTER TABLE credit_cards_declinated ADD CONSTRAINT fk_declinated__credit_cards FOREIGN KEY (id) REFERENCES credit_card...	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.000 sec
29	19:33:18	WITH cte_rango AS (SELECT c.id,timestamp AS date_transaction, t.declined, DENSE_RANK() OVER (PARTITION BY c.id ORDER BY...	5000 row(s) affected Rows matched: 5000 Changed: 5000 Warnings: 0	2.516 sec
30	19:33:58	SELECT * FROM credit_cards_declinated WHERE status ="inactive"	5 row(s) returned	0.000 sec / 0.000 sec

Exercici 1

Quantes targetes estan actives?

He aplicat una consulta en la que es conten el número de targes on la condició és que han d'estar actives:



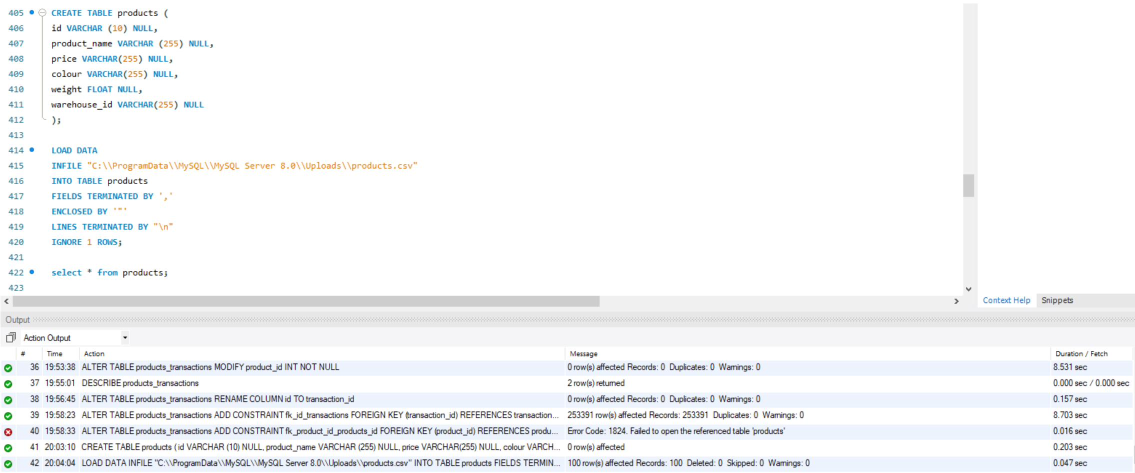
Nivell 3

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:

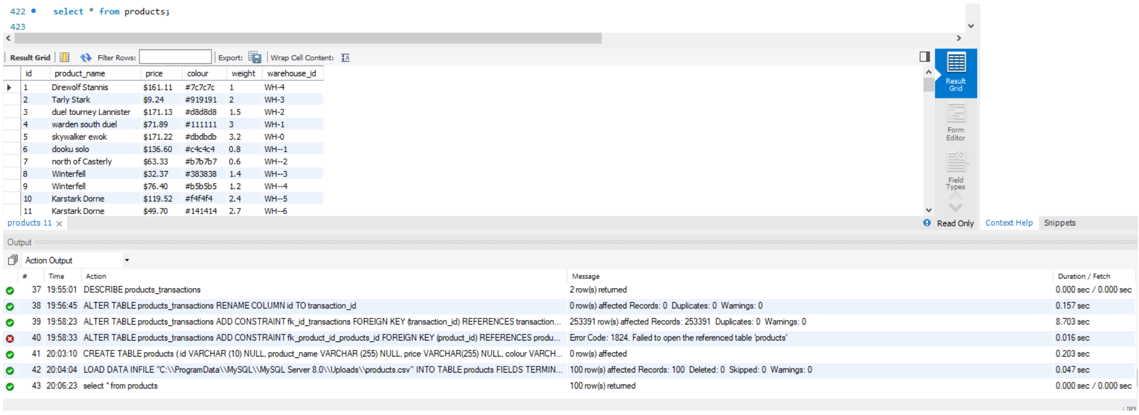
- **Càrrega i modelatge de la taula products**

Seguiré els mateixos passos que s'ha fet per crear el model d'estrella:

Creo i carrego la taula:



Veiem com són les dades:



Veiem longitud de les dades

I fem les següents modificacions per tal de tenir els tipus de dades desitjats:

Id: el posarem INT NOT NULL

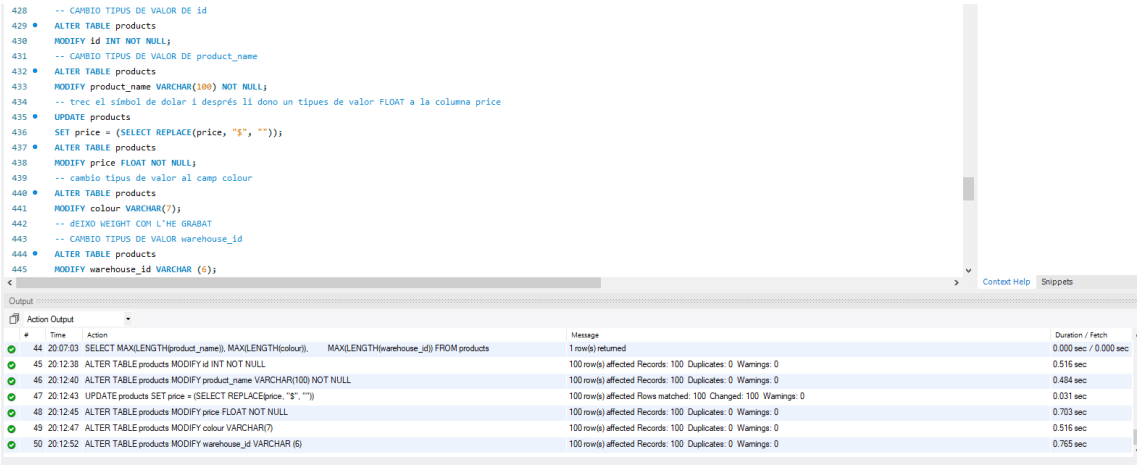
Product_name: VARCHAR més curt

Price: trèiem el símbol $ i el pasem a FLOAT

Colour: VARCHAR més curt

Deixo weight com l'he grabat

warehouse_id: VARCHAR més curt



```
-- CAMBIO TIPUS DE VALOR DE id
ALTER TABLE products
MODIFY id INT NOT NULL;
-- CAMBIO TIPUS DE VALOR DE product_name
ALTER TABLE products
MODIFY product_name VARCHAR(100) NOT NULL;
-- trec el símbol de dolar i després li dono un tipues de valor FLOAT a la columna price
UPDATE products
SET price = (SELECT REPLACE(price, "$", ""));
ALTER TABLE products
MODIFY price FLOAT NOT NULL;
-- cambio tipus de valor al camp colour
ALTER TABLE products
MODIFY colour VARCHAR(7);
-- dEIXO WEIGHT COM L'HE GRABAT
-- CAMBIO TIPUS DE VALOR warehouse_id
ALTER TABLE products
MODIFY warehouse_id VARCHAR (6);
```

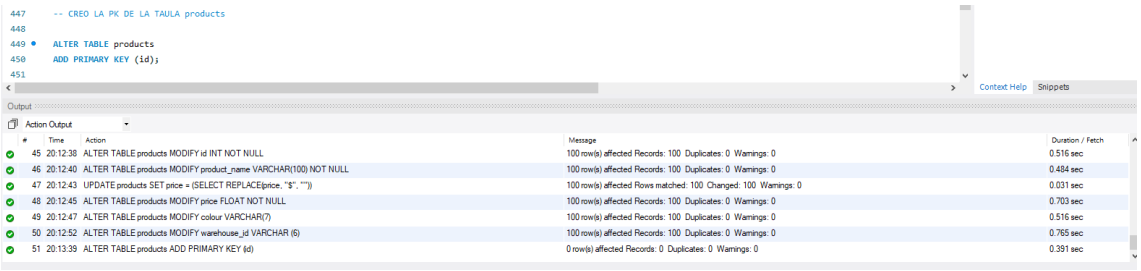
Context Help | Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
44	20:07:03	SELECT MAX(LENGTH(product_name)), MAX(LENGTH(colour)), MAX(LENGTH(warehouse_id)) FROM products	1 row(s) returned	0.000 sec / 0.000 sec
45	20:12:38	ALTER TABLE products MODIFY id INT NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.516 sec
46	20:12:40	ALTER TABLE products MODIFY product_name VARCHAR(100) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.484 sec
47	20:12:43	UPDATE products SET price = (SELECT REPLACE(price, "$", ""))	100 row(s) affected Rows matched: 100 Changed: 100 Warnings: 0	0.031 sec
48	20:12:45	ALTER TABLE products MODIFY price FLOAT NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.703 sec
49	20:12:47	ALTER TABLE products MODIFY colour VARCHAR(7)	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.516 sec
50	20:12:52	ALTER TABLE products MODIFY warehouse_id VARCHAR (6)	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.765 sec

Creo la PK:



```
-- CREO LA PK DE LA TAULA products

ALTER TABLE products
ADD PRIMARY KEY (id);
```

Context Help | Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
45	20:12:38	ALTER TABLE products MODIFY id INT NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.516 sec
46	20:12:40	ALTER TABLE products MODIFY product_name VARCHAR(100) NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.484 sec
47	20:12:43	UPDATE products SET price = (SELECT REPLACE(price, "$", ""))	100 row(s) affected Rows matched: 100 Changed: 100 Warnings: 0	0.031 sec
48	20:12:45	ALTER TABLE products MODIFY price FLOAT NOT NULL	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.703 sec
49	20:12:47	ALTER TABLE products MODIFY colour VARCHAR(7)	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.516 sec
50	20:12:52	ALTER TABLE products MODIFY warehouse_id VARCHAR (6)	100 row(s) affected Records: 100 Duplicates: 0 Warnings: 0	0.765 sec
51	20:13:39	ALTER TABLE products ADD PRIMARY KEY (id)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.391 sec

- **<u>Creació de la taula intermitja: products.transactions</u>**

Inicialment, la taula la he creat utilitzant la funció Length() i la funció SUBSTRING_INDEX(). Donava correctament, però durant la correcció de l'exercici m'han explicat que la miller manera de realitzar-lo és utilitzant la funció JSON_TABLE(), i finalment he decidit fer-ho amb aquesta funció. Per completar la informació de la decisió he de dir que als apunts indiquen que per fer taules Intermitges és millor utilitzar aquesta funció.

```
CREATE TABLE products_transactions AS (
        SELECT t.id, jt.product_id
        FROM transactions t
        CROSS JOIN JSON_TABLE(
                CONCAT('[', REPLACE(t.product_ids, ' ', ''), ']'),
                "$[*]" COLUMNS (product_id INT PATH "$") -- SI ES LISTA SÓLO SE PONE EL DOLAR
                ) AS jt
);
```

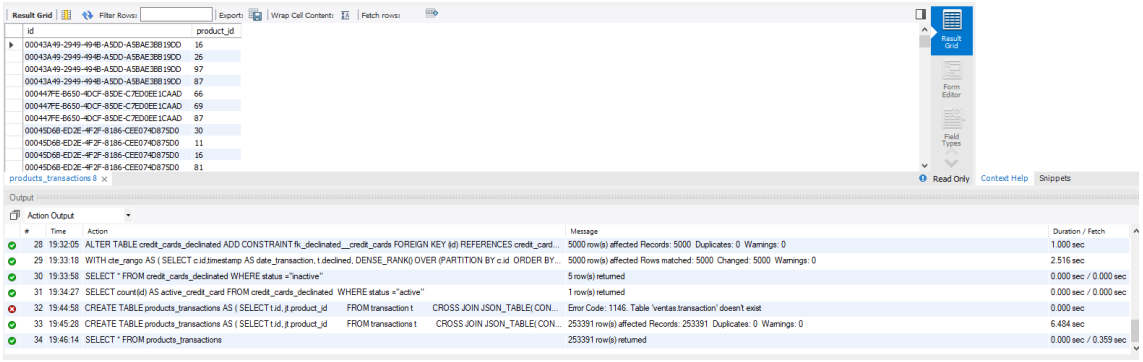
Context Help | Snippets

Output

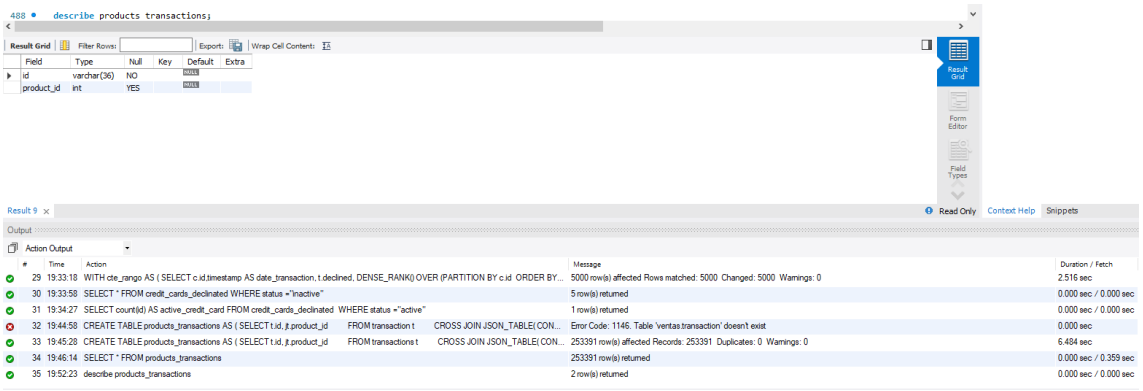
Action Output

#	Time	Action	Message	Duration / Fetch
27	19:30:28	ALTER TABLE credit_cards_declinated ADD PRIMARY KEY (id)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.765 sec
28	19:32:05	ALTER TABLE credit_cards_declinated ADD CONSTRAINT fk_declinated__credit_cards FOREIGN KEY (id) REFERENCES credit_card...	5000 row(s) affected Records: 5000 Duplicates: 0 Warnings: 0	1.000 sec
29	19:33:18	WITH cte_rango AS (SELECT c.id,timestamp AS date_transaction, t.declined, DENSE_RANK() OVER (PARTITION BY c.id ORDER BY...	5000 row(s) affected Rows matched: 5000 Changed: 5000 Warnings: 0	2.516 sec
30	19:33:58	SELECT * FROM credit_cards_declinated WHERE status ="inactive"	5 row(s) returned	0.000 sec / 0.000 sec
31	19:34:27	SELECT count(id) AS active_credit_card FROM credit_cards_declinated WHERE status ="active"	1 row(s) returned	0.000 sec / 0.000 sec
32	19:44:58	CREATE TABLE products_transactions AS (SELECT t.id, jt.product_id FROM transaction t CROSS JOIN JSON_TABLE(CON...	Error Code: 1146. Table 'ventas.transaction' doesn't exist	0.000 sec
33	19:45:28	CREATE TABLE products_transactions AS (SELECT t.id, jt.product_id FROM transactions t CROSS JOIN JSON_TABLE(CON...	253391 row(s) affected Records: 253391 Duplicates: 0 Warnings: 0	6.484 sec

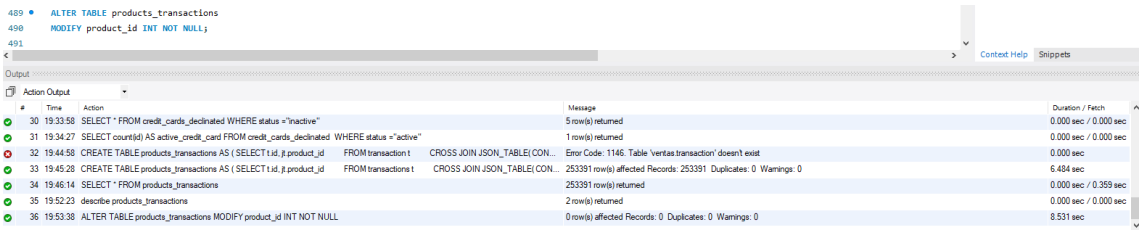
Veiem com queda la taula



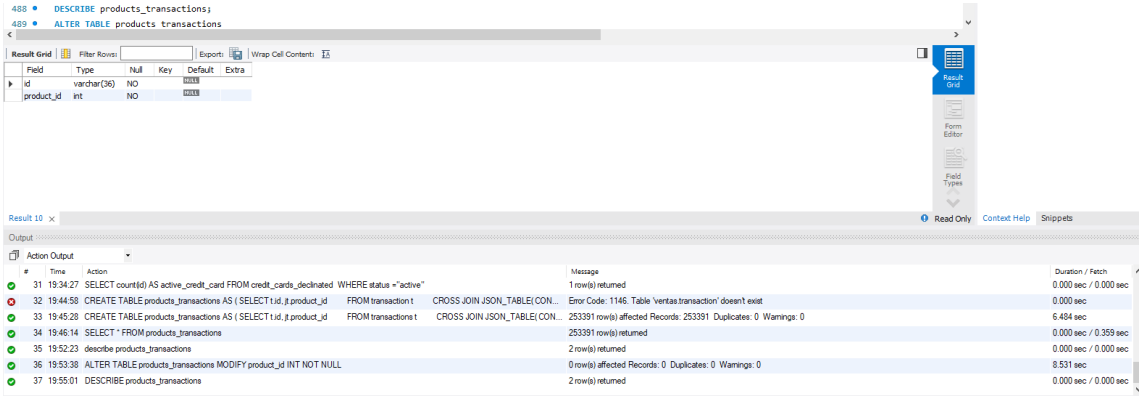
Comprovem com han quedat el tipus de dades:



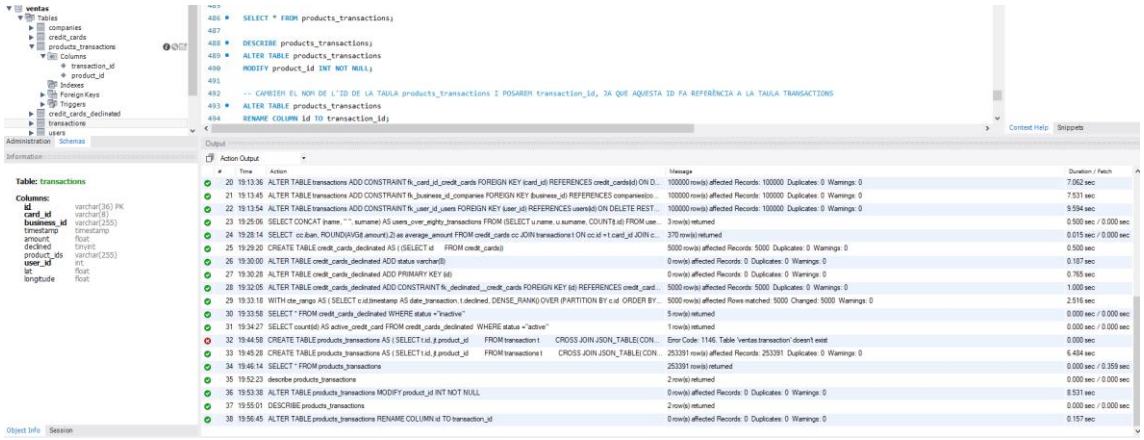
Decideixo posar que product_id no tingui Null:



Tornem a executar el DESCRIBE



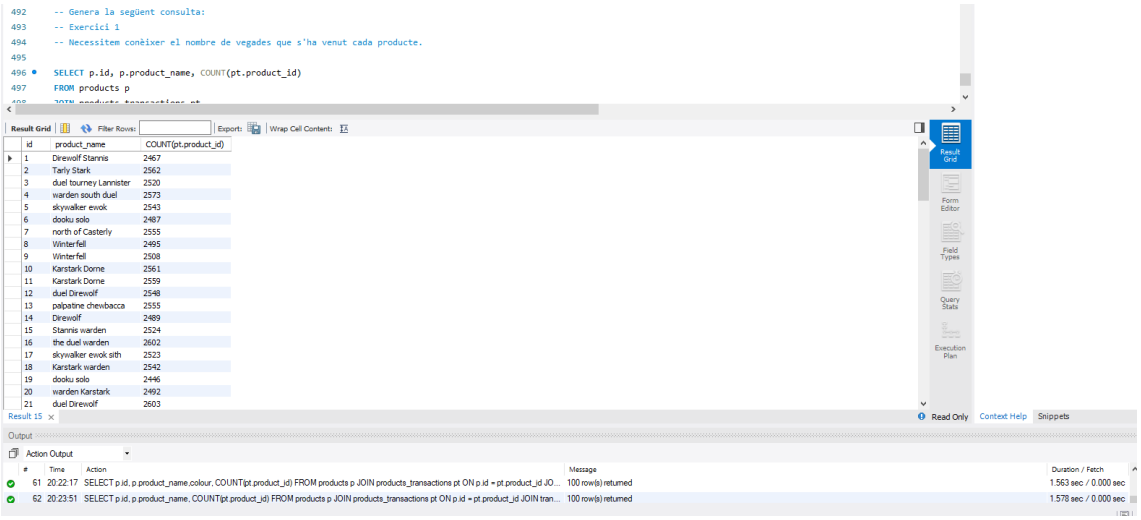
Cambiem el nom de l'id pel de transaction_id, per que quedi clar a que es refereix aquest camp:



Creem les Foreing key: amb la taula transaction i amb la taula products

Exercici 1

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



Durant la revisió de l'exercici hem vist que donva correcte però que hi havia noms de productes repetits i hem fet la proba afegint les altres característiques que defineixen el producte i veiem que encara que el nom és el mateix l'id del producte diferència no només el nom si no les altres característiques: