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:

En primer lloc, he creat les taules:

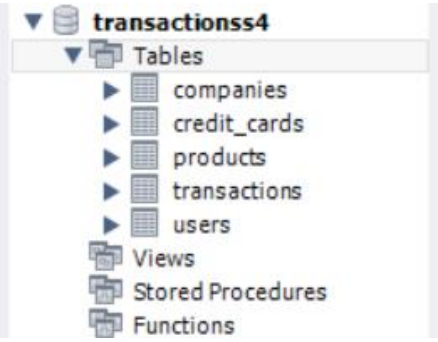
```sql
CREATE TABLE companies
(company_id VARCHAR (15) PRIMARY KEY,
company_name VARCHAR(150),
phone VARCHAR (25),
email VARCHAR (150),
country VARCHAR (150),
website VARCHAR (150)
);

CREATE TABLE credit_cards
(id VARCHAR (20) PRIMARY KEY,
user_id VARCHAR (100),
iban VARCHAR (100) ,
pan VARCHAR (100) ,
pin VARCHAR (100) ,
cvv VARCHAR (100) ,
track1 VARCHAR (100) ,
track2 VARCHAR (100) ,
expiring_date VARCHAR(50)
);

CREATE TABLE products
(id VARCHAR(50) PRIMARY KEY,
product_name VARCHAR (255),
price VARCHAR (20),
colour VARCHAR (50),
weight DECIMAL(8,2),
warehouse_id VARCHAR(50)
);
```

```sql
CREATE TABLE transactions
(id VARCHAR (40) PRIMARY KEY,
card_id VARCHAR(20),
business_id  VARCHAR(20),
timestamp DATETIME,
amount DECIMAL (10,2),
declined TINYINT(1),
product_ids VARCHAR(50),
user_id VARCHAR(20),
lat FLOAT ,
longitude FLOAT);

CREATE TABLE users
(id VARCHAR(20) PRIMARY KEY,
name VARCHAR (200),
surname VARCHAR(200),
phone VARCHAR(25),
email VARCHAR(150),
birth_date VARCHAR(50),
country VARCHAR (150),
city VARCHAR (150),
postal_code VARCHAR (50),
address VARCHAR (150)
);
```



A continuació importem les dades:

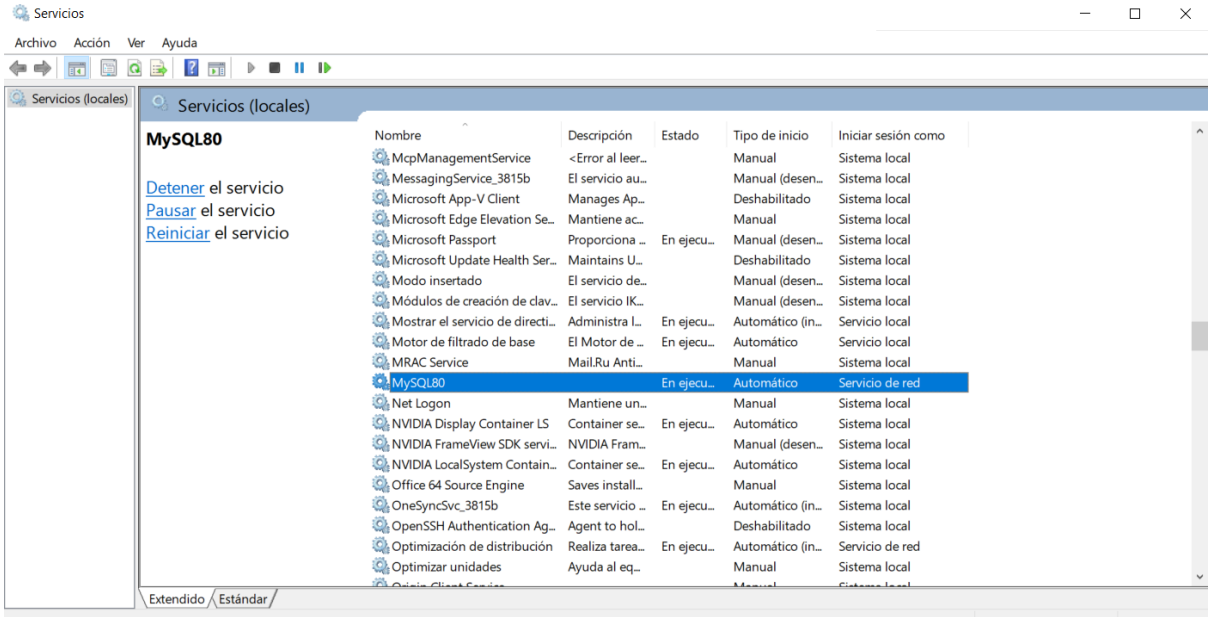
Taula companies:

```
LOAD DATA
INFILE 'C:/Users/ereth/Desktop/archivosCSV/ITAcademy/sprint4_V2/companies.csv'
INTO TABLE companies
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
IGNORE 1 ROWS;
```

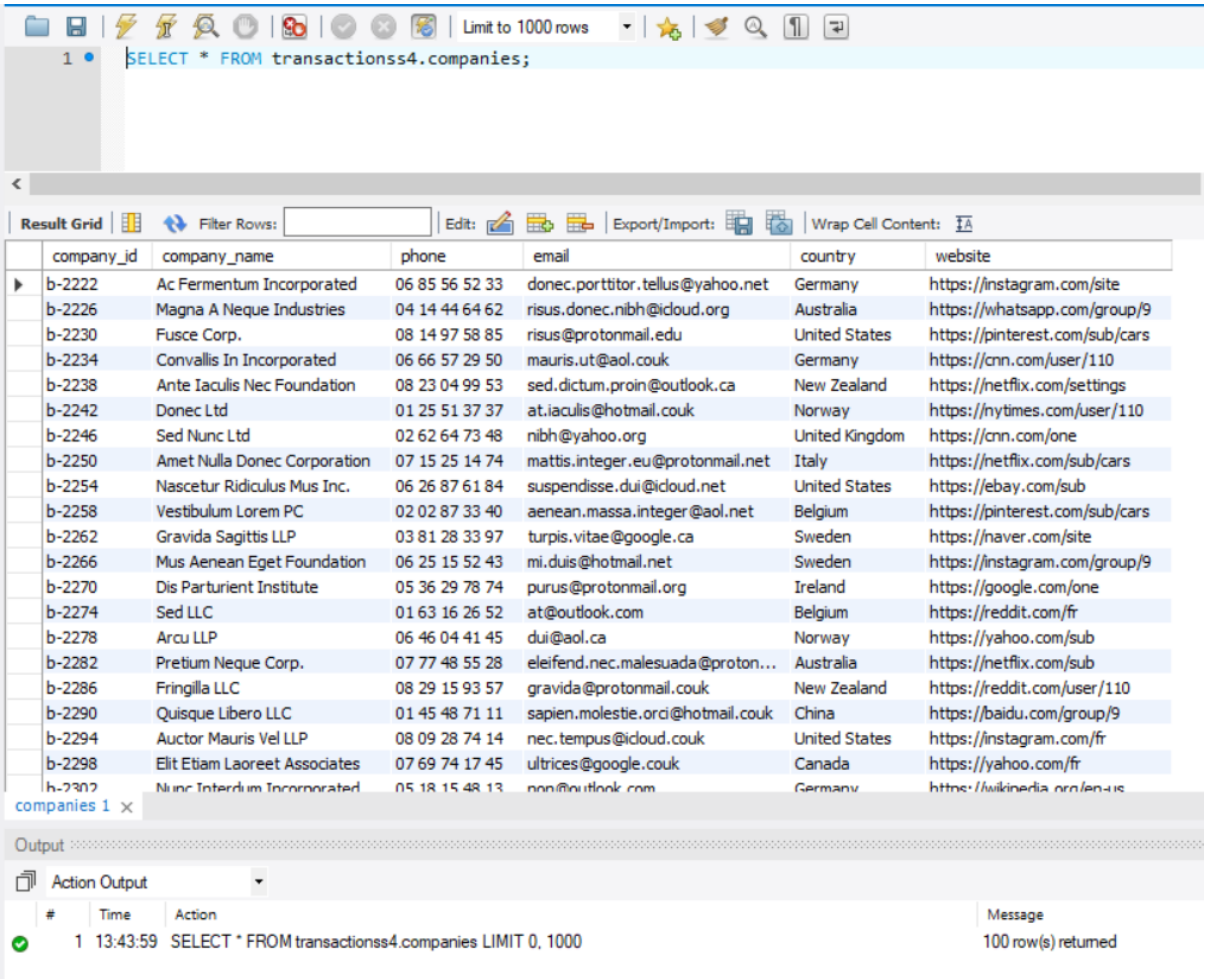
A l'hora d'executar aquesta query, dona un error de seguretat a causa del fet que això restringeix des de quina carpeta es poden importar les dades.
Per fer-ho, he obert l'arxiu my.ini amb el Notepad++que es troba a la carpeta:
C: |ProgramData |MySQL |MySQL Server 8.0
Un cop aquí he esborrat el *path* que hi ha al '*secure-file*':

```
# This variable is used to limit the effect of data import and export operations, such as
# those performed by the LOAD DATA and SELECT ... INTO OUTFILE statements and the
# LOAD_FILE() function. These operations are permitted only to users who have the FILE privilege.
secure-file-priv=""
```

D'aquesta manera el programa em deixarà importar dades des de qualsevol *path*.
Després s'ha d'aturar el servei de MySQL i tornar-ho a activar perquè es faci efectiu el canvi:



Taula 'companies' amb les dades importades:



```
SELECT * FROM transactionss4.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

Output

#	Time	Action	Message
1	13:43:59	SELECT * FROM transactionss4.companies LIMIT 0, 1000	100 row(s) returned

Hem importat en total 100 línies.

Taula credit_cards:

```
LOAD DATA
INFILE 'C:/Users/ereth/Desktop/archivosCSV/ITAcademy/sprint4_V2/credit_cards.csv'
INTO TABLE credit_cards
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
IGNORE 1 ROWS;
```

```
1 • SELECT * FROM transactionss4.credit_cards;
```

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

id	user_id	iban	pan	pin	cvv	track1	track2	expiring_date
CcU-2938	275	TR301950312213576817638661	5424465566813633	3257	984	%B8383712448554646^WovsxejDpwiev^8604...	%B7653863056044187=80071633363?3	10/30/22
CcU-2945	274	DO26854763748537475216568689	5142423821948828	9080	887	%B4621311609958661^UftuyfsSeimxn^06106...	%B4149568437843501=51071403303?1	08/24/23
CcU-2952	273	BG45IVQL52710525608255	4556 453 55 5287	4598	438	%B2183285104307501^CddyytcUxwfdq^5907...	%B6778580257827162=69068597400?7	06/29/21
CcU-2959	272	CR7242477244335841535	372461377349375	3583	667	%B7281111956795320^XocddijBckecd^09016...	%B4246154489281853=28052239167?8	02/24/23
CcU-2966	271	BG72LKTQ15627628377363	448566 886747 7265	4900	130	%B4728932322756223^JhlgvsuFbmwgj^7202...	%B2318571115599881=89082157847?5	10/29/24
CcU-2973	270	PT8780622813509242945634 6	544 58654 54343 384	8760	887	%B4761405253275637^HjnnipoBlejrl^7108515...	%B7816169831446746=13102772?9	01/30/25
CcU-2980	269	DE39241881883086277136	402400 7145845969	5075	596	%B7320483593870549^OokzqxrHpased^4901...	%B2474313962214151=04122191317?5	07/24/22
CcU-2987	268	GE896814348377487818 13	3763 747687 76666	2298	797	%B4750646345146674^PjmlyrfGwwtrf^83051...	%B5441935173418615=41037045367?7	10/31/23
CcU-2994	267	BH6271442836806676529 4	344283273252593	7545	595	%B1583759784015674^GmqoyhtUtoqrn^2507...	%B4141467473024349=65068009550?4	02/28/22
CcU-3001	266	CY490874266547745812668321 10	511722 924833 2244	9562	867	%B6227288756728648^AwxlfcFmgvdy^2808...	%B3429355750963453=53052683057?3	09/16/22
CcU-3008	265	LU507216693616119230	4485744464433884	1856	740	%B7182449430529226^MkoutyhTfdvpo^1708...	%B6235123731781366=94056381668?8	04/05/25
CcU-3015	264	PS11939821629571596834245682 1	3784 662233 17389	3246	822	%B5776250106724742^QvvzkrcCwrovm^530...	%B3561372148267521=19054731667?7	01/31/22
CcU-3022	263	GT916951628505569774231218 57	5164 1379 4842 3951	5610	342	%B8456622214332875^XmwxhenXwoxbt^050...	%B7761154174374063=23042334297?4	04/25/25
CcU-3029	262	AZ623174139824414181237397 46	3429 279566 77631	9708	505	%B9882354238385082^HrmhqsnRprjpm^1902...	%B4377026757181186=58024538197?6	09/02/23
CcU-3036	261	AZ393360029258428658439419 94	3768 451556 48766	2232	565	%B4814576454466431^IcstszwEpqgfk^92059...	%B7259434322726515=53054604957?3	10/27/25
CcU-3043	260	TN648814331051485217953 5	455676 6437463635	5969	196	%B6524853618888394^VjjxpyyCbiopy^44067...	%B5469323811685837=2403868577	06/07/25
CcU-3050	259	FR5167744369175836831854477	4024007123722	4834	126	%B7784177223537930^NhuwoziEexiwa^9105...	%B2727867073512632=74036902447?5	10/09/23
CcU-3057	258	LU931822574697545215	3484 621767 21237	6805	848	%B4513246318178918^EbmpsehXroiiy^71025...	%B1725272041127802=52027697987?2	09/14/25
CcU-3064	257	PS14696554544925337762727313 3	3467 732741 26810	3865	498	%B7675544533775797^XlxvwhuPwqeek^5103...	%B2536323414661722=08123392228?	06/03/25
CcU-3071	256	NO8923814763512	3464 789562 23352	6625	661	%B8981277622416587^EhdwdwlMapqxc^280...	%B8150826795832177=47081653206?1	12/20/23
CcU-3078	255	IS02512714588462327954873 3	4539 322 74 2377	9405	720	%B8805395627676929^YnocruwOohnno^690	%B7847385332697301=51044518942?1	03/08/23

credit_cards 1

Output

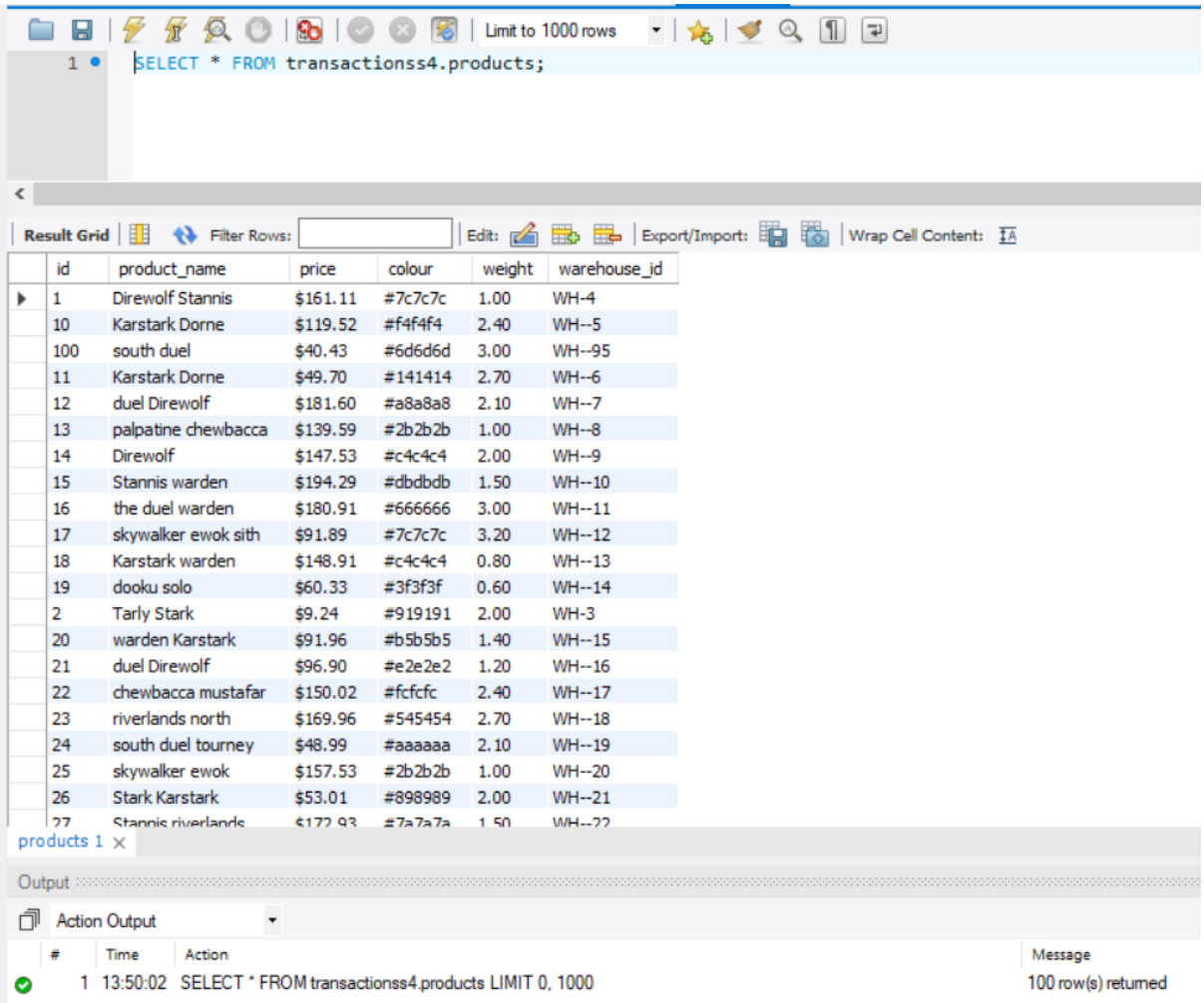
Action Output

#	Time	Action	Message
1	13:48:44	SELECT * FROM transactionss4.credit_cards LIMIT 0, 1000	275 row(s) returned

Hem importat en total 275 línies.

Taula products:

```
LOAD DATA
INFILE 'C:/Users/ereth/Desktop/archivosCSV/ITAcademy/sprint4_V2/products.csv'
INTO TABLE products
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
IGNORE 1 ROWS;
```



id	product_name	price	colour	weight	warehouse_id
1	Direwolf Stannis	$161.11	#7c7c7c	1.00	WH-4
10	Karstark Dorne	$119.52	#f4f4f4	2.40	WH--5
100	south duel	$40.43	#6d6d6d	3.00	WH--95
11	Karstark Dorne	$49.70	#141414	2.70	WH--6
12	duel Direwolf	$181.60	#a8a8a8	2.10	WH--7
13	palpatine chewbacca	$139.59	#2b2b2b	1.00	WH--8
14	Direwolf	$147.53	#c4c4c4	2.00	WH--9
15	Stannis warden	$194.29	#dbdbdb	1.50	WH--10
16	the duel warden	$180.91	#666666	3.00	WH--11
17	skywalker ewok sith	$91.89	#7c7c7c	3.20	WH--12
18	Karstark warden	$148.91	#c4c4c4	0.80	WH--13
19	dooku solo	$60.33	#3f3f3f	0.60	WH--14
2	Tarly Stark	$9.24	#919191	2.00	WH-3
20	warden Karstark	$91.96	#b5b5b5	1.40	WH--15
21	duel Direwolf	$96.90	#e2e2e2	1.20	WH--16
22	chewbacca mustafar	$150.02	#fcfcfc	2.40	WH--17
23	riverlands north	$169.96	#545454	2.70	WH--18
24	south duel tourney	$48.99	#aaaaaa	2.10	WH--19
25	skywalker ewok	$157.53	#2b2b2b	1.00	WH--20
26	Stark Karstark	$53.01	#898989	2.00	WH--21
27	Stannis riverlands	$172.93	#7a7a7a	1.50	WH--22

Hem importat en total 100 línies.

En el cas de la **taula 'transactions'** l'arxiu és diferent i està separat per ' ; ', per tant, s'ha de modificar una mica la query:

```
LOAD DATA
INFILE 'C:/Users/ereth/Desktop/archivosCSV/ITAcademy/sprint4_V2/transactions.csv'
INTO TABLE transactions
FIELDS TERMINATED BY ';'
ENCLOSED BY '"'
LINES TERMINATED BY '\r\n'
IGNORE 1 ROWS;
```

D'aquesta manera indiquem que l'arxiu està separat per punt i coma. A més he afegit el ' LINES TERMINATED BY '\r\n' , perquè detectava malament el salt de línia de l'arxiu.

```
SELECT * FROM transactionss4.transactions;
```

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

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-2302	2021-07-26 07:29:18	49.53	0	47, 97, 43	170	-43.9695	-117.525
063FBA79-99EC-66FB-29F7-25726D1764A5	CcU-2987	b-2250	2022-01-06 21:25:27	92.61	0	47, 67, 31, 5	275	-81.2227	-129.05
0668296C-CDB9-A883-76BC-2E4C44F8C8AE	CcU-3743	b-2618	2022-01-26 02:07:14	394.18	0	89, 83, 79	265	-34.3593	-100.556
06CD9AA5-9B42-D684-DDDD-A5E394FEBA99	CcU-2959	b-2346	2021-10-26 23:00:01	279.93	0	43, 31	92	33.7381	158.298
07A46D48-31A3-7E87-65B9-0DA902AD109F	CcU-3225	b-2386	2021-06-28 21:11:42	340.87	1	47, 23	272	38.8342	92.1905
09DE92CE-6F27-2BB7-13B5-9385B2B3B8E2	CcU-3071	b-2298	2021-05-11 20:40:06	303.05	1	67, 7	275	71.1706	10.5757
0A476ED9-0C13-1962-F87B-D3563924B539	CcU-4359	b-2302	2022-02-26 20:33:54	430.49	0	29, 41, 11	221	-56.4901	114.801
0BEB80B7-9D66-1707-CE4B-9DC7E71914B5	CcU-3141	b-2338	2022-03-04 14:54:35	288.81	1	19, 41, 29, 3	272	23.3264	-13.6037
0C7C3A33-9947-3BC1-846D-7BE3D0D17598	CcU-3309	b-2434	2021-04-10 20:58:41	103.44	1	89, 31	272	63.3615	-68.6667
0CE957A6-CCAA-2B7A-6839-8A4B1B324853	CcU-3435	b-2506	2022-02-02 07:29:36	428.69	1	83, 43, 73, 61	269	-69.3537	-10.26
0DD2E608-5C9E-D1B3-4999-B99F43AD735A	CcU-2959	b-2234	2021-04-17 05:30:17	252.47	1	7, 47, 17	275	9.68811	130.282
1017AA59-3D5F-7A4C-1992-D151A8D1FA0A	CcU-3701	b-2618	2021-11-01 01:02:11	447.11	0	37, 13	267	4.27645	-101.554
1026DA24-8929-31F1-8250-D7BAB05C13D2	CcU-2959	b-2346	2021-12-07 09:30:38	465.31	0	89, 11, 97, 79	92	32.0646	-140.147
108B1D1D-5B23-A76C-55EF-C568E49A05DD	CcU-2938	b-2222	2021-07-07 17:43:16	293.57	0	59	275	83.7839	-178.86
10A9B07A-810C-76EB-4D15-12C6CC128037	CcU-3155	b-2346	2021-05-16 21:00:28	27.85	1	43, 83	272	-32.0556	-76.7281
11ABED97-EA12-1B9A-96F0-A93ACC172179	CcU-3981	b-2362	2021-07-14 20:55:48	157.20	0	29	68	-78.8402	8.76182
122DC333-E19F-D629-DCD8-9C54CF1EBB9A	CcU-4366	b-2302	2021-06-09 06:04:14	172.01	0	1, 67, 19	221	29.6372	-166.173
133B82CC-DE62-8604-2D11-3DC5449E0A5F	CcU-3407	b-2490	2021-04-02 05:17:46	348.88	1	29	271	62.3246	101.017
135267BA-2E7D-957C-C42C-6450A2B3ED54	CcU-4520	b-2302	2021-12-29 20:38:23	17.97	0	11, 71	210	20.6724	14.9732
13DCC69F-EA07-E52B-8309-D474C6281E80	CcU-3197	b-2370	2021-06-02 04:10:57	50.09	1	97, 29, 23	272	32.3746	165.016

transactions 1

Output

Action Output

#	Time	Action	Message
1	13:52:15	SELECT * FROM transactionss4.transactions LIMIT 0, 1000	587 row(s) returned

Hem importat 587 línies.

En el cas de la **taula 'users'**, tenim tres arxius diferents separats per 'country', he decidit importar-les totes a la mateixa taula, ja que no és necessari que estiguin separats.

A més, a la columna 'adress' hi ha registres que entre cometes "" i això pot donar error a l'hora d'importar, perquè no registra bé el salt de línia. Per tant, també hem d'indicar quan canviar de línia:

```
201,Iola,Powers,018-139-4717,ante.blandit@outlook.edu,"Mar 20, 2000",Canada,Rigolet,V6T 6M7,134-3415 Auctor St.
202,Maxwell,Holden,045-402-7693,donec@hotmail.edu,"Dec 2, 1986",Canada,Murdochville,S7E 6E0,Ap #880-6372 Ultrices. St.
203,Jarrod,Fields,010-741-8105,sit.amet@google.couk,"Jan 6, 1982",Canada,Baddeck,K3X 6Z5,441-8969 Rhoncus Road
204,Emerson,Sharp,068-138-9383,ante.iaculis@outlook.ca,"Oct 15, 1994",Canada,Maple Creek,Y2C 9E6,"517-6759 Ut, Av."
205,Sonya,Mckee,041-151-9737,magna.phasellus.dolor@google.ca,"May 7, 1983",Canada,Dieppe,E7S 4P8,Ap #916-8051 A St.
206,Harper,Hart,030-656-1670,fringilla.donec@outlook.net,"Nov 17, 2000",Canada,Québec City,B4K 0J6,8588 Massa. Ave
207,Yvonne,Hatfield,003-854-1445,magna.et.ipsum@google.edu,"Sep 22, 1981",Canada,Rae-Edzo,20Y 8L2,Ap #636-8055 Egestas St.
208,Burke,Graham,064-568-4454,vel@yahoo.org,"Feb 23, 1993",Canada,Annapolis Royal,S4Y 8V5,Ap #983-6042 Amet Street
209,Athena,Malone,027-280-8275,pellentesque.tincidunt@yahoo.ca,"Dec 14, 1991",Canada,Cambridge Bay,93Z 5S5,Ap #388-8542 Est St.
```

```sql
LOAD DATA
INFILE 'C:/Users/ereth/Desktop/archivosCSV/ITAcademy/sprint4_V2/users_ca.csv'
INTO TABLE users
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
LINES TERMINATED BY '\r\n'
IGNORE 1 ROWS;

LOAD DATA
INFILE 'C:/Users/ereth/Desktop/archivosCSV/ITAcademy/sprint4_V2/users_uk.csv'
INTO TABLE users
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
LINES TERMINATED BY '\r\n'
IGNORE 1 ROWS;


LOAD DATA
INFILE 'C:/Users/ereth/Desktop/archivosCSV/ITAcademy/sprint4_V2/users_usa.csv'
INTO TABLE users
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
LINES TERMINATED BY '\r\n'
IGNORE 1 ROWS;
```

```sql
SELECT * FROM transactionss4.users;
```

id	name	surname	phone	email	birth_date	country	city	postal_code	address
1	Zeus	Zeus ple	1-282-581-0551	interdum.enim@protonmail.edu	Nov 17, 1985	United States	Lowell	73544	348-7818 Sagittis St.
10	Robert	Mccarthy	(324) 746-6771	fermentum@protonmail.com	Apr 30, 1984	United States	Eugene	85526	P.O. Box 773, 3594 Ornare St.
100	Melodie	Mclean	1-677-221-7152	risus.varius@google.ca	Sep 15, 1989	United States	College	11838	Ap #644-8492 Sagittis St.
101	Sarah	Beck	(358) 691-4345	vitae.risus@aol.couk	Apr 9, 1983	United States	Great Falls	67129	665-9047 In, Rd.
102	Jasper	Landry	1-397-765-1118	consectetuer.euismod@aol.org	Apr 16, 1982	United States	Columbus	11595	Ap #374-7325 Sodales Rd.
103	Upton	Chavez	(227) 785-6484	euismod.est@aol.ca	Mar 15, 1986	United States	Essex	95631	1990 Vel, Av.
104	Martha	Barlow	(732) 326-5448	vulputate@hotmail.net	Oct 29, 1988	United States	Chicago	41512	Ap #311-7103 In Avenue
105	Hashim	Rose	(858) 313-6727	urna@icloud.com	Mar 28, 1983	United States	Tacoma	99632	8034 Tortor, Road
106	Tanner	Valenzuela	1-346-421-3135	nascetur.ridiculus@google.net	Apr 6, 1993	United States	Naperville	31130	Ap #114-2616 Fusce Road
107	Victor	Valencia	(239) 569-1938	non.enim@hotmail.couk	May 1, 1998	United States	Warren	15158	Ap #182-9926 At St.
108	Germaine	Suarez	1-931-750-6983	risus@icloud.com	Feb 1, 1984	United States	Cleveland	36183	Ap #383-1856 Mauris Avenue
109	Raven	Reynolds	(667) 453-9731	sed@aol.com	Jul 11, 1986	United States	Rockville	64325	P.O. Box 753, 3474 Orci, Av.
11	Joan	Baird	(981) 429-8106	et@outlook.net	Feb 25, 1990	United States	Lincoln	35211	P.O. Box 687, 8917 Ligula St.
110	Neil	Powers	(864) 881-6737	nec.metus@aol.edu	Sep 3, 1980	United States	Clarksville	46921	571-2024 Quam Avenue
111	Astra	Baldwin	1-643-565-3266	adipiscing.ligula.aenean@prot...	Jul 3, 1999	United States	Indianapolis	74764	932-8297 Ac Ave
112	Ryder	Cole	1-572-759-8544	nec.enim.nunc@protonmail.net	Sep 4, 1990	United States	South Por...	52161	Ap #286-4884 Arcu. Avenue
113	Risa	Frost	1-712-488-5451	neque.pellentesque@outlook....	May 5, 1996	United States	Kearney	88986	Ap #678-785 Leo. Road
114	Jasmine	Castro	1-512-143-0648	lorem@google.ca	Jan 5, 1987	United States	San Jose	94101	9948 Dictum. Road
115	Urielle	Holman	1-424-793-4354	leo@google.ca	Oct 11, 1985	United States	Green Bay	29058	268-1889 Adipiscing Rd.
116	Sacha	Compton	(265) 342-4775	sed.dictum.proin@yahoo.org	Sep 1, 1981	United States	Wilmington	94151	Ap #722-5423 Velit. Road
117	Halla	Pearson	(681) 698-7518	lacus.etiam@protonmail.couk	Apr 19, 1994	United States	Biloxi	65926	664-903 In, Street

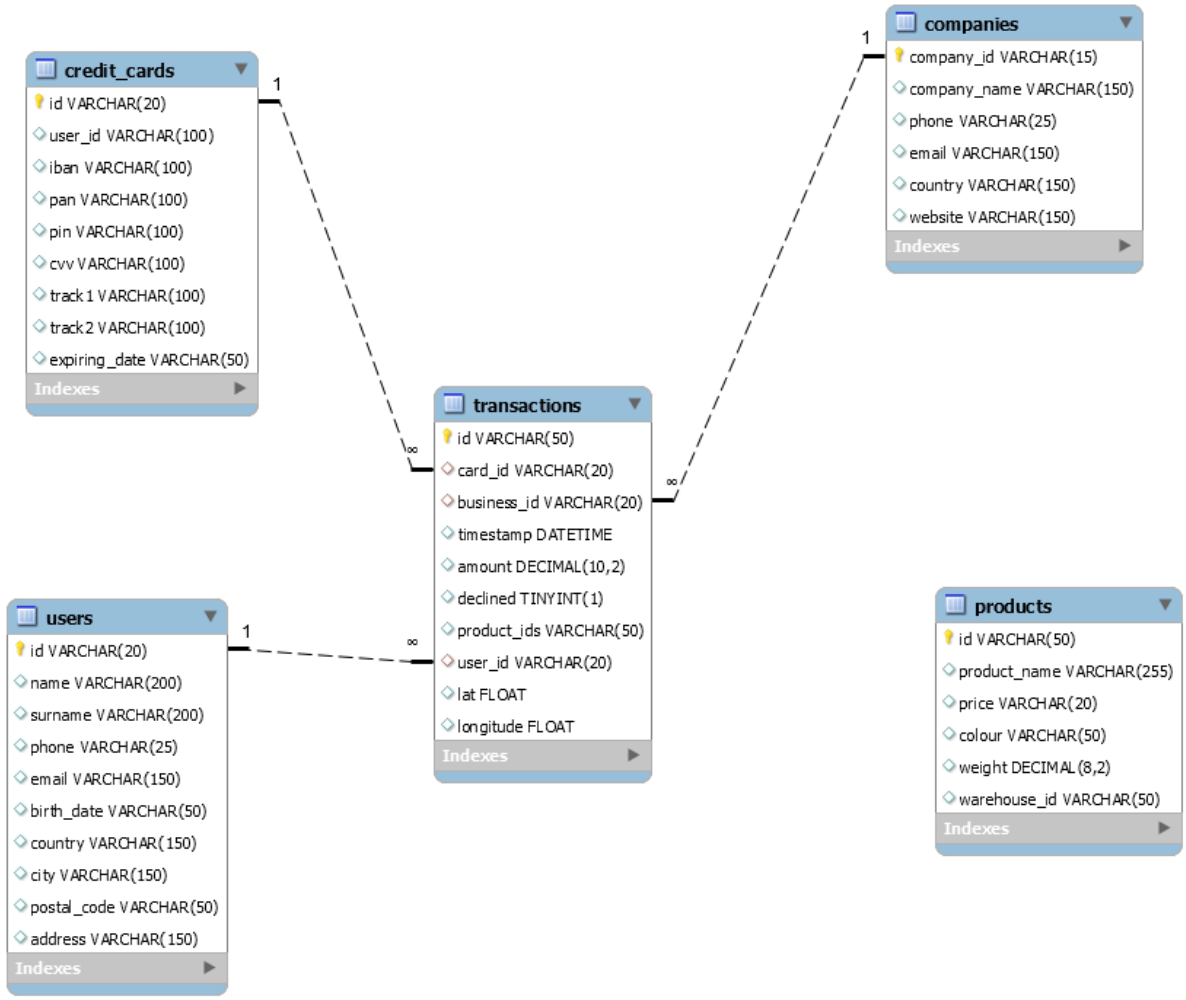
Output

#	Time	Action	Message
1	13:54:44	SELECT * FROM transactionss4.users LIMIT 0, 1000	275 row(s) returned

A continuació establim les relacions entre taules:

```sql
ALTER TABLE transactions
ADD CONSTRAINT fk_companies
FOREIGN KEY (business_id)
REFERENCES companies(company_id),
ADD CONSTRAINT fk_credit_cards
FOREIGN KEY (card_id)
REFERENCES credit_cards(id),
ADD CONSTRAINT fk_users
FOREIGN KEY (user_id)
REFERENCES users (id);
```

Encara no podem establir la relació amb 'products', ja que a la taula 'transactions' el camp amb el qual el relacionaríem és 'products_ids' però aquest conté més d'un id separat per comes. Això ho haurem de solucionar més endavant en un altre exercici.



Exercici 1

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

```
SELECT users.name, users.surname
FROM users
WHERE users.id IN (SELECT transactions.user_id
    FROM transactions
    GROUP BY user_id
    HAVING count(*)  >30);
```

Resultat:

	name	surname
▶	Ocean	Nelson
	Hedwig	Gilbert
	Kenyon	Hartman
	Lynn	Riddle

Ens retorna 4 línies amb el nom i cognoms dels 'users' que han fet més de 30 transactions.

Exercici 2

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

```
SELECT iban, AVG(amount)
FROM transactions
LEFT JOIN credit_cards
ON transactions.card_id = credit_cards.id
LEFT JOIN companies
ON transactions.business_id = companies.company_id
WHERE company_name LIKE ('Donec Ltd')
GROUP BY iban;
```

Resultat:

	iban	AVG(amount)
▶	PT87806228135092429456346	203.715000

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:

```
CREATE TABLE Estado_Tarjetas AS
SELECT
    card_id,
    CASE
        WHEN COUNT(*) < 3 THEN 'Activa'
        WHEN SUM(declined) = 3 THEN 'Inactiva'
        ELSE 'Activa'
    END AS Estado
FROM (
    SELECT
        card_id,
        declined,
        ROW_NUMBER() OVER(PARTITION BY card_id ORDER BY timestamp DESC) AS Rank_Transaccion
    FROM transactions
) AS Transacciones_Ordenadas
WHERE Rank_Transaccion <= 3
GROUP BY card_id;
```

```
    SELECT
        card_id,
        declined,
        ROW_NUMBER() OVER(PARTITION BY card_id ORDER BY timestamp DESC) AS Rank_Transaccion
    FROM transactions
```

Aquesta part de la consulta està ordenant per data les transaccions de cada 'credit_card' i li col·loca un nombre ordinal, és a dir, les transaccions més noves, tenen un número més baix:

card_id	declined	Rank_Transaccion
CdU-2938	0	1
CdU-2938	0	2
CdU-2938	0	3
CdU-2938	0	4
CdU-2938	0	5
CdU-2938	0	6
CdU-2938	0	7
CdU-2938	0	8
CdU-2938	0	9
CdU-2938	0	10
CdU-2938	0	11
CdU-2938	0	12
CdU-2938	0	13
CdU-2938	0	14
CdU-2938	0	15
CdU-2938	0	16
CdU-2938	0	17
CdU-2938	0	18
CdU-2938	1	19
CdU-2938	0	20

Després filtra només les 3 últimes transaccions, ja que només selecciona si tenen el valor 3 o menys de Rank_transaction

```
WHERE Rank_Transaccion <= 3
```

```
CREATE TABLE Estado_Tarjetas AS
SELECT
    card_id,
    CASE
        WHEN COUNT(*) < 3 THEN 'Activa'
        WHEN SUM(declined) = 3 THEN 'Inactiva'
        ELSE 'Activa'
    END AS Estado
```

Aquesta part està agrupant per 'card_id' i calcula l'estat basat en les últimes 3 transaccions:

- Si el nombre total de transaccions per una targeta és inferior a 3, la targeta es considera 'Activa'.
- Si el nombre total de transaccions declinades és igual a 3, la targeta es considera 'Inactiva'.
- En tots els altres casos, la targeta es considera 'Activa'.

Finalment, la consulta està creant una taula i emmagatzemant els resultats de la consulta anterior:

```
CREATE TABLE Estado_Tarjetas AS
```

Resultado:

	card_id	Estado
▶	CcU-2938	Activa
	CcU-2945	Activa
	CcU-2952	Activa
	CcU-2959	Activa
	CcU-2966	Activa
	CcU-2973	Activa
	CcU-2980	Activa
	CcU-2987	Activa
	CcU-2994	Activa
	CcU-3001	Activa
	CcU-3008	Activa
	CcU-3015	Activa
	CcU-3022	Activa
	CcU-3029	Activa
	CcU-3036	Activa
	CcU-3043	Activa
	CcU-3050	Activa
	CcU-3057	Activa
	CcU-3064	Activa
	CcU-3071	Activa
	CcU-3078	Activa

Exercici 1

Quantes targetes estan actives?

```
SELECT COUNT(*) AS Tarjetas_activas
FROM Estado_tarjetas
WHERE Estado = 'Activa';
```

Amb aquesta consulta, seleccionem les targetes que tenen estat = ‘Activa’. L’alies té únicament finalitat estètica i per millorar la comprensió de la visualització de la resposta:

	Tarjetas_activas
▶	275

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:

Primer he creat la Taula amb les columnes de transaction_id i product_ids

```
CREATE TABLE transaction_products (
    transaction_id VARCHAR(40),
    product_id VARCHAR(50),
    PRIMARY KEY (transaction_id, product_id),
    FOREIGN KEY (transaction_id) REFERENCES transactions(id),
    FOREIGN KEY (product_id) REFERENCES products(id));
```

A continuació he importat les dades de la següent manera:

```
INSERT INTO transaction_products (transaction_id, product_id)
SELECT transactions.id, products.id
FROM transactions
JOIN products ON FIND_IN_SET(products.id, REPLACE(transactions.product_ids, ', ', ','));
```

Aquest script, està important les dades de transactions i products, mitjançant un JOIN per trobar els productes associats a cada transacció.

La funció REPLACE la fem servir per manipular la columna product_ids de la taula transactions. Aquesta columna conté una llista de IDS separats per comes i espais. Per poder fer servir la següent funció (FIND_IN_SET) necessitem que només estiguin separats per comes i no per comes i espais. La funció REPLACE ens ajuda a aconseguir-ho substituint ', ' per ','.

```
JOIN products ON FIND_IN_SET(products.id, REPLACE(transactions.product_ids, ', ', ','));
```

Ara la funció FIND_IN_SET pot buscar els ID de productes de la llista d'ID de products associats a cada transacció. A cada fila de la taula transactions busca els id de produt_ids que hem manipulat anteriorment i el busca a la taula produts a la columna id. Si el troba, posa aquest ID el col·loca, si no, col·loca un 0.

Resultat:

	transaction_id	product_id
▶	02C6201E-D90A-1859-B4EE-88D2986D3B02	1
	02C6201E-D90A-1859-B4EE-88D2986D3B02	19
	02C6201E-D90A-1859-B4EE-88D2986D3B02	71
	0466A42E-47CF-8D24-FD01-C0B689713128	43
	0466A42E-47CF-8D24-FD01-C0B689713128	47
	0466A42E-47CF-8D24-FD01-C0B689713128	97
	063FBA79-99EC-66FB-29F7-25726D1764A5	31
	063FBA79-99EC-66FB-29F7-25726D1764A5	47
	063FBA79-99EC-66FB-29F7-25726D1764A5	5
	063FBA79-99EC-66FB-29F7-25726D1764A5	67

Podem observar totes els product_id associats a cada transaction.

Exercici 1

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

```
SELECT products.id, products.product_name, Count(transaction_id) as num_ventes
FROM transactions LEFT JOIN transaction_products
ON transaction_products.transaction_id = transactions.id
LEFT JOIN products
ON transaction_products.product_id=products.id
WHERE transactions.declined = 0
GROUP BY products.id, product_name
ORDER BY num_ventes desc
;
```

Resultat:

	id	product_name	num_ventes
▶	23	riverlands north	60
	67	Winterfell	59
	2	Tarly Stark	56
	43	duel	54
	17	skywalker ewok sith	54
	97	jinn Winterfell	53
	79	Direwolf riverlands the	52
	13	palpatine chewbacca	51
	1	Direwolf Stannis	51
	47	Tully	50