

## SPRINT 2

### Nivell 1 – Exercici 1:

```

1  -- Creamos la base de datos
2  CREATE DATABASE IF NOT EXISTS transactions;
3  USE transactions;
4
5  -- Creamos la tabla company
6  CREATE TABLE IF NOT EXISTS company (
7      id VARCHAR(15) PRIMARY KEY,
8      company_name VARCHAR(255),
9      phone VARCHAR(15),
10     email VARCHAR(100),
11     country VARCHAR(100),
12     website VARCHAR(255)
13 );
14
15 -- Creamos la tabla transaction
16 CREATE TABLE IF NOT EXISTS transaction (
17     id VARCHAR(255) PRIMARY KEY,
18     credit_card_id VARCHAR(15) REFERENCES credit_card(id),
19     company_id VARCHAR(20),
20     user_id INT REFERENCES user(id),
21     lat FLOAT,
22     longitude FLOAT,
23     timestamp TIMESTAMP,
24     amount DECIMAL(10, 2),
25     declined BOOLEAN,
26     FOREIGN KEY (company_id) REFERENCES company(id)
27 );
28

```

Time	Action	Response	Duration / Fetch Time
851 13:34:28	CREATE DATABASE IF NOT EXISTS transactions	1 row(s) affected	0.0014 sec
852 13:34:28	USE transactions	0 row(s) affected	0.00015 sec
853 13:34:32	CREATE TABLE IF NOT EXISTS company ( id VARCHAR(15) PRIMARY KEY, company_name VARCHAR(255), phone...	0 row(s) affected	0.0061 sec
854 13:34:38	CREATE TABLE IF NOT EXISTS transaction ( id VARCHAR(255) PRIMARY KEY, credit_card_id VARCHAR(15) REFERENC...	Error Code: 1824. Failed to open the referenced table...	0.00088 sec

Error 1824 de MySQL, "Failed to open the referenced table": és produït perquè `credit_card_id` fa referència a una clau externa que no apareix en cap altra taula de la base de dades.

Vaig treure aquestes referències per poder carregar correctament l'estructura de la BBDD, tal que així:

```

1  -- Creamos la base de datos
2  CREATE DATABASE IF NOT EXISTS transactions;
3  USE transactions;
4
5  -- Creamos la tabla company
6  CREATE TABLE IF NOT EXISTS company (
7      id VARCHAR(15) PRIMARY KEY,
8      company_name VARCHAR(255),
9      phone VARCHAR(15),
10     email VARCHAR(100),
11     country VARCHAR(100),
12     website VARCHAR(255)
13 );
14
15 -- Creamos la tabla transaction
16 CREATE TABLE IF NOT EXISTS transaction (
17     id VARCHAR(255) PRIMARY KEY,
18     credit_card_id VARCHAR(15),
19     company_id VARCHAR(20),
20     user_id INT,
21     lat FLOAT,
22     longitude FLOAT,
23     timestamp TIMESTAMP,
24     amount DECIMAL(10, 2),
25     declined BOOLEAN,
26     FOREIGN KEY (company_id) REFERENCES company(id)
27 );
28

```

Time	Action	Response	Duration / Fetch Time
852 13:34:28	USE transactions	0 row(s) affected	0.00015 sec
853 13:34:32	CREATE TABLE IF NOT EXISTS company ( id VARCHAR(15) PRIMARY KEY, company_name VARCHAR(255), phone...	0 row(s) affected	0.0061 sec
854 13:34:38	CREATE TABLE IF NOT EXISTS transaction ( id VARCHAR(255) PRIMARY KEY, credit_card_id VARCHAR(15) REFERENC...	Error Code: 1824. Failed to open the referenced table...	0.00088 sec
855 13:38:21	CREATE TABLE IF NOT EXISTS transaction ( id VARCHAR(255) PRIMARY KEY, credit_card_id VARCHAR(15), comp...	0 row(s) affected	0.011 sec

Carrega de dades:

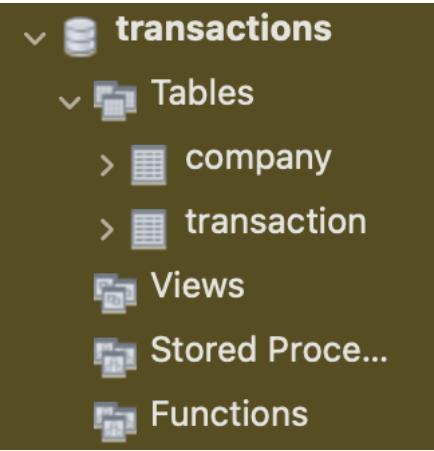
```
00079 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('07417985-F420-4857-9AEA-8A2436
00080 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('F6665E6B-E543-4E0D-AE28-C34232
00081 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('5C0CC822-1ECB-43E5-B538-954205
00082 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('80077626-1186-4973-BBAA-1CBE7A
00083 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('31F6C9E0-96AA-4F1B-9890-3D6BC3
00084 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('E6826F62-F637-469B-B464-5AA30E
00085 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('83380605-AE39-48B2-AA25-A005B4
00086 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('C35A2438-ECE2-4006-A6E8-8CD920
00087 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('2F347A65-9778-48EA-80E2-EC3F80
00088 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('2376839F-EC4D-455A-B602-7A1423
00089 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('82343C87-140B-42A7-8843-577209
00090 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('5CE87C4D-F2D4-4644-8065-4C15E0
00091 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('72546752-C2F6-4E5A-B868-EAD906
00092 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('623640C6-AA7E-4879-B3F2-221920
00093 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('29063BCD-1886-4E89-ACED-02E18F
00094 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('989054DB-E9E1-40B5-8A25-20CB10
00095 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('7733BCDA-5EBF-41A3-90CE-FD7403
00096 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('DF27ABD1-13A2-4AE1-8E65-74103F
00097 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('5A980850-2921-4191-87B0-D80067
00098 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('FBC7857A-E4BE-497B-AB14-F51C10
00099 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('16C3BD53-1A6C-4262-9390-C68F95
00100 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('3D39E00C-1F9D-42AE-B0F5-C435D7
00101 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('E183116A-B83A-412C-87CE-A1DFD2
00102 • INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('65FF0A2A-3141-4378-AEF6-785D51

100% 1:10010

Action Output

Time Action Response Duration / Fetch Time
10... 13:39:03 INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('FBC7... 1 row(s) affected 0.00016 sec
10... 13:39:03 INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('16C3... 1 row(s) affected 0.00016 sec
10... 13:39:03 INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('3D39... 1 row(s) affected 0.00017 sec
10... 13:39:03 INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('E1831... 1 row(s) affected 0.00017 sec
10... 13:39:03 INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('65FF0... 1 row(s) affected 0.00016 sec
10... 13:39:03 INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('D7AE2... 1 row(s) affected 0.00018 sec
10... 13:39:03 INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('C312... 1 row(s) affected 0.00018 sec
10... 13:39:03 INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('3EFB1... 1 row(s) affected 0.00016 sec
```

BBDD Transactions en Schema:



Taula Transaction:

1 • SELECT \* FROM transactions.company;

100% 1:1

Result Grid Filter Rows: Search Edit: Export/Import:

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

company 1

Action Output

	Time	Action	Response
10...	13:39:03	INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('16C3...	1 row(s) affected
10...	13:39:03	INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('3D39...	1 row(s) affected
10...	13:39:03	INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('E1831...	1 row(s) affected
10...	13:39:03	INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('65FF0...	1 row(s) affected
10...	13:39:03	INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('D7AE2...	1 row(s) affected
10...	13:39:03	INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('C312...	1 row(s) affected
10...	13:39:03	INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('3EFB1...	1 row(s) affected
10...	13:49:18	SELECT * FROM transactions.company LIMIT 0, 1000	100 row(s) returned

## Taula Company:

1 • SELECT \* FROM transactions.transaction;

100% 1:1

Result Grid Filter Rows: Search Edit: Export/Import: Fetch rows:

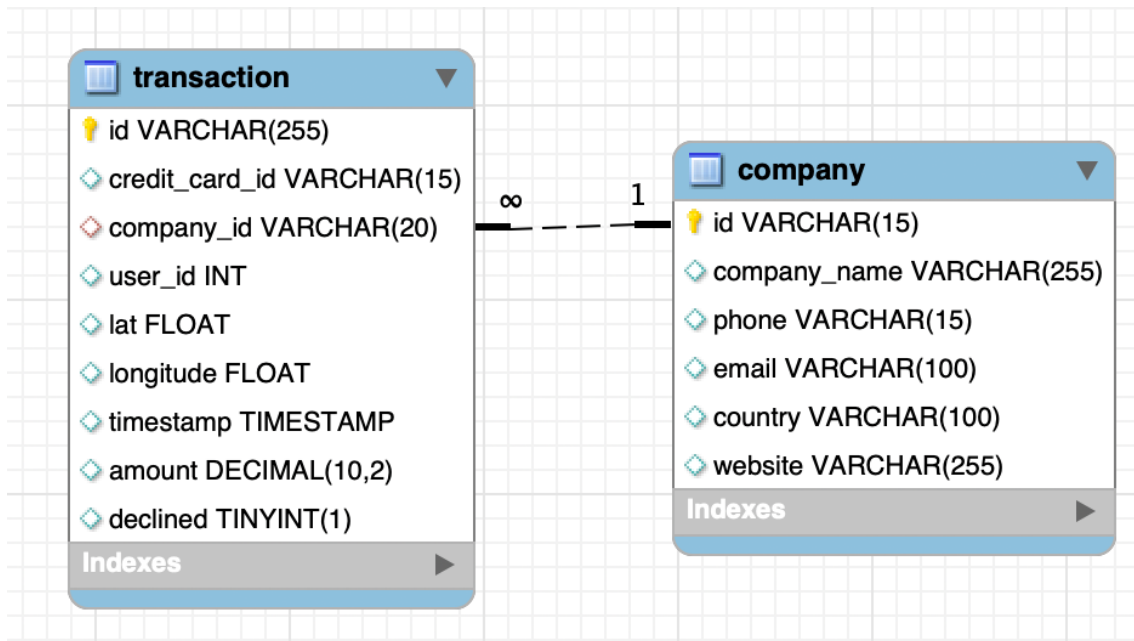
id	credit_card...	company_id	user_id	lat	longitude	timestamp	amount	declined
00045D6B-ED2E-4F2F-8186-CEE074D875D0	CcS-6699	b-2390	2118	29.7573	-95.3796	2020-07-14 15:37:45	326.01	0
000481C3-1C26-4FEF-83A0-4CD0EB0048BD	CcS-6696	b-2230	2115	53.5489	-113.503	2017-09-04 19:44:53	161.80	0
00051AA4-9CBE-4268-B070-C38062A1B3E2	CcS-7806	b-2266	3025	52.2084	5.69081	2017-01-05 18:19:25	148.91	0
0008A312-EDFE-4A4F-BC99-E9C92EC3CA4D	CcU-3358	b-2598	215	53.5535	-113.499	2023-09-23 04:51:43	294.59	0

transaction 1

Action Output

	Time	Action	Response
10...	13:39:03	INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('3D39...	1 row(s) affected
10...	13:39:03	INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('E1831...	1 row(s) affected
10...	13:39:03	INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('65FF0...	1 row(s) affected
10...	13:39:03	INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('D7AE2...	1 row(s) affected
10...	13:39:03	INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('C312...	1 row(s) affected
10...	13:39:03	INSERT INTO transaction (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) VALUES ('3EFB1...	1 row(s) affected
10...	13:49:18	SELECT * FROM transactions.company LIMIT 0, 1000	100 row(s) returned
10...	13:49:38	SELECT * FROM transactions.transaction LIMIT 0, 1000	1000 row(s) returned

## Diagrama:



Com podem observar, existeix una relació N:1 entre la taula transaction i company. A la taula transaction tenim com clau primària id i forànea company\_id, aquesta ultima connecta amb la primària id de la taula company.

La taula transaction té informació rellevant a les vendes realitzades, mentre la taula company, té informació sobre les empreses que fan les compres.

A continuació, una breu descripció de les variables:

#### *Taula Company*

- Id: Identificador únic de cada empresa. Serveix per diferenciar-les i relacionar-les amb altres taules.
- Company\_name: Nom de l'empresa que ha processat o generat la transacció de compra del bé o servei.
- Phone: Número de telèfon de l'empresa.
- Email: Correu electrònic de contacte de l'empresa.
- Country: País on opera l'empresa.
- Website: Pàgina web oficial de l'empresa.

#### *Taula Transaction:*

- Id: Identificador únic de cada transacció.
- Credit\_card\_id: Identificador de la targeta utilitzada per fer la compra. Aquesta enllaça amb la taula credit\_card.
- Company\_id: Identificador de l'empresa relacionada amb la transacció. Relacionat amb company.id.
- User\_id: Identificador assignat a cada usuari que ha realitzat la compra.
- Lat: Latitud geogràfica des d'on s'ha realitzat la transacció.

- Longitude: Longitud geogràfica del punt de la transacció.
- Timestamp: Data i hora de quan s'ha efectuat la transacció.
- Amount: Import total de la compra, accepta decimals.
- Declined: Indica si la transacció ha estat rebutjada (1) o acceptada (0). En la practica TYNINT(1) es molt similar a BOOLEAN.

## Nivell 1 - Exercici 2:

```

1 • USE transactions;
2
3 -----
4 -- Nivell 1
5 -- Exercici 2: Utilitzant JOIN realitzaràs les següents consultes; llistat dels països que estan generant vendes
6 -----
6 • SELECT DISTINCT c.country
7   FROM company c
8  JOIN transaction t ON c.id = t.company_id
9  WHERE t.declined = 0;
10
11
12

```

130% 22:9

Result Grid

country
Netherlands
Sweden
Ireland
United States
Belgium
Canada
Germany
Norway
France
Italy
United Kingdom
New Zealand
China
Spain

Result 86 Read Only

Action Output

	Time	Action	Response	Duration / Fetch Time
✓ 61	11:32:13	SELECT c.company_name, c.phone, c.country, DATE(t.timestamp) AS date, t.amount FROM transaction t JOIN co...	8 row(s) returned	0.065 sec / 0.000007...
✓ 62	11:32:46	SELECT DISTINCT c.country FROM company c JOIN transaction t ON c.id = t.company_id WHERE t.declined = 0	15 row(s) returned	0.226 sec / 0.000067...
✓ 63	11:34:59	SELECT DISTINCT c.country FROM company c JOIN transaction t ON c.id = t.company_id WHERE t.declined = 0	15 row(s) returned	0.227 sec / 0.000055...

```

11 -----
12 -- Des de quants països es generen les vendes.
13 -----
14 • SELECT COUNT(DISTINCT c.country) AS NumberOfCountries
15   FROM company c
16  JOIN transaction t ON c.id = t.company_id
17  WHERE t.declined = 0;
18

```

130% 22:17

Result Grid

NumberOfCountri...
15

Result 87 Read Only

Action Output

	Time	Action	Response	Duration / Fetch Time
✓ 62	11:32:46	SELECT DISTINCT c.country FROM company c JOIN transaction t ON c.id = t.company_id WHERE t.declined = 0	15 row(s) returned	0.226 sec / 0.000067...
✓ 63	11:34:59	SELECT DISTINCT c.country FROM company c JOIN transaction t ON c.id = t.company_id WHERE t.declined = 0	15 row(s) returned	0.227 sec / 0.000055...
✓ 64	11:35:39	SELECT COUNT(DISTINCT c.country) AS NumberOfCountries FROM company c JOIN transaction t ON c.id = t.company_id WHE...	1 row(s) returned	0.223 sec / 0.000047...



```

19  -- Identifica la companyia amb la mitjana més gran de vendes
20  --
21  --
22  SELECT
23    c.company_name,
24    ROUND(AVG(t.amount), 2) AS AverageSales
25  FROM company c
26  JOIN transaction t ON c.id = t.company_id
27  WHERE t.declined = 0
28  GROUP BY c.company_name
29  ORDER BY AverageSales DESC
30  LIMIT 1;

```

Result Grid

company_name	AverageSales
Ac Fermentum Incorporated	284.91

Result 88

Action Output

	Time	Action	Response	Duration / Fetch Time
63	11:34:59	SELECT DISTINCT c.country FROM company c JOIN transaction t ON c.id = t.company_id WHERE t.declined = 0	15 row(s) returned	0.227 sec / 0.000055...
64	11:35:39	SELECT COUNT(DISTINCT c.country) AS NumberOfCountries FROM company c JOIN transaction t ON c.id = t.company_id WHERE t.declined = 0	1 row(s) returned	0.223 sec / 0.000047...
65	11:36:37	SELECT c.company_name, ROUND(AVG(t.amount), 2) AS AverageSales FROM company c JOIN transaction t ON c.id = t.company_id WHERE t.declined = 0 ORDER BY AverageSales DESC LIMIT 1	1 row(s) returned	0.277 sec / 0.000061...

## Nivell 1 – Exercici 3:

```

32  -- Exercici 3: Utilitzant només subconsultes (sense utilitzar JOIN), mostra totes les transaccions realitzades per empreses d'Alemanya
33  --
34  --
35  SELECT *
36  FROM transaction t
37  WHERE t.declined = 0
38  AND EXISTS(
39    SELECT 1
40    FROM company c
41    WHERE c.id = t.company_id
42    AND c.country = 'Germany'
43  );
44
45

```

Result Grid

id	credit_card...	company_id	user_id	lat	longitude	timestamp	amount	declined
00136D3B-206D-4C05-94B7-63A2676EB9B4	CcS-4899	b-2222	318	41.3781	12.447	2020-03-25 10:43:43	426.36	0
0013C1B5-3084-406C-9154-E2B3FEB0A8E9	CcS-5070	b-2222	469	41.3814	2.18178	2020-12-17 14:15:37	318.90	0
00201A11-2E62-4C49-941D-198FCBDB77F0	CcU-3512	b-2222	193	55.5704	3.65129	2021-01-22 23:44:27	453.04	0
00235618-0A5C-4D49-9DCB-83A9405D8923	CcS-8137	b-2222	3556	59.8421	18.729	2020-09-09 15:43:19	263.14	0
005A5A7B-1F1A-4B6C-9B15-1625A78C9C38	CcS-8998	b-2222	4417	41.1591	-8.63905	2024-05-15 09:10:11	442.01	0
00687139-4882-4FFA-8E73-B20376F04AB4	CcS-4870	b-2222	289	51.1966	10.4669	2019-03-09 19:37:49	524.84	0
0074F4DD-32F1-4827-8758-55896314623A	CcS-8061	b-2222	3500	39.7016	-8.50325	2016-12-26 23:06:57	491.90	0
00A9B9CD-39D6-4DCB-8A1D-13BE73DC90A9	CcS-6797	b-2222	2216	55.7652	-3.76245	2021-04-25 03:06:59	167.15	0
00B509D4-6920-47DB-ABE9-325E2269629D	CcS-4983	b-2222	402	33.708	9.12993	2019-02-27 15:25:16	141.58	0
00DA0383-E048-4577-8ED1-3C56C258FF2F	CcS-9223	b-2222	4642	51.1742	10.2027	2019-03-21 11:47:34	326.62	0
00DD11DE-ED01-4B8D-9A0D-174D183A59DF	CcS-7681	b-2222	3100	45.7565	4.83109	2024-01-28 18:20:49	242.53	0
01449CED-98E9-4DE5-9810-728C8BA00E6F	CcS-5424	b-2222	843	47.0163	2.26064	2024-02-17 19:37:14	451.71	0
01758C7-241E-42DA-AB89-9F246DBF4D2F	CcS-7510	b-2222	2929	52.0619	4.29464	2021-08-28 16:29:38	9.46	0
01ABDAB8-06E2-4CA0-A131-AEE6FF11B749	CcS-5053	b-2222	472	51.7738	5.17479	2020-01-28 01:15:07	368.41	0

transaction 89

Action Output

	Time	Action	Response	Duration / Fetch Time
64	11:35:39	SELECT COUNT(DISTINCT c.country) AS NumberOfCountries FROM company c JOIN transaction t ON c.id = t.company_id WHERE t.declined = 0	1 row(s) returned	0.223 sec / 0.000047...
65	11:36:37	SELECT c.company_name, ROUND(AVG(t.amount), 2) AS AverageSales FROM company c JOIN transaction t ON c.id = t.company_id WHERE t.declined = 0 ORDER BY AverageSales DESC LIMIT 1	1 row(s) returned	0.277 sec / 0.000061...
66	11:37:54	SELECT * FROM transaction t WHERE t.declined = 0 AND EXISTS( SELECT 1 FROM company c WHERE c.id = t.company_id AND c.country = 'Germany' );	13269 row(s) returned	0.037 sec / 0.060 sec

```

45  -- Llista les empreses amb transaccions superiors a la mitjana
46  -- -----
47
48  SELECT c.company_name
49  FROM company c
50  WHERE EXISTS(
51      SELECT 1
52      FROM transaction t
53      WHERE t.company_id = c.id
54            AND t.declined = 0
55            AND t.amount > (
56                SELECT AVG(t2.amount)
57                FROM transaction t2
58                WHERE t2.declined = 0
59            )
60  );

```

100% 3:60

Result Grid

company_name
Fusce Corp.
Convalle In Incorporated
Ante Iaculis Nec Foundation
Donec Ltd
Sed Nunc Ltd
Amet Nulla Donec Corporation
Nascetur Ridiculus Mus Inc.
Vestibulum Lorem PC
Gravida Sagittis LLP
Mus Aenean Eget Foundation
Dis Parturient Institute

company 90

Action Output

Time	Action	Response	Duration / Fetch Time
11:37:54	SELECT * FROM transaction t WHERE t.declined = 0 AND EXISTS( SELECT 1 FROM company c WHERE c.id = t.company_id...	13269 row(s) returned	0.037 sec / 0.060 sec
11:38:22	SELECT * FROM transaction t WHERE t.company_id IN( SELECT c.id FROM company c WHERE c.country='Germany') AND...	13269 row(s) returned	0.0039 sec / 0.075 sec
11:39:23	SELECT c.company_name FROM company c WHERE EXISTS( SELECT 1 FROM transaction t WHERE t.company_id = c.id AND...	100 row(s) returned	0.100 sec / 0.000024...

```

62  -- Llista d'empreses sense transaccions registrades
63  -- -----
64
65  SELECT c.company_name
66  FROM company c
67  WHERE NOT EXISTS(
68      SELECT 1
69      FROM transaction t
70      WHERE t.company_id = c.id
71            AND t.declined = 0
72  );
73

```

100% 3:72

Result Grid

company_name
--------------

company 91

Action Output

Time	Action	Response	Duration / Fetch Time
11:40:22	SELECT c.company_name FROM company c WHERE NOT EXISTS( SELECT 1 FROM transaction t WHERE t.company_id =...	0 row(s) returned	0.069 sec / 0.000018...
11:40:33	SELECT company_name FROM company WHERE id IN( SELECT company_id FROM transaction t WHERE declined=0 AND amo...	100 row(s) returned	0.086 sec / 0.000018...
11:40:55	SELECT c.company_name FROM company c WHERE NOT EXISTS( SELECT 1 FROM transaction t WHERE t.company_id=c.i...	0 row(s) returned	0.069 sec / 0.000018...

Nivell 2 - Exercici 1:

```

74  -----
75  -- Nivell 2:
76  -- Els 5 dies amb més ingressos. Mostra la data de cada transacció juntament amb el total de les vendes.
77  -----
78  * SELECT
79      ROUND(SUM(t.amount), 2) AS TotalSales,
80      DATE(t.timestamp) AS Date
81  FROM transaction t
82  WHERE t.declined = 0
83  GROUP BY Date
84  ORDER BY TotalSales DESC
85  LIMIT 5;
86
87  -----
88  -- Mitjana de vendes per país
89  -----

```

100% 9:85

Result Grid Filter Rows: Search Export:

TotalSales	Date
14337.44	2022-12-13
13691.32	2019-11-18
13332.59	2023-02-20
13318.43	2017-12-20
12680.96	2019-03-18

Result 92 Read Only

Action Output

	Time	Action	Response	Duration / Fetch Time
✓ 70	11:40:33	SELECT company_name FROM company WHERE id IN( SELECT company_id FROM transaction t WHERE declined=0 AND amo...	100 row(s) returned	0.086 sec / 0.000018...
✓ 71	11:40:55	SELECT c.company_name FROM company c WHERE NOT EXISTS( SELECT 1 FROM transaction t WHERE t.company_id=c.i...	0 row(s) returned	0.069 sec / 0.000018...
✓ 72	11:41:26	SELECT ROUND(SUM(t.amount), 2) AS TotalSales, DATE(t.timestamp) AS Date FROM transaction t WHERE t.declined = 0...	5 row(s) returned	0.113 sec / 0.000014...

## Nivell 2 - Exercici 2:

```

87  -----
88  -- Mitjana de vendes per país
89  -----
90  * SELECT
91      c.country, ROUND(AVG(t.amount), 2) AS AverageSales
92  FROM company c
93  JOIN transaction t ON c.id = t.company_id
94  WHERE t.declined = 0
95  GROUP BY c.country
96  ORDER BY AverageSales DESC;
97

```

100% 28:96

Result Grid Filter Rows: Search Export:

country	AverageSales
Australia	266.54
United States	264.42
Belgium	260.97
Germany	260.83
Ireland	260.39
Spain	260.28
France	259.91
New Zealand	259.59
Norway	259.14
Netherlands	258.34
Italy	258.12
Canada	267.41

Result 93 Read Only

Action Output

	Time	Action	Response	Duration / Fetch Time
✓ 71	11:40:55	SELECT c.company_name FROM company c WHERE NOT EXISTS( SELECT 1 FROM transaction t WHERE t.company_id=c.i...	0 row(s) returned	0.069 sec / 0.000018...
✓ 72	11:41:26	SELECT ROUND(SUM(t.amount), 2) AS TotalSales, DATE(t.timestamp) AS Date FROM transaction t WHERE t.declined = 0...	5 row(s) returned	0.113 sec / 0.000014...
✓ 73	11:43:31	SELECT c.country, ROUND(AVG(t.amount), 2) AS AverageSales FROM company c JOIN transaction t ON c.id = t.company_id...	16 row(s) returned	0.282 sec / 0.000079...

## Nivell 2 - Exercici 3:



```
98
99  -- Llista de transaccions d'empreses del mateix país que "Non Institute". Mostra el llistat aplicant JOIN i subconsultes.
100
101 SELECT t.*
102 FROM transaction t
103 JOIN company c ON c.id = t.company_id
104 WHERE t.declined = 0
105 AND c.country = (
106     SELECT c2.country
107     FROM company c2
108     WHERE c2.company_name = 'Non Institute'
109 );
110
111
112 -- Mostra el llistat aplicant solament subconsultes.
113
```

Result Grid

id	credit_card...	company_id	user_id	lat	longitude	timestamp	amount	declined
01F075B1-07AE-4D02-AAD9-5FFD72A43F3C	CcS-6700	b-2246	4119	55.856	-3.15783	2018-01-27 13:44:36	103.73	0
023FFCE8-E618-4938-BF56-C8DF80540ADD	CcS-7816	b-2246	3235	46.3568	1.82755	2016-12-19 11:53:45	219.28	0
02683BEB-EF91-4564-957B-D6F1662AB7C5	CcS-8471	b-2246	4890	42.1332	12.396	2017-01-10 21:09:29	326.87	0
02C2F29E-CEf2-4C1E-A594-F476E8F279C0	CcS-9082	b-2246	4501	39.4662	-0.373246	2020-05-24 01:17:29	155.72	0
02F468DC-426C-47C2-880A-DB825B7A81AF	CcS-6913	b-2246	2332	52.175	19.3508	2023-03-17 16:36:27	305.35	0
0306BE3B-817B-4A49-934E-0E439291A104	CcS-5302	b-2246	721	51.9233	18.926	2021-12-02 23:06:02	339.58	0
0347BF6E-8EB5-4387-B187-0E78E8F2B8FB	CcS-7674	b-2246	3093	45.768	4.84271	2021-12-30 08:40:24	172.93	0
03AEBD0E-DC97-4BD3-9C57-6A60B78026FD	CcS-6121	b-2246	1540	50.8113	10.3145	2016-11-11 11:28:49	114.77	0
03CA36D3-88F4-4D8F-BFD4-4CC7D44EED28	CcS-8036	b-2246	3455	52.5178	13.4131	2017-02-25 15:38:21	440.27	0
04484182-96D0-42EB-93FE-6F92C5210537	CcS-6791	b-2246	2210	41.8542	12.4607	2018-05-17 17:53:53	1241.59	0
042AACF8-FF85-49FB-9DE4-E8730655368A	CcS-5363	b-2246	782	39.2464	-7.50454	2016-08-09 22:12:54	188.58	0

Result 94

Action Output

	Time	Action	Response	Duration / Fetch Time
72	11:41:26	SELECT ROUND(SUM(t.amount), 2) AS TotalSales, DATE(t.timestamp) AS Date FROM transaction t WHERE t.declined = 0;	5 row(s) returned	0.113 sec / 0.000014...
73	11:43:31	SELECT c.country, ROUND(AVG(t.amount), 2) AS AverageSales FROM company c JOIN transaction t ON c.id = t.company_id;	15 row(s) returned	0.282 sec / 0.000079...
74	11:44:32	SELECT t.* FROM transaction t JOIN company c ON c.id = t.company_id WHERE t.declined = 0 AND c.country = ( SELECT c2.c...	13754 row(s) returned	0.0053 sec / 0.091 sec

```
111
112 -- Mostra el llistat aplicant solament subconsultes.
113
114 SELECT t.*
115 FROM transaction t
116 WHERE t.declined = 0
117 AND EXISTS(
118     SELECT 1
119     FROM company c
120     WHERE c.id = t.company_id
121     AND c.country = (
122         SELECT c2.country
123         FROM company c2
124         WHERE c2.company_name = 'Non Institute'
125     )
126 );
127
```

Result Grid

id	credit_card...	company_id	user_id	lat	longitude	timestamp	amount	declined
008629B4-C9A9-406C-A3D2-71FDA7BC546	CcS-7063	b-2246	2482	45.7666	4.83048	2015-07-30 12:12:42	486.44	0
00B72B44-54A3-4B8E-B13F-2D67535AA17A	CcS-8475	b-2246	3894	55.6212	-3.7546	2017-10-26 22:08:26	414.06	0
01F075B1-07AE-4D02-AAD9-5FFD72A43F3C	CcS-6700	b-2246	4119	55.856	-3.15783	2018-01-27 13:44:36	103.73	0
023FFCE8-E618-4938-BF56-C8DF80540ADD	CcS-7816	b-2246	3235	46.3568	1.82755	2016-12-19 11:53:45	219.28	0
02683BEB-EF91-4564-957B-D6F1662AB7C5	CcS-8471	b-2246	4890	42.1332	12.396	2017-01-10 21:09:29	326.87	0
02C2F29E-CEf2-4C1E-A594-F476E8F279C0	CcS-9082	b-2246	4501	39.4662	-0.373246	2020-05-24 01:17:29	155.72	0
02F468DC-426C-47C2-880A-DB825B7A81AF	CcS-6913	b-2246	2332	52.175	19.3508	2023-03-17 16:36:27	305.35	0
0306BE3B-817B-4A49-934E-0E439291A104	CcS-5302	b-2246	721	51.9233	18.926	2021-12-02 23:06:02	339.58	0
0347BF6E-8EB5-4387-B187-0E78E8F2B8FB	CcS-7674	b-2246	3093	45.768	4.84271	2021-12-30 08:40:24	172.93	0
03AEBD0E-DC97-4BD3-9C57-6A60B78026FD	CcS-6121	b-2246	1540	50.8113	10.3145	2016-11-11 11:28:49	114.77	0
03CA36D3-88F4-4D8F-BFD4-4CC7D44EED28	CcS-8036	b-2246	3455	52.5178	13.4131	2017-02-25 15:38:21	440.27	0
04484182-96D0-42EB-93FE-6F92C5210537	CcS-6791	b-2246	2210	41.8542	12.4607	2018-05-17 17:53:53	1241.59	0

transaction 95

Action Output

	Time	Action	Response	Duration / Fetch Time
74	11:44:32	SELECT t.* FROM transaction t JOIN company c ON c.id = t.company_id WHERE t.declined = 0 AND c.country = ( SELECT c2.c...	13754 row(s) returned	0.0053 sec / 0.091 sec
75	11:45:57	SELECT t.* -- Mejor utilizar esto para todo de transaction FROM transaction t JOIN company c ON c.id=t.company_id WHERE t...	13754 row(s) returned	0.0047 sec / 0.092 sec
76	11:46:31	SELECT t.* FROM transaction t WHERE t.declined = 0 AND EXISTS( SELECT 1 FROM company c WHERE c.id = t.c...	13754 row(s) returned	0.0047 sec / 0.082 sec

## Nivell 3 – Exercici 1:

```

129 -- Nivell 3
130 -- Exercici 1: Dades d'empreses amb transaccions entre 350 i 400€ en dates '2015-04-29', '2018-07-20', '2024-03-13'
131
132 SELECT
133     c.company_name,
134     c.phone,
135     c.country,
136     DATE(t.timestamp) AS date,
137     t.amount
138 FROM transaction t
139 JOIN company c
140 ON t.company_id = c.id
141 WHERE t.amount BETWEEN 350 AND 400
142 AND t.declined = 0
143 AND DATE(t.timestamp) IN ('2015-04-29', '2018-07-20', '2024-03-13')
144 ORDER BY t.amount DESC;

```

company_name	phone	country	date	amount
Aliquam PC	01 45 73 52 16	Germany	2024-03-13	399.84
Auctor Mauris Vel LLP	08 09 28 74 14	United States	2018-07-20	399.51
At Pede Corp.	06 14 48 33 15	Italy	2015-04-29	390.69
Aliquam PC	01 45 73 52 16	Germany	2024-03-13	388.29
Oro Adipiscing Limited	03 18 00 77 81	United Kingdom	2018-07-20	373.71
Fringilla LLC	08 29 15 93 57	New Zealand	2015-04-29	367.62
Pede Cum Ltd	07 62 26 48 38	Norway	2018-07-20	356.87
Auctor Mauris Vel LLP	08 09 28 74 14	United States	2024-03-13	353.79

Time	Action	Response	Duration / Fetch Time
75 11:45:57	SELECT t.* -- Mejor utilizar esto para todo de transaction FROM transaction t JOIN company c ON c.id=t.company_id WHERE t...	13764 row(s) returned	0.0047 sec / 0.092 sec
76 11:46:31	SELECT t.* FROM transaction t WHERE t.declined = 0 AND EXISTS( SELECT 1 FROM company c WHERE c.id = t.c...	13764 row(s) returned	0.0047 sec / 0.082 sec
77 11:47:22	SELECT c.company_name, c.phone, c.country, DATE(t.timestamp) AS date, t.amount FROM transaction t JOIN co...	8 row(s) returned	0.089 sec / 0.000021...

## Nivell 3 – Exercici 2:

```

146 -- Exercici 2: Classificació de les empreses segons si tenen més o menys de 400 transaccions
147
148 SELECT
149     c.id,
150     c.company_name,
151     COUNT(t.id) AS num_transactions,
152     CASE
153         WHEN COUNT(t.id) > 400 THEN 'Over400'
154         WHEN COUNT(t.id) < 400 THEN 'Under400'
155         ELSE 'Exactly400'
156     END AS category_transaction
157 FROM company c
158 JOIN transaction t ON c.id = t.company_id
159 WHERE t.declined = 0
160 GROUP BY c.id, c.company_name;

```

id	company_name	num_transactio...	category_transacti...
b-2458	Eget Tincidunt Dui Institute	1522	Over400
b-2370	Non Justo Corp.	1478	Over400
b-2390	Neque Tellus Imperdiet Corp.	422	Over400
b-2230	Fusce Corp.	445	Over400
b-2266	Mus Aenean Eget Foundation	1563	Over400
b-2598	Aliquam lacus Lacus Corp.	422	Over400
b-2548	Lorem Ipsum Dolor Corp.	1465	Over400
b-2526	Amet Luctus Vulputate Foundation	410	Over400
b-2558	Nulla Integer Vulputate Corp.	1447	Over400
b-2550	Auctor Mauris Corp.	1561	Over400
b-2590	Eutismod Mauris Institute	417	Over400
b-2478	Quisquam Corp. Ltd	1446	Over400

Time	Action	Response	Duration / Fetch Time
76 11:46:31	SELECT t.* FROM transaction t WHERE t.declined = 0 AND EXISTS( SELECT 1 FROM company c WHERE c.id = t.c...	13764 row(s) returned	0.0047 sec / 0.082 sec
77 11:47:22	SELECT c.company_name, c.phone, c.country, DATE(t.timestamp) AS date, t.amount FROM transaction t JOIN co...	8 row(s) returned	0.089 sec / 0.000021...
78 11:48:04	SELECT c.id, c.company_name, COUNT(t.id) AS num_transactions, CASE WHEN COUNT(t.id) > 400 THEN 'Over...	100 row(s) returned	0.405 sec / 0.000082...

## Canvis aplicats i comentaris finals Peer-to-Peer:

- Millorar la informació descrita en el diagrama sobre cada variable de les taules en el nivell 1.
- Afegir “declined=0” sempre que es preguntí per transaccions.
- Revisar indexació.
- Utilitzar sempre àlies.