

SPRINT 2

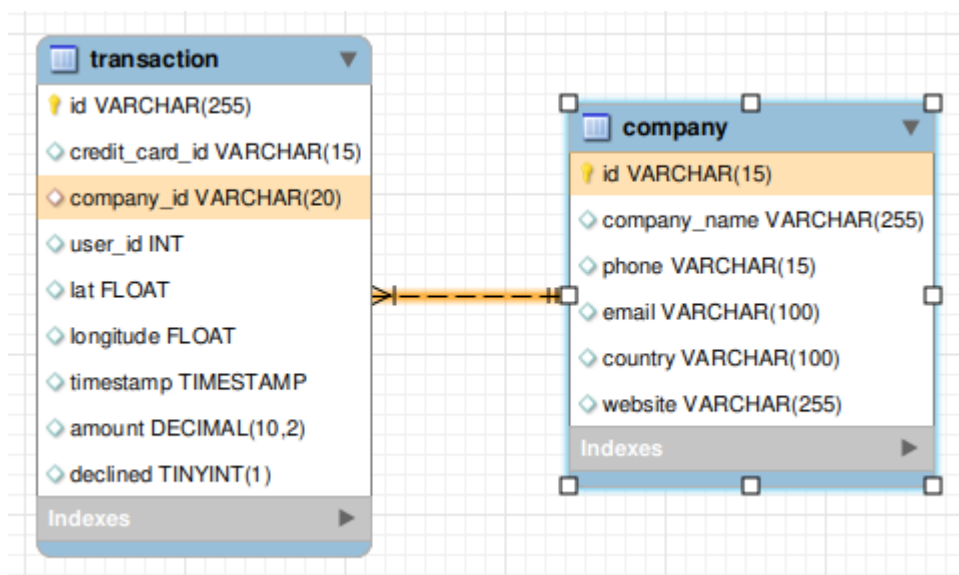
Nocions bàsiques SQL

Juanjo MONTERO

NIVELL 1 – Exercici 1

A partir dels documents adjunts (estructura_dades i dades_introduir), importa les dues taules. Mostra les característiques principals de l'esquema creat i explica les diferents taules i variables que existeixen.

Assegura't d'incloure un diagrama que il·lustri la relació entre les diferents taules i variables.



La base de dades *transactions* està formada per dues taules: *transaction* i *company*.

La taula **transaction** conté informació sobre cada una de les transaccions i està formada per les següents columnes:

- *transaction.id* : identificador única de transacció (actua com a **primary key**)
- *transaction.credit_card_id* : identificador de la tarja de crèdit
- *transaction.company_id* : identificador de companyia (actua com a **foreign key**)
- *transaction.user_id* : identificador de l'usuari
- *transaction.lat* i *transaction.longitude* : coordenades geogràfiques
- *transaction.timestamp* : data i hora de la transacció
- *transaction.amount* : valor econòmic de la transacció
- *transaction.declined* : estat de la transacció (declinada o no)

La taula **company** conté informació detallada de cada companyia, inclou les columnes:

- *company.id* : identificador únic de company (**primary key** de la taula)
- *company.company_name* : nom de la companyia
- *company.phone* : telèfon de la companyia
- *company.email* : adreça de correu electrònic de la companyia
- *company.country* : país on està basada la companyia
- *company.website* : lloc web de la companyia

Les dues taules es relacionen entre elles a través del identificador de companyia recollit a **transaction.company_id** i **company.id**.

NIVELL 1 – Exercici 2

Utilitzant JOIN realitzaràs les següents consultes:

- Llistat dels països que estan fent compres.

The screenshot shows a SQL IDE interface. At the top, there's a toolbar with icons for file operations, execution, and search. Below the toolbar, a SQL query is entered in a text area:

```
1 • SELECT DISTINCT(company.country) AS "Llistat de països que fan compres"
2 FROM transaction
3 INNER JOIN company ON transaction.company_id = company.id
4 ORDER BY 1;
```

Below the query editor, the 'Result Grid' is displayed. It shows the results of the query in a table format:

#	Llistat de països que fan compres
1	Australia
2	Belgium
3	Canada
4	China
5	France
6	Germany

Below the result grid, there's an 'Action Output' section showing the execution details:

#	Time	Action	Message	Duration / Fetch
1	11:27:19	SELECT DISTINCT(company.country) AS "Llistat de països que f...	15 row(s) returned	0,00084 sec / 0,0000...

- Des de quants països es realitzen les compres.

The screenshot shows a SQL IDE interface. At the top, there's a toolbar with icons for file operations, execution, and search. Below the toolbar, a SQL query is entered in a text area:

```
1 • SELECT COUNT(DISTINCT(company.country)) AS "Desde quants països es fan compres?"
2 FROM transaction
3 INNER JOIN company ON transaction.company_id = company.id;
```

Below the query editor, the 'Result Grid' is displayed. It shows the results of the query in a table format:

#	Desde quants països es fan compres?
1	15

Below the result grid, there's an 'Action Output' section showing the execution details:

#	Time	Action	Message	Duration / Fetch
1	11:39:58	SELECT COUNT(DISTINCT(company.country)) AS "Desde quant...	1 row(s) returned	0,0012 sec / 0,00001...

- Identifica la companyia amb la mitjana més gran de vendes.

Limit to 1000 rows

```
1 • SELECT
2     company_id,
3     company_name,
4     round(avg(amount),2) AS "Mitjana de vendes",
5     count(transaction.id) AS "Número de transaccions",
6     sum(amount) AS "Total vendes"
7 FROM transaction
8 INNER JOIN company ON transaction.company_id = company.id
9 GROUP BY company_id
10 ORDER BY 3 DESC
11 LIMIT 1;
```

Result Grid

#	company_id	company_name	Mitjana de vendes	Número de transaccions	Total vendes
1	b-2398	Eget Ipsum Ltd	473.08	2	946.15

Action Output

#	Time	Action	Message	Duration / Fetch
✓ 1	11:43:17	SELECT	company_id, company_name, ... 1 row(s) returned	0,0045 sec / 0,00001...

NIVELL 1 – Exercici 3

Utilitzant només subconsultes (sense utilitzar JOIN):

- Mostra totes les transaccions realitzades per empreses d'Alemanya.

```
1 • SELECT *
2 FROM transaction
3 WHERE company_id IN (
4     SELECT id
5     FROM company
6     WHERE country = "Germany"
7 );
```

Result Grid

#	id	credit_card_id	company_id	user_id	lat	longitude	timestamp	amount	declined
1	108B1D1D-5B23-A76C-55EF-C568E49A05DD	CcU-2938	b-2222	275	83.7839	-178.86	2021-07-07 17:43:16	293.57	0
2	EA2C3281-C9C1-A387-44F8-729FB4B51C76	CcU-2938	b-2222	275	20.2004	-116.84	2021-05-09 10:25:08	119.36	1
3	0DD2E608-5C9E-D1B3-4999-B99F43AD735A	CcU-2959	b-2234	275	9.68811	130.282	2021-04-17 05:30:17	252.47	1
4	AB069F53-965E-A2A8-CE06-CA8C4FD92501	CcU-2959	b-2234	275	1.64819	-158.007	2021-04-15 13:37:18	60.99	0
5	0466A42E-47CF-8D24-FD01-C0B689713128	CcU-4219	b-2302	170	-43.9695	-117.525	2021-07-26 07:29:18	49.53	0

transaction 11

Action Output

#	Time	Action	Message	Duration / Fetch
1	11:51:54	SELECT * FROM transaction WHERE company_id IN...	118 row(s) returned	0,0016 sec / 0,00003...

- Llista les empreses que han realitzat transaccions per un amount superior a la mitjana de totes les transaccions.

```
1 • SELECT * FROM company
2 WHERE id IN (
3     SELECT DISTINCT(company_id) FROM transaction
4     WHERE amount > (
5         SELECT AVG(amount) FROM transaction
6     )
7 );
```

Result Grid

#	id	company_name	phone	email	country	website
1	b-2222	Ac Fermentum I...	06 85 56 52 33	donec.porttitor.tellus@yahoo.net	Germany	https://instagram.com/site
2	b-2226	Magna A Neque...	04 14 44 64 62	risus.donec.nibh@icloud.org	Australia	https://whatsapp.com/group/9
3	b-2230	Fusce Corp.	08 14 97 58 85	risus@protonmail.edu	United States	https://pinterest.com/sub/cars
4	b-2238	Ante Iaculis Nec...	08 23 04 99 53	sed.dictum.proin@outlook.ca	New Zealand	https://netflix.com/settings
5	b-2242	Donec Ltd	01 25 51 37 37	at.iaculis@hotmail.couk	Norway	https://nytimes.com/user/110

company 12

Action Output

#	Time	Action	Message	Duration / Fetch
1	11:53:34	SELECT * FROM company WHERE id IN (	S... 70 row(s) returned	0,0019 sec / 0,00002...

- Eliminaran del sistema les empreses que no tenen transaccions registrades, entrega el llistat d'aquestes empreses.

Limit to 1000 rows

```
1 • SELECT * FROM company
2 WHERE id NOT IN (
3     SELECT DISTINCT(company_id) FROM transaction
4 );
```

Result Grid

#	id	company_name	phone	email	country	website
*	HULL	HULL	HULL	HULL	HULL	HULL

Action Output

#	Time	Action	Message	Duration / Fetch
✓ 1	11:57:06	SELECT * FROM company WHERE id NOT IN (...	0 row(s) returned	0,00086 sec / 0,0000...

NIVELL 2 – Exercici 1

Identifica els cinc dies que es va generar la quantitat més gran d'ingressos a l'empresa per vendes. Mostra la data de cada transacció juntament amb el total de les vendes.

The screenshot shows a SQL query editor with the following query:

```
1 • SELECT
2     date(timestamp) AS "Data transacció",
3     sum(amount) AS "Total vendes"
4 FROM transaction
5 GROUP BY 1
6 ORDER BY 2 DESC
7 LIMIT 5;
```

Below the query, the 'Result Grid' displays the results of the query:

#	Data transacció	Total vendes
1	2021-03-29	1564.87
2	2021-12-20	1532.36
3	2021-06-15	1469.90
4	2021-05-09	1463.73
5	2021-06-21	1443.11

The 'Action Output' table shows the execution details:

#	Time	Action	Message	Duration / Fetch
1	14:08:04	SELECT	date(timestamp) AS "Data transacció", ... 5 row(s) returned	0,0018 sec / 0,00000...

NIVELL 2 – Exercici 2

Quina és la mitjana de vendes per país?

Presenta els resultats ordenats de major a menor mitjà.

The screenshot shows a SQL query editor with the following query:

```
1 • SELECT
2     country AS "País",
3     ROUND(AVG(amount),2) AS "Mitjana de vendes"
4 FROM transaction
5 LEFT JOIN company ON company.id = transaction.company_id
6 GROUP BY country
7 ORDER BY 2 DESC;
```

Below the query, the 'Result Grid' displays the results of the query:

#	País	Mitjana de vendes
1	United States	309.18
2	Ireland	277.31
3	United Kingdom	270.73
4	Canada	269.65
5	Sweden	260.62
6	Norway	254.22

The 'Action Output' table shows the execution details:

#	Time	Action	Message	Duration / Fetch
1	12:37:55	SELECT	country AS "País", ROUND(AVG(a... 15 row(s) returned	0,0035 sec / 0,00001...

NIVELL 2 – Exercici 3

En la teva empresa, es planteja un nou projecte per a llançar algunes campanyes publicitàries per a fer competència a la companyia "Non Institute". Per a això, et demanen la llista de totes les transaccions realitzades per empreses que estan situades en el mateix país que aquesta companyia.

- Mostra el llistat aplicant JOIN i subconsultes.

The screenshot shows a SQL IDE with a query editor and a result grid. The query is as follows:

```
1 • SELECT * FROM transaction
2   INNER JOIN company ON transaction.company_id = company.id
3   WHERE country = (SELECT country FROM company WHERE company_name = "Non Institute");
```

The result grid displays 10 rows of transaction data. The columns are: #, id, cre, company_id, use, lat, lon, timestamp, amount, dec, id, company_name, ph, en, country, wet. The data is as follows:

#	id	cre	company_id	use	lat	lon	timestamp	amount	dec	id	company_name	ph	en	country	wet
1	2B928E1...	...	b-2246	...	...	...	2021-08-10 08:14:49	383.73	0	b-...	Sed Nunc Ltd	...	...	United Kingdom	...
2	ACD2011...	...	b-2246	...	...	...	2022-03-05 20:41:20	60.07	1	b-...	Sed Nunc Ltd	...	...	United Kingdom	...
3	4334349...	...	b-2310	...	...	...	2021-05-03 22:37:23	458.74	0	b-...	Non Magna LLC	...	...	United Kingdom	...
4	BC2B9A...	...	b-2310	...	...	...	2021-10-18 07:27:35	477.95	1	b-...	Non Magna LLC	...	...	United Kingdom	...
5	1479B3D...	...	b-2326	...	...	...	2021-08-09 00:58:07	309.45	0	b-...	Enim Condiment...	...	...	United Kingdom	...
6	152598C...	...	b-2326	...	...	...	2021-07-05 03:10:00	395.43	0	b-...	Enim Condiment...	...	...	United Kingdom	...
7	1B636B5...	...	b-2326	...	...	...	2021-07-06 08:48:46	195.06	0	b-...	Enim Condiment...	...	...	United Kingdom	...
8	20418DE...	...	b-2326	...	...	...	2022-01-03 15:59:29	479.52	0	b-...	Enim Condiment...	...	...	United Kingdom	...
9	239B857...	...	b-2326	...	...	...	2021-08-26 06:04:05	43.90	0	b-...	Enim Condiment...	...	...	United Kingdom	...
10	267C4A8...	...	b-2326	...	...	...	2021-10-01 21:08:53	122.63	0	b-...	Enim Condiment...	...	...	United Kingdom	...

The Action Output shows the execution of the query, returning 100 rows in 0.00089 seconds.

- Mostra el llistat aplicant solament subconsultes.

The screenshot shows a SQL IDE with a query editor and a result grid. The query is as follows:

```
1 • SELECT *
2   FROM transaction
3   WHERE company_id IN (
4     SELECT id
5     FROM company
6     WHERE country = (
7       SELECT country
8       FROM company
9       WHERE company_name = "Non Institute"
10    )
11  );
```

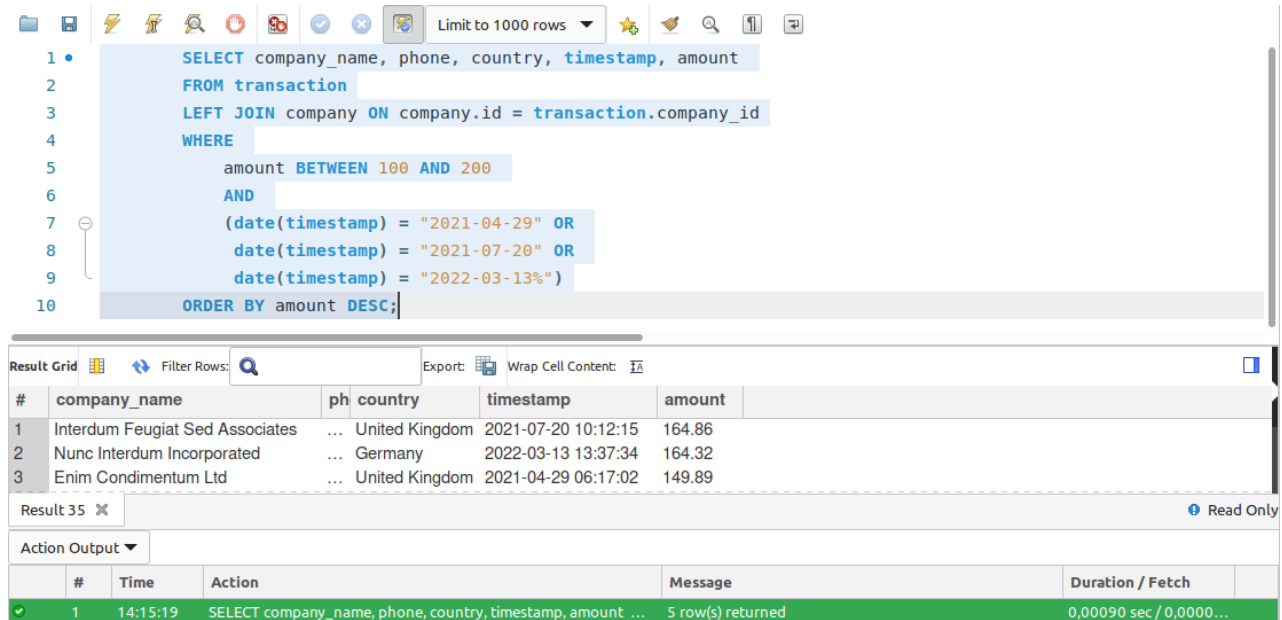
The result grid displays 2 rows of transaction data. The columns are: #, id, cre, company_id, use, lat, lon, timestamp, amount, dec. The data is as follows:

#	id	cre	company_id	use	lat	lon	timestamp	amount	dec
1	2B928E1...	...	b-2246	...	...	...	2021-08-10 08:14:49	383.73	0
2	ACD2011...	...	b-2246	...	...	...	2022-03-05 20:41:20	60.07	1

The Action Output shows the execution of the query, returning 100 rows in 0.0013 seconds.

NIVELL 3 – Exercici 1

Presenta el nom, telèfon, país, data i amount, d'aquelles empreses que van realitzar transaccions amb un valor comprès entre 100 i 200 euros i en alguna d'aquestes dates: 29 d'abril del 2021, 20 de juliol del 2021 i 13 de març del 2022. Ordena els resultats de major a menor quantitat.



The screenshot shows a SQL query editor with a toolbar at the top. The query is as follows:

```
1 • SELECT company_name, phone, country, timestamp, amount
2 FROM transaction
3 LEFT JOIN company ON company.id = transaction.company_id
4 WHERE
5     amount BETWEEN 100 AND 200
6 AND
7     (date(timestamp) = "2021-04-29" OR
8      date(timestamp) = "2021-07-20" OR
9      date(timestamp) = "2022-03-13%")
10 ORDER BY amount DESC;
```

Below the editor is the 'Result Grid' showing 3 rows of data. The columns are: #, company_name, ph, country, timestamp, and amount.

#	company_name	ph	country	timestamp	amount
1	Interdum Feugiat Sed Associates	...	United Kingdom	2021-07-20 10:12:15	164.86
2	Nunc Interdum Incorporated	...	Germany	2022-03-13 13:37:34	164.32
3	Enim Condimentum Ltd	...	United Kingdom	2021-04-29 06:17:02	149.89

Below the result grid is the 'Action Output' section, which shows a single action executed successfully at 14:15:19.

#	Time	Action	Message	Duration / Fetch
✓ 1	14:15:19	SELECT company_name, phone, country, timestamp, amount ...	5 row(s) returned	0,00090 sec / 0,0000...

NIVELL 3 – Exercici 2

Necessitem optimitzar l'assignació dels recursos i dependrà de la capacitat operativa que es requereixi, per la qual cosa et demanen la informació sobre la quantitat de transaccions que realitzen les empreses, però el departament de recursos humans és exigent i vol un llistat de les empreses on especifiquis si tenen més de 4 transaccions o menys.

```

1 •
2     company_id,
3     company_name,
4     COUNT(transaction.id) AS "Número de transacciones",
5     CASE
6         WHEN COUNT(transaction.id) > 4 THEN "Sí"
7         ELSE "No"
8     END AS "Más de 4 transacciones?",
9     phone,
10    email,
11    country,
12    website
13 FROM transaction
14 INNER JOIN company ON transaction.company_id = company.id
15 GROUP BY company_id;

```

Action Output ▼

	#	Time	Action	Message			Duration / Fetch
✓	1	12:52:02	SELECT	company_id,	company_name, ...	100 row(s) returned	0,0028 sec / 0,00003...

#	company_id	company_name	Número de transaccions	Més de 4 transaccions?	ph	em	country	web
1	b-2222	Ac Fermentum Incorporated	2	No	...	...	Germany	...
2	b-2226	Magna A Neque Industries	2	No	...	...	Australia	...
3	b-2230	Fusce Corp.	2	No	...	...	United States	...
4	b-2234	Convallis In Incorporated	2	No	...	...	Germany	...
5	b-2238	Ante Iaculis Nec Foundation	2	No	...	...	New Zealand	...
6	b-2242	Donec Ltd	2	No	...	...	Norway	...
7	b-2246	Sed Nunc Ltd	2	No	...	...	United Kingdom	...
8	b-2250	Amet Nulla Donec Corporation	2	No	...	...	Italy	...
9	b-2254	Nascetur Ridiculus Mus Inc.	2	No	...	...	United States	...
10	b-2258	Vestibulum Lorem PC	2	No	...	...	Belgium	...
11	b-2262	Gravida Sagittis LLP	2	No	...	...	Sweden	...
12	b-2266	Mus Aenean Eget Foundation	2	No	...	...	Sweden	...
13	b-2270	Dis Parturient Institute	2	No	...	...	Ireland	...
14	b-2274	Sed LLC	2	No	...	...	Belgium	...
15	b-2278	Arcu LLP	56	Si	...	...	Norway	...
16	b-2282	Pretium Neque Corp.	2	No	...	...	Australia	...
17	b-2286	Fringilla LLC	2	No	...	...	New Zealand	...

