

Roser Blasco
Sprint 2

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Nivell 1

- Exercici 1: esquema
- Exercici 2: joins
 - o Llistat dels països que estan fent compres.
 - o Des de quants països es realitzen les compres.
 - o Identifica la companyia amb la mitjana més gran de vendes
- Exercici 3: subconsultes
 - o Mostra totes les transaccions realitzades per empreses d'Alemanya.
 - o Llista les empreses que han realitzat transaccions per un amount superior a la mitjana de totes les transaccions.
 - o Eliminaran del sistema les empreses que no tenen transaccions registrades, entrega el llistat d'aquestes empreses.

Nivell 2

- Exercici 1
- Exercici 2
- Exercici 3
 - o Mostra el llistat aplicant JOIN i subconsultes.
 - o Mostra el llistat aplicant solament subconsultes.

Nivell 3

- Exercici 1
- Exercici 2

Nivell 1

- Exercici 1: esquema

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. Assegurat d'incloure un diagrama que il·lustri la relació entre les diferents taules i variables.

Característiques principals de l'esquema creat:

- És una base de dades anomenada “transactions”
- L'esquema té dues taules: “company” i “transaction”

Explicació de les diferents taules i variables:

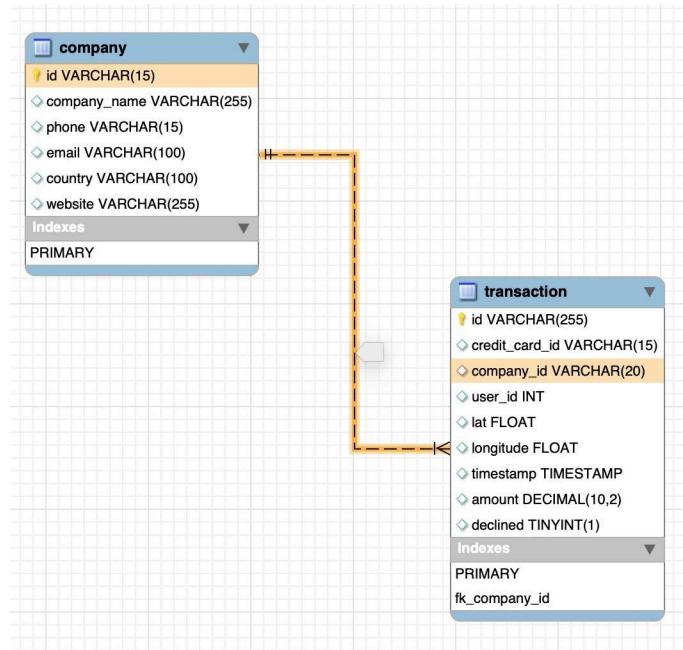
- La taula “**company**” conté dades de contacte de diferents empreses com el correu electrònic, telèfon, país i adresa de la seva pàgina web.
 - Totes són del tipus VARCHAR, és a dir, format text, i amb una limitació de caracters. El id d'empresa i el telèfon tenen una llargària màxima de 15 caracters. L'adresa electrònica i el país de 100, i el nom d'empresa i la web de 255.
- La taula “**transaction**” conté dades de pagaments amb targeta bancària, com import, ubicació geogràfica, si el pagament ha segut acceptat o declinat, i una referència al pagador i a l'empresa que reb el pagament.
 - Quasi tots els ids d'aquesta taula són del tipus VARCHAR també, format text. El id de la tarjeta de crèdit té una llargària màxima de 15 caracters. El id d'empresa de 20 caracters, és a dir, aquí es permetria que fos més llarg que a la taula anterior. L'id de transacció pot ser fins a 255 caracters.
 - En canvi, per a l'id d'usuari, de la persona que fa el pagament, s'ha elegit una variable INT, que és un número enter.
 - La variable “declined” és del tipus BOOLEAN, és a dir, només pot ser 0 o 1. Si és 0, es considera que el pagament ha segut correcte, i si és 1 que el pagament ha segut rebutjat pel banc, per exemple, per falta de fons al compte.
 - La variable “timestamp” és de tipus TIMESTAMP, capture el dia i hora en que es va realitzar el pagament. El format és YYYY-MM-DD hh:mm:ss en temps universal coordinat (UTC). Cal tenir en compte que aquest és un estàndard universal i no la hora local del lloc on s'ha fet el pagament.
 - La ubicació geogràfica es determina per dues variables, la latitud i la longitud. Ambdues són variables numèriques variables de tipus FLOAT, decimal de fins a

24 caracters decimals. La combinació de latitud i longitud ens dóna un punt en el globus terraqui.

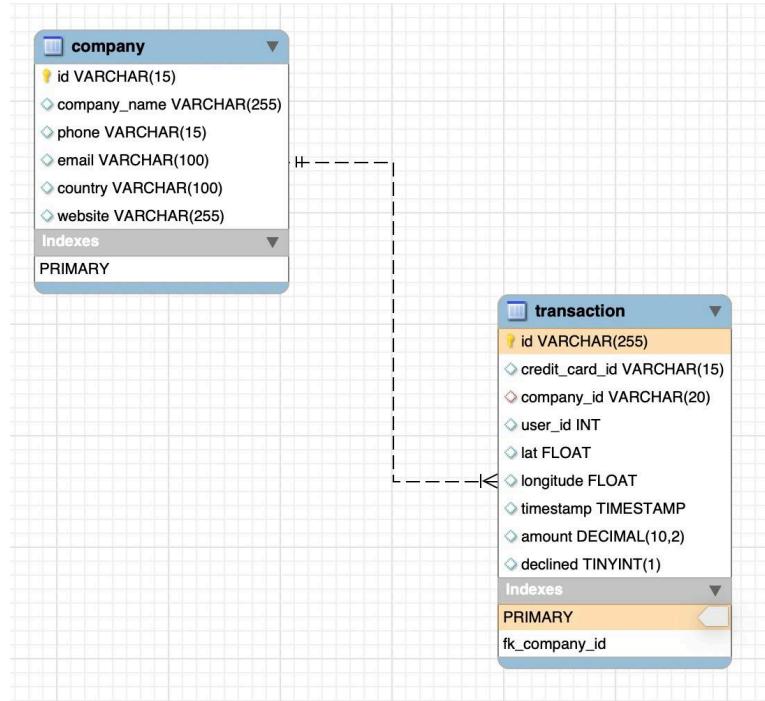
- Finalment, l'import de la transacció és una variable de tipus DECIMAL, és a dir també un nombre decimal. En aquest cas ens limiten el número total de caracters a 10 i a la dreta de la coma hi haurà un màxim de 2.

Diagrama relacional (relació entre les diferents taules i variables):

- Les dues taules es relacionen a través “company_id” de la taula transaction, on és la foreign key, i que proporciona aquest vincle amb el “id” de la taula “company” on és la primary key. Aquesta relació és de 1 a molts, i per tant pot aparèixer només una vegada a “company” però moltes vegades a “transaction”.



- La taula transacion té a la seva vegada una primary key que és el id de transacció, ja que cada transacció és única, i que no juga paper en la relació entre les taules.



- Exercici 2: joins

Utilitzant JOIN realitzaràs les següents consultes:

- Llistat dels països que estan fent compres.

Entenem que totes les compres són nacionals i que el país de compra és el mateix que el de venda. Primer he donat un ull a la llista de països de la taula “company”

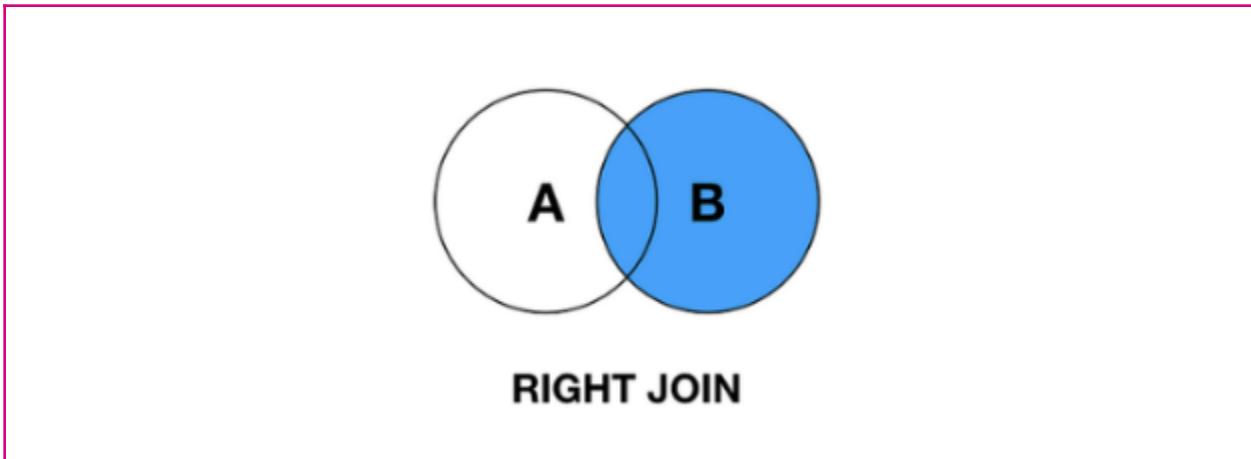
The screenshot shows the MySQL Workbench interface. On the left, the 'Schemas' tree view shows the 'transactions' schema selected, with the 'company' table expanded to show columns: id, company_name, phone, email, country, and website. The 'Result Grid' tab is active, displaying a list of countries from the 'country' column of the 'company' table. The results are as follows:

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

The status bar at the bottom indicates 761 rows returned in 0.00056 sec / 0.000... ms. A context help message on the right says: "Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help."

```
1 # Nivell 1
2 # Exercici 2
3
4 # Utilitzant JOIN realitzaràs les següents consultes:
5 # Llistat dels països que estan fent compres.
6 # Des de quants països es realitzen les compres.
7 # Identifica la companyia amb la mitjana més gran de vendes.
8
9 • SELECT distinct country
10   FROM company
11   ORDER BY country ASC;
12
```

Aquest problema el solucionem amb RIGHT JOIN, unint les dues taules a través de l'id d'empresa, per a que surtin només els països de les empreses que apareixen en la taula transaccions



Screenshot of MySQL Workbench showing a query results grid and a query editor.

Query Editor:

```
1  # - Llista dels països que estan fent compres.
2 • SELECT distinct company.country
3   FROM company
4     RIGHT JOIN transaction
5       ON company.id = transaction.company_id
6         WHERE declined = 0
7   ORDER BY country ASC;
8
```

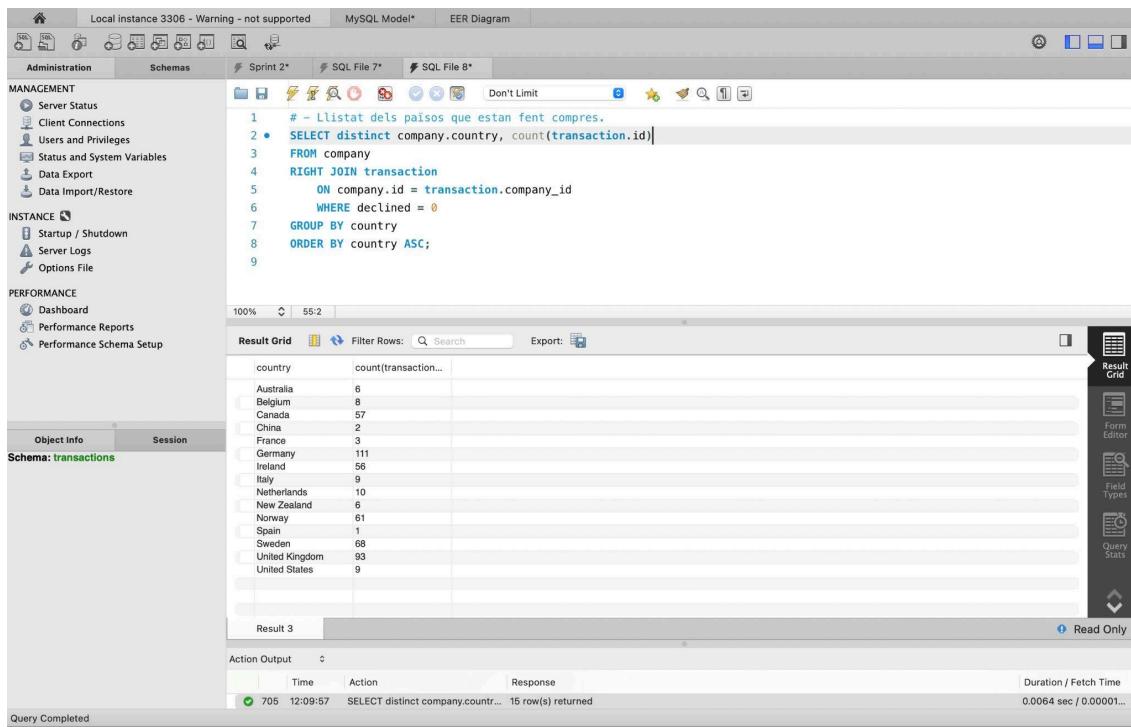
Result Grid:

country
Australia
Belgium
Canada
China
France
Germany
Ireland
Italy
Netherlands
New Zealand

Action Output:

Time	Action	Response	Duration / Fetch Time
703 12:08:32	SELECT distinct company.coun...	15 row(s) returned	0.0037 sec / 0.00001...

Com que ens han sortit la mateixa llista de 15 països, he decidit comprovar que tots tenen transaccions amb un GROUP BY.



The screenshot shows the MySQL Workbench interface. The left sidebar contains navigation links for Administration, Schemas, and Performance. The main area displays a SQL editor with the following query:

```
# - Llistat dels països que estan fent compres.
SELECT distinct company.country, count(transaction.id)
FROM company
RIGHT JOIN transaction
ON company.id = transaction.company_id
WHERE declined = 0
GROUP BY country
ORDER BY country ASC;
```

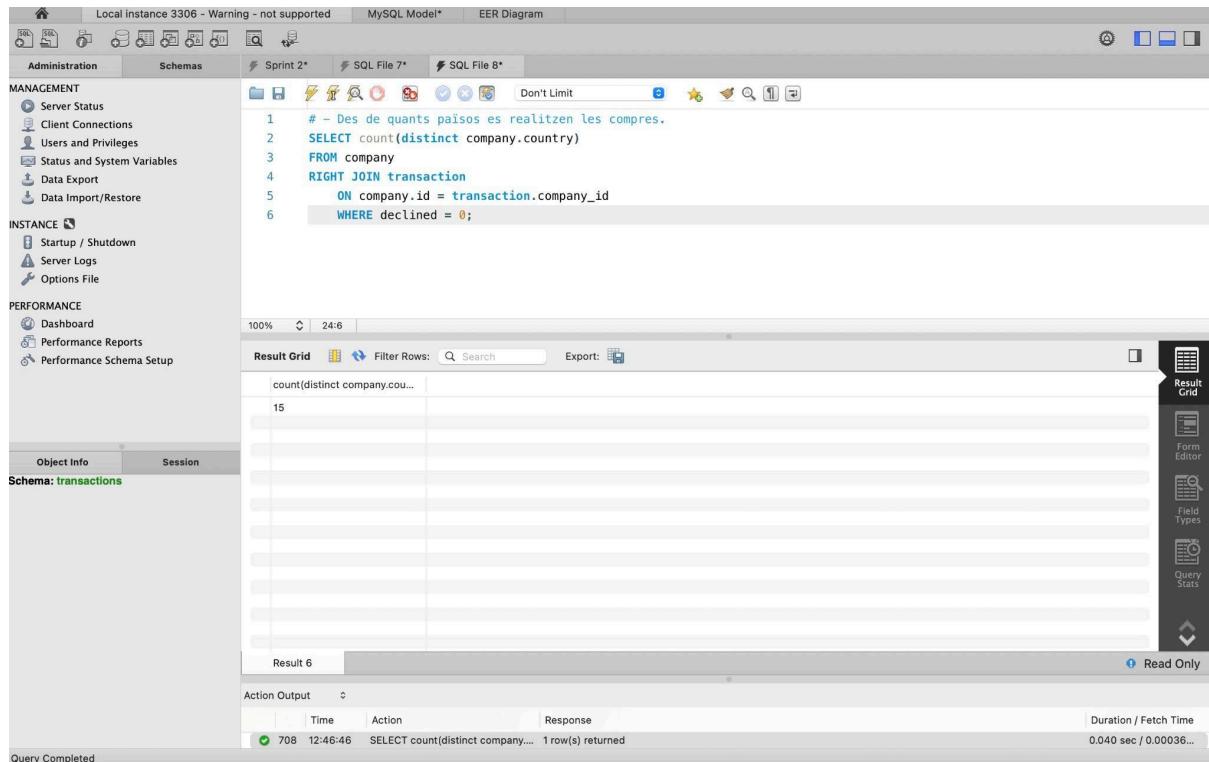
The results grid shows the following data:

country	count(transaction...)
Australia	6
Belgium	8
Canada	57
China	2
France	3
Germany	111
Iceland	56
Italy	9
Netherlands	10
New Zealand	6
Norway	61
Spain	1
Sweden	68
United Kingdom	93
United States	9

At the bottom, the status bar indicates "Query Completed".

- Des de quants països es realitzen les compres.

Utilitzem un count sobre el codi anterior per al número de països



The screenshot shows the MySQL Workbench interface. On the left, the navigation pane includes sections for MANAGEMENT (Server Status, Client Connections, Users and Privileges, Status and System Variables, Data Export, Data Import/Restore), INSTANCE (Startup / Shutdown, Server Logs, Options File), and PERFORMANCE (Dashboard, Performance Reports, Performance Schema Setup). The central area displays a SQL editor with the following query:

```

1 # - Des de quants països es realitzen les compres.
2 SELECT count(DISTINCT company.country)
3 FROM company
4 RIGHT JOIN transaction
5 ON company.id = transaction.company_id
6 WHERE declined = 0;

```

The results grid shows one row with the value 15. Below the grid, the status bar indicates "Query Completed". A sidebar on the right contains icons for Result Grid, Form Editor, Field Types, and Query Stats.

Pregunta de la tutora: ¿crees necesario un join en esta consulta?

Es podria contar el número de països de les empreses de la taula països, com he fet a sota, però això no ens garanteix que tinguin transaccions. En aquest cas dóna la casualitat que sí que té el mateix perquè en tenen totes, però no és una bona pràctica.

The screenshot shows the MySQL Workbench interface. The left sidebar displays the schema 'transactions' with tables 'company' and 'transaction'. The main area shows a SQL editor with the following query:

```
1 • SELECT COUNT(distinct country)
2   FROM company;
```

The results grid shows a single row with the value '15'. Below the results, the action output shows the execution details:

Action	Time	Response
SELECT COUNT(distinct country)	719 14:04:44	1 row(s) returned

Duration / Fetch Time: 0.00081 sec / 0.00000...

La veritable raó de que no calgui una join és que també es podria solucionar aquesta consulta amb subqueries de la següent manera

The screenshot shows the MySQL Workbench interface with the same schema and table structure. The SQL editor contains the following query:

```
1 # - Des de quants països es realitzen les compres.
2 • Select COUNT(distinct country)
3   from company
4   WHERE id IN
5     (SELECT company_id
6      FROM transaction)
7 ;
```

The results grid shows a single row with the value '15'. Below the results, the action output shows the execution details:

Action	Time	Response
Select COUNT(distinct country)	725 14:12:47	1 row(s) returned

Duration / Fetch Time: 0.0020 sec / 0.00000...

- Identifica la companyia amb la mitjana més gran de vendes

Entenc que el que volen dir és la mitjana més gran per transacció. Així doncs li demanem el nom d'empresa i l'average per transacció. L'ordenem de major a menor per a comprovar visualment quin és el resultat major per a quan ho filtrem.

The screenshot shows the MySQL Workbench interface. On the left, the 'Schemas' tree view is open, showing the 'transaction' schema with its tables ('transaction', 'company', 'credit_card', etc.). The 'Result Grid' tab is selected, displaying the results of the following SQL query:

```

1 # Nivell 1
2 # Exercici 2
3
4 # Identifica la companyia amb la mitjana més gran de vendes
5
6 • SELECT company.company_name, avg(amount)
7   FROM company
8   JOIN transaction ON company.id = transaction.company_id
9   GROUP BY company.company_name
10  ORDER BY avg(amount) DESC;

```

The results grid shows the following data:

company_name	avg(amount)
Eget Ipsum Ltd	473.075000
Non Magna LLC	468.345000
Sed Id Limited	461.210000
Justo Eu Arcu Ltd	443.635000
Eget Tincidunt Dui Institute	442.520000
Viverra Donec Foundation	442.280000
Vestibulum Lorem PC	434.060000
Aliquet Diam Limited	425.640000
Maecenas Malesuada Fringilla Inc.	408.620000
Non Ante LLP	407.790000
Egestas Nunc Sed Limited	406.110000
Nunc Sit Incorporated	405.355000
Magna A Neque Industries	396.315000
Amet Luctus Vulpitate Foundation	390.325000
Aliquam PC	385.265000
Neque Tellus Incorporated	364.005000
Placerat LLP	357.080000
Elit Etiam Laoreet Associates	351.840000
Fusce Corp.	350.125000
Sanien Nunc Pulvinar I I P	349.655000

The 'Object Info' and 'Session' tabs are also visible on the left, and the 'Result Grid' tab is highlighted on the right sidebar.

No he aconseguit que em funcioni el MAX sense subqueries així que li he posat un limit 1

The screenshot shows the MySQL Workbench interface. On the left, the 'Schemas' tree view is open, showing the 'transaction' schema with its columns (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined) and primary key (PRIMARY). The 'Indexes' and 'Foreign Keys' sections are also visible. On the right, the main area contains a SQL editor with the following query:

```
1 # Nivell 1
2 # Exercici 2
3
4 # Identifica la companyia amb la mitjana més gran de vendes
5
6 • SELECT company.company_name, avg(amount)
  FROM company
  JOIN transaction ON company.id = transaction.company_id
  GROUP BY company.company_name
  ORDER BY avg(amount) DESC
  LIMIT 1;
```

The results grid below the query shows one row:

company_name	avg(amount)
Eget Ipsum Ltd	473.075000

At the bottom, the 'Action Output' panel indicates '1 row(s) returned'.

En han aclarit que a les vendes no s'han d'incloure les transaccions declinades, així que modifiquem el codi. El que farem és posar una condició al join per a que només tingui en compte les transaccions no declinades. Així, quan es calculi la mitjana, no les tindrà en compte

The screenshot shows the MySQL Workbench interface. The left sidebar displays the database schema with the 'transactions' schema selected. The main area contains a SQL editor with the following query:

```

1 # - Identifica la companyia amb la mitjana més gran de vendes.
2 • SELECT company.company_name, ROUND(avg(transaction.amount),2 ) AS mitjana
3   FROM company
4     RIGHT JOIN transaction
5       ON company.id = transaction.company_id
6       WHERE declined = 0
7   GROUP BY company.company_name
8   ORDER BY mitjana DESC
9   LIMIT 1;
10

```

The results grid shows one row of data:

company_name	mitjana
Eget Ipsum Ltd	481.86

At the bottom, the status bar indicates "Query Completed".

Pregunta de la tutora: ¿por qué aquí discriminas por el declined y en el ítem anterior no? igual te están hablando de compras ¿qué cambia?

Havia entés 'compres' com a sinònim de 'transacció' i 'vendes' com a les transaccions acceptades, però ja veig que 'compres' i 'vendes' es deuen entendres com la mateixa cosa. Ho he canviat a l'exercici anterior.

- Exercici 3: subconsultes

Utilitzant només subconsultes (sense utilitzar JOIN):

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

Primer fem una consulta d'empreses amb el filtre d'Alemanya

The screenshot shows the MySQL Workbench interface. In the Navigator pane, under the 'transactions' schema, the 'Tables' section is expanded, showing 'company', 'transaction', and other table definitions. In the central SQL Editor pane, a query is written:

```
1 • SELECT *
2   FROM company
3   WHERE country = 'Germany';
```

The Result Grid pane displays the results of the query, showing 10 rows of company information where the country is Germany. The columns are: id, company_name, phone, email, country, and website. The results are as follows:

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-2234	Convallis In Incorporated	06 66 57 29 50	mauris.ut@aol.co.uk	Germany	https://cnn.com/user/110
b-2302	Nunc Interdum Incorporated	05 18 15 48 13	non@outlook.com	Germany	https://wikipedia.org/en-us
b-2306	Augue Foundation	06 89 43 15 63	mauris@yahoo.com	Germany	https://baidu.com/sub/cars
b-2358	Ac Industries	09 34 65 40 60	ipsum@yahoo.com	Germany	https://bbc.co.uk/group/9
b-2550	Auctor Mauris Corp.	05 62 87 14 41	eget.metus@protonmail.ca	Germany	https://walmart.com/sub
b-2566	Aliquam PC	01 45 73 52 16	scelerisque.mollis@cloud.org	Germany	https://yahoo.com/en-ca
b-2614	Rutrum Non Inc.	02 66 31 61 09	neque@protonmail.net	Germany	https://netflix.com/site
*	NULL	NULL	NULL	NULL	NULL

In the Output pane, the execution details are shown:

#	Time	Action	Message	Duration / Fetch
1	23 13:32:45	SELECT company.company_name, avg(amount) FROM compan...	1 row(s) returned	0.016 sec / 0.000 sec

Però sense el join, amb el nom no podem fer res. En canvi si treiem els id d'empresa de les empreses en alemanya, aquest ens serveix en l'altra taula.

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

- Navigator:** Shows the database schema. Under the 'transactions' schema, there is a 'company' table which contains columns: id, company_name, phone, email, country, and website.
- SQL Editor:** Displays the following SQL query:

```
1 • SELECT id
2   FROM company
3   WHERE country = 'Germany';
```
- Result Grid:** Shows the results of the query, listing various company IDs (e.g., b-2222, b-2234, b-2302, b-2306, b-2358, b-2550, b-2566, b-2614, NULL).
- Output Window:** Shows the execution log with two entries:

#	Time	Action	Message	Duration / Fetch
1	15:12:27	SELECT company_name FROM company WHERE country = 'Germany'	8 row(s) returned	0.000 sec / 0.000 sec
2	15:13:42	SELECT id FROM company WHERE country = 'Germany' LIMIT 0, 1...	8 row(s) returned	0.000 sec / 0.000 sec

Ara utilitzarem aquesta llista com a filtre de l'altra taula
Primer provem amb un dels resultats

The screenshot shows the MySQL Workbench interface. In the Navigator pane, under the 'transactions' schema, the 'transaction' table is selected. The 'Columns' section lists fields: id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, and declined. A query editor window displays the following SQL code:

```
1 • Select *
2   FROM transaction
3   WHERE company_id in ('b-2222');
4
5
6
7   #   SELECT id
8   #   FROM company
9   #   WHERE country ='Germany';
10
```

The results grid shows two rows of data:

id	credit_card_id	company_id	user_id	lat	longitude	timestamp	amount	declined
10881D1D-5823-A76C-55EF-C568E49A05DD	CcU-2938	b-2222	275	83.7839	-178.86	2021-07-07 17:43:16	293.57	0
EA2C3281-C9C1-A387-44F8-729FB4B51C76	CcU-2938	b-2222	275	20.004	-116.84	2021-05-09 10:25:08	119.36	1
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

The 'Output' pane at the bottom shows the execution log:

#	Time	Action	Message	Duration / Fetch
5	15:20:33	Select * FROM transaction WHERE company_id = b-2222' LIMIT ...	2 row(s) returned	0.000 sec / 0.000 sec
6	15:20:50	Select * FROM transaction WHERE company_id in (b-2222) LIMI...	2 row(s) returned	0.000 sec / 0.000 sec

I ara afegim tota la subquery

MySQL Workbench

Roser x

File Edit View Query Database Server Tools Scripting Help

Navigator: SQL File 3* 1.2.sql 1.3* x

SCHEMAS: sakila, sys, transactions

Tables: company, transaction

Columns: id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined

Indexes, Foreign Keys, Triggers, Views, Stored Procedures, Functions

Administration Schemas

Information

Schema: transactions

SQL File 3* 1.2.sql 1.3* x

```
1 * Select *
2   FROM transaction
3   WHERE company_id in (
4     SELECT id
5       FROM company
6      WHERE country = 'Germany');
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: | Result Grid | Form Editor | Field Types | Query Stats | Execution Plan

ID	Credit Card ID	Company ID	User ID	Lat	Longitude	Timestamp	Amount	Declined
10881D1D-5B23-A76C-55EF-C568E49A05D0	CdU-2938	b-2222	275	83.7839	-178.86	2021-07-07 17:43:16	293.57	0
EA2C3281-C9C1-A387-44F8-729FB4B51C76	CdU-2938	b-2222	275	20.2004	-116.84	2021-05-09 10:25:08	119.36	1
0DD2E608-5C9E-D1B3-4999-B99F43AD735A	CdU-2959	b-2234	275	9.68811	130.282	2021-04-17 05:30:17	252.47	1
AB069F53-965E-A2A8-CED6-CABCFD92501	CdU-2959	b-2234	275	1.64819	-158.007	2021-04-15 13:37:18	60.99	0
0466A42E-7CF-8D24-FD01-C06869713128	CdU-4219	b-2302	170	-43.9695	-117.525	2021-07-26 07:29:18	49.53	0
0A476ED9-0C13-1962-F87B-03363924B539	CdU-4359	b-2302	221	-56.4901	114.801	2022-02-26 20:33:54	430.49	0
12DC333-E19F-D629-DC08-9C54CF1EB89A	CdU-4366	b-2302	221	29.6372	-166.173	2021-06-09 06:04:14	172.01	0
135267BA-2E7D-957C-C42C-6450A2B3ED54	CdU-4520	b-2302	210	20.6724	14.9732	2021-12-29 20:38:23	17.97	0
14CAE5B5-8FB1-3E4A-4C85-0EA4167534F4	CdU-4849	b-2302	189	-53.6202	93.0533	2021-12-31 00:29:42	388.04	0
158A3ACB-541C-DBCC-65BD-6373CC678F1C	CdU-4849	b-2302	183	42.5424	-170.347	2022-03-08 05:02:19	240.29	0
162C7E78-2B6B-7971-A1E4-D212-E732451	CdU-4527	b-2302	210	-69.1381	58.0017	2021-04-11 05:59:18	231.26	0
1717F068-ADAD-7082-A748-9112BE892CC0	CdU-4219	b-2302	172	69.4892	-138.411	2021-12-29 16:18:54	249.91	0
1753A288-9FC1-52E6-5C39-A1FFB97803A	CdU-4345	b-2302	222	57.9422	-114.729	2021-08-17 05:32:08	497.84	0
186F53DE-0E27-B1FE-682F-15B61CEB7726	CdU-4310	b-2302	225	-72.7448	36.6211	2021-12-20 13:13:45	238.16	0
18CCBA7C-ABC1-813D-FAF3-4BABA97429368	CdU-4219	b-2302	173	51.3881	-156.371	2021-06-21 03:21:34	58.16	0
18CE4ZD-1E4C-F35E-2198-C6608081DC25	CdU-4849	b-2302	177	68.0133	91.4839	2021-09-24 18:55:25	237.04	0
18CCBA7C-ABC1-813D-FAF3-4BABA97429368	CdU-4219	b-2302	173	51.3881	-156.371	2021-06-21 03:21:34	58.16	0
19E1EC3E-2119-1EFD-8AEF-5930D4A4E63F	CdU-4219	b-2302	154	-56.0839	116.987	2021-07-06 21:40:15	29.63	0
1B117D49-936C-BA6C-E94B-30C329A239	CdU-4219	b-2302	163	-75.099	109.034	2021-05-09 23:56:04	371.35	0
1B521826-5860-SA86-5364-6EB6A5CC21B7	CdU-4226	b-2302	231	-53.4613	49.1484	2021-08-14 02:39:50	476.33	0

transaction 6 x

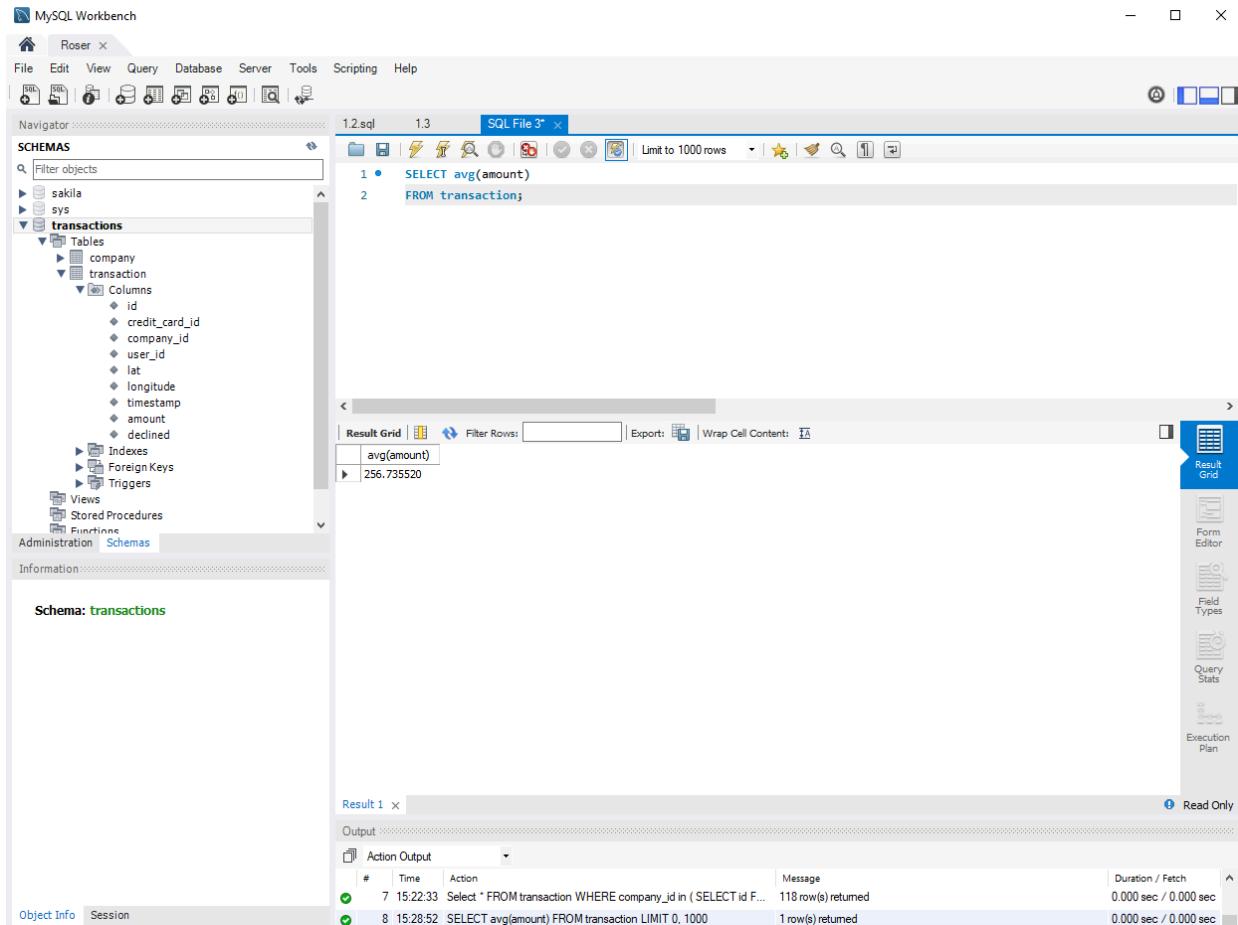
Output

#	Time	Action	Message	Duration / Fetch
6	15:20:50	Select * FROM transaction WHERE company_id in (b-2222) LIMIT 1000	2 row(s) returned	0.000 sec / 0.000 sec
7	15:22:33	Select * FROM transaction WHERE company_id in (SELECT id F...	118 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

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

Comencem calculant la mitjana de totes les transaccions



The screenshot shows the MySQL Workbench interface. In the top-left corner, there's a small window titled "Roser" which displays the message "Llista les empreses que han realitzat transaccions per un amount superior a la mitjana de totes les transaccions." The main workspace contains the following elements:

- SQL Editor:** A tab labeled "1.2.sql" contains the SQL query:

```
1 • SELECT avg(amount)
2 FROM transaction;
```
- Results Grid:** A table showing the output of the query:

avg(amount)
256.735520
- Output Log:** A table titled "Result 1" showing the execution log with two rows of data:

#	Time	Action	Message	Duration / Fetch
7	15:22:33	Select * FROM transaction WHERE company_id in (SELECT id F...	118 row(s) returned	0.000 sec / 0.000 sec
8	15:28:52	SELECT avg(amount) FROM transaction LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec

Ara busquem totes les transaccions per sobre d'aquest amount

The screenshot shows the MySQL Workbench interface with a highlighted query window. The query is:

```
1 • SELECT *
  2   FROM transaction
  3   WHERE amount > (
  4     SELECT avg(amount)
  5       FROM transaction);
```

The result grid displays a list of transactions, including columns: id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, and declined. The output pane shows two rows of log entries.

id	credit_card_id	company_id	user_id	lat	longitude	timestamp	amount	declined
02C6201E-D90A-1859-B4EE-88D2986D3802	CdU-2938	b-2362	92	81.9185	-12.5276	2021-08-28 23:42:24	466.92	0
0668296C-CD89-A883-768C-2E4C44F8C8AE	CdU-3743	b-2618	265	-34.3593	-100.555	2022-01-26 02:07:14	394.18	0
06CD9A5-9842-D684-0DD0-A5E394EBAA99	CdU-2959	b-2346	92	33.7381	158.298	2021-10-26 23:00:01	279.93	0
07A46D48-31A3-7E87-65B9-0DA902AD109F	CdU-3225	b-2386	272	38.8342	92.1905	2021-06-28 21:11:42	340.87	1
09DE92CE-6F27-2B87-1385-9389B2388E2	CdU-3071	b-2298	275	71.1706	10.5757	2021-05-11 20:40:06	303.05	1
0A476ED9-0C13-1962-F876-D35639246533	CdU-4359	b-2302	221	-56.4901	114.801	2022-02-26 20:33:54	430.49	0
0BE88087-9D66-1707-CE4B-9DCE7E1914B5	CdU-3141	b-2338	272	23.3264	-13.6037	2022-03-04 14:54:35	288.81	1
0CE957A6-CCAA-2B7A-6839-8A40B324853	CdU-3435	b-2506	269	-69.3537	-10.26	2022-02-02 07:29:36	428.69	1
1017AA59-3D5F-7A4C-1992-D151ABD1FA0A	CdU-3701	b-2618	267	4.27645	-101.554	2021-11-01 01:02:11	447.11	0
1026DA24-8929-31F1-8250-D7BA805C13D2	CdU-2959	b-2346	92	32.0646	-140.147	2021-12-07 09:30:38	465.31	0
10881D1D-5B23-A76C-53EF-C568E9A05D0	CdU-2938	b-2222	275	83.7839	-178.86	2021-07-07 17:43:16	293.57	0
133882CC-DE62-8604-2D11-3DC5496E0A5F	CdU-3407	b-2490	271	62.3246	101.017	2021-04-02 05:17:46	348.88	1
147983D2-B7BA-C7B8-4CE3-8D7C2DE85A8B	CdU-2994	b-2326	133	66.2672	172.399	2021-08-09 00:58:07	309.45	0
14CAE5B5-8FB1-3E4A-4C85-0EA4167534F4	CdU-4849	b-2302	189	-53.6202	93.0533	2021-12-31 00:29:42	388.04	0
151763AB-8844-A7C9-6691-692C2700DC2C	CdU-3505	b-2546	267	-70.0484	-44.5028	2021-03-23 01:58:34	259.51	1
152598C2-029D-D684-4B66-91EDCF393EBFF	CdU-2994	b-2326	126	-67.0189	-141.672	2021-07-05 03:10:00	395.43	0
156F3F80-7E7D-65CF-727D-6AE03CEB7520	CdU-2959	b-2346	92	-59.9778	172.731	2021-04-29 07:06:10	404.16	0
15CC4862-D13E-ED4B-941C-486484AF0FDAD	CdU-3239	b-2394	272	-14.0843	7.79937	2021-04-22 13:56:42	447.11	0
1670E938-B1C2-428D-FA3D-96A45CD41B22	CdU-3883	b-2494	255	67.3865	-63.1993	2021-03-29 11:04:24	414.36	0

Output:

#	Time	Action	Message	Duration / Fetch
17	15:34:31	SELECT * FROM transaction WHERE amount > 100 LIMIT 0, 1000	479 row(s) returned	0.000 sec / 0.000 sec
18	15:35:20	SELECT * FROM transaction WHERE amount > (SELECT avg(amount) FROM transaction)	297 row(s) returned	0.000 sec / 0.000 sec

Ara li demanarem que només ens doni els id d'empresa d'aquestes transaccions i demanarem que ens tregui els duplicats

The screenshot shows the MySQL Workbench interface. In the top-left, the Navigator pane displays the database schema, including the 'transactions' table which contains columns like id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, and declined. A specific row for 'amount' is highlighted. In the center, the SQL Editor window contains the following query:

```
1. SELECT distinct company_id
   FROM transaction
  WHERE amount > (
    SELECT avg(amount)
      FROM transaction);
```

The Result Grid shows the output of the query, listing company_ids: b-2362, b-2360, b-2346, b-2386, b-2298, b-2302, b-2338, b-2506, b-2222, b-2490, b-2326, b-2546, b-2394, b-2494, b-2278, b-2374, b-2370, b-2366, and b-2246. The Output pane at the bottom shows the execution history with two entries:

Action	Time	Message	Duration / Fetch
SELECT company_id FROM transaction WHERE amount > (SELE...	19 15:36:34	297 row(s) returned	0.000 sec / 0.000 sec
SELECT distinct company_id FROM transaction WHERE amount >...	20 15:36:43	70 row(s) returned	0.000 sec / 0.000 sec

Ara ja tenim una llista de ids d'empresa, només ens calen els noms, que demanarem a l'altra taula

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

SQL Editor:

```
1 • Select company_name
2   FROM company
3   WHERE id in (
4     SELECT distinct company_id
5       FROM transaction
6      WHERE amount > (
7        SELECT avg(amount)
8          FROM transaction
9      )
10    ORDER by company_name;
```

Result Grid:

company_name
A Institute
Ac Fermentum Incorporated
Ac Industries
Aliquam PC
Aliquet Diam Limited
Aliquet Sem Limited
Anet Institute
Anet Luctus Vulputate Foundation
Ante Tacitus Nec Foundation
Arcu LLP
At Pede Corp.
Auctor Mauris Corp.
Augue Foundation
Dictum Eu Corp.
Dis Parturient Institute
Donec Fringilla PC
Donec Ltd
Egestas Nunc Sed Limited
Eget Ipsum Ltd

Output:

#	Time	Action	Message	Duration / Fetch
23	15:39:57	Select company_name as "Empreses amb transaccions per sobre la mitat del temps"	70 row(s) returned	0.000 sec / 0.000 sec
24	15:40:46	Select company_name FROM company WHERE id in (SELECT d...	70 row(s) returned	0.000 sec / 0.000 sec

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

Ens demanen un llistat de les empreses que no tenen transaccions
Començarem amb la llista d'empreses que tenen transaccions

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

```

1  # - Eliminaran del sistema les empreses que no tenen transaccions registrades, entrega el llistat d'aquestes empreses.
2  Select company_name
3  FROM company
4  WHERE EXISTS (
5      Select *
6      FROM transaction
7  )
8  ORDER by company_name;

```

The results grid displays 100 rows of company names, all of which have transactions. The columns are company_name, Time, Action, Response, and Duration / Fetch Time.

El resultat són 100 files, que és el número d'empreses que tenim a la base de dades. Per tant, no és cap sorpresa que no hi hagi cap empresa que no tingui transaccions.

The screenshot shows the MySQL Workbench interface with a query editor and a results grid. The query is identical to the one above:

```

1  # - Eliminaran del sistema les empreses que no tenen transaccions registrades, entrega el llistat d'aquestes empreses.
2  Select company_name
3  FROM company
4  WHERE NOT EXISTS (
5      Select *
6      FROM transaction
7  )
8  ORDER by company_name;

```

The results grid is empty, indicating 0 rows returned. The columns are company_name, Time, Action, Response, and Duration / Fetch Time.

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.

Comencem calculant el total de vendes

The screenshot shows the MySQL Workbench interface. In the top-left pane, the Navigator displays the database schema with the 'transactions' schema expanded, showing tables like 'company' and 'transaction'. In the center, a query editor window titled '1.2.sql' contains the following SQL code:

```
1 • SELECT SUM(amount)
2   FROM transaction
3 WHERE declined = 0;
```

Below the query editor is a 'Result Grid' showing the output of the query:

	SUM(amount)
	129505.59

At the bottom of the interface, the 'Output' pane shows the 'Action Output' log with several entries, including one with an error:

#	Time	Action	Message	Duration / Fetch
25	15:48:51	Select distinct company_id FROM transaction LIMIT 0, 1000	100 row(s) returned	0.000 sec / 0.000 sec
26	15:50:48	distinct	Error Code: 1064. You have an error in your SQL syntax; check the... 0 row(s) returned	0.000 sec
27	15:51:44	Select company_name FROM company WHERE id NOT in (Sele... 0 row(s) returned	0.000 sec / 0.000 sec	
28	15:56:42	SELECT SUM(amount) FROM transactions WHERE declined = 0 L... Error Code: 1146. Table 'transactions.transactions' doesn't exist	0.000 sec	
29	15:56:59	SELECT SUM(amount) FROM transaction WHERE declined = 0 LI... 1 row(s) returned	0.000 sec / 0.000 sec	

Hem d'agrupar per dia, però cada timestamp és diferent perquè inclou la hora. Convertirem a només dia amb DATE, i agruparem per data.

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

- File Bar:** File, Edit, View, Query, Database, Server, Tools, Scripting, Help.
- Navigator:** Schemas (sakila, sys, transactions), Tables (transaction), Columns (id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, declined), Indexes, Foreign Keys, Triggers, Views, Stored Procedures, Functions.
- Query Editor:** Tab 2.1* (highlighted) contains the SQL query:

```
1 • SELECT date(timestamp), SUM(amount)
2   FROM transaction
3   WHERE declined = 0
4   GROUP BY date(timestamp);
```
- Result Grid:** Shows the results of the query in a tabular format:

date(timestamp)	SUM(amount)
2021-08-28	1319.61
2021-07-26	979.43
2022-01-01	943.15
2022-01-26	748.46
2021-10-26	1051.92
2022-02-26	1337.62
2021-11-01	621.66
2021-12-07	465.31
2021-07-07	689.72
2021-07-14	157.20
2021-06-09	194.20
2021-12-29	1149.88
2021-08-09	839.86
...	...

Result 17 x
- Action Output:** Shows the history of actions taken during the session:

#	Time	Action	Message	Duration / Fetch
29	15:56:59	SELECT SUM(amount) FROM transaction WHERE declined = 0	1 row(s) returned	0.000 sec / 0.000 sec
30	16:01:55	SELECT SUM(amount) FROM transaction WHERE declined = 0	280 row(s) returned	0.016 sec / 0.000 sec
31	16:02:03	SELECT date, SUM(amount) FROM transaction WHERE declined = 0	Error Code: 1054. Unknown column 'date' in field list	0.000 sec
32	16:02:09	SELECT SUM(amount) FROM transaction WHERE declined = 0	280 row(s) returned	0.000 sec / 0.000 sec
33	16:02:31	SELECT date(timestamp), SUM(amount) FROM transaction WHERE declined = 0	280 row(s) returned	0.000 sec / 0.000 sec

Ara ens toca ordrenar de major a menor i demanar que ens doni els ingressos més grans.

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

- Toolbar:** Local instance 3306 - Warning - not supported, MySQL Model*, EER Diagram.
- Schemas:** Administration, Schemas, Sprint 2, SQL File 14*, SQL File 13*.
- Left Panel (schemas):** SCHEMAS: modelat_sql_rosier2, modelat_sql_rosier4, Tables, Views, Stored Procedures, Functions, sakila, sys, transactions (selected).
- SQL Editor:** Contains the following SQL query:

```
1 • SELECT date(timestamp) AS data, SUM(amount) AS ingressos
2 FROM transaction
3 WHERE declined = 0
4 GROUP BY data
5 ORDER BY ingressos DESC
6 LIMIT 5;
7
```
- Result Grid:** Shows the results of the query:

data	ingressos
2021-12-20	1532.36
2021-04-22	1397.96
2021-05-09	1344.37
2022-02-26	1337.62
2021-03-29	1325.12
- Right Panel (Toolbox):** Result Grid, Form Editor, Field Types, Query Stats.
- Bottom Status Bar:** Action Output, Time (739), Action (SELECT date(timestamp) AS data, SUM(am...)), Response (5 row(s) returned), Duration / Fetch Time (0.0040 sec / 0.00001...), Query Completed.

- Exercici 2

Quina és la mitjana de vendes per país? Presenta els resultats ordenats de major a menor mitjà.

Agafem el mateix codi que tenim amb l'exercici 2 del nivell 1 i en compte de preguntar-li per les empreses, li preguntem per país. Agruparem per país també.

The screenshot shows the MySQL Workbench interface. The left sidebar displays the schema tree under 'SCHEMAS'. The 'transactions' schema is selected, showing tables like 'company' and 'transaction'. The main area contains a SQL editor with the following query:

```
1  # - Mitjana de vendes per país, de major a menor
2  SELECT company.country as pais, ROUND(avg(transaction.amount),2) as "mitjana de vendes"
3  FROM company
4  LEFT JOIN transaction
5    ON company.id = transaction.company_id
6    WHERE declined = 0
7  GROUP BY pais
8  ORDER BY "mitjana de vendes" DESC;
9
```

Below the SQL editor is a 'Result Grid' pane showing the results of the query:

pais	mitjana de vendes
Canada	261.94
Germany	242.24
Italy	243.34
United Kingdom	271.77
Sweden	276.67
Ireland	285.83
United States	287.53
Norway	251.11
France	169.41
New Zealand	167.06
Netherlands	240.94
Belgium	255.22
Australia	177.33
China	222.24
Spain	26.22

The 'Action Output' pane at the bottom shows the query details:

Action	Time	Response	Duration / Fetch Time
743	14:49:14	SELECT company.country as pais, ROUND(a... 15 row(s) returned	0.0047 sec / 0.00000...

- 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.

Primer fer una consulta per a veure que l'empresa estigui a la llista i de quin país és

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

```
1 SELECT *
2 FROM company;
```

The results grid displays a list of companies with their details:

	id	company_name	phone	email	country	website
b-2266		Mus Aenean Eget Foundation	06 25 15 52 43	mi.duis@hotmail.net	Sweden	https://instagram.com/group/9
b-2254		Nascetur Ridiculus Mus Inc.	06 26 87 61 84	suspendisse.du@icloud.net	United States	https://ebay.com/sub
b-2470		Nec Luctus LLC	02 14 71 75 73	consectetur.cursus@protonmail...	Norway	https://instagram.com/user/110
b-2393		Neque Tellus Imperdiet Corp.	09 15 42 22 11	vestibulum.anus.ipsum@aol.edu	Ireland	https://whatsapp.com/sub/cars
b-2382		Neque Tellus Incorporated	04 43 18 34 19	ultrices.lacus.odo@aol.ca	Ireland	https://google.com/site
b-2414		Nibh Phasellus Corporation	02 55 43 68 46	et.ipsum.cursus@aol.edu	Netherlands	https://baidu.com/sub/cars
b-2362		Nibh Phasellus Corporation	08 48 67 57 48	nisi@google.edu	China	https://netflix.com/sub/cars
b-2406		Non Ante LLP	08 89 47 65 08	at.augue.id@aol.net	Sweden	https://nytimes.com/group/9
b-2618		Non Institute	06 77 15 31 14	neat.morbi@protonmail.co.uk	United Kingdom	https://guardian.co.uk/settings
b-2370		Non Justo	Open Value In Editor	pidunt@yahoo.edu	Sweden	https://baidu.com/en-us
b-2310		Non Magis	Set Field to NULL	a.fringilla@hotmail.ca	United Kingdom	https://whatsapp.com/site
b-2558		Nulla Inte	Mark Field Value as a Function/Literal	protonmail.org	Sweden	https://yahoo.com/one
b-2438		Nunc Ac F	Delete Row(s)	google.com	Sweden	https://nytimes.com/fr
b-2542		Nunc In F	Load Value From File...	um@protonmail.com	Italy	https://netflix.com/sub
b-2302		Nunc Inte	Save Value To File...	ok.com	Germany	https://wikipedia.org/en-us
b-2490		Nunc Sit I	Copy Row	es@cloud.net	Norway	https://haver.com/en-ca
b-2574		Orci Adipi	Copy Row (with names)	@protonmail.ca	United Kingdom	https://reddit.com/user/110
b-2426		Pede Cum	Copy Row (with names)	n.sodales@yahoo.ca	Norway	https://crn.com/one
b-2462		Pede Ultr	Copy Row (with names)	@yahoo.com	Belgium	https://instagram.com/group/9
b-2602		Placerat L	Copy Row (unquoted)	endisse@hotmail.org	Netherlands	https://zoom.us/sub
b-2282		Pretium N	Copy Row (names, unquoted)	j.malesuada@proton...	Australia	https://netflix.com/sub
b-2318		Quam A F	Copy Row (names, unquoted)	gildoud.edu	Italy	https://ebay.com/settings
b-2290		Quisque L	Copy Row (names, tab separated)	este.orci@hotmail.co.uk	China	https://baidu.com/group/9
b-2446		Risus Ass	Copy Row (tab separated)	ula.nullan@google.edu	Australia	https://whatsapp.com/group/9
b-2614		Rutrum N	Copy Field	stormail.net	Germany	https://netflix.com/site
b-2506		Sapien Nt	Copy Field (unquoted)	ahoo.net	New Zealand	https://netflix.com/settings

Seleccionem la entrada de Non Institute

The screenshot shows the MySQL Workbench interface. In the top navigation bar, the title is "Roser x". The menu includes File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. Below the menu is a toolbar with various icons. The main area has tabs labeled 1.2, 1.3, and 2, with "SQL File 11" active. The SQL editor contains the following query:

```
1  SELECT *
2  FROM company
3  WHERE company_name = 'Non Institute';
```

The results are displayed in a "Result Grid" table:

	id	company_name	phone	email	country	website
▶	b-2618	Non Institute	06 77 15 31 14	amet.metus@protonmail.co.uk	United Kingdom	https://guardian.co.uk/settings
*	NULL	NULL	NULL	NULL	NULL	NULL

On the left, the Navigator pane shows the schema structure under "schemas". The "transactions" schema is expanded, showing tables like "company" and "transaction", and other objects like Views, Stored Procedures, Functions, and world. On the right, there are several tabs: Result Grid, Form Editor, Field Types, Query Stats, and Execution Plan. At the bottom, the "Object Info" tab is selected, showing the output of the previous query:

#	Time	Action	Message	Duration / Fetch
✖	711 11:53:25	SELECT * FROM company WHERE company_name is 'Non Institute'	Error Code: 1064. You have an error in your SQL syntax; check the ...	0.000 sec
✔	712 11:54:55	SELECT * FROM company WHERE company_name = 'Non Institut...' 1 row(s) returned		0.000 sec / 0.000 sec

The status bar at the bottom indicates "Query Completed".

Reduim a que ens doni només el país

The screenshot shows the MySQL Workbench interface. In the top-left corner, the title bar says "MySQL Workbench" and "Roser". The menu bar includes File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. The "Query" tab is selected.

The Navigator pane on the left shows the "schemas" section with "transactions" selected. Under "Tables", there are "company", "transaction", "Views", "Stored Procedures", and "Functions".

The main SQL editor pane contains the following query:

```
1 SELECT country
2 FROM company
3 WHERE company_name = 'Non Institute';
```

The results pane below the query shows a single row:

country
United Kingdom

The bottom pane, titled "company 4", shows the "Action Output" log:

#	Time	Action	Message	Duration / Fetch
712	11:54:55	SELECT * FROM company WHERE company_name = 'Non Institut...' 1 row(s) returned		0.000 sec / 0.000 sec
713	11:56:20	SELECT country FROM company WHERE company_name = 'Non I... 1 row(s) returned		0.000 sec / 0.000 sec

Ara li demanarem una llista d'empreses d'aquest mateix país amb una subquery i comprovem que també són de Regne Unit

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

SQL Editor:

```
## EXERCICI 3
# - Transaccions en el mateix país que "Non Institute"
# - Amb JOIN i subconsultes

Select *
FROM company
WHERE country = (
    SELECT country
    FROM company
    WHERE company_name = 'Non Institute');
```

Result Grid:

id	company_name	phone	email	country	website
b-2246	Sed Nunc Ltd	02 62 64 73 48	nibh@yahoo.org	United Kingdom	https://cnr.com/one
b-2310	Non Magna LLC	06 71 73 13 17	nisi quisque.fringilla@hotmail.ca	United Kingdom	https://whatsapp.com/site
b-2326	Enim Condimentum Ltd	09 55 51 66 25	imperdiet.non.vestibulum@yahoo.net	United Kingdom	https://cnr.com/group/9
b-2354	Ac Libero Inc.	04 36 20 64 29	mollis.lectus@protonmail.ca	United Kingdom	https://reddit.com/one
b-2374	Amet Faucibus Ut Foundation	03 21 62 47 12	malesuada@cloud.net	United Kingdom	https://zoom.us/fr
b-2430	Interdum Feugiat Sed Associates	04 88 40 32 52	consectetur.mauris@yahoo.co.uk	United Kingdom	https://nytimes.com/sub
b-2522	Viverra Donec Foundation	03 33 12 32 73	dictum.eu@outlook.net	United Kingdom	https://nytimes.com/site
b-2574	Orci Adipiscing Limited	03 18 00 77 81	dolor.fusce@protonmail.ca	United Kingdom	https://reddit.com/user/110
b-2618	Non Institute	06 77 15 31 14	amet.metus@protonmail.co.uk	United Kingdom	https://guardian.co.uk/settings
*	NULL	NULL	NULL	NULL	NULL

Action Output:

#	Time	Action	Message	Duration / Fetch
713	11:56:20	SELECT country FROM company WHERE company_name = 'Non I...	1 row(s) returned	0.000 sec / 0.000 sec
714	11:57:56	Select * FROM company WHERE country = (SELECT country FRO...	9 row(s) returned	0.000 sec / 0.000 sec

Ara farem un JOIN i li posarem aquesta condició. Li demanarem que ens doni tota la informació de les transaccions, inclosa la d'empresa i veiem que són d'aquest país

The screenshot shows the MySQL Workbench interface. The left sidebar displays the schema tree under 'SCHEMAS'. The 'transactions' schema is selected. The main area contains a SQL query:

```

1  ### NIVELL 2 ###
2  ## EXERCICI 3
3
4  # - Transaccions en el mateix país que "Non Institute"
5  # - Amb JOIN i subconsultes
6  Select *
7  FROM transaction
8  RIGHT JOIN company
9    ON company.id = transaction.company_id
10   WHERE company.country =
11     SELECT company.country
12       FROM company
13         WHERE company_name = 'Non Institute';

```

The results grid shows a list of transactions with columns: timestamp, amount, declined, id, company_name, phone, email, country, and website. The 'country' column for all rows is 'United Kingdom'. The 'website' column lists various URLs from CNN's group 9.

timestamp	amount	declined	id	company_name	phone	email	country	website
2021-08-10 08:14:49	383.73	0	b-2246	Sed Nunc Ltd	02 62 64 73 48	nib@ yahoo.org	United Kingdom	https://cnn.com/one
2022-03-05 20:41:20	60.07	1	b-2246	Sed Nunc Ltd	02 62 64 73 48	nib@ yahoo.org	United Kingdom	https://cnn.com/one
2021-05-03 22:37:23	458.74	0	b-2310	Non Magna LLC	06 71 73 13 17	nisi quisque.fringilla@hotmail.ca	United Kingdom	https://whatsapp.com/site
2021-10-18 07:27:35	477.95	1	b-2310	Non Magna LLC	06 71 73 13 17	nisi quisque.fringilla@hotmail.ca	United Kingdom	https://whatsapp.com/site
2021-08-09 00:58:07	309.45	0	b-2326	Enim Condimentum Ltd	09 55 51 66 25	imperdiet.non.vestibulum@yahoo.net	United Kingdom	https://cnn.com/group/9
2021-07-05 03:10:00	395.43	0	b-2326	Enim Condimentum Ltd	09 55 51 66 25	imperdiet.non.vestibulum@yahoo.net	United Kingdom	https://cnn.com/group/9
2021-07-06 08:48:46	195.06	0	b-2326	Enim Condimentum Ltd	09 55 51 66 25	imperdiet.non.vestibulum@yahoo.net	United Kingdom	https://cnn.com/group/9
2022-01-03 15:59:29	479.52	0	b-2326	Enim Condimentum Ltd	09 55 51 66 25	imperdiet.non.vestibulum@yahoo.net	United Kingdom	https://cnn.com/group/9
2021-08-26 06:04:05	43.90	0	b-2326	Enim Condimentum Ltd	09 55 51 66 25	imperdiet.non.vestibulum@yahoo.net	United Kingdom	https://cnn.com/group/9
2021-10-01 21:08:53	122.63	0	b-2326	Enim Condimentum Ltd	09 55 51 66 25	imperdiet.non.vestibulum@yahoo.net	United Kingdom	https://cnn.com/group/9
2021-04-06 17:24:44	91.59	0	b-2326	Enim Condimentum Ltd	09 55 51 66 25	imperdiet.non.vestibulum@yahoo.net	United Kingdom	https://cnn.com/group/9

The bottom status bar indicates 'Query Completed'.

- Mostra el llistat aplicant solament subconsultes.

Tornem al punt on tenim una subconsulta que ens donava les empreses del mateix país.

```

MySQL Workbench
File Edit View Query Database Server Tools Scripting Help
Navigator
SCHEMAS
    Filter objects
        sakila
        sys
        transactions
            Tables
                company
                transaction
                Views
                Stored Procedures
                Functions
        world
12 1.3 2° SQL File 11°
1   # - Transaccions en el mateix país que "Non Institute"
2   # - Només amb subconsultes
3   ● SELECT *
4   FROM company
5   WHERE country = (
6       SELECT country
7           FROM company
8           WHERE company_name = 'Non Institute');

```

id	company_name	phone	email	country	website
b-2246	Sed Nunc Ltd	02 62 64 73 48	nibh@yahoo.org	United Kingdom	https://cnn.com/one
b-2310	Non Magna LLC	06 71 73 13 17	nisl quisque.fringilla@hotmail.ca	United Kingdom	https://whatsapp.com/site
b-2326	Enim Condimentum Ltd	09 55 51 66 25	imperdiet.non.vestibulum@yahoo.net	United Kingdom	https://cnn.com/group/9
b-2354	Ac Libero Inc.	04 36 20 64 29	mollis.lectus@protonmail.ca	United Kingdom	https://reddit.com/one
b-2374	Amet Faucibus Ut Foundation	03 21 62 47 12	malesuada@cloud.net	United Kingdom	https://zoom.us/fr
b-2430	Interdum Feugiat Sed Associates	04 88 40 32 52	consectetur.mauris@yahoo.co.uk	United Kingdom	https://nytimes.com/sub
b-2522	Viverra Donec Foundation	03 33 12 32 73	dictum.eu@outlook.net	United Kingdom	https://nytimes.com/site
b-2574	Orci Adipiscing Limited	03 18 00 77 81	dolor.fusce@protonmail.ca	United Kingdom	https://reddit.com/user/110
b-2618	Non Institute	06 77 15 31 14	amet.metus@protonmail.co.uk	United Kingdom	https://guardian.co.uk/settings
*	HULL	HULL	HULL	HULL	HULL

company 10 x

Output:

#	Time	Action	Message	Duration / Fetch
728	12:18:49	SELECT * FROM company LIMIT 0, 1000	100 row(s) returned	0.000 sec / 0.000 sec
729	12:19:51	SELECT * FROM company WHERE country = (SELECT country FROM co... 9 row(s) returned		0.000 sec / 0.000 sec

Li diem que només ens doni el resultat de id's d'empresa

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

- File Menu:** File, Edit, View, Query, Database, Server, Tools, Scripting, Help.
- Navigator:** Shows the database schema with the "transactions" schema selected, containing Tables, Views, Stored Procedures, and Functions.
- SQL Editor:** Displays the following SQL code:

```
1  # - Transaccions en el mateix país que "Non Institute"
2  # - Només amb subconsultes
3  ● SELECT id
4    FROM company
5  ⚡ WHERE country = (
6    SELECT country
7      FROM company
8      WHERE company_name = 'Non Institute');
```
- Result Grid:** Shows the results of the query, listing various IDs (e.g., b-2246, b-2310, b-2328, b-2354, b-2374, b-2430, b-2522, b-2574, b-2618) under the "id" column.
- Output Panel:** Displays the execution log:

#	Time	Action	Message	Duration / Fetch
729	12:19:51	SELECT * FROM company WHERE country = (SELECT country FROM co...	9 row(s) returned	0.000 sec / 0.000 sec
730	12:30:56	SELECT id FROM company WHERE country = (SELECT country FROM c...	9 row(s) returned	0.000 sec / 0.000 sec
- Status Bar:** Shows "Query Completed".

Ara li direm que ens doni les transaccions només amb aquests id d'empresa
Comencem provant amb un dels ids

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

Query Editor:

```
1 # - Transaccions en el mateix país que "Non Institute"
2 # - Només amb subconsultes
3 • SELECT *
4 FROM transaction
5 WHERE company_id in ('b-2310');
```

Result Grid:

id	credit_card_id	company_id	user_id	lat	longitude	timestamp	amount	declined
4334349E-CEB0-3D68-A4D4-FEB7718A1ACE	CcU-3092	b-2310	275	-20.4859	150.87	2021-05-03 22:37:23	458.74	0
BC2B9A38-77B4-28CD-1FE8-14DED863E773	CcU-3092	b-2310	275	-78.0295	18.5295	2021-10-18 07:27:35	477.95	1
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Output:

#	Time	Action	Message	Duration / Fetch
741	12:37:00	SELECT * FROM transaction WHERE company_id = b-2310 LIMIT 0, 1000	2 row(s) returned	0.000 sec / 0.000 sec
742	12:37:11	SELECT * FROM transaction WHERE company_id in (b-2310) LIMIT 0, 10...	2 row(s) returned	0.000 sec / 0.000 sec

I ara ho juntem tot

The screenshot shows the MySQL Workbench interface. The top navigation bar includes tabs for 'Local instance 3306 - Warning - not supported', 'MySQL Model*', and 'ER Diagram'. Below the navigation is a toolbar with various icons. The main window has two panes: the left pane displays the 'SCHEMAS' tree, which includes 'modelat_sql_rosser2', 'modelat_sql_rosser4', 'Tables', 'Views', 'Stored Procedures', 'Functions', 'sakila', 'sys', and 'transactions' (which is selected). The right pane contains a query editor with the following SQL code:

```
1  # - Transaccions en el mateix pais que "Non Institute"
2  # - solament subconsultes
3
4  • SELECT *
  FROM transaction
  WHERE company_id IN (
    SELECT id
      FROM company
     WHERE company.country =
       (SELECT company.country
          FROM company
         WHERE company_name = 'Non Institute')
  )
14 ;
```

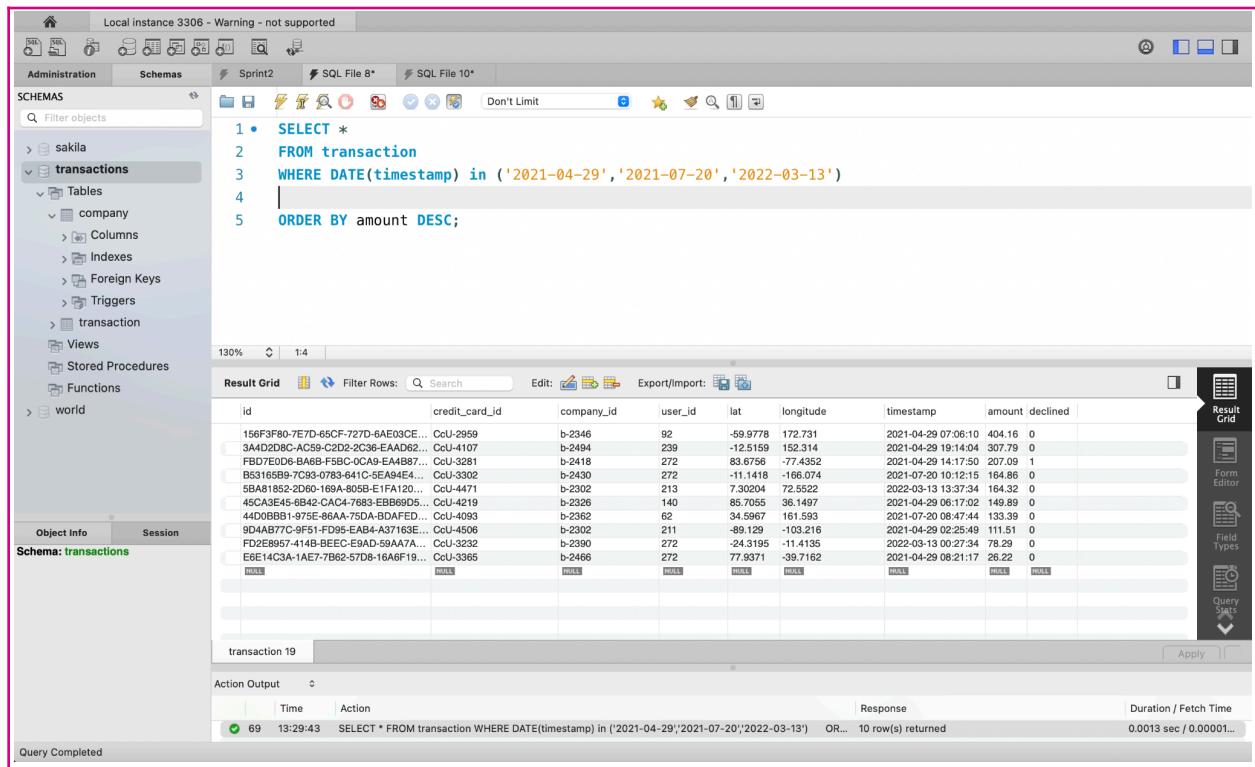
Below the query editor is a 'Result Grid' tab, which displays the results of the query. The results table has columns: id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, and declined. The data shows multiple transactions from users in 'Non Institute' country. At the bottom of the result grid, it says 'transaction 12' and 'Action Output'. The action output shows a single row: '750 14:56:56 SELECT * FROM transaction WHERE compa... 100 row(s) returned Duration / Fetch Time 0.0020 sec / 0.00000...'. The status bar at the bottom left says 'Query Completed'.

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. Ordена els resultats de major a menor quantitat.

Començarem per les transaccions que s'han fet aquests tres dies



The screenshot shows the MySQL Workbench interface. The left sidebar displays the schema 'transactions' with its tables: company, credit_card, user, and transaction. The main area shows a query editor with the following SQL code:

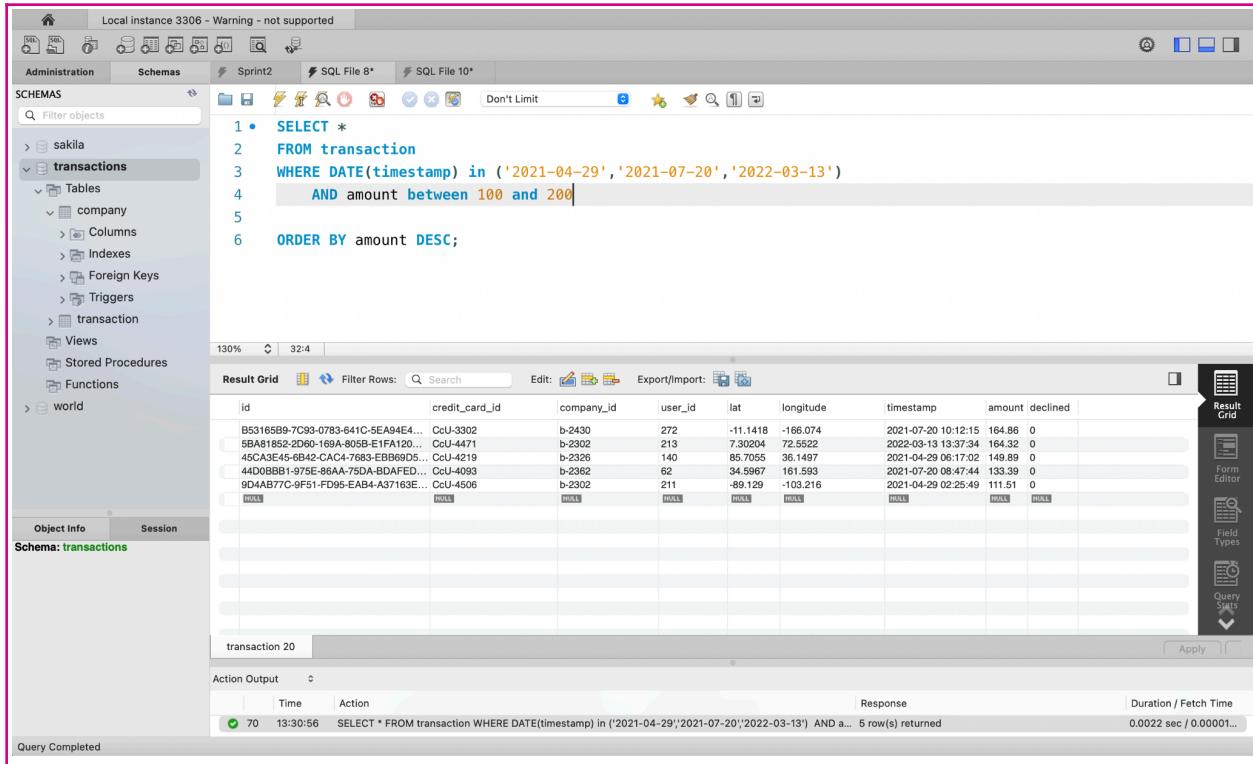
```
1 •  SELECT *
2   FROM transaction
3  WHERE DATE(timestamp) IN ('2021-04-29', '2021-07-20', '2022-03-13')
4
5  ORDER BY amount DESC;
```

The results grid displays the following data:

id	credit_card_id	company_id	user_id	lat	longitude	timestamp	amount	declined
156F3F80-7E7D-65CF-727D-6AE03CE...	CcU-2959	b-2346	92	-59.9778	172.731	2021-04-29 07:06:10	404.16	0
3A4D2D8C-AC59-C2D2-2C36-EAD62...	CcU-4107	b-2494	239	-12.5159	152.314	2021-04-29 19:14:04	307.79	0
FBD7E0D6-B46B-F5BC-0CA9-EA4B87...	CcU-3281	b-2418	272	83.6758	-77.4352	2021-04-29 14:17:50	207.09	1
B53165B9-7C93-1783-641C-5EA94E...	CcU-3302	b-2430	272	-11.1418	-166.074	2021-07-20 10:12:15	164.86	0
5BA81852-2D60-169A-805B-E1FA120...	CcU-4471	b-2302	213	7.30208	72.5522	2022-03-13 13:37:34	164.32	0
45CA3E45-6B42-CAC4-7683-EBB6905...	CcU-4219	b-2326	140	85.7055	36.1497	2021-04-29 06:17:02	149.88	0
44D0BBB1-975E-66AA-75DA-BDAFED...	CcU-4093	b-2362	62	34.5967	161.593	2021-07-20 08:47:44	133.39	0
9D4AB77C-9F51-FD95-EAB4-A37163E...	CcU-4506	b-2302	211	-89.129	-103.216	2021-04-29 02:25:49	111.51	0
FD2E8957-414B-BECC-E9AD-59A7A...	CcU-3232	b-2390	272	-24.3195	-11.4135	2022-03-13 00:27:34	78.29	0
E6E14C3A-1AE7-7B82-57D8-16A6F19...	CcU-3365	b-2466	272	77.9371	-39.7162	2021-04-29 06:21:17	26.22	0
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

The bottom status bar indicates "Query Completed".

Limitem als valors entre 100 i 200



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

Query Editor:

```
1 • SELECT *
2   FROM transaction
3   WHERE DATE(timestamp) IN ('2021-04-29', '2021-07-20', '2022-03-13')
4     AND amount BETWEEN 100 AND 200
5
6   ORDER BY amount DESC;
```

Result Grid:

id	credit_card_id	company_id	user_id	lat	longitude	timestamp	amount	declined
B53165B9-7C93-0783-641C-5EA94E4...	CcU-3302	b-2430	272	-11.1418	-166.074	2021-07-20 10:12:15	164.86	0
5BA81852-2D60-169A-805B-E1FA120...	CcU-4471	b-2302	213	7.30204	72.5522	2022-03-13 13:37:34	164.32	0
45CA3E45-6842-CAC4-7683-EBB69D5...	CcU-4219	b-2326	140	85.7055	36.1497	2021-04-29 06:17:02	149.89	0
44D0DBB1-975E-86AA-75DA-BDAFED...	CcU-4093	b-2362	62	34.5967	161.593	2021-07-20 08:47:44	133.39	0
9D4AB77C-9F51-FD95-EABA-A37163E...	CcU-4506	b-2302	211	-89.129	-103.216	2021-04-29 02:25:49	111.51	0
HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL	HULL

Action Output:

Action	Time	Response	Duration / Fetch Time
70	13:30:56	SELECT * FROM transaction WHERE DATE(timestamp) IN ('2021-04-29','2021-07-20','2022-03-13') AND a... 5 row(s) returned	0.0022 sec / 0.0000...

Message: Query Completed

I ajuntem aquestes transaccions amb les empreses i seleccionem les dades que ens demanen

The screenshot shows the MySQL Workbench interface. The top navigation bar includes 'Local Instance 3306 - Warning - not supported', 'MySQL Model*', and 'EER Diagram'. Below the navigation is a toolbar with various icons. The main area has tabs for 'Administration', 'Schemas', 'Sprint 2', and 'SQL File 14*'. The 'Schemas' tab is active, showing a tree view of databases: 'modelat_sql_roser2', 'modelat_sql_roser4', 'sakila', 'sys', and 'transactions'. The 'transactions' schema is expanded, showing 'Tables' (company, transaction), 'Views', and 'Stored Procedures'. The 'SQL File 14*' tab contains the following SQL code:

```
1  ### NIVELL 3 ###
2  ## EXERCICI 1
3
4  # – Transaccions entre 100 i 200€ de 29 d'abril 2021, 20 de juliol 2021 i 13 de març 2022
5  • SELECT company.company_name, company.phone, company.country, transaction.timestamp, transaction.amount
6  FROM company
7  JOIN transaction
8  ON company.id = transaction.company_id
9  WHERE DATE(transaction.timestamp) IN ('2021-04-29', '2021-07-20', '2022-03-13')
10   AND transaction.amount BETWEEN 100 AND 200
11
12 ORDER BY transaction.amount DESC;
13
```

The 'Result Grid' tab displays the query results in a table:

company_name	phone	country	timestamp	amount
Interdum Feugiat Sed Associates	04 88 40 32 52	United Kingdom	2021-07-20 10:12:15	164.86
Nunc Interdum Incorporated	05 18 15 48 13	Germany	2022-03-13 13:37:34	164.32
Enim Condimentum Ltd	09 55 51 66 25	United Kingdom	2021-04-29 06:17:02	149.89
Lorem Eu Incorporated	01 83 66 62 07	Canada	2021-07-20 08:47:44	133.39
Nunc Interdum Incorporated	05 18 15 48 13	Germany	2021-04-29 02:25:49	111.51

The bottom status bar shows 'Query Completed'.

- 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 especificquis si tenen més de 4 transaccions o menys.

Comencem demanant el número de transaccions per empresa

The screenshot shows the MySQL Workbench interface. In the SQL Editor tab, a query is written:

```
## EXERCICI 2
SELECT company_id, COUNT(transaction.id)
FROM transaction
GROUP BY company_id;
```

The Result Grid shows the output of the query:

company_id	COUNT(transaction.id)
b-2222	2
b-2226	2
b-2230	2
b-2234	2
b-2238	2
b-2242	2
b-2246	2
b-2250	2
b-2254	2
b-2258	2
b-2262	2
b-2266	2
b-2270	2
b-2274	2
b-2278	56
b-2282	2
b-2286	2

The Output tab shows the execution log:

#	Time	Action	Message	Duration / Fetch
767	13:28:47	SELECT company.company_name, company.phone, company.country, tra...	4 row(s) returned	0.000 sec / 0.000 sec
768	13:44:38	SELECT COUNT(transaction.id) FROM transaction GROUP BY company._...	100 row(s) returned	0.000 sec / 0.000 sec
769	13:44:49	SELECT company_id, COUNT(transaction.id) FROM transaction GROUP B...	100 row(s) returned	0.000 sec / 0.000 sec

Després li afegim el nom d'empresa amb un join

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

Query Editor:

```
## EXERCICI 2
SELECT company.company_name, COUNT(transaction.id)
FROM transaction
JOIN company
ON company.id = transaction.company_id
GROUP BY company.company_name;
```

Results Grid:

company_name	COUNT(transaction.id)
Ac Fermentum Incorporated	2
Magna A Neque Industries	2
Fusce Corp.	2
Convallis In Incorporated	2
Ante Iaculis Nec Foundation	2
Donec Ltd	2
Sed Nunc Ltd	2
Amet Nulla Donec Corporation	2
Nascetur Ridiculus Mus Inc.	2
Vestibulum Lorem PC	2
Gravida Sagittis LLP	2
Mus Aenean Eget Foundation	2
Dis Parturient Institute	2
Sed LLC	2
Arcu LLP	56
Pretium Neque Corp.	2
Fringilla LLC	2

Action Output:

#	Time	Action	Message	Duration / Fetch
768	13:44:38	SELECT COUNT(transaction.id) FROM transaction GROUP BY company_id...	100 row(s) returned	0.000 sec / 0.000 sec
769	13:44:49	SELECT company_id, COUNT(transaction.id) FROM transaction GROUP BY...	100 row(s) returned	0.000 sec / 0.000 sec
770	13:46:30	SELECT company.company_name, COUNT(transaction.id) FROM transaction...	100 row(s) returned	0.000 sec / 0.000 sec

I ordenem de més a menys transaccions

The screenshot shows the MySQL Workbench interface. In the top navigation bar, the database 'Roser' is selected. The left sidebar displays the schema structure under the 'sakila' database, specifically the 'transactions' table which contains columns for company_id, id, credit_card_id, user_id, lat, and longitude. A query editor window titled 'SQL File 17*' contains the following SQL code:

```
## EXERCICI 2
SELECT company.company_name, COUNT(transaction.id)
FROM transaction
JOIN company
ON company.id = transaction.company_id
GROUP BY company.company_name
ORDER BY COUNT(transaction.id) DESC;
```

The results grid shows the output of the query, listing companies and their transaction counts:

company_name	COUNT(transaction.id)
Nunc Interdum Incorporated	105
Ut Semper Foundation	59
Emin Condimentum Ltd	57
Arcu LLP	56
Lorem Eu Incorporated	54
Malesuada PC	52
Non Institute	30
Fusce Corp.	2
Convallis In Incorporated	2
Ante Iaculis Nec Foundation	2
Donec Ltd	2
Sed Nunc Ltd	2
Amet Nulla Donec Corporation	2
Nascetur Ridiculus Mus Inc.	2
Vestibulum Lorem PC	2
Gravida Sagittis LLP	2
Mus Aenean Eget Foundation	2

The bottom section of the interface shows the 'Output' tab, which displays the execution log with three entries:

#	Time	Action	Message	Duration / Fetch
770	13:46:30	SELECT company.company_name, COUNT(transaction.id) FROM transaction	100 row(s) returned	0.000 sec / 0.000 sec
771	13:48:01	SELECT company.company_name, COUNT(transaction.id) FROM transaction	100 row(s) returned	0.000 sec / 0.000 sec
772	13:48:06	SELECT company.company_name, COUNT(transaction.id) FROM transaction	100 row(s) returned	0.000 sec / 0.000 sec

Ara li afegim el que vol el departament de Recursos Humans. Entenem que són menys de 4 transaccions versus 4 o més transaccions. Utilitzarem un case.

The screenshot shows the MySQL Workbench interface with a SQL editor window containing the following code:

```
## EXERCICI 2
SELECT company.company_name, COUNT(transaction.id),
CASE
    WHEN COUNT(transaction.id) < 4 THEN "Menys de 4"
    ELSE "Més de 4"
END
FROM transaction
JOIN company
ON company.id = transaction.company_id
GROUP BY company.company_name
ORDER BY COUNT(transaction.id) DESC;
```

The results grid displays the company names and their transaction counts, categorized by the CASE statement. The output pane shows the execution log with three entries:

#	Time	Action	Message	Duration / Fetch
779	13:54:01	SELECT company.company_name, COUNT(transaction.id) CASE WHEN ...	Error Code: 1064. You have an error in your SQL syntax; check the manual ...	0.000 sec
780	13:54:14	SELECT company.company_name, COUNT(transaction.id), CASE WHEN ...	100 row(s) returned	0.016 sec / 0.000 sec
781	13:54:40	SELECT company.company_name, COUNT(transaction.id), CASE WHEN ...	100 row(s) returned	0.000 sec / 0.000 sec

Li afegim les de menys i posem un nom més curt a la columna

The screenshot shows the MySQL Workbench interface. In the top navigation bar, the 'File' menu is open, showing options like 'Edit', 'View', 'Query', 'Database', 'Server', 'Tools', 'Scripting', and 'Help'. Below the menu is a toolbar with various icons. The main area has tabs labeled '1.2', '1.3', '2', '3', and 'SQL File 17'. The SQL tab contains the following code:

```
## EXERCICI 2
SELECT company.company_name, COUNT(transaction.id),
CASE
    WHEN COUNT(transaction.id) < 4 THEN "Menys de 4"
    ELSE "4 o més"
END AS transaccions
FROM transaction
JOIN company
ON company.id = transaction.company_id
GROUP BY company.company_name
ORDER BY COUNT(transaction.id) DESC;
```

Below the code is a 'Result Grid' table with three columns: 'company_name', 'COUNT(transaction.id)', and 'transaccions'. The table lists 22 companies and their transaction counts, categorized by the CASE statement. The last two rows are marked as 'Menys de 4'. The 'Output' pane at the bottom shows the execution log with three entries, all successful.

company_name	COUNT(transaction.id)	transaccions
Nunc Interdum Incorporated	105	4 o més
Ut Semper Foundation	59	4 o més
Emin Condimentum Ltd	57	4 o més
Arca LLP	56	4 o més
Lorem Eu Incorporated	54	4 o més
Malesuada PC	52	4 o més
Non Institute	30	4 o més
Fusce Corp.	2	Menys de 4
Convallis In Incorporated	2	Menys de 4
Ante Iaculis Nec Foundation	2	Menys de 4
Donec Ltd	2	Menys de 4
Sed Nunc Ltd	2	Menys de 4
Amet Nulla Donec Corporation	2	Menys de 4
Nascetur Ridiculus Mus Inc.	2	Menys de 4
Vestibulum Lorem PC	2	Menys de 4
Gravida Sagittis LLP	2	Menys de 4
Mus Aenean Eget Foundation	2	Menys de 4

Action Output

#	Time	Action	Message	Duration / Fetch
784	13:56:04	SELECT company.company_name, COUNT(transaction.id), CASE WHEN ...	Error Code: 1064. You have an error in your SQL syntax; check the manual ...	0.00 sec
785	13:56:08	SELECT company.company_name, COUNT(transaction.id), CASE WHEN ...	100 row(s) returned	0.016 sec / 0.000 sec
786	13:56:13	SELECT company.company_name, COUNT(transaction.id), CASE WHEN ...	100 row(s) returned	0.000 sec / 0.000 sec

I treiem el número de transaccions, que no ens les demanen

The screenshot shows the MySQL Workbench interface. The left sidebar displays the database schema with the 'transactions' schema selected. The main area contains a SQL editor window titled 'Sprint 2' with the following query:

```
1  ### NIVELL 3 ###
2  ## EXERCICI 2
3
4  # - Quantitat de transaccions especificant si tenen més de 4 transaccions o menys.
5  SELECT company.company_name,
6  CASE
7      WHEN COUNT(transaction.id) < 4 THEN "Menys de 4"
8      ELSE "4 o més"
9  END AS transaccions
10 FROM transaction
11 JOIN company
12     ON company.id = transaction.company_id
13 GROUP BY company.company_name
14 ORDER BY transaccions ASC;
```

The results grid shows the output of the query:

company_name	transaccions
Arcu LLP	4 o més
Malesuada PC	4 o més
Non Institute	4 o més
Lorem Eu Incorporated	4 o més
Ui Semper Foundation	4 o més
Enim Condimentum Ltd	4 o més
Nunc Interdum Incorporated	4 o més
Urna Convallis Associates	Menys de 4
Ac Fermentum Incorporated	Menys de 4
Vestibulum Loren PC	Menys de 4
Gravida Sagittis LLP	Menys de 4
Mus Aenean Eget Foundat...	Menys de 4

Below the results, the status bar indicates 'Query Completed'.