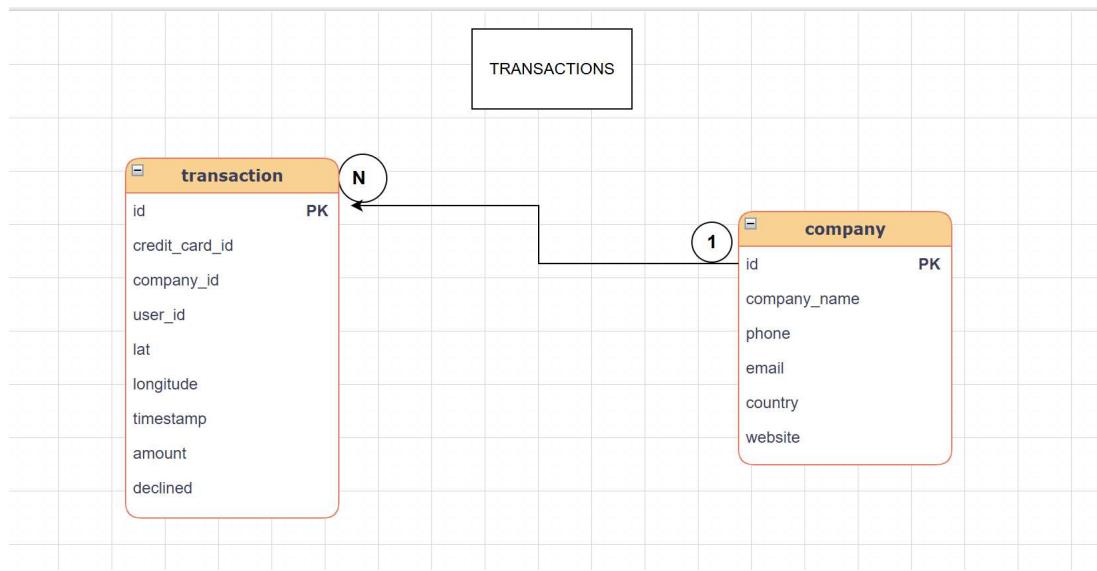


Capturas pantallas workbench S2-01

Tasca-S2.01.-Nocions-basiques-SQL

Nivel 1: Ejercicio 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.



Una vez importados los dos archivos en Workbench, se obtienen un schema llamado transactions, que a su vez contienen dos tablas:

- **transaction**: la cual muestra los registros de las transacciones de la empresa con otras compañías que compran sus productos, se puede observar columnas como el id de la transaccion, el id de la tarjeta de crédito, id de la compañía que compra, un identificador de esa compañía, las coordenadas como latitud y longitud, fecha de la transaccion, el monto de la transaccion y una columna si la venta finalmente se hizo o no se llegó a concretar.
- **company**: esta tabla muestra los datos de las compañías que compran, desde el nombre de la compañía, telefono, email, pais de origen, y pagina web.

La relacion es mediante los Primary Keys de cada tabla(en el grafico esta marcado como PK) y es una relacion de 1 a muchos (desde company hacia transaction), es decir que una compañía puede tener muchas transacciones.

Exercici 2

Utilitzant JOIN realitzaràs les següents consultes:

1) Llistat dels països que estan fent compres.

The screenshot shows the MySQL Workbench interface. At the top, there's a toolbar with various icons. Below it is the SQL editor window containing the following code:

```
1 -- Exercici 2
2 -- Utilitzant JOIN realitzaràs les següents consultes:
3 -- 1) Llistat dels països que estan fent compres.
4 • SELECT DISTINCT country
5 FROM transaction
6 JOIN company ON transaction.company_id = company.id
7 WHERE transaction.declined = 0
8 ORDER BY country ASC;
```

Below the SQL editor is a results grid titled "Result Grid". It has a column header "country" and lists the following countries:

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

At the bottom of the interface, there's a "Result 27" tab and an "Output" section. The output log shows the following entry:

#	Time	Action	Message
1	12:40:11	SELECT DISTINCT country FROM transaction JOIN company ON transaction.company_id = company.id WHERE transactio...	15 row(s) returned

2) Des de quants països es realitzen les compres.

```
10 -- 2) Des de quants països es realitzen les compres.  
11 • SELECT COUNT( DISTINCT country) as num_country  
12   FROM company  
13   JOIN transaction on transaction.company_id = company.id  
14   WHERE transaction.declined = 0;
```

The screenshot shows the MySQL Workbench interface with the results of a query. The 'Result Grid' pane displays a single row with the column 'num_country' containing the value '15'. Below it, the 'Output' pane shows the executed SQL statement and a message indicating 1 row(s) returned.

num_country
15

Output

Action Output

Time Action

1 12:44:11 SELECT COUNT(DISTINCT country) as num_country FROM company JOIN transaction on transaction.company_id = comp... 1 row(s) returned

3) Identifica la companyia amb la mitjana més gran de vendes.

```
16 -- 3) Identifica la companyia amb la mitjana més gran de vendes.  
17 • SELECT company_name, AVG(amount) as media  
18   FROM company  
19   JOIN transaction on transaction.company_id = company.id  
20   WHERE transaction.declined = 0  
21   GROUP BY company_name  
22   ORDER BY AVG(amount) DESC  
23   limit 1;  
24
```

The screenshot shows the MySQL Workbench interface with the results of a query. The 'Result Grid' pane displays a single row with columns 'company_name' and 'media', where 'company_name' is 'Eget Ipsum Ltd' and 'media' is '481.860000'. Below it, the 'Output' pane shows the executed SQL statement and a message indicating 1 row(s) returned.

company_name	media
Eget Ipsum Ltd	481.860000

The screenshot shows the MySQL Workbench interface with the results of a query under a session named 'Result 31'. The 'Result Grid' pane displays a single row with columns 'company_name' and 'media', where 'company_name' is 'Eget Ipsum Ltd' and 'media' is '481.860000'. Below it, the 'Output' pane shows the executed SQL statement and a message indicating 1 row(s) returned.

company_name	media
Eget Ipsum Ltd	481.860000

Exercici 3

Utilitzant només subconsultes (sense utilitzar JOIN):

1) Mostra totes les transaccions realitzades per empreses d'Alemanya.

```
25  -- Exercici 3
26  -- Utilitzant només subconsultes (sense utilitzar JOIN):
27
28  -- 1) Mostra totes les transaccions realitzades per empreses d'Alemanya.
29 • SELECT *
30   FROM transaction
31   WHERE company_id IN (SELECT company.id
32     FROM company
33     WHERE country = 'Germany');
34
35
```

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

- Query Editor:** The SQL query is displayed in the top pane.
- Result Grid:** The bottom pane displays the results of the query. The columns are: id, credit_card_id, company_id, user_id, lat, longitude, timestamp, amount, and declined. The data shows 118 rows of transaction records.
- Action Output:** Below the result grid, it shows the executed query: "SELECT * FROM transaction where company_id in (SELECT company.id FROM company WHERE country = 'Germany')".
- Message:** It indicates "118 row(s) returned".

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

The screenshot shows a MySQL Workbench environment. At the top, there's a toolbar with various icons for file operations, search, and database management. Below the toolbar is a query editor window containing the following SQL code:

```

36 -- 2) Llista les empreses que han realitzat transaccions
37 -- per un amount superior a la mitjana de totes les transaccions.
38 • SELECT company_name
39   FROM company
40   WHERE company.id IN (SELECT company_id
41                         from transaction
42                         WHERE amount >(SELECT AVG(amount) FROM transaction));
43

```

Below the query editor is a results grid titled "Result Grid". It displays a single column named "company_name" with 37 rows of data. The data includes:

- Ac Fermentum Incorporated
- Magna A Neque Industries
- Fusce Corp.
- Ante Iaculis Nec Foundation
- Donec Ltd
- Sed Nunc Ltd
- Nascentur Ridiculus Mus Inc.
- Vestibulum Lorem PC
- Gravida Sagittis LLP
- Mus Aenean Eget Foundation
- Dis Parturient Institute
- Sed LLC
- Arcu LLP
- Fringilla LLC
- Elit Etiam Laoreet Associates

At the bottom of the interface, there's an "Output" section titled "Action Output" which shows the execution log:

#	Time	Action	Message
1	12:51:13	SELECT company_name FROM company WHERE company.id IN (SELECT company_id from transaction WHERE amount >...)	70 row(s) returned

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

```

44 -- 3) Eliminaran del sistema les empreses que no tenen transaccions registrades, entrega el llistat d'aquestes empreses.
45
46 • SELECT COUNT(company_name)
47 FROM company
48 WHERE company.id in (SELECT company_id from transaction WHERE amount = 0);
49

```

Result Grid | Filter Rows: Export: Wrap Cell Content: □

COUNT(company_name)
0

Result 40 ×

Output

Action Output

#	Time	Action	Message
1	12:52:53	SELECT COUNT(company_name) FROM company WHERE company.id in (SELECT company_id from transaction WHERE amount = 0);	1 row(s) returned

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.

```

51 -- Nivell 2
52 -- Exercici 1
53 -- Identifica els cinc dies que es va generar la quantitat més gran d'ingressos a l'empresa per vendes.
54 -- Mostra la data de cada transacció juntament amb el total de les vendes.
55
56 • SELECT DATE(timestamp) AS FECHA, SUM(amount) AS VENTAS_TOTAL
57 FROM transaction
58 WHERE declined = FALSE
59 GROUP BY FECHA
60 ORDER BY VENTAS_TOTAL DESC
61 LIMIT 5;
62

```

Result Grid | Filter Rows: Export: Wrap Cell Content: □

FECHA	VENTAS_TOTAL
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

Result 41 ×

Output

Action Output

#	Time	Action	Message
1	12:54:25	SELECT DATE(timestamp) AS FECHA, SUM(amount) AS VENTAS_TOTAL FROM transaction WHERE declined = FALSE ...	5 row(s) returned

Exercici 2

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

```
63 -- Exercici 2
64 -- Quina és la mitjana de vendes per país? Presenta els resultats ordenats de major a menor mitjà.
65 • SELECT country, AVG(amount)
66 FROM transaction
67 JOIN company ON company.id = transaction.company_id
68 GROUP BY 1
69 ORDER BY 2 DESC;
70
```

country	AVG(amount)
United States	309,179412
Ireland	277,308387
United Kingdom	270,731700
Canada	269,647869
Sweden	260,615063
Norway	254,216324
Netherlands	253,017778
Germany	244,203220
Australia	232,052500
Belgium	228,147692
China	227,556667
New Zealand	222,277273
Italy	201,590000
France	179,198333
Spain	53,400000

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.

```

71 -- Exercici 3
72 -- En la teva empresa, es planteja un nou projecte per a llançar algunes campanyes publicitàries per a fer competència a la companyia "
73 -- Per a això, et demanen la llista de totes les transaccions realitzades per empreses que estan situades en el mateix país que aquesta
74
75 -- Mostra el llistat aplicant JOIN i subconsultes.
76
77 • SELECT *
78   FROM transaction
79   JOIN company ON company.id = transaction.company_id
80   WHERE country LIKE (SELECT DISTINCT country
81           FROM company
82           WHERE company_name LIKE "Non Institute");
83
84

```

Result Grid | Filter Rows: Export: Wrap Cell Contents: **Result Grid** | **Form Editor** | **Field Types**

id	credit_card_id	company_id	user_id	lat	longitude	timestamp	amount	declined	id	company_name	phone	email	country
26928E1C-E1C14-A750-0A75-871477549D5A	CcU-2980	b-2246	275	-41.0496	161.685	2021-08-10 08:14:49	383.73	0	b-2246	Sed Nunc Ltd	02 62 64 73 48	nbb@yahoo.org	United Kingdom
ACD0111A-A2B1C1C65-A1E1-2A800C65147A	CcU-2980	b-2246	275	-54.4792	-82.7974	2022-03-02 02:41:20	60.07	1	b-2246	Sed Nunc Ltd	02 62 64 73 48	nbb@yahoo.org	United Kingdom
433449E-CE00-3D68-A4D4-FEB7181A1ACE	CcU-3092	b-2310	275	-20.4859	150.87	2021-05-03 22:37:23	458.74	0	b-2310	Non Magra LLC	06 71 73 13 17	nsl.queque.fringilla@hotmail.ca	United Kingdom
BC289A38-7B84-28CD-1FEB-1HED663E773	CcU-3092	b-2310	275	-78.0295	18.5295	2021-10-18 07:27:35	477.95	1	b-2310	Non Magra LLC	06 71 73 13 17	nsl.queque.fringilla@hotmail.ca	United Kingdom
147983D2-B78A-C7B8-4CE3-B07C2DE8548B	CcU-2994	b-2236	133	66.2672	172.399	2021-08-09 00:58:07	309.45	0	b-2236	Enim Condimentum Ltd	09 55 51 66 25	impordiet.non.vestibulum@yahoo.net	United Kingdom
152598C2-2D9D-D684-B656-91EDF393BFF	CcU-2994	b-2236	126	-67.0189	-141.672	2021-07-05 03:10:00	395.43	0	b-2236	Enim Condimentum Ltd	09 55 51 66 25	impordiet.non.vestibulum@yahoo.net	United Kingdom
1B638B5B-A2E8-7C69-09C9-C545352A9D3B	CcU-2994	b-2236	131	70.2543	-13.1336	2021-07-06 08:46:46	195.06	0	b-2236	Enim Condimentum Ltd	09 55 51 66 25	impordiet.non.vestibulum@yahoo.net	United Kingdom
20410DE5-A804-BE57-BD7A-A95C1BFDBF5C	CcU-2994	b-2236	126	-79.1145	1.51481	2022-01-03 15:59:29	479.52	0	b-2236	Enim Condimentum Ltd	09 55 51 66 25	impordiet.non.vestibulum@yahoo.net	United Kingdom
23968576-6C0E-137A-C2F5-3180A18A2D3	CcU-2994	b-2236	126	23.6174	137.222	2021-08-26 06:04:05	43.90	0	b-2236	Enim Condimentum Ltd	09 55 51 66 25	impordiet.non.vestibulum@yahoo.net	United Kingdom
267C4A86-7A7-1C5E-0718-2824983C87D0	CcU-2994	b-2326	126	-17.5259	104.915	2021-10-01 21:08:53	122.63	0	b-2326	Enim Condimentum Ltd	09 55 51 66 25	impordiet.non.vestibulum@yahoo.net	United Kingdom
3142C93E-8387-49E4-E2D-29CA834B198D	CcU-2994	b-2326	126	-67.8476	-119.978	2021-04-06 17:24:44	91.59	0	b-2326	Enim Condimentum Ltd	09 55 51 66 25	impordiet.non.vestibulum@yahoo.net	United Kingdom
3578688E-7B1D-8887-8BC7-2088673AA31E	CcU-2994	b-2326	126	87.0665	-22.7339	2021-07-26 22:59:24	303.60	0	b-2326	Enim Condimentum Ltd	09 55 51 66 25	impordiet.non.vestibulum@yahoo.net	United Kingdom

Result 46 × **Read Only**

Action Output

#	Time	Action	Message	Duration / Fetch
1	12:57:49	SELECT * FROM transaction JOIN company ON company.id = transaction.company_id WHERE country LIKE (SELECT DIS...	100 row(s) returned	0.000 sec / 0.000 sec

Mostra el llistat aplicant solament subconsultes.

```

85      -- Mostra el llistat alicant solament subconsultes.
86 •  SELECT *
87   FROM transaction
88   WHERE company_id IN (SELECT company.id
89     FROM company
90     WHERE country LIKE (SELECT DISTINCT country
91       FROM company
92       WHERE company_name LIKE "Non Institute"));

```

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

id	credit_card_id	company_id	user_id	lat	longitude	timestamp	amount	declined
2B928E1C-EC14-A760-0A75-871477649D6A	CdU-2980	b-2246	275	-41.0496	161.685	2021-08-10 08:14:49	383.73	0
ACD2011A-A2B1-C365-41E1-2AB00C65147A	CdU-2980	b-2246	275	-54.4792	-82.7974	2022-03-05 20:41:20	60.07	1
4334349E-CEB0-3D68-A4D4-FEB7718A1ACE	CdU-3092	b-2310	275	-20.4859	150.87	2021-05-03 22:37:23	458.74	0
BC2B9A38-77B4-28CD-1FE8-14DED863E773	CdU-3092	b-2310	275	-78.0295	18.5295	2021-10-18 07:27:35	477.95	1
147983D2-B7BA-C7B8-4CE3-8D7C2DE85ABB	CdU-2994	b-2326	133	66.2672	172.399	2021-08-09 00:58:07	309.45	0
152598C2-029D-D684-4B66-91EDF393EBFF	CdU-2994	b-2326	126	-67.0189	-141.672	2021-07-05 03:10:00	395.43	0
1B636B58-A2E8-7C69-D9C9-C54535DAFD3B	CdU-2994	b-2326	131	70.2543	-13.1336	2021-07-06 08:48:46	195.06	0
20418DE5-B804-BE9B-BD7A-A95C1BFDBF5C	CdU-2994	b-2326	126	-79.1145	1.51481	2022-01-03 15:59:29	479.52	0
23988576-600E-137A-C2F6-3180A188A2D3	CdU-2994	b-2326	126	23.6174	137.222	2021-08-26 06:04:05	43.90	0
267C4A86-7BA7-1C5E-0718-2824983C87DD	CdU-2994	b-2326	126	-17.5259	104.915	2021-10-01 21:08:53	122.63	0
3142C93E-B3B7-49E4-EE2D-29CA834B198D	CdU-2994	b-2326	126	-67.8476	-119.978	2021-04-06 17:24:44	91.59	0
3578688E-7B1D-B887-3BC7-20B8673AA31E	CdU-2994	b-2326	126	87.0665	-22.7339	2021-07-26 22:59:24	303.60	0
360C7814-F7AF-B43A-0946-AB38D2683C86	CdU-2994	b-2326	116	-7.93005	-79.0733	2021-08-21 10:19:58	494.82	0
391E1CFD-D653-E45B-A729-F2EB93247B58	CdU-2994	b-2326	118	60.5512	103.904	2021-10-09 00:50:38	271.27	0
3C4D7C2A-A402-B941-625A-D64CA53526E8	CdU-2994	b-2326	117	23.1627	-10.381	2021-04-25 19:11:52	441.27	0
3ED634C2-01CA-D6E9-2DBD-24B53A7912F7	CdU-4219	b-2326	137	69.0549	96.5033	2021-03-29 11:38:38	478.54	0
3FEC4131-98ED-2EA6-1776-82674C80DDBB	CdU-2994	b-2326	126	-7.28469	179.063	2021-07-25 04:59:17	393.42	0
41C13F08-471E-D475-3E14-760DF3F79B42	CdU-4219	b-2326	138	-51.7289	55.3294	2022-01-16 16:48:55	45.63	0
41EC591D-808E-085C-F05F-08BC3DE7A618	CdU-2994	b-2326	126	5.38535	-78.3917	2022-01-06 07:47:39	335.54	0
42137267-1E51-FD2E-BE45-5C021D2202700	CdU-2994	b-2326	120	65.47322	22.2735	2021-01-22 12:07:50	102.22	0

transaction 48 ×

Output :

Action Output

#	Time	Action	Message
1	12:58:49	SELECT * FROM transaction WHERE company_id IN (SELECT company.id FROM company WHERE country LIKE (SELECT DISTINCT country FROM company WHERE company_name LIKE "Non Institute"));	100 rows(s) returned

Nivel 3

Ejercicio 1

Presenta el nombre, teléfono, país, fecha y amount, de aquellas empresas que realizaron transacciones con un valor comprendido entre 100 y 200 euros y en alguna de estas fechas: 29 de abril de 2021, 20 de julio de 2021 y 13 de marzo de 2022. Ordena los resultados de mayor a menor cantidad.

```

94    -- Nivel 3
95    -- Ejercicio 1
96    -- Presenta el nombre, teléfono, país, fecha y amount, de aquellas empresas que realizaron transacciones con un valor comprendido entre 100 y 200 euros y
97    -- en alguna de estas fechas: 29 de abril de 2021, 20 de julio de 2021 y 13 de marzo de 2022. Ordena los resultados de mayor a menor cantidad.
98
99 •  SELECT company_name, phone, country, DATE(timestamp) AS FECHA, amount
.00   FROM transaction
.01   JOIN company ON company.id = transaction.company_id
.02 WHERE (amount BETWEEN 100 AND 200) AND (DATE(timestamp) IN ('2021-04-29', '2021-07-20', '2022-03-13'))
.03 ORDER BY 4 DESC;

```

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

company_name	phone	country	FECHA	amount
Nunc Interdum Incorporated	05 18 15 48 13	Germany	2022-03-13	164.32
Lorem Eu Incorporated	01 83 66 62 07	Canada	2021-07-20	133.39
Interdum Feugiat Sed Associates	04 88 40 32 52	United Kingdom	2021-07-20	164.86
Enim Condimentum Ltd	09 55 51 66 25	United Kingdom	2021-04-29	149.89
Nunc Interdum Incorporated	05 18 15 48 13	Germany	2021-04-29	111.51

result 49 x
Output
Action Output
Time Action Message
1 13:00:37 SELECT company_name, phone, country, DATE(timestamp) AS FECHA, amount FROM transaction JOIN company ON comp... 5 row(s) returned

Ejercicio 2

Necesitamos optimizar la asignación de los recursos y dependerá de la capacidad operativa que se requiera, por lo que te piden la información sobre la cantidad de transacciones que realizan las empresas, pero el departamento de recursos humanos es exigente y quiere un listado de las empresas en las que especifiques si tienen más de 4 transacciones o menos.

```

105 -- Ejercicio 2
106 -- Necesitamos optimizar la asignación de los recursos y dependerá de la capacidad operativa que se requiera,
107 -- por lo que te piden la información sobre la cantidad de transacciones que realizan las empresas,
108 -- pero el departamento de recursos humanos es exigente y quiere un listado de las empresas en las que especifiques si tienen más de 4 transacciones o menos.
109
110 • SELECT company_name, COUNT(*),
111     CASE
112         WHEN COUNT(*) < 4 THEN 'Poca actividad'
113         ELSE 'Mucha actividad'
114     END AS actividad
115 FROM transaction
116 JOIN company ON company.id = transaction.company_id
117 GROUP BY company_name
118 ORDER BY 2 DESC;
119
120

```

Result Grid | Filter Rows | Export: | Wrap Cell Content: 14

company_name	COUNT(*)	actividad
Nunc Interdum Incorporated	105	Mucha actividad
Ut Semper Foundation	59	Mucha actividad
Erit Condimentum Ltd	57	Mucha actividad
Arcu LLP	56	Mucha actividad
Loren Eu Incorporated	54	Mucha actividad
Malesuada PC	52	Mucha actividad
Non Institute	30	Mucha actividad
Fusce Corp.	2	Poca actividad
Convallis In Incorporated	2	Poca actividad
Ante Iaculis Nec Foundation	2	Poca actividad
Donec Ltd	2	Poca actividad
Sed Nunc Ltd	2	Poca actividad
Amet Nulla Donec Corporation	2	Poca actividad

Result 50 ×

Action Output

#	Time	Action	Message	Durat
1	13:02:22	SELECT company_name,COUNT(), CASE WHEN COUNT() < 4 THEN 'Poca actividad' E... 100 row(s) returned		0.016