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SPRINT 2

Lucía Fernández Gagliano

NIVEL 1

Ejercicio 1

La Base de Datos 'Transactions' cuenta con dos tablas: Transaction y Company. Por estar en SQL se trata de una tabla relacional, pero si estuviéramos en Power BI podría funcionar como una base de datos Dimensional.

En la Tabla Transaction -que podría funcionar como una 'tabla de hechos'- tenemos los datos de cada transacción con su ID como Primary Key.

Las variables que se computan son el ID de la tarjeta de crédito, el ID de la empresa, el ID del usuario, la latitud y la longitud -como locación-, el momento de la transacción (timestamp), y el monto de la misma.

En la Tabla Company -que podría funcionar como Tabla de Dimensiones- tenemos el ID de la empresa como Primary Key junto a otras variables de la empresa: El nombre, el teléfono, email, país y la website de la empresa.

Ejercicio 2 (JOINS)

a) Llistat dels països que estan fent compres.

```
24 -----
25 -- A > llistat dels països que estan fent compres.
26 -----
27
28 • SELECT distinct country from company join transaction on company.id=transaction.company_id;
29
30
```

| Result Grid | | | | |
|-----------------------------------|----------|--|---------------------|--|
| Filter Rows: <input type="text"/> | | | | |
| Export: | | | | |
| Wrap Cell Content: | | | | |
| country | | | | |
| Germany | | | | |
| Australia | | | | |
| United States | | | | |
| New Zealand | | | | |
| Norway | | | | |
| United Kingdom | | | | |
| Result 204 x | | | | |
| Output | | | | |
| Action Output | | | | |
| # | Time | Action | Message | |
| ✓ 292 | 11:48:21 | SELECT company_name, phone, country, amount, date(timestamp) from transaction join company on... | 5 row(s) returned | |
| ✓ 293 | 11:48:51 | SELECT company.company_name EMPRESAMENOS, count(transaction.id) as transacciones total... | 100 row(s) returned | |
| ✓ 294 | 12:19:51 | SELECT distinct country from company join transaction on company.id=transaction.company_id | 15 row(s) returned | |

b) Des de quants països es realitzen les compres.

```

34 -----
35 -- B > Des de quants països es realitzen les compres.
36 -----
37
38 • SELECT count(distinct country) from company join transaction on company.id=transaction.company_id;
39

```

| Result Grid | Filter Rows: | Export: | Wrap Cell Content: |
|-------------------------|--------------|---------|--------------------|
| count(distinct country) | | | |
| 15 | | | |

| # | Time | Action | Message |
|-------|----------|---|---------------------|
| ✓ 293 | 11:48:51 | SELECT company.company_name EMPRESASMENOS, count(transaction.id) as transacciones total... | 100 row(s) returned |
| ✓ 294 | 12:19:51 | SELECT distinct country from company join transaction on company.id=transaction.company_id | 15 row(s) returned |
| ✓ 295 | 12:23:39 | SELECT count(distinct country) from company join transaction on company.id=transaction.company_id | 1 row(s) returned |

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

```

40 -----
41 -- C > Identifica la companyia amb la mitjana més gran de vendes.
42 -----
43
44 • SELECT company_name, avg(amount) media_ventas from company join transaction on company.id=transaction.company_id
45 where declined = 0
46 group by company_name
47 order by media_ventas desc
48 LIMIT 1;

```

| Result Grid | Filter Rows: | Export: | Wrap Cell Content: |
|----------------|--------------|---------|--------------------|
| company_name | media_ventas | | |
| Eget Ipsum Ltd | 481.860000 | | |

| # | Time | Action | Message |
|-------|----------|---|--------------------|
| ✓ 294 | 12:19:51 | SELECT distinct country from company join transaction on company.id=transaction.company_id | 15 row(s) returned |
| ✓ 295 | 12:23:39 | SELECT count(distinct country) from company join transaction on company.id=transaction.company_id | 1 row(s) returned |
| ✓ 296 | 12:24:51 | SELECT company_name, avg(amount) media_ventas from company join transaction on company.id=... | 1 row(s) returned |

EXERCICI 3 (SUBCONSULTES)**a) Mostra totes les transaccions realitzades per empreses d'Alemanya.**

```

54 -----
55 -- A > Mostra totes les transaccions realitzades per empreses d'Alemanya.
56 -----
57
58 -- con SUBCONSULTA
59 • SELECT transaction.id as transacciones_alemanas from transaction
60   where company_id in(SELECT id from company where country = 'Germany');
61
62 -- (la Subconsulta):
63 • SELECT id from company where country = 'Germany';
64
65 -- (con JOIN para corroborar)-> hay 118 transacciones con empresas de Alemania
66 • SELECT transaction.id, company.country from transaction join company on company.id=transaction.company_id
67   where country = 'Germany';
68 -----

```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: [IA](#)

| transacciones_alemanas | |
|--------------------------------------|--|
| 108B1D1D-5B23-A76C-55EF-C568E49A05DD | |
| EA2C3281-C9C1-A387-44F8-729FB4B51C76 | |
| 0DD2E608-5C9E-D1B3-4999-B99F43AD735A | |
| AB069F53-965E-A2A8-CE06-CA8C4FD92501 | |
| 0466A42E-47CF-8D24-FD01-C0B689713128 | |
| 0A476ED9-0C13-1962-F87B-D3563924B539 | |

transaction 208 x

Output

Action Output

| # | Time | Action | Message |
|-------|----------|---|---------------------|
| ✓ 296 | 12:24:51 | SELECT company_name, avg(amount) media_ventas from company join transaction on company.id=... | 1 row(s) returned |
| ✓ 297 | 12:26:56 | SELECT date(timestamp) fecha, sum(amount) amount_by_day from transaction where declined = 0 gr... | 5 row(s) returned |
| ✓ 298 | 12:32:54 | SELECT transaction.id as transacciones_alemanas from transaction where company_id in(SELECT i... | 118 row(s) returned |

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

```

68 -----
69 -- B > Llista les empreses que han realitzat transaccions per un amount superior a la mitjana de totes les transaccions.
70 -----
71 -- (sin tener en cuenta si las transacciones han sido declinadas o no)
72
73 • SELECT company_name from company
74 where company.id IN (SELECT company_id from transaction where amount > (SELECT avg(amount) from transaction));
75
76 -- (1a Subconsulta)
77 • SELECT avg(amount) from transaction;
78
79 -- CORROBORACIÓN
80 • select distinct company_id from transaction
81 where amount > '256.735520'
82 ;

```

| Result Grid | | | |
|--------------|-----------------------------|---------|---------------------------------------|
| Filter Rows: | | Export: | Wrap Cell Content: IA |
| company_name | | | |
| ▶ | Ac Fermentum Incorporated | | |
| | Magna A Neque Industries | | |
| | Fusce Corp. | | |
| | Ante Iaculis Nec Foundation | | |
| | Donec Ltd | | |
| | Sed Nunc Ltd | | |
| | ... | | |
| | company 209 | | |

| Output | | | |
|---------------|----------|---|---------------------|
| Action Output | | | |
| # | Time | Action | Message |
| ✓ 297 | 12:26:56 | SELECT date(timestamp) fecha, sum(amount) amount_by_day from transaction where declined = 0 gr... | 5 row(s) returned |
| ✓ 298 | 12:32:54 | SELECT transaction.id as transacciones_alemanas from transaction where company_id in(SELECT i... | 118 row(s) returned |
| ✓ 299 | 12:33:58 | SELECT company_name from company where company.id IN (SELECT company_id from transaction... | 70 row(s) returned |

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

En este ejercicio lo que hice fue corroborar de varias formas que no hubiera ninguna empresa que tuviera cero transacciones.

```

87 • SELECT distinct id from company; -- HAY 100 EMPRESAS EN TOTAL
88 • SELECT distinct company_id from transaction; -- HAY 100 EMPRESAS EN TOTAL QUE HAN REALIZADO TRANSACCIONES REGISTRADAS
89
90 -- (ya sospechamos que no hay ninguna empresa en la tabla company que no haya realizado transacciones, pero seguimos probando) --
91
92 -- tiramos un Left Join desde la tabla 'company' para ver si encontramos algún NULL pero no aparecere ninguno...
93 • SELECT * from company LEFT JOIN transaction on transaction.company_id=company.id;
94
95 -- tiro el código con SUNCONSULTA que me podría devolver las empresas que no tuvieran su transacción
96
97 • SELECT company_name from company
98 where company.id NOT IN (SELECT company_id from transaction);
99
100 • SELECT company_name from company
101 where id IN (SELECT company_id from transaction);

```

| Result Grid | | | |
|--------------|--|---------|---------------------------------------|
| Filter Rows: | | Export: | Wrap Cell Content: IA |
| company_name | | | |
| | | | |

| Output | | | |
|---------------|----------|--|---------------------|
| Action Output | | | |
| # | Time | Action | Message |
| ✓ 298 | 12:32:54 | SELECT transaction.id as transacciones_alemanas from transaction where company_id in(SELECT i... | 118 row(s) returned |
| ✓ 299 | 12:33:58 | SELECT company_name from company where company.id IN (SELECT company_id from transaction... | 70 row(s) returned |
| ✓ 300 | 12:36:00 | SELECT company_name from company where company.id NOT IN (SELECT company_id from trans... | 0 row(s) returned |

NIVEL 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.

```

127  -- CON FECHA CONVERTIDA
128  • SELECT date(timestamp) fecha, sum(amount) amount_by_day from transaction
129  where declined = 0
130  group by fecha
131  order by amount_by_day desc
132  limit 5;
133
134  -----

```

| Result Grid | | Filter Rows: | Export: | Wrap Cell Content: |
|-------------|---------------|--------------|---------|--------------------|
| fecha | amount_by_day | | | |
| 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 211 ×

Output

| # | Time | Action | Message |
|-----|----------|---|--------------------|
| 299 | 12:33:58 | SELECT company_name from company where company.id IN (SELECT company_id from transaction... | 70 row(s) returned |
| 300 | 12:36:00 | SELECT company_name from company where company.id NOT IN (SELECT company_id from trans... | 0 row(s) returned |
| 301 | 12:46:02 | SELECT date(timestamp) fecha, sum(amount) amount_by_day from transaction where declined = 0 gr... | 5 row(s) returned |

EXERCICI 2: Quina és la mitjana de vendes per país? Presenta els resultats ordenats de major a menor mitjà.

```

134  -----
135  -- Exercici 2
136  -----
137  -- >Quina és la mitjana de vendes per país? Presenta els resultats ordenats de major a menor mitjà.
138
139  • SELECT AVG(amount) media_ventas_pais, country from transaction join company on transaction.company_id=company.id
140  where declined = 0
141  group by country
142  order by media_ventas_pais desc;
143

```

| Result Grid | | Filter Rows: | Export: | Wrap Cell Content: |
|-------------------|----------------|--------------|---------|--------------------|
| media_ventas_pais | country | | | |
| 287.531111 | United States | | | |
| 285.825357 | Ireland | | | |
| 276.668382 | Sweden | | | |
| 271.767527 | United Kingdom | | | |
| 261.941930 | Canada | | | |

Result 212 ×

Output

| # | Time | Action | Message |
|-----|----------|---|--------------------|
| 300 | 12:36:00 | SELECT company_name from company where company.id NOT IN (SELECT company_id from trans... | 0 row(s) returned |
| 301 | 12:46:02 | SELECT date(timestamp) fecha, sum(amount) amount_by_day from transaction where declined = 0 gr... | 5 row(s) returned |
| 302 | 12:47:31 | SELECT AVG(amount) media_ventas_pais, country from transaction join company on transaction.co... | 15 row(s) returned |

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.

a) Mostra el llistat aplicant JOIN i subconsultes.

```

155 -- A> Mostra el llistat aplicant JOIN i subconsultes.
156 -----
157 -- Utilizando el JOIN me permite visualizar los datos de ambas tablas y ver los datos de las empresas que realizan cada transacción
158
159 • SELECT * from transaction join company on transaction.company_id=company.id
160 where country in (Select country from company
161 where company_name = 'Non Institute')
162 and company_name not like 'Non Institute';
163
164 -- Ahora bien, si quisiera sólomente visualizar los datos de la tabla de transacciones pero solo tomando id y nombre de la
165 -- tabla 'company', el código sería el siguiente:
166
167 • Select * from transaction join
168 (Select id, company_name from company
169 where company_name not like 'Non Institute' and country in ( Select country from company
170 where company_name = 'Non Institute')) empresas_UK

```

Result Grid

Filter Rows:

Export:

Wrap Cell Contents:

| id | credit_card_id | company_id | user_id | lat | longitude | timestamp | amount | declined | id | company_name | phone | email |
|--------------------------------------|----------------|------------|---------|----------|-----------|---------------------|--------|----------|--------|---------------|----------------|---------------|
| 2B928E1C-EC14-A760-0A75-871477649D6A | CdU-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 | nibh@yahoo |
| ACD2011A-A2B1-C365-41E1-2A800C65147A | CdU-2980 | b-2246 | 275 | -54.4792 | -82.7974 | 2022-03-05 20:41:20 | 60.07 | 1 | b-2246 | Sed Nunc Ltd | 02 62 64 73 48 | nibh@yahoo |
| 4334349E-CEB0-3D68-A4D4-FEB7718A1ACE | CdU-3092 | b-2310 | 275 | -20.4859 | 150.87 | 2021-05-03 22:37:23 | 458.74 | 0 | b-2310 | Non Magna LLC | 06 71 73 13 17 | nisl.quisque. |
| BC2B9A38-77B4-28CD-1FE8-14DED863E773 | CdU-3092 | b-2310 | 275 | -78.0295 | 18.5295 | 2021-10-18 07:27:35 | 477.95 | 1 | b-2310 | Non Magna LLC | 06 71 73 13 17 | nisl.quisque. |

Result 213

Output

Action Output

| # | Time | Action | Message | Duration / Fetc |
|-----|----------|--|--------------------|-----------------|
| 301 | 12:46:02 | SELECT date(timestamp) fecha, sum(amount) amount_by_day from transaction where declined = 0 gr... | 5 row(s) returned | 0.000 sec / 0.0 |
| 302 | 12:47:31 | SELECT AVG(amount) media_ventas_pais, country from transaction join company on transaction.co... | 15 row(s) returned | 0.000 sec / 0.0 |
| 303 | 12:53:23 | SELECT * from transaction join company on transaction.company_id=company.id where country in (S... | 70 row(s) returned | 0.000 sec / 0.0 |

b) Mostra el llistat aplicant solament subconsultes.

```

174 -----
175 -- B> Mostra el llistat aplicant solament subconsultes.
176 -----
177 -- En esta logro el resultado correcto utilizando puras subconsultas, pero sin utilizar los JOINS no se pueden ver los datos de la tabla 'company',
178 -- solo los datos de las transacciones
179
180 • Select * from transaction
181 where company_id in
182 (Select id from company where company_name not like 'Non Institute' and country in
183 ( Select country from company where company_name = 'Non Institute'));
184
185 -- SUBCONSULTA QUE ME DA LA ID DE LAS EMPRESAS DEL MISMO PAÍS QUE Non Institute como para poder filtrarlo luego
186
187 • Select id, company_name from company
188 where country in ( Select country from company
189 where company_name = 'Non Institute');

```

| Result Grid | | | | | | | | | | | |
|--|----------------|------------|---------|----------|-----------|---------------------|--------|----------|--|--|--|
| Filter Rows: | | | | | | | | | | | |
| Edit: Export/Import: Wrap Cell Contents: | | | | | | | | | | | |
| 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-C365-41E1-2A800C65147A | 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 | | | |
| 1479B3D2-87BA-C7B8-4CE3-8D7C2DE85AB8 | CdU-2994 | b-2326 | 133 | 66.2672 | 172.399 | 2021-08-09 00:58:07 | 309.45 | 0 | | | |

transaction 214 x

Output

Action Output

| # | Time | Action | Message |
|-----|----------|--|--------------------|
| 302 | 12:47:31 | SELECT AVG(amount) media_ventas_pais, country from transaction join company on transaction.co... | 15 row(s) returned |
| 303 | 12:53:23 | SELECT * from transaction join company on transaction.company_id=company.id where country in (S... | 70 row(s) returned |
| 304 | 12:54:45 | Select * from transaction where company_id in (Select id from company where company_name not li... | 70 row(s) returned |

NIVEL 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.

```

195 -- Exercici 1
196 -----
197 -- Presenta el nom, telèfon, país, data i amount, d'aquelles empreses que van realitzar transaccions amb un valor comprès entre 100 i 200 euros
198 -- 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.
199
200 • SELECT company_name, phone, country, amount, date(timestamp) from transaction join company on company.id=transaction.company_id
201 where amount > 100 and amount < 200
202 and (date(timestamp) = '2021-04-29' or date(timestamp) = '2021-07-20' or date(timestamp) = '2022-03-13')
203 order by amount desc;
204
205 -- (otra forma de gestionar el date)
206 • select company_name, phone, country, date(timestamp) as data, amount
207 from company
208 join transaction on transaction.company_id=company.id
209 where amount between 100 and 200 and date(timestamp) in ('2021-04-29', '2021-07-20', '2022-03-13')
210 order by amount desc;

```

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

| # | Time | Action | Message | Dur. |
|-----|----------|--|--------------------|------|
| 303 | 12:53:23 | SELECT * from transaction join company on transaction.company_id=company.id where country in (S... | 70 row(s) returned | 0.00 |
| 304 | 12:54:46 | Select * from transaction where company_id in (Select id from company where company_name not li... | 70 row(s) returned | 0.01 |
| 305 | 12:57:11 | SELECT company_name, phone, country, amount, date(timestamp) from transaction join company on... | 5 row(s) returned | 0.01 |

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.

```

219 • SELECT company.company_name EMPRESASMENOS, count(transaction.id) as 'transacciones totales',
220 IF(count(transaction.id) >4, 'mas de 4', '4 o menos') as 'Más o menos de 4'
221 from company join transaction on company.id=transaction.company_id
222 group by company_name
223 order by 2 desc;
224

```

| EMPRESASMENOS | transacciones totales | Más o menos de 4 |
|----------------------------|-----------------------|------------------|
| Nunc Interdum Incorporated | 105 | mas de 4 |
| Ut Semper Foundation | 59 | mas de 4 |
| Enim Condimentum Ltd | 57 | mas de 4 |
| Arcu LLP | 56 | mas de 4 |

| # | Time | Action | Message |
|-----|----------|--|---------------------|
| 304 | 12:54:46 | Select * from transaction where company_id in (Select id from company where company_name not li... | 70 row(s) returned |
| 305 | 12:57:11 | SELECT company_name, phone, country, amount, date(timestamp) from transaction join company on... | 5 row(s) returned |
| 306 | 12:58:21 | SELECT company.company_name EMPRESASMENOS, count(transaction.id) as transacciones total... | 100 row(s) returned |