

EJERCICIO 1

Tabla dimensiones

COMPANY
id (PK) - VCHAR
company_name - VCHAR
phone - VCHAR
email - VCHAR
country - VCHAR
website - VCHAR

Tabla hechos

TRANSACTION
id (PK) - VCHAR
credit_card_id - VCHAR
company_id (FK) - VCHAR
user_id - INT
lat - FLOAT
longitude - FLOAT
timestamp - TIMESTAMP
amount - DECIMAL
declined - BOOL

1:N

La FK en la tabla transaction (company_id), apunta hacia el campo id de la tabla Company

Tabla Company:

Empresas que realizan las **ventas**

id (PK)	Identificador único para cada empresa
company_name	Nombre comercial de la empresa
phone	teléfono contacto
email	mail de contacto
country	País de la empresa
website	web de la empresa

TRANSACTION

Transacciones de las empresas de la tabla Company

id (PK)	identifica cada transacción (intento de compra-venta)
credit_card_id	Dato que extraería de un tabla 'CreditCards'
company_id (FK)	Dato que extrae de la tabla de Company
user_id	Un usuario puede tener 'N' Tarjetas de Crédito y hacer transacciones con 'N' empresas. Dato que extraería de una tabla de 'Usuarios'
lat	longitud geográfica
longitude	latitud geográfica Un país puede tener 'N' Long+lat (coordenadas de puntos) Cada coordenada corresponde a 1 sólo País
timestamp	Fecha y hora de cada transacción
amount	Importe cada transacción
declined	Booleano: Si aparece 1 (TRUE) la operación NO se ha realizado (rechazada). No puede computarse como compra-venta Sólo son compra-ventas la que aparecen como 0 (FALSE) Cada línea (registro) es una transacción.

En la tabla 'Transaction' se observan otros campos que también son FK de otras tablas (aparecerán más adelante):

- user_id
- credit_card_id

Relación 1:N: una company, user, credit_card pueden tener N Transacciones, pero cada Transacción corresponde a una única company, user o credit card.

NIVEL 1

```
5 -----
6 -- NIVEL 1
7 -----
8 -- 2: Consultas con JOIN
9
10 -- 2.1: Listado de los países que están haciendo compras:
11
12 • SELECT DISTINCT c.country AS ListadoPaísesComprando
13 FROM company c
14 INNER JOIN transaction t ON c.id = t.company_id
15 WHERE t.declined = 0;
```

Result Grid				Filter Rows:	Export:	Wrap Cell Content:
ListadoPaísesComprando						
▶ Canada						
Germany						
Italy						
United Kingdom						
Sweden						

Result 22 x

Output

Action Output

#	Time	Action	Message
✓ 1	12:21:27	SELECT DISTINCT c.country AS ListadoPaísesComprando FROM company c INNER JOIN transaction t ON c.id = t.company_id WHERE t....	15 row(s) returned

```
17 -- 2.2 Desde cuántos países se realizan las compras:
18
19 • SELECT count(DISTINCT c.country) AS NumeroDePaísesComprando
20 FROM company c
21 INNER JOIN transaction t ON c.id = t.company_id
22 WHERE t.declined = 0;
23
```

Result Grid				Filter Rows:	Export:	Wrap Cell Content:
NumeroDePaísesComprando						
▶ 15						

Result 24 x

Output

Action Output

#	Time	Action	Message
✓ 1	12:39:22	SELECT count(DISTINCT c.country) AS NumeroDePaísesComprando FROM company c INNER JOIN transaction t ON c.id = t.company_id ...	1 row(s) returned

```

24      -- 2.3 Identificar la compañía con la media más grande de ventas:
25
26      •      SELECT c.company_name AS Empresa, AVG(t.amount) AS VentasMedias
27              FROM company c
28              JOIN transaction t ON c.id = t.company_id
29              WHERE t.declined = 0
30              GROUP BY c.company_name
31              ORDER BY VentasMedias DESC
32              LIMIT 1;

```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
Empresa	VentasMedias			
Eget Ipsum Ltd	481.860000			

Result 25 x

Output

Action Output

#	Time	Action	Message
✓ 1	12:42:59	SELECT c.company_name AS Empresa, AVG(t.amount) AS VentasMedias FROM company c JOIN transaction t ON c.id = t.company_id	W... 1 row(s) returned

```

34      -- Exercici 3: Utilitzant només subconsultes (sense utilitzar JOIN):
35
36      -- 3.1 Mostra totes les transaccions realitzades per empreses d'Alemanya.
37
38      •      SELECT *
39              FROM transaction t
40              WHERE t.company_id IN (
41                                  SELECT c.id
42                                  FROM company c
43                                  WHERE c.country = 'Germany'
44                                  );

```

Result Grid

Filter Rows:

Edit:

Export/Import:

Wrap Cell Content:

id	credit_card_id	company_id	user_id	lat	longitude	timestamp	amount	declined
108B1D1D-5B23-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	20.2004	-116.84	2021-05-09 10:25:08	119.36	1
0DD2E608-5C9E-D1B3-4999-B99F43AD735A	CcU-2959	b-2234	275	9.68811	130.282	2021-04-17 05:30:17	252.47	1
AB069F53-965E-A2A8-CE06-CA8C4FD92501	CcU-2959	b-2234	275	1.64819	-158.007	2021-04-15 13:37:18	60.99	0
0466A42E-47CF-8D24-FD01-C0B689713128	CcU-4219	b-2302	170	-43.9695	-117.525	2021-07-26 07:29:18	49.53	0
0A476ED9-0C13-1962-F87B-D3563924B539	CcU-4359	b-2302	221	-56.4901	114.801	2022-02-26 20:33:54	430.49	0

transaction 26 x

Output

Action Output

#	Time	Action	Message
✓ 1	12:46:09	SELECT * FROM transaction t WHERE t.company_id IN(SELECT c.id FROM company c WHERE c.country = 'Germany')	118 row(s) returned

```

47      -- 3.2 Llista les empreses que han realitzat transaccions per un amount superior a la mitjana de totes les transaccions.
48
49      •      SELECT c.company_name
50      FROM company c
51      WHERE c.id IN (
52                  SELECT t.company_id
53                  FROM transaction t
54                  WHERE amount > (
55                          SELECT AVG(t1.amount) AS MediaPorEmpresa
56                          FROM transaction t1
57                  )
58      );

```

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

company 27 x

Output

Action Output

#	Time	Action	Message
1	12:47:13	SELECT c.company_name FROM company c WHERE c.id IN(SELECT t.company_id FROM transaction t WHERE amount > (SELECT AVG(t1...	70 row(s) returned

```

60      -- 3.3 Eliminarian del sistema les empreses que no tenen transaccions registrades, entrega el llistat d'aquestes empreses.
61
62      •      SELECT *
63      FROM company c
64      WHERE c.id NOT IN (
65                  SELECT DISTINCT t.company_id
66                  FROM transaction t
67                  ); -- todas las empresas tienen transacciones registradas. No hay empresas a eliminar
68
69      -- Ahora podríamos "delete" los registros:
70      •      DELETE FROM company
71      WHERE id NOT IN (
72                  SELECT t.company_id
73                  FROM transaction t
74                  );

```

Result Grid			
	Filter Rows:	Edit:	Export/Import:
id	company_name	phone	email
country	website		
NULL	NULL	NULL	NULL

company 38 x

Output

Action Output

#	Time	Action	Message	Duration /
1	13:18:59	SELECT * FROM company c WHERE c.id NOT IN (SELECT DISTIN...	0 row(s) returned	0.000 sec

NIVEL 2

```
79 -- 3.1 Identifica els cinc dies que es va generar la quantitat més gran d'ingressos a l'empresa per vendes.
80 -- Mostra la data de cada transacció juntament amb el total de les vendes.
```

```
81
82 •      SELECT date(t.timestamp) AS DiaMayorVenta, SUM(t.amount) AS VentasDelDia
83      FROM transaction t
84      WHERE t.declined = 0
85      GROUP BY DATE(t.timestamp)
86      ORDER BY VentasDelDia DESC
87      LIMIT 5;
```

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

	DiaMayorVenta	VentasDelDia
▶	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 35 ×

Output

Action Output

#	Time	Action	Message
✓ 1	12:56:10	SELECT date(t.timestamp) AS DiaMayorVenta, SUM(t.amount) AS VentasDelDia FROM transaction t WHERE t.declined = 0 GROUP BY DATE(t...	5 row(s) returned

```
111 -- 3.2 Quina és la mitjana de vendes per país? Presenta els resultats ordenats de major a menor mitjà.
112
113 •      SELECT c.country, AVG(t.amount) MediaVentasPais
114      FROM transaction t
115      INNER JOIN company c ON t.company_id = c.id
116      WHERE t.declined = 0
117      GROUP BY c.country
118      ORDER BY MediaVentasPais DESC;
```

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

	country	MediaVentasPais
▶	United States	287.531111
	Ireland	285.825357
	Sweden	276.668382
	United Kingdom	271.767527
	Canada	261.941930

Result 42 ×

Output

Action Output

#	Time	Action	Message
✓ 1	13:25:56	SELECT c.country, AVG(t.amount) MediaVentasPais FROM transaction t INN...	15 row(s) returned

```

99  /* 3.3 En la teva empresa, es planteja un nou projecte per a llançar algunes campanyes publicitàries per a fer
100 competència a la companyia "Non Institute". Per a això, et demanen la llista de totes les transaccions
101 realitzades per empreses que estan situades en el mateix país que aquesta companyia.*/
102
103 -- 3.3.1. Mostra el llistat aplicant JOIN i subconsultes.
104
105 • SELECT t.*, c.country AS País, c.company_name AS Empresa
106 FROM transaction t
107 JOIN company c ON t.company_id = c.id
108 WHERE c.country = (
109     SELECT c1.country
110     FROM company c1
111     WHERE c1.company_name = 'Non Institute'
112 );

```

Result Grid											
Filter Rows:											
Export: Wrap Cell Content: f1											
	id	credit_card_id	company_id	user_id	lat	longitude	timestamp	amount	declined	País	Empresa
▶	2B928E1C-EC14-A760-0A75-871477649D6A	CdJ-2980	b-2246	275	-41.0496	161.685	2021-08-10 08:14:49	383.73	0	United Kingdom	Sed Nunc Ltd
	ACD2011A-A2B1-C365-41E1-2AB00C65147A	CdJ-2980	b-2246	275	-54.4792	-82.7974	2022-03-05 20:41:20	60.07	1	United Kingdom	Sed Nunc Ltd
	4334349E-CEB0-3D68-A4D4-FEB7718A1ACE	CdJ-3092	b-2310	275	-20.4859	150.87	2021-05-03 22:37:23	458.74	0	United Kingdom	Non Magna LLC
	BC2B9A38-77B4-28CD-1FE8-14DED863E773	CdJ-3092	b-2310	275	-78.0295	18.5295	2021-10-18 07:27:35	477.95	1	United Kingdom	Non Magna LLC
	1479B3D2-B7BA-C7BB-4CE3-8D7C2DE85ABB	CdJ-2994	b-2326	133	66.2672	172.399	2021-08-09 00:58:07	309.45	0	United Kingdom	Enim Condimentum Ltd

Result 8 x

Output

Action Output

#	Time	Action	Message
✓ 1	10:17:13	SELECT t.*, c.country AS País, c.company_name AS Empresa FROM transaction t JOIN company c ON t.company_id = c.id WHERE c.country = (SELECT c1.country FROM...	100 row(s) returned

```

114 -- 3.3.2. Mostra el llistat aplicant solament subconsultes.
115
116 • SELECT t.*,
117     (
118         SELECT c.country
119         FROM company c
120         WHERE c.id = t.company_id
121     ) AS País,
122     (
123         SELECT c.company_name
124         FROM company c
125         WHERE c.id = t.company_id
126     ) AS Empresa
127 FROM transaction t
128 WHERE t.company_id IN (
129     SELECT c.id FROM company c
130     WHERE c.country = (
131         SELECT c2.country
132         FROM company c2
133         WHERE c2.company_name = 'Non Institute'
134     )
135 );

```

Result Grid											
Filter Rows:											
Export: Wrap Cell Content: f1											
	id	credit_card_id	company_id	user_id	lat	longitude	timestamp	amount	declined	País	Empresa
▶	2B928E1C-EC14-A760-0A75-871477649D6A	CdJ-2980	b-2246	275	-41.0496	161.685	2021-08-10 08:14:49	383.73	0	United Kingdom	Sed Nunc Ltd
	ACD2011A-A2B1-C365-41E1-2AB00C65147A	CdJ-2980	b-2246	275	-54.4792	-82.7974	2022-03-05 20:41:20	60.07	1	United Kingdom	Sed Nunc Ltd
	4334349E-CEB0-3D68-A4D4-FEB7718A1ACE	CdJ-3092	b-2310	275	-20.4859	150.87	2021-05-03 22:37:23	458.74	0	United Kingdom	Non Magna LLC
	BC2B9A38-77B4-28CD-1FE8-14DED863E773	CdJ-3092	b-2310	275	-78.0295	18.5295	2021-10-18 07:27:35	477.95	1	United Kingdom	Non Magna LLC
	1479B3D2-B7BA-C7BB-4CE3-8D7C2DE85ABB	CdJ-2994	b-2326	133	66.2672	172.399	2021-08-09 00:58:07	309.45	0	United Kingdom	Enim Condimentum Ltd
	152598C2-029D-D684-4B66-91EDF393EBFF	CdJ-2994	b-2326	126	-67.0189	-141.672	2021-07-05 03:10:00	395.43	0	United Kingdom	Enim Condimentum Ltd
	1B636B58-A2E8-7C69-D9C9-C54535DAFD3B	CdJ-2994	b-2326	131	70.2543	-13.1336	2021-07-06 08:48:46	195.06	0	United Kingdom	Enim Condimentum Ltd

Result 7 x

Output

Action Output

#	Time	Action	Message
✓ 1	10:14:25	SELECT t.*, (SELECT c.country FROM company c WHERE c.id = t.company_id) AS País, (SELECT c.company_name FROM company c WHERE c.id = t.company_id) ...	100 row(s) returned

NIVEL 3

```

149 -----
150 -- Nivell 3
151 -----
152
153 -- 1. Presenta el nom, telèfon, país, data i amount, d'aquelles empreses que van realitzar transaccions
154 -- amb un valor comprès entre 100 i 200 euros i en alguna d'aquestes dates:
155 -- 29 d'abril del 2021, 20 de juliol del 2021 i 13 de març del 2022. Ordena els resultats de major a menor quantitat.
156
157 • SELECT DISTINCT company_name AS Empresa, phone AS Teléfono, country AS País, timestamp AS Fecha, amount AS Importe
158 FROM company c
159 INNER JOIN transaction t ON c.id = t.company_id
160 WHERE amount BETWEEN 100 AND 200
161 AND DATE(t.timestamp) IN ('2021-04-29', '2021-07-20', '2022-03-13')
162 ORDER BY amount DESC;

```

<div> <div>Result Grid</div> <div> <div>Filter Rows:</div> <div></div> </div> <div> <div>Export:</div> <div></div> </div> <div> <div>Wrap Cell Content:</div> <div></div> </div> </div>					
	Empresa	Teléfono	País	Fecha	Importe
▶	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

Result 45 x ! Read

Action Output

#	Time	Action	Message	Dur:
1	13:29:38	SELECT DISTINCT company_name AS Empresa, phone AS Teléfono, countr...	5 row(s) returned	0.00

Columna con el detalle del transacciones comentada por si se quiere mostrar

```
164 -- 2. Necessitem optimitzar l'assignació dels recursos i dependrà de la capacitat operativa que es requereixi,
165 -- per la qual cosa et demanen la informació sobre la quantitat de transaccions que realitzen les empreses,
166 -- però el departament de recursos humans és exigent i vol un llistat de les empreses on especifiquis
167 -- si tenen més de 4 transaccions o menys.
168
169 • SELECT c.id, c.company_name AS Empresa, CASE
170                                     WHEN COUNT(t.id) > 4 THEN 'Mas de 4 ventas'
171                                     ELSE 'Pocas ventas'
172                                     END AS NivelVentas-- , COUNT(t.id) AS NumTransacciones
173
174 FROM company c
175 INNER JOIN transaction t ON t.company_id = c.id
176 GROUP BY c.id, c.company_name
177 ORDER BY COUNT(t.id) DESC;
```

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

	id	Empresa	NivelVentas
▶	b-2302	Nunc Interdum Incorporated	Mas de 4 ventas
	b-2346	Ut Semper Foundation	Mas de 4 ventas
	b-2326	Enim Condimentum Ltd	Mas de 4 ventas
	b-2278	Arcu LLP	Mas de 4 ventas
	b-2362	Lorem Eu Incorporated	Mas de 4 ventas
	b-2404	Maecenas PC	Mas de 4 ventas

Result 47 x

Output

Action Output

#	Time	Action	Message
✓ 1	13:33:03	SELECT c.id, c.company_name AS Empresa, CASE WHEN COUNT(t.id) > 4 ...	100 row(s) returned