

EJERCICIO 1

Tabla dimensiones

COMPANY
id (PK) - VCHAR
company_name - VCHAR
phone - VCHAR
email - VCHAR
country V- CHAR
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 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.
lat	Dato que extraería de una tabla de 'Usuarios'
longitude	longitud geográfica
timestamp	latitud geográfica
amount	Un país puede tener 'N' Long+lat (coordenadas de puntos)
declined	Fecha y hora de cada transacción
	Importe cada transacción
	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.

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

3.1 OPCIÓN A

```
77 -----
78 -- NIVEL 2
79 -----
80 -- 3.1 Identifica els cinc dies que es va generar la quantitat més gran d'ingressos a l'empresa per vendes.
81 -- Mostra la data de cada transacció juntament amb el total de les vendes.
82
83 -- OPCIÓN A: sin mostrar el acum. de ventas total por empresa. Sólo el del día:
84
85 • SELECT t.timestamp AS DiaMayorVenta , t.company_id AS IDEmpresa, c.company_name AS Empresa,
86      SUM(t.amount) AS VentasDelDia
87 FROM transaction t
88 INNER JOIN company c ON t.company_id = c.id
89 WHERE t.declined = 0
90 GROUP BY t.timestamp, t.company_id, c.company_name
91 ORDER BY VentasDelDia DESC
92 LIMIT 5;
```

Result Grid				
Filter Rows: <input type="text"/>				
Export:				
Wrap Cell Content:				
	DiaMayorVenta	IDEmpresa	Empresa	VentasDelDia
▶	2021-06-21 11:23:01	b-2302	Nunc Interdum Incorporated	499.23
	2021-08-17 05:32:08	b-2302	Nunc Interdum Incorporated	497.84
	2021-08-21 10:19:58	b-2326	Enim Condimentum Ltd	494.82
	2021-08-28 20:01:52	b-2278	Arcu LLP	494.17
	2022-01-31 12:01:11	b-2618	Non Institute	492.42
Result 39 ×				
Output				
Action Output				
#	Time	Action	Message	
✓ 1	13:22:16	SELECT t.timestamp AS DiaMayorVenta , t.company_id AS IDEmpresa, c.co...	5 row(s) returned	

3.1 OPCIÓN B

```
94      -- OPCIÓN B: si queremos mostrar también el acumulado total de ventas de la empresa en cada línea:
95
96 •      SELECT t.timestamp AS DiaMayorVenta , t.company_id AS IDEmpresa, c.company_name AS Empresa,
97          SUM(t.amount) AS VentasDelDia, x.AcumVentasEmpresa
98      FROM transaction t
99      INNER JOIN company c ON t.company_id = c.id
100     INNER JOIN (
101         SELECT t1.company_id, SUM(t1.amount) AS AcumVentasEmpresa
102     FROM transaction t1
103     GROUP BY company_id
104     ) x
105     ON c.id = x.company_id
106     WHERE t.declined = 0
107     GROUP BY t.timestamp, t.company_id, c.company_name, x.AcumVentasEmpresa
108     ORDER BY VentasDelDia DESC
109     LIMIT 5;
```

Result Grid

	DiaMayorVenta	IDEmpresa	Empresa	VentasDelDia	AcumVentasEmpresa
▶	2021-06-21 11:23:01	b-2302	Nunc Interdum Incorporated	499.23	25622.65
	2021-08-17 05:32:08	b-2302	Nunc Interdum Incorporated	497.84	25622.65
	2021-08-21 10:19:58	b-2326	Enim Condimentum Ltd	494.82	14616.05
	2021-08-28 20:01:52	b-2278	Arcu LLP	494.17	14116.04
	2022-01-31 12:01:11	b-2618	Non Institute	492.42	8911.24

Result 40 ×

Output

Action Output

#	Time	Action	Message
✓ 1	13:23:07	SELECT t.timestamp AS DiaMayorVenta , t.company_id AS IDEmpresa, c.co...	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

	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

```

120 -- 3.3 En la teva empresa, es planteja un nou projecte per a llançar algunes campanyes publicitàries per a fer
121 -- competència a la companyia "Non Institute". Per a això, et demanen la llista de totes les transaccions
122 -- realitzades per empreses que estan situades en el mateix país que aquesta companyia.
123 -- 3.3.1. Mostra el llistat aplicant JOIN i subconsultes.
124

```

```

125 • SELECT t.*, c.country AS País, c.company_name AS Empresa
126 FROM transaction t
127 JOIN company c ON t.company_id = c.id
128 WHERE c.country = (
129     SELECT c1.country
130     FROM company c1
131     WHERE c1.company_name = 'Non Institute'
132 )
133 AND NOT c.company_name = 'Non Institute';

```

Result Grid										
Filter Rows: <input type="text"/>										
Export: Wrap Cell Content: <input type="checkbox"/>										
	id	credit_card_id	company_id	user_id	lat	longitude	timestamp	amount	declined	País
▶	2B928E1C-EC14-A760-0A75-871477649D6A	CcU-2980	b-2246	275	-41.0496	161.685	2021-08-10 08:14:49	383.73	0	United Kingdom
	ACD2011A-A2B1-C365-41E1-2AB00C65147A	CcU-2980	b-2246	275	-54.4792	-82.7974	2022-03-05 20:41:20	60.07	1	United Kingdom
	4334349E-CEB0-3D68-A4D4-FEB7718A1ACE	CcU-3092	b-2310	275	-20.4859	150.87	2021-05-03 22:37:23	458.74	0	United Kingdom
	BC2B9A38-77B4-28CD-1FE8-14DED863E773	CcU-3092	b-2310	275	-78.0295	18.5295	2021-10-18 07:27:35	477.95	1	United Kingdom
	1479B3D2-B7BA-C7BB-4CE3-8D7C2DE85ABB	CcU-2994	b-2326	133	66.2672	172.399	2021-08-09 00:58:07	309.45	0	United Kingdom
	152598C2-029D-D684-4B66-91EDF393EBFF	CcU-2994	b-2326	126	-67.0189	-141.672	2021-07-05 03:10:00	395.43	0	United Kingdom

Result 12 x

Output

Action Output

#	Time	Action	Message
✓ 1	11:16:04	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 ...	70 row(s) returned

```

137 • SELECT t.*, c.country AS País, c.company_name AS Empresa
138 FROM transaction t, company c
139 WHERE t.company_id = c.id
140 AND c.country = (
141     SELECT c2.country
142     FROM company c2
143     WHERE c2.company_name = 'Non Institute'
144 )
145 AND NOT c.company_name = 'Non Institute';
146

```

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

Result 29 x

Output

Action Output

#	Time	Action	Message
✓ 1	11:40:02	SELECT t.*, c.country AS País, c.company_name AS Empresa FROM transaction t, company c WHERE t.company_id = c.id AND c.country = (...	70 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;
```

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

	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 ×

Read

Output

Action Output

#	Time	Action	Message	Duration
✓ 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 FROM company c
174 INNER JOIN transaction t ON t.company_id = c.id
175 GROUP BY c.id, c.company_name
176 ORDER BY COUNT(t.id) DESC;
177
```

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	Malesuada PC	Mas de 4 ventas

Result 47 ×

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