

NIVELL 1

Ex1

Table Transaction = FACT TABLE

Table Company = DIMENSION TABLE

Relation = N to 1 (transaction.company_id = company.id)

La mayoría de los elementos son VARCHAR (string de letras y/o números) pero también hay Integer, Floats, una variable de tipo Boolean (True/False), una decimal y una de tipo fecha (timestamp).

Se establece la relación entre tables mediante la FOREIGN KEY transaction.company_id, a través de la instrucción REFERENCE.

Se observa que aparecen otras REFERENCE, una con user_id y otra con credit_card_id. Seguramente existan dos tablas mas de DIMENSIONES, una llamada Users, con información de los usuarios, y otra llamada Credit Cards, con información de las tarjetas de crédito. Así se montaría un esquema en estrella con la tabla Transaction como FACT TABLE en el medio.

Ejecutamos los dos archivos proporcionados, uno crea las tablas y las relaciones, el otro las llena de contenido.

Ex2

The screenshot shows a database management tool interface. At the top, there's a toolbar with various icons. Below it, a query editor displays the following SQL query:

```
1 #NIVELL 1
2
3 #Ex2
4 SELECT company_name, email, country FROM transactions.company
5 ORDER BY company_name;
```

Below the query editor, the 'Result Grid' tab is active, showing a table with three columns: company_name, email, and country. The table contains 20 rows of data, including entries like 'A Institute', 'Ac Fermentum Incorporated', 'Ac Industries', etc.

At the bottom, the 'Output' tab is active, showing a list of actions and their results. The actions are numbered 696 to 703, and the results show the number of rows returned for each query.

#	Time	Action	Message
696	16:45:53	SELECT DATE(timestamp), SUM(amount) FROM transaction GROUP BY DATE(timestamp) ORDER BY SUM(amount) DESC LIMIT 5	5 row(s) returned
697	16:45:55	SELECT DATE(timestamp), SUM(amount) FROM transaction GROUP BY DATE(timestamp) ORDER BY SUM(amount) ASC LIMIT 5	5 row(s) returned
698	16:45:58	SELECT AVG(amount), country FROM transaction, company WHERE company_id = transaction.company_id GROUP BY company.country ORDER BY	15 row(s) returned
699	16:46:07	SELECT company_name, SUM(amount) FROM company, (SELECT * FROM transaction WHERE amount BETWEEN 100 AND 200) AS transaction1...	37 row(s) returned
700	16:46:41	SELECT company_name, SUM(amount) FROM company, (SELECT * FROM transaction WHERE amount BETWEEN 100 AND 200) AS transaction1...	37 row(s) returned
701	16:46:55	SELECT DISTINCT(company_name) FROM company, transaction WHERE company_id = transaction.company_id AND timestamp LIKE (2022-03-16...	6 row(s) returned
702	16:47:08	SELECT DISTINCT(company_name) FROM company, transaction WHERE company_id = transaction.company_id AND timestamp LIKE (2022-03-16...	6 row(s) returned
703	16:59:17	SELECT company_name, email, country FROM transactions.company ORDER BY company_name	100 row(s) returned

Ex3

dades_intro | **estructura_datos** | **sprint**

```

7 #Ex3
8 SELECT DISTINCT country FROM company
9 INNER JOIN transaction
10 ON company_id = transaction.company_id;

```

company_name	email	country
A Institute	metus.aliquam@google.edu	Belgium
Ac Fermentum Incorporated	donec.porttitor.telus@yahoo.net	Germany
Ac Industries	ipsum@yahoo.com	Germany
Ac Libero Inc.	mollis.lectus@protonmail.ca	United Kingdom
Aliquam Erat Vitae Volutpat LLP	pede.nunc@icloud.net	Italy
Aliquam Inaculis Lacus Corp.	dictum@aol.org	Belgium
Aliquam PC	scelerisque.mollis@icloud.org	Germany
Aliquet Diam Limited	eu.erros.nam@icloud.org	United States
Alloqui Sem Limited	sem.magna@yahoo.edu	Netherlands
Alloqui Vel Vulputate Incorporated	suspendisse.commodo@outlook.co.uk	Netherlands
Amet Faucibus Ut Foundation	malesuada@icloud.net	United Kingdom
Amet Institute	nulla.labor.tis.quam@outlook.net	Australia
Amet Lorem LLP	ultrices.adipiscing@icloud.edu	Spain
Amet Lucius Vulputate Foundation	nulla@outlook.com	Canada
Amet Nula Donec Corporation	martis.integer.eu@protonmail.net	Italy
Ante Inaculis Nec Foundation	sed.dictum.prim@outlook.ca	New Zealand
Arcu LLP	dui@aol.dk	Norway
At Associates	tristique.neque@yahoo.co.uk	New Zealand
At Pede Corp.	ac.mi.elefeld@hotmail.edu	Italy
Auctor Mauris Corp.	eget.metus@protonmail.ca	Germany
Auctor Mauris Vel LP	nec.tempus@icloud.co.uk	United States
Augue Foundation	mauris@yahoo.com	Germany
Convallis In Incorporated	mauris.ut@aol.co.uk	Germany
Cras Proin Mollis	eget.crasenim.vitae@protonmail.ca	Russia

company 11 x

Output:

#	Time	Action	Message
697	16:45:55	SELECT DATE(timestamp), SUM(amount) FROM transaction GROUP BY DATE(timestamp) ORDER BY SUM(amount) ASC LIMIT 5	5 row(s) returned
698	16:46:58	SELECT AVG(amount), country FROM transaction, company WHERE company_id = transaction.company_id GROUP BY company.country ORDER BY ...	15 row(s) returned
699	16:46:57	SELECT company_name, SUM(amount) FROM company, (SELECT * FROM transaction WHERE amount BETWEEN 100 AND 200) AS transaction1...	37 row(s) returned
700	16:46:41	SELECT company_name, SUM(amount) FROM company, (SELECT * FROM transaction WHERE amount BETWEEN 100 AND 200) AS transaction1...	37 row(s) returned
701	16:46:55	SELECT DISTINCT(company_name) FROM company, transaction WHERE company_id = transaction.company_id AND timestamp LIKE (2022-03-16...)	6 row(s) returned
702	16:47:08	SELECT DISTINCT(company_name) FROM company, transaction WHERE company_id = transaction.company_id AND timestamp LIKE (2022-03-16...)	6 row(s) returned
703	16:59:17	SELECT company_name, email, country FROM transactions.company ORDER BY company_name	100 row(s) returned
704	17:00:25	SELECT company_name, email, country FROM transactions.company ORDER BY company_name	100 row(s) returned

Ex4

The screenshot shows the DBeaver SQL editor interface. The top toolbar includes icons for file operations, database connections, and a "Don't Limit" dropdown. The SQL editor contains the following query:

```

12 #Ex4
13 • SELECT COUNT(DISTINCT country) FROM company
14   INNER JOIN transaction
15     ON company.id = transaction.company_id;
16

```

Below the editor, the "Result Grid" tab is active, displaying the execution results. A tooltip is visible over the first row, showing the expression "COUNT(DISTINCT country)". The main grid displays one row with the value "15".

	COUNT(DISTINCT country)
▶ 15	

On the right side of the interface, there is a vertical toolbar with icons for "Result Grid", "Form Editor", "Field Types", "Query Stats", and "Execution Plan". At the bottom, the "Output" pane shows a log of actions performed during the execution of the query.

Action Output

#	Time	Action	Message
✓ 698	16:45:58	SELECT AVG(amount), country FROM transaction, company WHERE company.id = transaction.company_id GROUP BY company.country ORDER B...	15 row(s) returned
✓ 699	16:46:07	SELECT company_name, SUM(amount) FROM company, (SELECT * FROM transaction WHERE amount BETWEEN 100 AND 200) AS transaction1...	37 row(s) returned
✓ 700	16:46:41	SELECT company_name, SUM(amount) FROM company, (SELECT * FROM transaction WHERE amount BETWEEN 100 AND 200) AS transaction1...	37 row(s) returned
✓ 701	16:46:55	SELECT DISTINCT(company_name) FROM company, transaction WHERE company.id = transaction.company_id AND timestamp LIKE (2022-03-16...	6 row(s) returned
✓ 702	16:47:08	SELECT DISTINCT(company_name) FROM company, transaction WHERE company.id = transaction.company_id AND timestamp LIKE (2022-03-16...	6 row(s) returned
✓ 703	16:59:17	SELECT company_name, email, country FROM transactions.company ORDER BY company_name	100 row(s) returned
✓ 704	17:00:25	SELECT company_name, email, country FROM transactions.company ORDER BY company_name	100 row(s) returned
✓ 705	17:01:13	SELECT COUNT(DISTINCT country) FROM company INNER JOIN transaction ON company.id = transaction.company_id	1 row(s) returned

NIVELL 2

Ex1

dades_introduir estructura_dades sprint

```
#NIVELL 2  
#Ex1  
SELECT COUNT(id) FROM transactions.company  
GROUP BY id  
HAVING COUNT(id) > 1;
```

Result Grid | Filter Rows: | Exports | Wrap Cell Contents:

	COUNT(id)
--	-----------

Result 15 x Read Only

Output

Action Output

#	Time	Action	Message
✓	701 16:46:55	SELECT DISTINCT(company_name) FROM company, transaction WHERE company_id = transaction_company_id AND timestamp LIKE (2022-03-16 ...	6 row(s) returned
✓	702 16:47:08	SELECT DISTINCT(company_name) FROM company, transaction WHERE company_id = transaction_company_id AND timestamp LIKE (2022-03-16 ...	6 row(s) returned
✓	703 16:59:17	SELECT company_name, email, country FROM transactions.company ORDER BY company_name	100 row(s) returned
✓	704 17:00:25	SELECT company_name, email, country FROM transactions.company ORDER BY company_name	100 row(s) returned
✓	705 17:01:13	SELECT COUNT(DISTINCT country) FROM company INNER JOIN transaction ON company_id = transaction_company_id	1 row(s) returned
✓	706 17:02:12	SELECT company_name, country FROM company WHERE id = b-2354'	1 row(s) returned
✓	707 17:02:55	SELECT AVG(amount), company_name FROM transaction, company WHERE company_id = transaction_company_id GROUP BY company_name OR...	100 row(s) returned
✓	708 17:03:47	SELECT COUNT(id) FROM transactions.company GROUP BY id HAVING COUNT(id) > 1	0 row(s) returned

Ex2

dases_introduir

estructura_dades

sprint

Don't Limit

#Ex2

SELECT DATE(timestamp), SUM(amount) FROM transaction

GROUP BY DATE(timestamp)

ORDER BY SUM(amount) DESC

LIMIT 5;

Result Grid

Filter Rows:

Export:

Wrap Cell Contents:

DATE(timestamp)	SUM(amount)
2021-03-20	1564.87
2021-12-20	1532.36
2021-06-15	1469.90
2021-05-09	1463.73
2021-06-21	1443.11

Result 16

Output

Action Output

#	Time	Action	Message
702	16:47:08	SELECT DISTINCT(company_name) FROM company, transaction WHERE company_id = transaction.company_id AND timestamp LIKE (2022-03-16...	6 row(s) returned
703	16:59:17	SELECT company_name, email, country FROM transactions company ORDER BY company_name	100 row(s) returned
704	17:00:25	SELECT company_name, email, country FROM transactions company ORDER BY company_name	100 row(s) returned
705	17:01:13	SELECT COUNT(DISTINCT country) FROM company INNER JOIN transaction ON company_id = transaction.company_id	1 row(s) returned
706	17:02:12	SELECT company_name, country FROM company WHERE id = b-2354'	1 row(s) returned
707	17:02:55	SELECT AVG(amount), company_name FROM transaction, company WHERE company_id = transaction.company_id GROUP BY company_name OR...	100 row(s) returned
708	17:03:47	SELECT COUNT(id) FROM transactions company GROUP BY id HAVING COUNT(id) > 1	0 row(s) returned
709	17:04:26	SELECT DATE(timestamp), SUM(amount) FROM transaction GROUP BY DATE(timestamp) ORDER BY SUM(amount) DESC LIMIT 5	5 row(s) returned

Ex3

estructura_datos

sprint1

Don't Limit

#Ex3

```

40
41
42 • SELECT DATE(timestamp), SUM(amount) FROM transaction
43 GROUP BY DATE(timestamp)
44 ORDER BY SUM(amount) ASC
45 LIMIT 5;

```

Result Grid

Filter Rows:

Export:

Wrap Cell Contents:

DATE(timestamp)	SUM(amount)
2022-01-04	15.05
2022-04-27	18.08
2022-01-24	23.86
2022-02-27	30.76
2022-01-14	37.55

Result 17

Read Only

Action Output

#

Time

Action

Message

703

16:59:17

SELECT company_name, email, country FROM transactions.company ORDER BY company_name

100 row(s) returned

704

17:00:25

SELECT company_name, email, country FROM transactions.company ORDER BY company_name

100 row(s) returned

705

17:01:13

SELECT COUNT(DISTINCT country) FROM company INNER JOIN transaction ON company.id = transaction.company_id

1 row(s) returned

706

17:02:12

SELECT company_name, country FROM company WHERE id = b-2354

1 row(s) returned

707

17:02:55

SELECT AVG(amount), company_name FROM transaction, company WHERE company.id = transaction.company_id GROUP BY company_name OR...

100 row(s) returned

708

17:03:47

SELECT COUNT(id) FROM transactions.company GROUP BY id HAVING COUNT(id) > 1

0 row(s) returned

709

17:04:26

SELECT DATE(timestamp), SUM(amount) FROM transaction GROUP BY DATE(timestamp) ORDER BY SUM(amount) DESC LIMIT 5

5 row(s) returned

710

17:05:11

SELECT DATE(timestamp), SUM(amount) FROM transaction GROUP BY DATE(timestamp) ORDER BY SUM(amount) ASC LIMIT 5

5 row(s) returned

Ex4

estructura_datos

sprint1

Don't Limit

#Ex4

```

47 SELECT AVG(amount), country FROM transaction, company
48 WHERE company.id = transaction.company_id
49 GROUP BY company.country
50 ORDER BY AVG(amount) DESC;
51
52

```

Result Grid

Filter Rows:

Exports

Wrap Cell Contents:

	AVG(amount)	country
309.179412	United States	
277.308387	Ireland	
270.731700	United Kingdom	
269.647869	Canada	
260.615063	Sweden	
254.216324	Norway	
253.017778	Netherlands	
244.203220	Germany	
232.052500	Australia	
228.147692	Belgium	
227.556667	China	
222.277273	New Zealand	
201.590000	Italy	
179.198333	France	
53.400000	Spain	

Result 18

Read Only

Action Output

#

Time

Action

Message

704

17:00:25

SELECT company_name, email, country FROM transactions company ORDER BY company_name

100 row(s) returned

705

17:01:13

SELECT COUNT(DISTINCT country) FROM company INNER JOIN transaction ON company.id = transaction.company_id

1 row(s) returned

706

17:02:12

SELECT company_name, country FROM company WHERE id = b-2354

1 row(s) returned

707

17:02:55

SELECT AVG(amount), company_name FROM transaction, company WHERE company.id = transaction.company_id GROUP BY company_name OR...

100 row(s) returned

708

17:03:47

SELECT COUNT(id) FROM transactions company GROUP BY id HAVING COUNT(id) > 1

0 row(s) returned

709

17:04:26

SELECT DATE(timestamp), SUM(amount) FROM transaction GROUP BY DATE(timestamp) ORDER BY SUM(amount) DESC LIMIT 5

5 row(s) returned

710

17:05:11

SELECT DATE(timestamp), SUM(amount) FROM transaction GROUP BY DATE(timestamp) ORDER BY SUM(amount) ASC LIMIT 5

5 row(s) returned

711

17:05:48

SELECT AVG(amount), country FROM transaction, company WHERE company.id = transaction.company_id GROUP BY company.country ORDER B...

15 row(s) returned

NIVELL 3

Ex1

The screenshot shows a SQL Studio interface. The top toolbar includes icons for file operations, running queries, and saving. Below the toolbar, there are tabs for 'estructura_datos' and 'sprint1'. The main editor displays a SQL query:

```
#Ex1
SELECT company_name, SUM(amount)
FROM company, (SELECT * FROM transaction
               WHERE amount BETWEEN 100 AND 200) AS transaction100200
WHERE transaction100200.company_id = company.id
GROUP BY company_name
ORDER BY SUM(amount) DESC;
```

Below the query editor, the 'Result Grid' tab is active, displaying the following results:

company_name	SUM(amount)
Eren Condominium Ltd	2747.41
Nunc Interdum Incorporated	2412.55
Ut Semper Foundation	2285.80
Arcu LLP	1589.00
Lorem Eu Incorporated	1544.61
Malesuada PC	1255.22
Non Institute	1070.31
At Associates	968.81
Cras Vehicula Aliquet Industries	339.92
Tristique Neque Venenatis Institute	296.30
Auctor Mauris Vel LLP	287.60
Nec Luctus LLC	268.32
Amet Nulla Donec Corporation	197.65
Ac Libero Inc.	186.34
Nunc In Foundation	183.84
Ac Industries	183.14
Tincidunt Associates	173.34
Dolor Vitae Limited	164.88
Interdum Egestas Tellus Associates	164.86

On the right side, there is a vertical toolbar with icons for 'Result Grid', 'Form Editor', 'Field Types', 'Query State', and 'Execution Plan'. At the bottom, the 'Output' pane shows the execution log with timestamps and messages indicating successful query execution.

Ex2

[illegible]