SPRINT 4

Nivell 1

Descàrrega els arxius CSV, estudia'ls i dissenya una base de dades amb un esquema d'estrella que contingui,#almenys 4 taules de les quals puguis realitzar les següents consultes:

1)*creo la base de datos sales b

```
CREATE DATABASE IF NOT EXISTS salesb;

USE salesb;
```

2)he cambiado el formato fecha a varchar porque estan en diferentes formatos, el user id a varchar y el id a varchar y ya no me da error

3)Creo la tabla credit cards

```
CREATE TABLE credit_cards (
  id VARCHAR(50) PRIMARY KEY,
  user_id VARCHAR(50),
  iban VARCHAR(100),
  pan VARCHAR(100),
  pin VARCHAR(100),
  cvv VARCHAR(100),
        track1 TEXT,
  track2 TEXT,
  expiring_date VARCHAR(50)
);
 set global local_infile = "on" ;
```

4)cambios : cambié el slash de direccion y ahora ya me permite acceder a los archivos , si el slash está para el otro lado (izquierdo) no te deja acceder a los archivos)

```
LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/credit_cards.csv'
```

```
INTO TABLE credit_cards
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
LINES TERMINATED BY '\n'
IGNORE 1 LINES;
```

5)Creo la tabla transactions

```
USE salesb;
CREATE TABLE transactions(
  id VARCHAR(100) PRIMARY KEY,
  card_id VARCHAR(100),
          business_id VARCHAR(100),
  timestamp TIMESTAMP,
          amount DECIMAL(10, 2),
  declined  BOOLEAN,
          product_ids TEXT,
  user_id TEXT,
  lat FLOAT,
  longitude FLOAT
);

 set global local_infile = "on" ;

 SET SESSION SQL_MODE='ALLOW_INVALID_DATES';

LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/transactions.csv'
```

```
 INTO TABLE transactions
 FIELDS TERMINATED BY ';'
 ENCLOSED BY '"'
 LINES TERMINATED BY  '\n'
  IGNORE 1 LINES;

  #me da error en el timestamp y lo he camniado a varchar
```

6)Creo la tabla companies

```
USE salesb;

 CREATE TABLE companies(
   company_id VARCHAR(100) PRIMARY KEY,
    company_name VARCHAR(100),
               email VARCHAR(100),
   phone VARCHAR(100),
   country VARCHAR(100),
   website VARCHAR(100)

);
  set global local_infile = "on" ;

  SET SESSION SQL_MODE='ALLOW_INVALID_DATES';
 LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server
8.0/Uploads/companies.csv'
 INTO TABLE companies
 FIELDS TERMINATED BY ','
 ENCLOSED BY '"'
 LINES TERMINATED BY '\n'
 IGNORE 1 LINES ;
```

7)Creo la tabla users

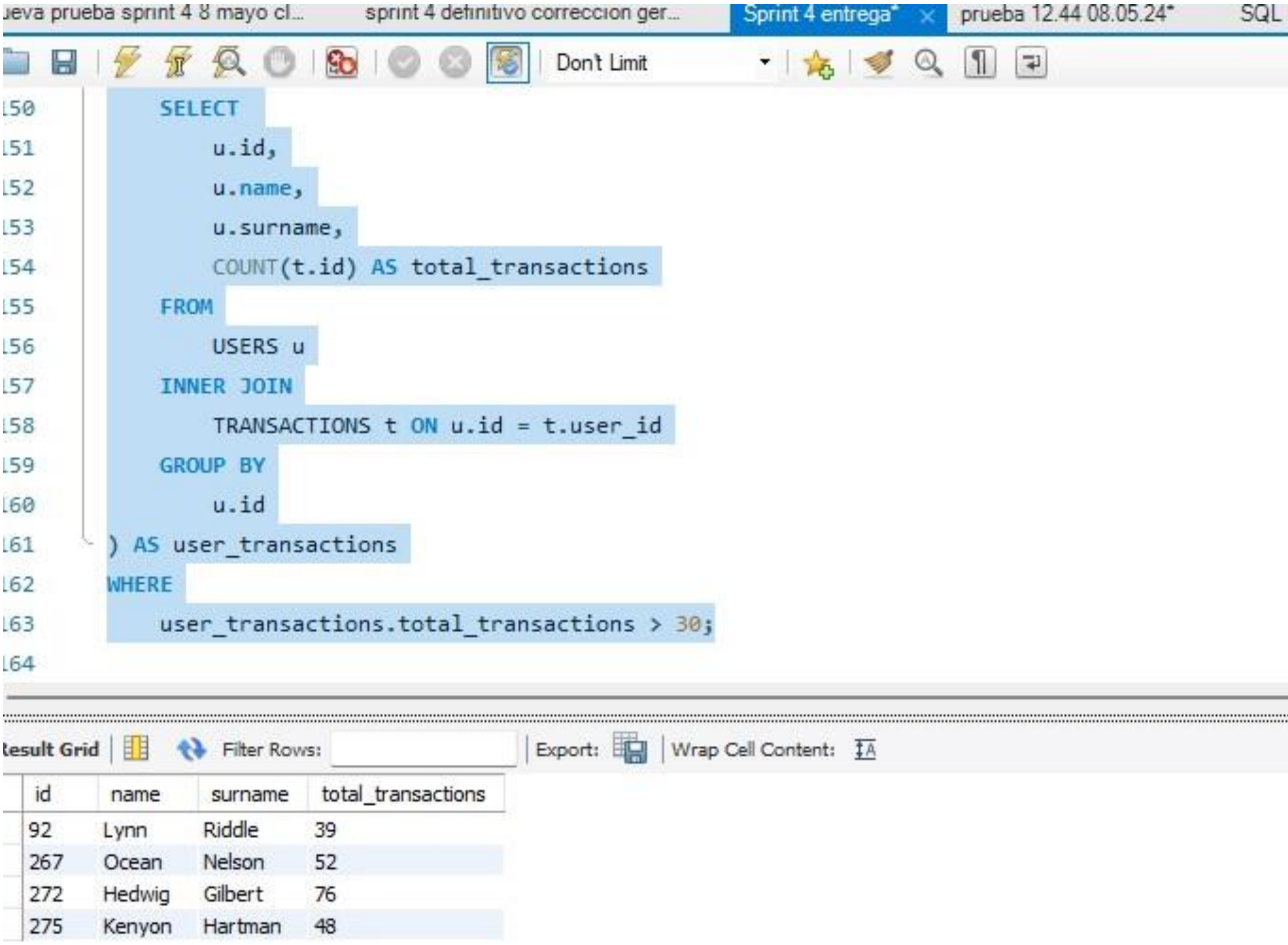
```
USE salesb;

 CREATE TABLE users(
	id INT PRIMARY KEY,
	name VARCHAR(100),
	surname VARCHAR(100),
	phone VARCHAR(100),
	email VARCHAR(100),
	birth_date VARCHAR(50) ,
	country VARCHAR(100),
	city VARCHAR(100),
	postal_code VARCHAR(100),
	address VARCHAR(100)
);

  set global local_infile = "on" ;
  #SET SESSION SQL_MODE='ALLOW_INVALID_DATES';
 LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/users_usa.csv'
 INTO TABLE users
 FIELDS TERMINATED BY ','
 ENCLOSED BY '"'
 LINES TERMINATED BY '\r\n'
 IGNORE 1 LINES ;
 LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/users_ca.csv'
 INTO TABLE users
 FIELDS TERMINATED BY ','
 ENCLOSED BY '"'
 LINES TERMINATED BY '\r\n'
 IGNORE 1 LINES ;

 LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/users_uk.csv'
 INTO TABLE users
 FIELDS TERMINATED BY ','
 ENCLOSED BY '"'
 LINES TERMINATED BY '\r\n'
 IGNORE 1 LINES ;

 #añado las foreig keys

ALTER TABLE transactions ADD CONSTRAINT fk_card_id FOREIGN KEY (card_id) REFERENCES credit_cards(id);
ALTER TABLE transactions ADD CONSTRAINT fk_business_id FOREIGN KEY (business_id) REFERENCES companies(company_id);
ALTER TABLE transactions MODIFY COLUMN user_id INT;
ALTER TABLE transactions ADD CONSTRAINT fk_user_id FOREIGN KEY (user_id) REFERENCES users(id);
CREATE INDEX idx_declined ON transactions(declined);
```

- Exercici 1

#Realitza una subconsulta que mostri tots els usuaris amb més de 30 transaccions utilitzant almenys 2 taules.

*Aquí hago una subconsulta para el id , el name, y el surname de user y que haga un count de transactions.id para luego hacer un join con el id de users y el user_id de transactions. AL final le fongo la clausula whsere para responder a la pregunta :

```
SELECT * FROM (
  SELECT
    u.id,
    u.name,
    u.surname,
    COUNT(t.id) AS total_transactions
  FROM
    USERS u
  INNER JOIN
    TRANSACTIONS t ON u.id = t.user_id
  GROUP BY
    u.id
) AS user_transactions
WHERE
  user_transactions.total_transactions > 30;
```



```
    SELECT
        u.id,
        u.name,
        u.surname,
        COUNT(t.id) AS total_transactions
    FROM
        USERS u
    INNER JOIN
        TRANSACTIONS t ON u.id = t.user_id
    GROUP BY
        u.id
) AS user_transactions
WHERE
    user_transactions.total_transactions > 30;
```

id	name	surname	total_transactions
92	Lynn	Riddle	39
267	Ocean	Nelson	52
272	Hedwig	Gilbert	76
275	Kenyon	Hartman	48

- Exercici 2

Mostra la mitjana d'amount per IBAN de les targetes de crèdit a la companyia Donec Ltd, utilitza almenys 2 taules.

SELECT cc.iban, AVG(t.amount) AS average_amount

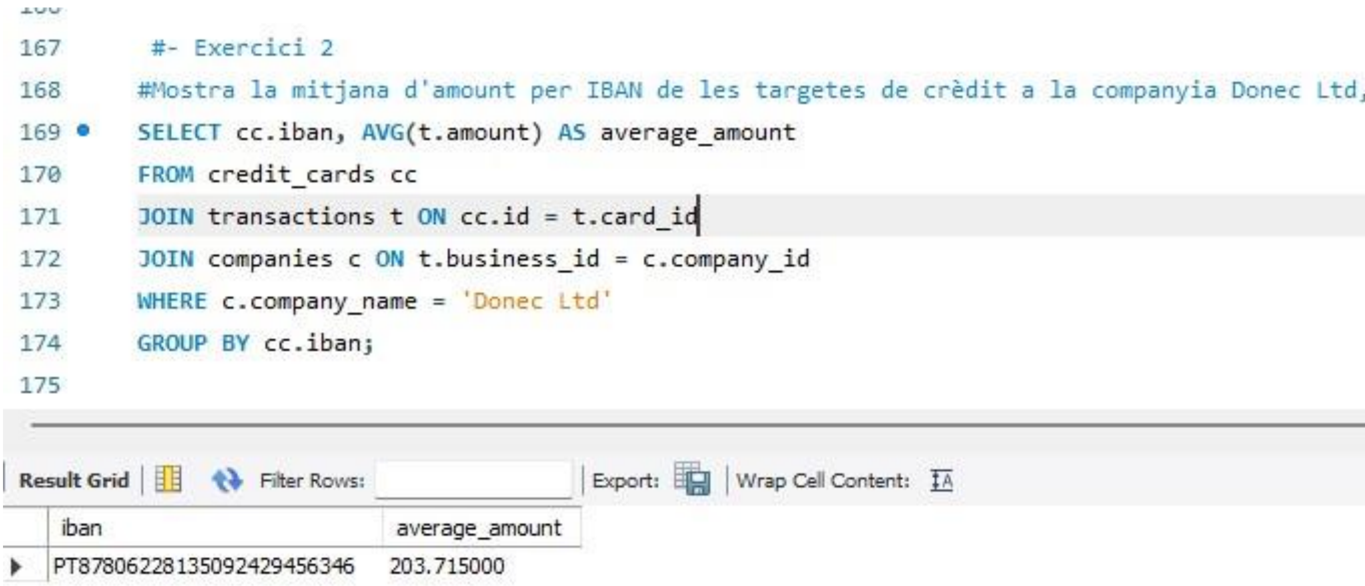
FROM credit_cards cc

JOIN transactions t ON cc.id = t.card_id

JOIN companies c ON t.business_id = c.company_id

WHERE c.company_name = 'Donec Ltd'

GROUP BY cc.iban;



```
 #- Exercici 2
#Mostra la mitjana d'amount per IBAN de les targetes de crèdit a la companyia Donec Ltd,
SELECT cc.iban, AVG(t.amount) AS average_amount
FROM credit_cards cc
JOIN transactions t ON cc.id = t.card_id
JOIN companies c ON t.business_id = c.company_id
WHERE c.company_name = 'Donec Ltd'
GROUP BY cc.iban;
```

iban	average_amount
PT87806228135092429456346	203.715000

Nivell 2

Crea una nova taula que reflecteixi l'estat de les targetes de crèdit basat en si les últimes tres transaccions van ser declinades i genera la següent consulta:

Exercici 1

Quantes targetes estan actives?

1.He creado la tabla credit_card_status

```
CREATE TABLE credit_card_status (
   card_id VARCHAR(100) PRIMARY KEY,
   last_three_transactions_declined BOOLEAN
);
```

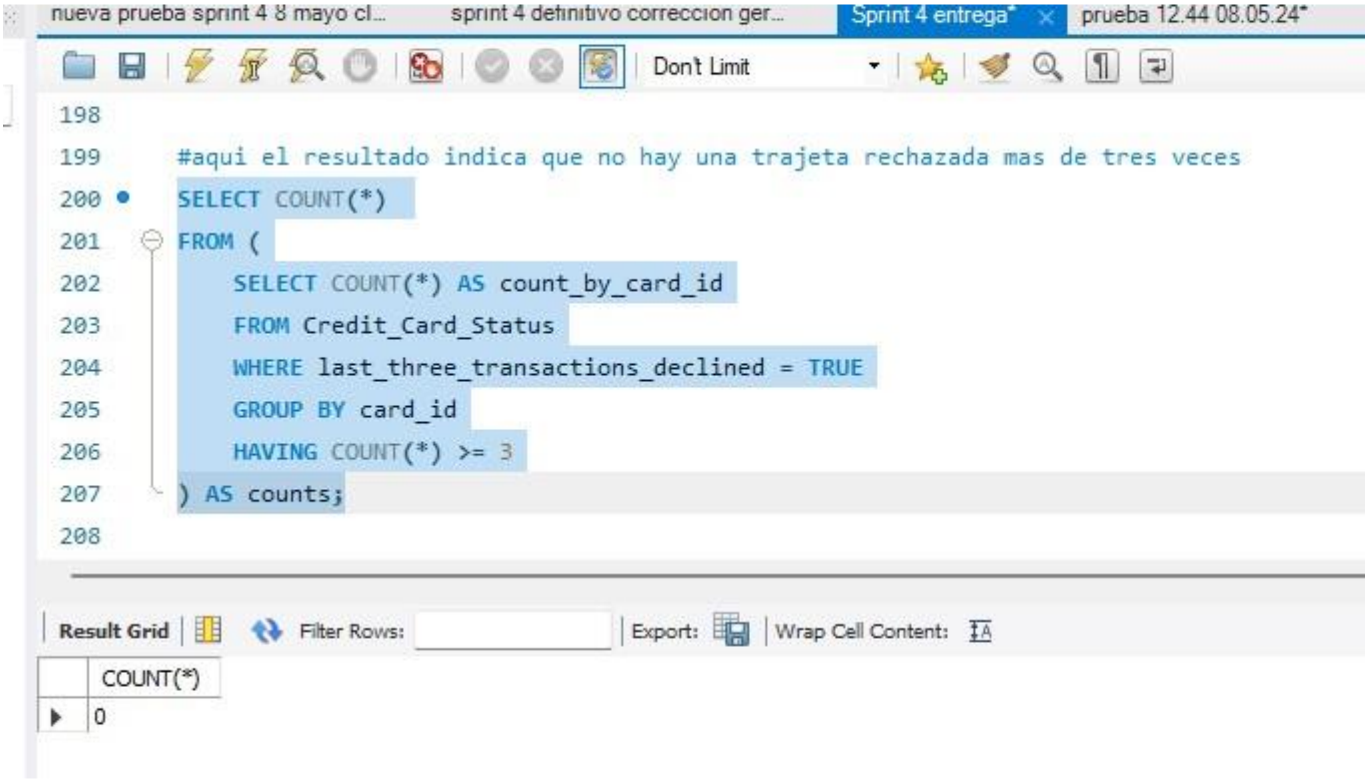
2.Inserté los datos con una query

```
INSERT INTO credit_card_status (card_id, last_three_transactions_declined)
SELECT
   card_id,
   COUNT(CASE WHEN declined = 1 THEN 1 END) >= 3 AS
last_three_transactions_declined
```

```
FROM
  transactions
GROUP BY
  card_id;
```

3.aqui el resultado indica que no hay una trajeta rechazada mas de tres veces

```
SELECT COUNT(*)
FROM (
  SELECT COUNT(*) AS count_by_card_id
  FROM Credit_Card_Status
  WHERE last_three_transactions_declined = TRUE
  GROUP BY card_id
  HAVING COUNT(*) >= 3
) AS counts;
```



```
#aqui el resultado indica que no hay una trajeta rechazada mas de tres veces
SELECT COUNT(*)
FROM (
    SELECT COUNT(*) AS count_by_card_id
    FROM Credit_Card_Status
    WHERE last_three_transactions_declined = TRUE
    GROUP BY card_id
    HAVING COUNT(*) >= 3
) AS counts;
```

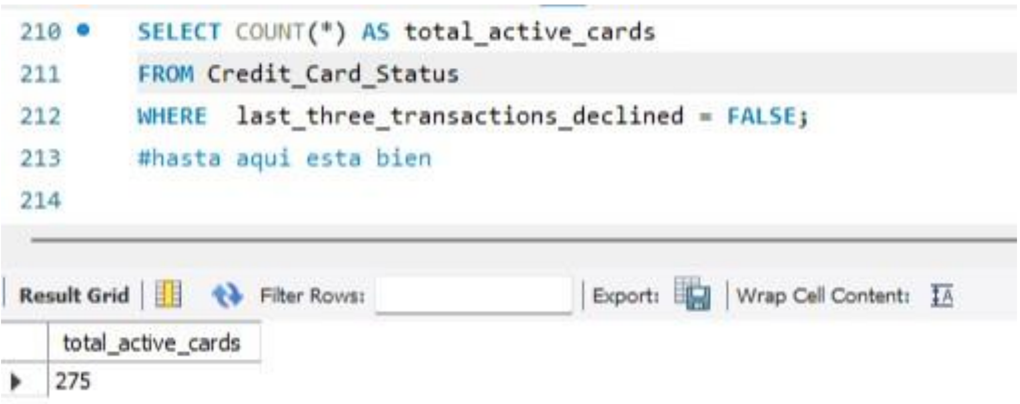
COUNT(*)
0

#cuantas tarjetas estan activas ? estan todas activas

SELECT COUNT(*) AS total_active_cards

FROM Credit_Card_Status

WHERE last_three_transactions_declined = FALSE;



```
SELECT COUNT(*) AS total_active_cards
FROM Credit_Card_Status
WHERE  last_three_transactions_declined = FALSE;
#hasta aqui esta bien
```

```
total_active_cards
275
```

Nivell 3

Crea una taula amb la qual puguem unir les dades del nou arxiu products.csv amb la base de dades creada,tenint en compte que des de transaction tens product_ids. Genera la següent consulta:

#Exercici 1

#Necessitem conèixer el nombre de vegades que s'ha venut cada producte.

*Creo la tabla products

use salesb;

CREATE TABLE products (

  id varchar (100) PRIMARY KEY,

  product_name VARCHAR(100),

  price DECIMAL(10, 2),

  colour VARCHAR(50),

```
  weight DECIMAL(10, 2),
  warehouse_id VARCHAR (100)
);
```

```
 set global local_infile = "on" ;
LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/products.csv'
INTO TABLE products
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
LINES TERMINATED BY '\n'
IGNORE 1 LINES
```

*aquí tengo q modificar Price porque me da error , y después de modificar ya no me da error :

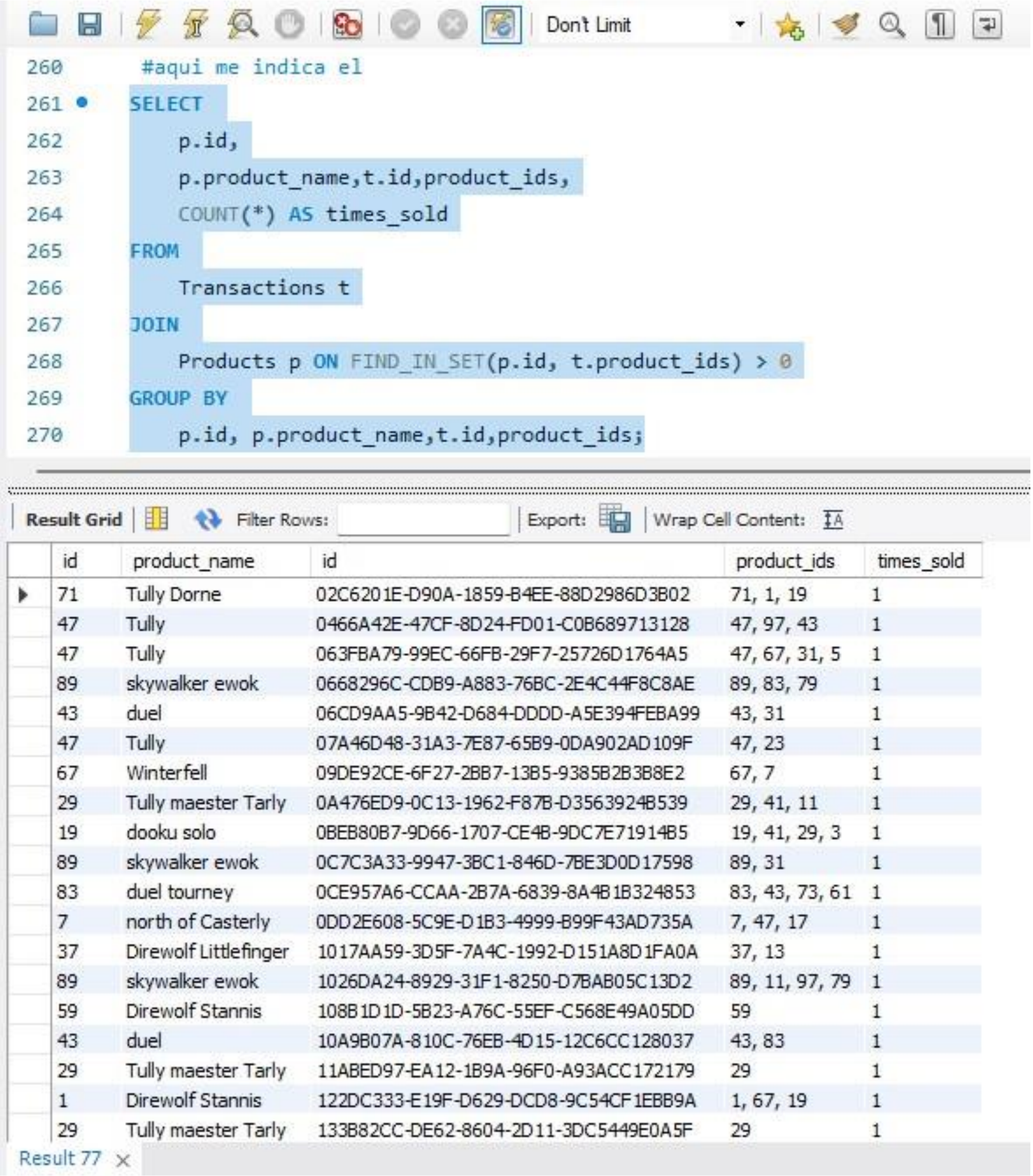
```
(@id, @product_name, @price ,@colour,@weight,@warehouse_id )  -- Definir variables para las columnas
SET
  id = @id,
  product_name = @product_name,
  price = REPLACE(@price, '$', ''),
  colour =  @colour,
  weight = @weight,
  warehouse_id = @warehouse_id
  ;  -- Eliminar el símbolo "$" de la columna price
```

```
ALTER TABLE transactions ADD CONSTRAINT fk_product_ids FOREIGN KEY (product_ids) REFERENCES product(id);
```

```
SELECT transactions.product_ids AS id_prom_product, products.id AS id_product, transactions.id

FROM sales.products

JOIN transactions ON products.id = transactions.product_ids;
```

#primera prueba : aquí me da todos los datos q le pido pero no me cuenta los productos vendidos , debo estar agrupando mal

```
SELECT

  p.id,

  p.product_name,t.id,product_ids,

  COUNT(*) AS times_sold

FROM

  Transactions t

JOIN

  Products p ON FIND_IN_SET(p.id, t.product_ids) > 0

GROUP BY

  p.id, p.product_name,t.id,product_ids;
```



```
 #aqui me indica el
SELECT
    p.id,
    p.product_name,t.id,product_ids,
    COUNT(*) AS times_sold
FROM
    Transactions t
JOIN
    Products p ON FIND_IN_SET(p.id, t.product_ids) > 0
GROUP BY
    p.id, p.product_name,t.id,product_ids;
```

id	product_name	id	product_ids	times_sold
71	Tully Dorne	02C6201E-D90A-1859-B4EE-88D2986D3B02	71, 1, 19	1
47	Tully	0466A42E-47CF-8D24-FD01-C0B689713128	47, 97, 43	1
47	Tully	063FBA79-99EC-66FB-29F7-25726D1764A5	47, 67, 31, 5	1
89	skywalker ewok	0668296C-CDB9-A883-76BC-2E4C44F8C8AE	89, 83, 79	1
43	duel	06CD9AA5-9B42-D684-DDDD-A5E394FEBA99	43, 31	1
47	Tully	07A46D48-31A3-7E87-65B9-0DA902AD109F	47, 23	1
67	Winterfell	09DE92CE-6F27-2BB7-13B5-9385B2B3B8E2	67, 7	1
29	Tully maester Tarly	0A476ED9-0C13-1962-F87B-D3563924B539	29, 41, 11	1
19	dooku solo	0BEB80B7-9D66-1707-CE4B-9DC7E71914B5	19, 41, 29, 3	1
89	skywalker ewok	0C7C3A33-9947-3BC1-846D-7BE3D0D17598	89, 31	1
83	duel tourney	0CE957A6-CCAA-2B7A-6839-8A4B1B324853	83, 43, 73, 61	1
7	north of Casterly	0DD2E608-5C9E-D1B3-4999-B99F43AD735A	7, 47, 17	1
37	Direwolf Littlefinger	1017AA59-3D5F-7A4C-1992-D151A8D1FA0A	37, 13	1
89	skywalker ewok	1026DA24-8929-31F1-8250-D7BAB05C13D2	89, 11, 97, 79	1
59	Direwolf Stannis	108B1D1D-5B23-A76C-55EF-C568E49A05DD	59	1
43	duel	10A9B07A-810C-76EB-4D15-12C6CC128037	43, 83	1
29	Tully maester Tarly	11ABED97-EA12-1B9A-96F0-A93ACC172179	29	1
1	Direwolf Stannis	122DC333-E19F-D629-DCD8-9C54CF1EBB9A	1, 67, 19	1
29	Tully maester Tarly	133B82CC-DE62-8604-2D11-3DC5449E0A5F	29	1

#me da 587 rows returnes