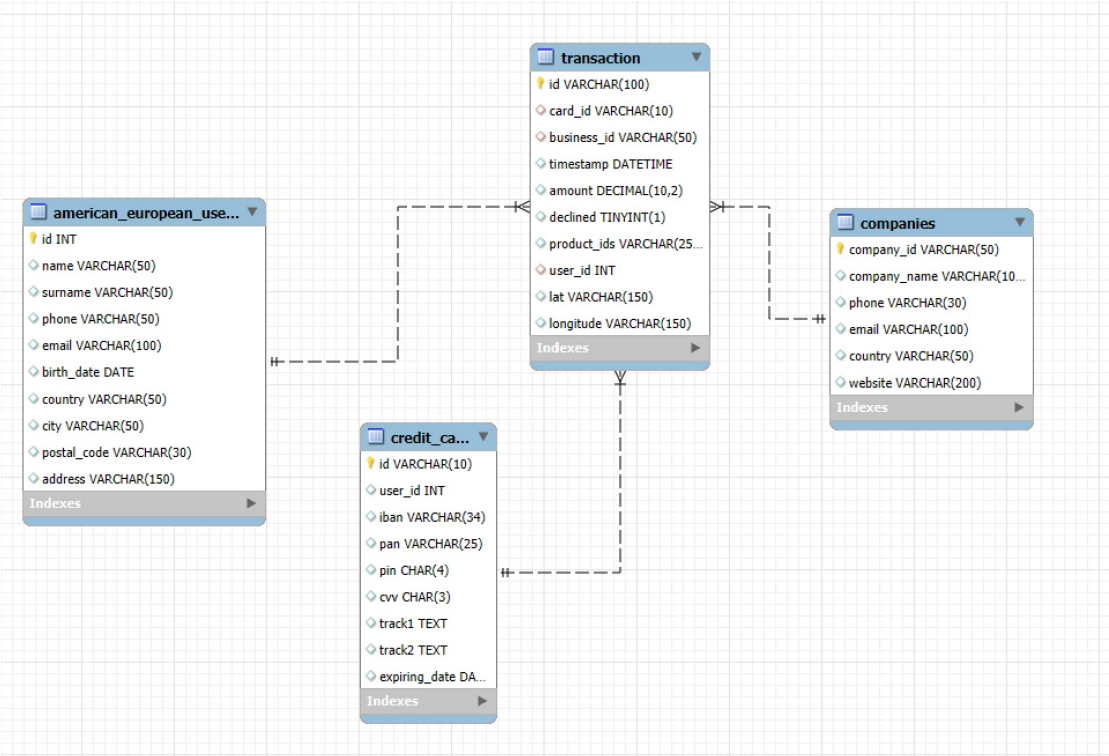
Alumna: Mariela Giménez Riveros

Crear la base de datos con sus respectivas tablas



CREACIÓN TABLAS Y CARGAR DATOS:

Tabla de "AMERICAN_USERS_RAW" he creado para tener una tabla temporal ya que "birth_date" esta en formato de string y luego creé la Tabla de american_users y insertar alli el birth_date de tipo Date.

```sql
CREATE TABLE american_users_raw (
    id INT,
    name VARCHAR(100),
    surname VARCHAR(100),
    phone VARCHAR(50),
    email VARCHAR(150),
    birth_date VARCHAR(50), -- formato tipo 'Nov 17, 1985'
    country VARCHAR(100),
    city VARCHAR(100),
    postal_code VARCHAR(20),
    address VARCHAR(255)
);

#cargar datos...
LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.4/Uploads/american_users.csv'
INTO TABLE american_users_raw
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
LINES TERMINATED BY '\n'
IGNORE 1 ROWS;
```

```sql
CREATE TABLE american_users (
    id INT,
    name VARCHAR(100),
    surname VARCHAR(100),
    phone VARCHAR(50),
    email VARCHAR(150),
    birth_date DATE,
    country VARCHAR(100),
    city VARCHAR(100),
    postal_code VARCHAR(20),
    address VARCHAR(255)
);

#Insertar los datos de american_users_raw a american_users
INSERT INTO american_users
SELECT
    id,
    name,
    surname,
    phone,
    email,
    STR_TO_DATE(birth_date, '%b %d, %Y') AS birth_date,
    country,
    city,
    postal_code,
    address
FROM american_users_raw;
```

2. Crear la Tabla EUROPEAN_USERS_RAW he creado para tener una tabla temporal ya que "birth_date" esta en formato de string y luego creé la Tabla de EUROPEAN_USERS y insertar alli el birth_date de tipo Date. Utilice STR_TO_DATE() para convertir el valor de string en Date(fecha)

El '%b %e, %Y' indica el formato en el que está escrita la fecha en la cadena.

```sql
CREATE TABLE european_users_raw (
    id INT,
    name VARCHAR(100),
    surname VARCHAR(100),
    phone VARCHAR(50),
    email VARCHAR(150),
    birth_date VARCHAR(50), -- fecha como texto
    country VARCHAR(100),
    city VARCHAR(100),
    postal_code VARCHAR(20),
    address VARCHAR(255)
);
 #cargar los datos
LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.4/Uploads/european_users.csv'
INTO TABLE european_users_raw
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
LINES TERMINATED BY '\n'
IGNORE 1 ROWS;
```

```sql
CREATE TABLE european_users (
    id INT PRIMARY KEY,
    name VARCHAR(50),
    surname VARCHAR(50),
    phone VARCHAR(50),
    email VARCHAR(100),
    birth_date DATE,
    country VARCHAR(50),
    city VARCHAR(50),
    postal_code VARCHAR(30),
    address VARCHAR(150)
);

#insertar datos
INSERT INTO european_users
SELECT
    id,
    name,
    surname,
    phone,
    email,
    STR_TO_DATE(birth_date, '%b %e, %Y') AS birth_date,
    country,
    city,
    postal_code,
    address
FROM european_users_raw;
```

Fusionar las tablas temporales a la tabla AMERICAN_EUROPEAN_USERS porque tienen las mismas columnas y era innesario tener tablas por separado. Para añadir los valores a la tabla Utilice la función INSERT().

```sql
CREATE TABLE american_european_users (
    id INT PRIMARY KEY,
    name VARCHAR(50),
    surname VARCHAR(50),
    phone VARCHAR(50),
    email VARCHAR(100),
    birth_date DATE,
    country VARCHAR(50),
    city VARCHAR(50),
    postal_code VARCHAR(30),
    address VARCHAR(150)
);

-- 3. Insertar ambos en AMERICAN_EUROPEAN_USERS:
INSERT INTO american_european_users
SELECT * FROM american_users;

INSERT INTO american_european_users
SELECT * FROM european_users;
select count(*) from american_european_users;
```

CREANDO LA TABLA CREDIT_CARD_RAW temporal porque la fecha esta de tipo cadena y haré lo mismo que las tablas anteriores, luego se inserta en la tabla CREDIT_CARD

```sql
CREATE TABLE credit_card_raw (
    id VARCHAR(10),
    user_id INT,
    iban VARCHAR(34),
    pan VARCHAR(25),
    pin CHAR(4),
    cvv CHAR(3),
    track1 TEXT,
    track2 TEXT,
    expiring_date VARCHAR(10)  -- fecha como texto, ej: 10/30/22
);

#cargar datos
LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.4/Uploads/credit_cards.csv'
INTO TABLE credit_card_raw
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
LINES TERMINATED BY '\n'
IGNORE 1 ROWS;
```

```sql
CREATE TABLE credit_card (
    id VARCHAR(10) PRIMARY KEY,
    user_id INT,
    iban VARCHAR(34),
    pan VARCHAR(25),
    pin CHAR(4),
    cvv CHAR(3),
    track1 TEXT,
    track2 TEXT,
    expiring_date DATE
);

INSERT INTO credit_card
SELECT
    id,
    user_id,
    iban,
    pan,
    pin,
    cvv,
    track1,
    track2,
    STR_TO_DATE(expiring_date, '%m/%d/%y') AS expiring_date
FROM credit_card_raw;
```

CREANDO LA TABLA COMPANIES y cargar datos

```sql
CREATE TABLE companies (
    company_id VARCHAR(50) PRIMARY KEY,
    company_name VARCHAR(100),
    phone VARCHAR(30),
    email VARCHAR(100),
    country VARCHAR(50),
    website VARCHAR(200)
);

#cargar datos
LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.4/Uploads/companies.csv'
INTO TABLE companies
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
LINES TERMINATED BY '\n'
IGNORE 1 ROWS;
```

CREANDO LA TABLA DE TRANSACTION

```sql
CREATE TABLE transaction (
    id VARCHAR(100) PRIMARY KEY,
    card_id VARCHAR(10),
    business_id VARCHAR(50),
    timestamp DATETIME,
    amount DECIMAL(10,2),
    declined BOOLEAN,
    product_ids VARCHAR(255),
    user_id INT,
    lat VARCHAR(150),
    longitude VARCHAR(150),
    FOREIGN KEY (card_id) REFERENCES credit_card(id),
    FOREIGN KEY (business_id) REFERENCES companies(company_id),
    FOREIGN KEY (user_id) REFERENCES american_european_users(id)
);
```

```sql
LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.4/Uploads/transactions.csv'
INTO TABLE transaction
FIELDS TERMINATED BY ';'
ENCLOSED BY '"'
LINES TERMINATED BY '\n'
IGNORE 1 ROWS;
```

EJERCICIO 1

1 Realizar una subconsulta que muestre todas los usuarios con más de 80 transacciones utilizando al menos 2 tablas.

```sql
SELECT u.name, t.amount
FROM american_european_users u
JOIN (
    SELECT t.amount, t.user_id #, COUNT(*) AS total_transactions
    FROM transaction t
    where t.amount >= 80
    GROUP BY t.amount, t.user_id
) t ON u.id = t.user_id
order by t.amount desc;
```

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

name	amount
Ioaib	876.66
Fhrhqn	858.60
Neil	858.55
Reed	845.91
Genevieve	825.14
Tupvan	824.65
Upton	821.08
Qirpsrzg	817.06
Slet	811.46

Result 104

Output

Action Output

#	Time	Action	Message
1	19:54:35	SELECT u.name, t.amount FROM american_european_users u JOIN (SELECT t.amount, t.user_id #, CO...	1000 row(s) returned

Ejercicio 2.

2.1- Muestra la mediana de amount por IBAN de las tarjetas de creditos a la compañia DONEC LTD. Utiliza al menos 2 tablas.

```sql
select c.company_name, round(avg(t.amount),2) as mediana_amount
from transaction t join credit_card cc
on t.card_id = cc.id
join companies c on t.business_id = c.company_id
where c.company_name = "Donec Ltd"
group by t.amount
#having round(avg(t.amount),2)
order by t.amount desc;
```

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

company_name	mediana_amount
Donec Ltd	680.69
Donec Ltd	680.01
Donec Ltd	645.46
Donec Ltd	639.79
Donec Ltd	628.89
Donec Ltd	608.68
Donec Ltd	607.29
Donec Ltd	605.41
Donec Ltd	605.36

Result 105

Output

Action Output

#	Time	Action	Message
1	19:59:14	select c.company_name, round(avg(t.amount),2) as mediana_amount from transaction t join credit_card cc o...	401 row(s) returned

Nivell 2

Crea una nueva tabla que refleje el estado de las tarjetas de creditos basada en las ultimas 3 transacciones van a ser declinades y genera la siguiente consulta:

```
CREATE TABLE card_status (
    card_id varchar(10) PRIMARY KEY,
    status VARCHAR(10),
    FOREIGN KEY (card_id) REFERENCES credit_card(id)
);
```

Insertar los datos en la tabla, como ya esta insertado he hecho un count para ver los datos que se han añadido en la tabla card_status

```
INSERT INTO card_status (card_id, status)
SELECT
    card_id AS credit_card_id,
    CASE
        WHEN SUM(CASE WHEN declined = 1 THEN 1 ELSE 0 END) = 3 THEN 'bloqueada'
        ELSE 'activa'
    END AS status
FROM (
    SELECT
        card_id,
        declined,
        ROW_NUMBER() OVER (PARTITION BY card_id ORDER BY timestamp DESC) AS fila
    FROM transaction
) t
WHERE fila <= 3
GROUP BY card_id;

select count(*) from card_status;
```

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

count(*)
5000

esult 106

utput

Action Output

#	Time	Action	Message
1	20:05:58	select count(*) from card_status LIMIT 0, 1000	1 row(s) returned

Ejercicio 1

1.1- Cuantas tarjetas estan activas?

```
54 •  select count(*) from card_status where status = "activa";
```

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

count(*)
4995

Result 107

Output

Action Output

#	Time	Action	Message
1	20:10:00	select count(*) from card_status where status = "activa" LIMIT 0, 1000	1 row(s) returned

Nivel 3

3.1- Crea una tabla con la cual pueda unir los datos del nuevo archivo "Products.csv con la base de datos creada, teniendo en cuenta en cuenta que desde transaction tiene products_ids. Genera la siguiente consulta

Creando tabla temporal para cargar los datos porque el price tiene el $

```
CREATE TABLE products_temp (
    id INT PRIMARY KEY,
    product_name VARCHAR(100),
    price VARCHAR(20),
    colour VARCHAR(50),
    weight DECIMAL(10,2),
    warehouse_id VARCHAR(10)
);

#cargando los datos a la tabla temporal
LOAD DATA INFILE 'C:/ProgramData/MySQL/MySQL Server 8.4/Uploads/products.csv'
INTO TABLE products_temp
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
LINES TERMINATED BY '\n'
IGNORE 1 ROWS;
```

```sql
CREATE TABLE products (
    id INT PRIMARY KEY,
    product_name VARCHAR(100),
    price DECIMAL(10,2),
    colour VARCHAR(50),
    weight DECIMAL(10,2),
    warehouse_id varchar(10)
);
#insertar los datos de la tabla temporal a la tabla de products
INSERT INTO products (id, product_name, price, colour, weight, warehouse_id)
SELECT
    id,
    product_name,
    CAST(REPLACE(price, '$', '') AS DECIMAL(10,2)) AS price,
    colour,
    weight,
    warehouse_id
FROM products_temp;
```

Crear la tabla de puente que conecta la transaction y products

```sql
CREATE TABLE transaction_products (
    transaction_id varchar(100),
    product_id INT,
    FOREIGN KEY (transaction_id) REFERENCES transaction(id),
    FOREIGN KEY (product_id) REFERENCES products(id),
    PRIMARY KEY (transaction_id, product_id)
);

SHOW COLUMNS FROM products; # mirar los nombres y tipos de la tabla
```

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

Field	Type	Null	Key	Default	Extra
id	int	NO	PRI	NULL	
product_name	varchar(100)	YES		NULL	
price	decimal(10,2)	YES		NULL	
colour	varchar(50)	YES		NULL	
weight	decimal(10,2)	YES		NULL	
warehouse_id	varchar(10)	YES		NULL	

insertar los datos en la tabla puente y limpiar los datos de products ya que es una lista y puede haber espacios entre medios, he optado por usar la función JSON_TABLE puedes usar la función JSON_TABLE para convertir datos JSON para poder leer mejor, lo que

facilita su consulta y manipulación.

```
INSERT INTO transaction_products (transaction_id, product_id)
SELECT
    t.id AS transaction_id,
    CAST(j.value AS UNSIGNED) AS product_id
FROM transaction t,
JSON_TABLE(
    CONCAT(
        '["',
        REPLACE(REPLACE(t.product_ids, ' ', ''), ',', '","'),
        '"]'
    ),
    '$[*]' COLUMNS (value VARCHAR(10) PATH '$')
) AS j;
```

Ejercicio 1

3.1- Necesitamos conocer el numero de veces que se han vendido cada producto.

```
select p.id, count(pt.product_id) as product_sold, p.product_name
from transaction_products pt join products p
on pt.product_id = p.id
group by p.id, p.product_name
order by product_sold Desc;

SHOW COLUMNS FROM transaction_products; # mirar los nombres y tipos de la tabla
```

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

id	product_sold	product_name
52	2654	riverlands the duel
29	2635	Tully maester Tarly
21	2609	duel Direwolf
16	2608	the duel warden
66	2601	mustafar jinn
87	2598	sith Jade
33	2597	duel warden
48	2597	rock Renly in
23	2593	riverlands north
68	2589	Stark Karstark
88	2587	Stannis warden so...
4	2584	warden south duel

Result 109

Output

Action Output

#	Time	Action	Message
1	20:31:28	select p.id, count(pt.product_id) as product_sold, p.product_name from transaction_products pt join products ...	100 row(s) returned