

Álgebra Relacional

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Operaciones

1. $\text{genres} \leftarrow \text{genres} \cup E$
INSERT INTO genres VALUES (1, 'Ficcion');

| id | name |
|----|-----------------|
| 1 | Ficcion |
| 2 | Ciencia Ficcion |
| 3 | Fantasia |
| 4 | Misterio |
| 5 | Terror |

2. $\text{authors} \leftarrow \text{authors} \cup E$
INSERT INTO authors VALUES (1, 'Sofia Garcia', '1992-03-12', 'Espaniola');

| id | name | birthday | nationality |
|----|----------------|------------|----------------|
| 1 | Sofia Garcia | 1992-03-12 | Espaniola |
| 2 | Ethan Thompson | 1985-08-25 | Estadounidense |
| 3 | Luna Moreno | 2001-11-02 | Mexicana |
| 4 | Julian Lee | 1995-01-17 | Canadiense |
| 5 | Ava Patel | 1998-06-10 | India |

3. $\text{books} \leftarrow \text{books} \cup E$
INSERT INTO books VALUES (1, 'La Sombra del Olvido', '978-1-234-56789-0', 1, 5);

| id | title | isbn | id_author | id_genre |
|----|---------------------------|-------------------|-----------|----------|
| 1 | La Sombra del Olvido | 978-1-234-56789-0 | 1 | 5 |
| 2 | El Codigo de los Suenios | 978-9-876-54321-0 | 2 | 4 |
| 3 | La Ciudad de los Secretos | 978-1-512-34567-8 | 3 | 3 |
| 4 | El Ultimo Refugio | 978-0-987-65432-1 | 4 | 2 |
| 5 | La Memoria del Pasado | 978-1-234-90123-4 | 5 | 1 |

4. $\text{patrons} \leftarrow \text{patrons} \cup E$

INSERT INTO patrons VALUES (1, 'Ana Gomez', 'ana@example.com', '5551234567');

| id | name | email | phone |
|----|-----------------|-------------------|------------|
| 1 | Ana Gomez | ana@example.com | 5551234567 |
| 2 | Sofia Rodriguez | sofia@example.com | 5551112222 |
| 3 | Juan Hernandez | juan@example.com | 5553334444 |
| 4 | Maria Garcia | maria@example.com | 5555556666 |
| 5 | Luis Perez | luis@example.com | 5559012345 |

5. $\text{reservation} \leftarrow \text{reservation} \cup E$

INSERT INTO reservation VALUES (1, 1, 1, '2024-09-15', 'library@example.com');

| id | id_book | id_patron | date | email |
|----|---------|-----------|------------|---------------------|
| 1 | 1 | 1 | 2024-09-15 | library@example.com |
| 2 | 2 | 2 | 2024-04-28 | library@example.com |
| 3 | 3 | 3 | 2024-07-28 | library@example.com |
| 4 | 4 | 4 | 2024-09-15 | library@example.com |
| 5 | 5 | 5 | 2024-09-15 | library@example.com |

6. $\sigma(\text{genres})$

SELECT * FROM genres;

| id | name |
|----|-----------------|
| 1 | Ficcion |
| 2 | Ciencia Ficcion |
| 3 | Fantasia |
| 4 | Misterio |
| 5 | Terror |

7. $\sigma_{id=1}(\text{genres})$

SELECT * FROM books WHERE id = 1;

| id | title | isbn | id_author | id_genre |
|----|----------------------|-------------------|-----------|----------|
| 1 | La Sombra del Olvido | 978-1-234-56789-0 | 1 | 5 |

8. $\Pi_{id_book, id_patron}(reservation)$
 SELECT id_book, id_patron FROM reservation;

| book | patron |
|------|--------|
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |

9. $\sigma_{genres.name='Ficcion'}(genres \bowtie books)$
 SELECT * FROM genres NATURAL JOIN books WHERE name = 'Ficcion';

| id | name | title | isbn | id_author | id_genre |
|----|---------|----------------------|-------------------|-----------|----------|
| 1 | Ficcion | La Sombra del Olvido | 978-1-234-56789-0 | 1 | 5 |