



TRABAJO UNIDAD 3

Fundamentos de base de datos



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Creacion de tablas

```
1 CREATE TABLE Students (  
2     student_id SERIAL PRIMARY KEY,  
3     first_name VARCHAR(50) NOT NULL,  
4     last_name VARCHAR(50) NOT NULL,  
5     email VARCHAR(50) UNIQUE NOT NULL  
6 );  
7  
8 CREATE TABLE Courses(  
9     course_id SERIAL PRIMARY KEY,  
10    title VARCHAR(50) NOT NULL,  
11    credits INT NOT NULL CHECK (credits>0)  
12 );  
13  
14 CREATE TABLE Enrolments(  
15     enrollment_id SERIAL PRIMARY KEY,  
16     student_id INT NOT NULL,  
17     course_id INT NOT NULL,  
18     enrolled_on DATE DEFAULT CURRENT_DATE,  
19     FOREIGN KEY (student_id) REFERENCES Students(student_id),  
20     FOREIGN KEY (course_id) REFERENCES Courses(course_id)  
21 )
```

Insercion de datos

```
1 INSERT INTO Students (first_name, last_name, email) VALUES  
2 ('Ana', 'Pérez', 'ana.perez@example.com'),  
3 ('Luis', 'Gómez', 'luis.gomez@example.com'),  
4 ('María', 'López', 'maria.lopez@example.com');  
5  
6 -- Insertar cursos  
7 INSERT INTO Courses (title, credits) VALUES  
8 ('Matemáticas', 5),  
9 ('Historia', 3),  
10 ('Programación', 4);  
11  
12 -- Insertar inscripciones  
13 INSERT INTO Enrolments (student_id, course_id) VALUES  
14 (4, 4), -- Ana se inscribe a Matemáticas  
15 (4, 6), -- Ana se inscribe a Programación  
16 (5, 5), -- Luis se inscribe a Historia  
17 (6, 4); -- María se inscribe a Matemáticas
```

Modificaciones

```
5 --Agregar columna birth_date (fecha) a Students.  
6 ALTER TABLE Students  
7 ADD birth_date DATE;  
8 --Cambiar el tipo de credits en Courses de entero estándar a entero pequeño.  
9 ALTER TABLE Courses  
10 ALTER COLUMN credits TYPE SMALLINT;  
11 --Renombrar la tabla Enrollments a Registrations.  
12 ALTER TABLE Enrolments  
13 RENAME TO Registrations;  
14 --Eliminar la columna birth_date de Students.  
15 ALTER TABLE Students  
16 DROP COLUMN birth_date;  
17 --Eliminar la tabla Registrations.  
18 DROP TABLE Registrations;
```

Consultas

```
22 SELECT s.first_name || ' ' || s.last_name AS nombre, c.title AS curso, e.enrolled_on
23 FROM Enrolments e INNER JOIN Students s
24 --Anteriormente borramos la tabla de registrations así que volvi rehacer la de enrollments
25 ON e.student_id = s.student_id
26 INNER JOIN Courses c
27 ON e.course_id = c.course_id
28 WHERE c.credits >= 4;
```

	nombre text	curso character varying (50)	enrolled_on date
1	Ana Pérez	Matemáticas	2025-04-29
2	Ana Pérez	Programación	2025-04-29
3	María López	Matemáticas	2025-04-29

```
31 WITH EnrolmentCounts AS (
32     SELECT
33         student_id,
34         COUNT(*) AS total_enrolments
35     FROM Enrolments
36     GROUP BY student_id
37 )
38 SELECT s.first_name || ' ' || s.last_name AS full_name, ec.total_enrolments
39 FROM EnrolmentCounts ec
40 INNER JOIN Students s ON ec.student_id = s.student_id
41 WHERE ec.total_enrolments > 1
42 ORDER BY ec.total_enrolments DESC;
```

	full_name text	total_enrolments bigint
1	Ana Pérez	2