INSTITUTO TECNOLOGICO DE MEXICALI

Carrera:
Ing. en Sistemas Computacionales

Materia:
Fundamentos de base de datos.

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Actividad:
Tarea 4 Unidad 3

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```
CREATE TABLE Employees (
    employee_id SERIAL PRIMARY KEY,
    first_name VARCHAR(50) NOT NULL,
    last_name VARCHAR(50) NOT NULL,
    email VARCHAR(50) UNIQUE NOT NULL,
    position VARCHAR(50)
);

CREATE TABLE Projects (
    project_id SERIAL PRIMARY KEY,
    project_name VARCHAR(50) NOT NULL,
    start_date DATE,
    end_date DATE
);

CREATE TABLE Assignments (
    assignment_id SERIAL PRIMARY KEY,
    employee_id INT REFERENCES Employees(employee_id),
    project_id INT REFERENCES Projects(project_id),
    assigned_date DATE DEFAULT CURRENT_DATE,
    UNIQUE(employee_id, project_id)
);

-- CREATE --

-- Insertar empleados
INSERT INTO Employees (first_name, last_name, email, position) VALUES
('Carlos', 'Ramírez', 'carlos.ramirez@company.com', 'Backend Developer'),
('Laura', 'Gómez', 'laura.gomez@company.com', 'Frontend Developer'),
('Ana', 'Martínez', 'ana.martinez@gmail.com', 'QA Engineer');

-- Insertar proyectos
INSERT INTO Projects (project_name, start_date, end_date) VALUES
('Sistema de Inventario', '2024-01-01', '2024-06-30'),
('Plataforma de E-learning', '2024-03-01', '2024-12-31');

-- Asignaciones
INSERT INTO Assignments (employee_id, project_id) VALUES
(1, 1),
(2, 1),
(3, 2);

-- PARTE 2 --
alter table employees
add column salary decimal(10, 2);

alter table employees
alter column "position" type varchar(100);
```

```
alter table assignments
rename to TeamAssignments;

alter table employees
drop column salary;

drop table TeamAssignments;

-- PARTE 3 --

-- READ --
select e.first_name ||' '|| e.last_name as nombre,
p.project_name as nombre_proyecto
from employees e
inner join assignments a on e.employee_id = a.assignment_id
inner join projects p on a.assignment_id = p.project_id
where project_name = 'Sistema de Inventario';

select e.first_name ||' '|| e.last_name as nombre_empleado,
e.email as correo
from employees e
where email like '%@company.com';

-- UPDATE --
 update employees e
 set email = 'carlos.ramirez@gmail.com'
 where first_name = 'Carlos';

update projects p
set project_name = 'Base de datos';
where project_name = 'Plataforma de E-learning';

-- DELETE --
-- OPCION 1 --
delete from employees
where employee_id not in (
select distinct employee_id from assignments);

-- OPCION 2 --
delete from employees
where employee_id in (
    select e.employee_id
    from employees e
    left join assignments a on e.employee_id = a.employee_id
    where a.employee_id is null
);
-- PARTE 4 --
```

```
select
    e.first_name || ' ' || e.last_name AS nomre_completo,
    p.project_name,
    a.assigned_date
from employees e
inner join assignments a on e.employee_id = a.employee_id
inner join projects p on a.project_id = p.project_id
where p.start_date > '2023-01-31';

with contador_cte as (
    select
        e.employee_id,
        e.first_name || ' ' || e.last_name as nombre_completo,
        COUNT(a.project_id) as contador
    from employees e
    inner join assignments a on e.employee_id = a.employee_id
    group by e.employee_id, nombre_completo
)
select full_name, project_count
from contador_cte
where contador > 1
order by contador desc;
```