Practica 1
Bases de dades

Assignatura: Bases de dades

Grup: Pralab2

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DNI	Nom
47125160T	Ton Llucià Senserrich
49539818A	Eduard Sales Jové
49381025W	Gerard Llubes Cano
47983753A	Ian Ribalta Gené

1-

```
R1 = text(autor='C.J.Date')[ISBN]
R2 = utilitza(ISBN/ISBN)R1[idassignatura]
R3 = matricula[idassignatura=idassignatura]R2
R4 = R3[nota=10 ^ idalumne<>idalumne ^
idassignatura=idassignatura]R3[idassignatura]
R = assignatura[idassignatura=idassignatura]R4[nom]
```

2-

```
R1 = estudiant(ciutat<>'Lleida')[idalumne]
R2 = matricula[idalumne<>idalumne v nota=null]R1[idassignatura]
R = assignatura[idassignatura<>idassignatura]R2[nom]
```

3-

```
SELECT e.nom,m.nota
FROM estudiant e
    INNER JOIN matricula m
          ON e.idalumne=m.idalumne
    INNER JOIN assignatura a
          ON a.idassignatura=m.idassignatura
WHERE a.nom LIKE 'Bases de Dades'
AND a.departament LIKE 'Sistemes Informatics'
ORDER BY m.nota LIMIT 5;
```

4-

```
ALTER TABLE assignatura
ADD COLUMN numalumnes INT
CHECK(numalumnes<101 AND numalumnes>0);
```

5-

```
UPDATE matricula m SET nota=nota+1
FROM estudiant e,assignatura a
WHERE m.idalumne=e.idalumne
AND e.nom LIKE 'F%'
AND e.ciutat LIKE 'Mollerussa'
AND m.idassignatura=a.idassignatura
AND a.departament LIKE 'Sistemes Informàtics';
```

6-

```
DELETE FROM matricula m
WHERE m.idalumne=(SELECT e.idalumne
                  FROM estudiant e
                  WHERE e.DNI LIKE '87654321Z');

DELETE FROM estudiant e
WHERE e.DNI LIKE '87654321Z';
```

7-

```sql
SELECT a.nom, COUNT(u.ISBN)
FROM assignatura a
INNER JOIN utilitzat u
ON a.idassignatura=u.idassignatura
INNER JOIN text t
ON u.ISBN=t.ISBN
WHERE a.departament LIKE 'Sistemes'
AND t.titol LIKE '%manual%'
GROUP BY a.idassignatura
HAVING COUNT(*) > 2
ORDER BY COUNT(*) DESC LIMIT 10;
```

8-

```sql
SELECT a.idassignatura,a.nom,a.departament,COUNT(m.idassignatura) AS
ALUMNES,MAX(m.nota) AS NOTA_MAX,AVG(m.nota) AS NOTA_MITJA
FROM assignatura a INNER JOIN matricula m
ON a.idassignatura=m.idassignatura
GROUP BY a.idassignatura
ORDER BY a.nom;
```

9-

```sql
CREATE OR REPLACE FUNCTION getMaxNota(id INTEGER) RETURNS
VARCHAR(50) AS $$
  DECLARE
      Assignatura Varchar(50);
  BEGIN
      SELECT INTO Assignatura a.nom
      FROM matricula m
            INNER JOIN assignatura a
            ON m.idassignatura=a.idassignatura
      WHERE m.nota=(SELECT MAX(nota)
                        FROM matricula
                        WHERE idalumne=id)
      AND m.idalumne=id
      LIMIT 1;
      RETURN Assignatura;
  END;
$$ LANGUAGE 'plpgsql';
```

10-

```
CREATE OR REPLACE FUNCTION myFunction() RETURNS TRIGGER AS $$
   DECLARE
        texts INTEGER;
   BEGIN
        SELECT INTO texts COUNT(*)
        FROM text t
                INNER JOIN utilitzat u
                ON t.ISBN=u.ISBN
        WHERE t.editorial=(SELECT editorial FROM text WHERE ISBN=new.ISBN)
        AND u.idassignatura=new.idassignatura;
        IF texts > 0 THEN
                RAISE EXCEPTION 'la editorial del llibre que tractes d''inserir ja
s''esta utilitzant en la mateixa assignatura';
                RETURN OLD;
        END IF;
        RETURN NEW;
   END;
$$ LANGUAGE 'plpgsql';

CREATE TRIGGER myTrigger AFTER INSERT ON utilitzat FOR EACH ROW
EXECUTE PROCEDURE myFunction();
```