**σ, π, ∪, ∩, x, |×|, –, ÷, δ, ⇐**

1-

CConcretos **⇐** Vehiculo |X| (**σ** cant\_ruedas>=8 ^ cant\_ruedas <=12(Camion)) |X|

(**σ** km\_service =10000 (Service))

**Π** Camion.patente, Camion.largo, Camion.max\_toneladas, Camion.cant\_ruedas, Camion.tiene\_acoplado, Vehiculo.modelo, Vehiculo.marca, Vehiculo.peso, Vehiculo.km (CConcretos)

**2-**

AutosConcretos1 **⇐ Π** Auto.patente (Autos |X| (**σ** Observaciones = “Cambio de aceite” ^ km\_service<13000(Service))

AutosConcretos2 **⇐ Π** Auto.patente (Autos |X| (**σ** Observaciones = “Inspeccion General” (Service)) |X| Service\_Parte |X| (**σ** nombre = “Filtro de combustible”(Parte))

**Π** Auto.patente, Auto.es\_electrico, Auto.tipo\_motor (Autos |X| AutosConcretos1 **∪** AutosConcretos2)

**3-**

CamionesConcretos **⇐ Π** Camion.patente(Camion |X| (**σ** km\_service>350000(Service)))

Vehiculo 🡨 Vehiculo – (Vehiculo |X| CamionesConcretos)

Service\_Parte 🡨 Service\_Parte – (Service\_Parte |X| CamionesConcretos)

Service 🡨 Service – (Service |X| CamionesConcretos)

Camion 🡨 Camion – (Camion |X| CamionesConcretos)

4-

**Π** Parte.patente, Parte.nombre, Parte.precio\_parte (Parte |X| Service\_Parte)

%

(**Π** Service.patente (**σ** fecha >= “1/1/2019” ^ fecha >= “31/12/2019” (Service))

**5-**

**Π** Auto.patente, Vehiculo.modelo, Vehiculo.marca, Vehiculo.peso

(**σ** es\_electrico = “true” (Auto)) |X| Vehiculo)

**6-**

Parte 🡨 Parte U {(“NULL”,“Aleron”,3400)}

7-

AutoEspecifico 🡨 **Π** Auto.patente (**σ** patente = ‘AAA564’ (Auto))

Service\_Parte 🡨 Service\_Parte – (Service |X| AutoEspecifico)

Service 🡨 Service – (Service |X| AutoEspecifico)

8-

& precio\_parte 🡨 precio\_parte \*1.15 (Parte)

9-

**Π** Vehiculo.patente, Vehiculo.modelo, Vehiculo.marca, Vehiculo.peso, Vehiculo.km

(Vehiculo |X| (**σ** fecha >= “1/1/2019” ^ fecha >= “31/12/2019” (Service)))

**1-**

SELECT v.modelo, c.patente, c.max\_toneladas, c.cant\_ruedas, c.tiene\_acoplado, v.marca, v.peso, v.km FROM Vehiculo v

INNER JOIN Camion c ON (c.patente = v.patente)

INNER JOIN Service s ON (s.patente = c.patente)

WHERE (c.cant\_ruedas>=4 AND c.cant\_ruedas<=8)

AND s.fecha IN (BETWEEN NOW() - INTERVAL 365 DAY AND NOW())

2-

SELECT \* FROM Autos a

INNER JOIN Service s ON (a.patente = s.patente)

UNION

(

SELECT \* FROM Autos a1

INNER JOIN Service s1 ON (a1.patente = s1.patente)

WHERE (s1.observaciones = “Inspección General”)

AND

EXIST (SELECT \* FROM Service\_Parte sp

INNER JOIN Parte p (sp.cod\_parte = p.cod\_parte)

WHERE (nombre = “Filtro de combustible” AND sp.patente = s1.patente))

)

SELECT \*

FROM Auto a

WHERE EXIST

(SELECT patente FROM Service s WHERE s.observaciones "cambio de aceite" and s.km <13000 and s.patente = a.patente

UNION

SELECT patente FROM Service s2 NATURAL JOIN Service-parte sp NATURAL JOIN Parte p

WHERE s2.observaciones = "inspeccion general"

and p.nombre = "filtro combustible" and s.patente = a.patente)

3-

SELECT p.nombre, p.precio FROM Parte p

INNER JOIN Service\_Parte sp ON (sp.cod\_parte = p.cod\_parte)

INNER JOIN Service p ON (s.patente = sp.patente)

WHERE (p.precio>4000)

GROUP BY p.cod\_parte, p.nombre, p.precio

HAVING COUNT(\*)>30

4-

DELETE FROM Service\_Parte sp

WHERE EXIST (SELECT \* FROM Service s

INNER JOIN Camion c ON (s.patente = c.patente)

WHERE (s.km>250000) AND (sp.patente = s.patente))

DELETE FROM Vehiculo v

WHERE EXIST (SELECT \* FROM Camion c INNER JOIN Service s ON (s.patente = c.patente)

WHERE (s.km>250000) AND (s.patente = v.patente))

DELETE FROM Service s

WHERE EXIST (SELECT \* FROM Camion c

WHERE (s.km>250000) AND (sp.patente = s.patente))

DELETE FROM Camion c

WHERE EXIST (SELECT \* FROM Service s

WHERE (s.km>250000) AND (s.patente = c.patente))

5-

SELECT p.nombre, p.precio\_parte FROM Parte p

WHERE NOT EXISTS( SELECT \* FROM Service s

WHERE NOT EXISTS (SELECT \* FROM Service\_Parte sp

WHERE (s.patente = sp.patente) AND (p.cod\_parte = sp.cod\_parte) AND (YEAR(sp.fecha)=YEAR(CURDATE())))

6-

SELECT a.patente, v.modelo , v.marca, v.peso FROM Autos a

INNER JOIN Vehiculos v ON (a.patente = v.patente)

WHERE (a.tipo\_motor = “Electrico”)

7-

INSERT INTO Parte (nombre, precio\_parte)

Values (“Aleron”, &400)

8-

DELETE FROM Service\_Parte WHERE patente = “AWA564”

DELETE FROM Service WHERE patente = “AWA564”

//En caso de que fuera relevante el hecho de que es un auto

DELETE FROM Service\_Parte

WHERE EXIST (SELECT \* FROM Auto WHERE a.patente = “AWA564”)

DELETE FROM Service

WHERE EXIST (SELECT \* FROM Auto WHERE a.patente = “AWA564”)

9-

SELECT \* FROM Vehiculo v

WHERE EXIST

(SELECT \* FROM Service s

WHERE (s.patente = v.patente) AND (YEAR(s.fecha)=2018)

)