PRACTICA 1 BASES DE DADES

Fase 2

Índex

Creació de les queries	3
Captures de Pantalla	5
Queri 1	5
Queri 2	6
Queri 3	6
Queri 4	7
Queri 5	8
Queri 6	g
Queri 7	10
Queri 8	10
Queri 9	11
Queri 10	12
Conclusions	

Creació de les queries

```
--QUERY 1
    SELECT COUNT(c.charge) AS "nsancions", v.color FROM Vehicle AS v, Infraccio AS i, Charge AS c
    WHERE v.matricula = i.id vehicle AND c.charge= i.charg
    GROUP BY v.matricula ORDER BY count(c.charge) DESC LIMIT 1;
    SELECT p.nom, c.race FROM Propietari AS p, Conductor AS c, Vehicle AS v
WHERE p.id_driver = c.id_driver AND v.id_prop = p.id_driver
AND (v.matricula LIKE '%1%' OR v.matricula LIKE '%2%' OR v.matricula LIKE'%3%' OR v.matricula LIKE'%4%' OR v.matricula LIKE'%5%')
    ORDER BY v.make DESC, v.model, v.year;
--OUFRY 3
   SELECT matricula, year FROM(
SELECT v.matricula AS matricula, v.year AS year FROM Infraccio AS i, Vehicle AS v
WHERE v.year = 2007 AND v.matricula = i.id_vehicle AND ContributedToAccident = false AND i.Belts = true
                  v.matricula DESC LIMIT 6
       ORDER BY
   UNION ALL
   SELECT matricula, year FROM(
SELECT v.matricula AS matricula, v.year AS year FROM Infraccio AS i, Vehicle AS v
WHERE v.year = 2008 AND v.matricula = i.id_vehicle AND ContributedToAccident = false AND i.Belts = true
       ORDER BY
                   v.matricula ASC LIMIT 6
   UNION ALL
   SELECT matricula, year FROM(
SELECT v.matricula AS matricula, v.year AS year FROM Infraccio AS i, Vehicle AS v
       WHERE v.year = 2009 AND v.matricula = i.id_vehicle AND ContributedToAccident = false AND i.Belts = true
ORDER BY v.matricula DESC LIMIT 6
   UNTON ALL
       SELECT v.matricula AS matricula, v.year AS year FROM Infraccio AS i, Vehicle AS v
       WHERE v.year = 2010 AND v.matricula = i.id_vehicle AND ContributedToAccident = false AND i.Belts = true
       ORDER BY
  )AS sub
  SELECT matricula, year FROM(
       SELECT v.matricula AS matricula, v.year AS year FROM Infraccio AS i, Vehicle AS v
        WHERE v.year = 2011 AND v.matricula = i.id_vehicle AND ContributedToAccident = false AND i.Belts = true
       ORDER BY
                    v.matricula DESC LIMIT 6
   )AS sub
   UNION ALL
  SELECT matricula, year FROM(
       SELECT v.matricula AS matricula, v.year AS year FROM Infraccio AS i, Vehicle AS v
       WHERE v.year = 2012 AND v.matricula = i.id_vehicle AND ContributedToAccident = false AND i.Belts = true
                    v.matricula ASC LIMIT 6
       ORDER BY
   )AS sub
   UNTON ALL
   SELECT matricula, year FROM(
        SELECT v.matricula AS matricula, v.year AS year FROM Infraccio AS i, Vehicle AS v
       WHERE v.year = 2013 AND v.matricula = i.id_vehicle AND ContributedToAccident = false AND i.Belts = true
                    v.matricula DESC LIMIT 6
  )AS sub
  UNION ALL
       SELECT v.matricula AS matricula, v.year AS year FROM Infraccio AS i, Vehicle AS v
WHERE v.year = 2014 AND v.matricula = i.id_vehicle AND ContributedToAccident = false AND i.Belts = true
       ORDER BY
                     v.matricula ASC LIMIT 6
  )AS sub
   SELECT matricula, year FROM(
       SELECT v.matricula AS matricula, v.year AS year FROM Infraccio AS i, Vehicle AS v
        WHERE v.year = 2015 AND v.matricula = i.id_vehicle AND ContributedToAccident = false AND i.Belts = true
       ORDER BY
                    v.matricula DESC LIMIT 6
   )AS sub
   UNION ALL
```

```
UNION ALL

SELECT matricula, year FROM(

SELECT v.matricula AS matricula, v.year AS year FROM Infraccio AS 1, Vehicle AS v

WHERE v.year = 2016 AND v.matricula = 1.id_vehicle AND ContributedToAccident = false AND 1.Belts = true

ORDER BY v.matricula ASC LIMIT 6
      SELECT DISTINCT Charge.description FROM Infraccio, Vehicle, Propietari, Conductor, Charge
WHERE (Charge.description LIKE '%%' OR Charge.description LIKE '%%') AND (Charge.description LIKE '%%' OR Charge.description LIKE '%%')
AND (Charge.description LIKE '%%' OR Charge.description LIKE '%%')
AND (Charge.description LIKE '%%' OR Charge.description LIKE '%%')
AND (Charge.description LIKE '%%' OR Charge.description LIKE '%%')
AND Infraccio.id_vehicle = Vehicle.matricula AND charge.charge = Infraccio.charge AND Propietari.id_driver = Vehicle.id_prop
AND Propietari.id_driver = Conductor.id_driver AND Propietari.id_driver=Infraccio.id_driver AND (Conductor.gender ='F' AND Conductor.race ='BLACK' OR Vehicle.color='GOLD
--OUERY 5
      SELECT EXTRACT (year FROM i.Date_OfStop) AS any, COUNT(*) AS nincidents FROM Infraccio AS i
WHERE i.Alcohol=TRUE AND EXTRACT(month FROM i.Date_OfStop)=7 AND EXTRACT (day FROM i.Date_OfStop) BETWEEN 4 AND 5
GROUP BY EXTRACT (year FROM i.Date_OfStop) ORDER BY nincidents DESC LIMIT 1;
      SELECT c.gender AS gènere, COUNT(1.id_infraccio) AS "nincidents" FROM Infraccio AS 1, Conductor AS c WHERE c.id_driver = 1.id_driver GROUP BY c.gender ORDER BY COUNT(1.id_infraccio) DESC LIMIT 1;
        SELECT c.gender AS gènere, CAST((COUNT(i.id_infraccio)*100)AS FLOAT) / CAST((SELECT COUNT(i.id_infraccio) FROM Infraccio AS i)AS FLOAT)
AS "incidents_percentatge" FROM Infraccio AS i, Conductor AS c
WHERE c.id_driver = i.id_driver
         GROUP BY c.gender
         SELECT i.id_driver AS Identificador, p.nom AS Nom, 24-COUNT(i.alcohol=true)-(COUNT(i.belts=true)) AS "Punts Restants"
         PROM Conductor AS c, Propietari AS p, Infraccio AS i
WHERE c.id_driver = p.id_driver AND i.id_driver = c.id_driver AND (i.alcohol= true OR i.belts=true)
         GROUP BY i.id_driver,p.nom
         ORDER BY "Punts Restants" ASC;
         SELECT p.id_driver AS Identificador, p.nom, COUNT(*) AS "Num cotxes" FROM Propietari AS p, Vehicle AS v
        WHERE v.id_prop = p.id_driver
GROUP BY p.id_driver
ORDER BY "Num cotxes" DESC LIMIT 1;
 --QUERY 10
         SELECT p.id driver AS Identificador, p.nom, v.matricula, v.make AS Marca, v.model, v.vear FROM Propietari AS p. Vehicle AS v
         WHERE v.id_prop = p.id_driver AND v.color='BLACK'
ORDER BY v.year ASC LIMIT 4;
```

Captures de Pantalla

Queri 1

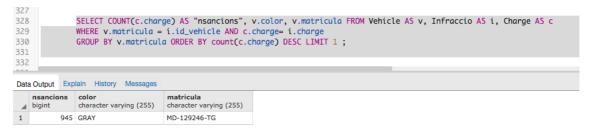
Codi

SELECT COUNT(c.charge) AS "nsancions", v.color FROM Vehicle AS v, Infraccio AS i, Charge AS c WHERE v.matricula = i.id_vehicle AND c.charge= i.charge GROUP BY v.matricula ORDER BY count(c.charge) DESC LIMIT 1;

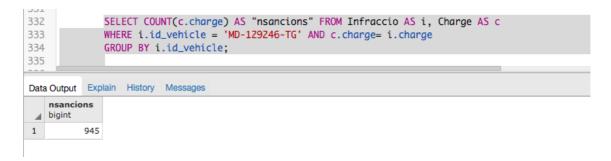
Resultats

4	nsancions bigint	color character varying (255)
1	945	GRAY

Captures de pantalla



Tot i que el resultat no és el que sortia a les solucions, en aquesta queri veiem la matricula del cotxe que a la nostra base de dades és el més sancionat.



Comprovem al realitzar una queri que conta quants cops apareix el cotxe amb aquesta matricula a les taules de infraccions que efectivament, es aquest cotxe.



Al buscar de quin color es, ens adonem que efectivament, es de color gris.

```
SELECT p.nom, c.race FROM Propietari AS p, Conductor AS c, Vehicle AS v
WHERE p.id_driver = c.id_driver AND v.id_prop = p.id_driver
AND (v.matricula LIKE '%1%' OR v.matricula LIKE '%2%' OR v.matricula LIKE'%3%' OR v.matricula LIKE'%4%' OR v.matricula LIKE'%5%')
ORDER BY v.make DESC, v.model, v.year;
```

Resultat

Data Output Explain History Messages				
4	nom character varying (255)	race character varying (255)		
1	Koralle Patterson	OTHER		
2	Delainey Longshaw	BLACK		
3	Muire Ruddick	BLACK		
4	Frankie Kilbourn	WHITE		
5	Lyndell Hardwick	BLACK		
6	Seumas Listone	WHITE		
7	Milli Jewsbury	WHITE		
8	Charlean Fotitt	WHITE		
9	Elias Bodiam	HISPANIC		
10	Eli Husset	WHITE		
11	Cherie Cotherill	WHITE		

En aquest cas, la queri mostra exactament el que surt a les solucions. Tot i que, al provar de fer-ho amb un Windows, ens saltava els 4 primers propietaris i ens mostrava la mateixa llista però començant pel 4t conductor.

Queri 3

Codi

```
SELECT matricula, year FROM(

SELECT v.matricula AS matricula, v.year AS year FROM Infraccio AS 1, Vehicle AS v
WHERE v.year = 2009 AND v.matricula = 1.1d_vehicle AND ContributedToAccident = false AND 1.Belts = true
ORDER BY V.matricula DESC LIMIT 6

JAS sub
UNION ALL
SELECT matricula, year FROM(
SELECT v.matricula AS matricula, v.year AS year FROM Infraccio AS 1, Vehicle AS v
WHERE v.year = 2008 AND v.matricula = 1.1d_vehicle AND ContributedToAccident = false AND 1.Belts = true
ORDER BY V.matricula AS matricula, v.year AS year FROM Infraccio AS 1, Vehicle AS v
WHERE v.year = 2009 AND v.matricula = 1.1d_vehicle AND ContributedToAccident = false AND 1.Belts = true
ORDER BY V.matricula DESC LIMIT 6

JAS sub
UNION ALL
SELECT matricula, year FROM(
SELECT v.matricula AS matricula, v.year AS year FROM Infraccio AS 1, Vehicle AS v
WHERE v.year = 2010 AND v.matricula = 1.1d_vehicle AND ContributedToAccident = false AND 1.Belts = true
ORDER BY V.matricula AS matricula = 1.1d_vehicle AND ContributedToAccident = false AND 1.Belts = true
ORDER BY v.matricula AS matricula, v.year AS year FROM Infraccio AS 1, Vehicle AS v
WHERE v.year = 2011 AND v.matricula = 1.1d_vehicle AND ContributedToAccident = false AND 1.Belts = true
ORDER BY v.matricula AS matricula, v.year AS year FROM Infraccio AS 1, Vehicle AS v
WHERE v.year = 2011 AND v.matricula = 1.1d_vehicle AND ContributedToAccident = false AND 1.Belts = true
ORDER BY v.matricula AS matricula, v.year AS year FROM Infraccio AS 1, Vehicle AS v
WHERE v.year = 2012 AND v.matricula = 1.1d_vehicle AND ContributedToAccident = false AND 1.Belts = true
ORDER BY v.matricula AS matricula = 1.1d_vehicle AND ContributedToAccident = false AND 1.Belts = true
ORDER BY v.matricula AS matricula = 1.1d_vehicle AND ContributedToAccident = false AND 1.Belts = true
ORDER BY v.matricula AS matricula = 1.1d_vehicle AND ContributedToAccident = false AND 1.Belts = true
ORDER BY v.matricula AS matricula = 1.1d_vehicle AND ContributedToAccident = false AND 1.Belts = true
ORDER BY v.matricula AS matricul
```

```
UNION ALL

SELECT matricula, year FROM(
SELECT v.matricula AS matricula, v.year AS year FROM Infractio AS 1, Vehicle AS v.
WHERE v.year = 2014 AND v.matricula = i.id_vehicle AND ContributedToAccident = false AND i.Belts = true
ORDER BY v.matricula AS cLIMIT 6

AS sub
SELECT v.matricula AS matricula, v.year AS year FROM Infractio AS 1, Vehicle AS v.
WHERE v.year = 2015 AND v.matricula = i.id_vehicle AND ContributedToAccident = false AND i.Belts = true
ORDER BY v.matricula DESC LIMIT 6

AS sub
UNION ALL
SELECT v.matricula, year FROM(
SELECT v.matricula, year FROM(
SELECT v.matricula, year FROM(
SELECT v.matricula AS matricula, v.year AS year FROM Infraccio AS 1, Vehicle AS v.
WHERE v.year = 2016 AND v.matricula = i.id_vehicle AND ContributedToAccident = false AND 1.Belts = true
ORDER BY v.matricula ASC LIMIT 6

AS sub
```

Resultats

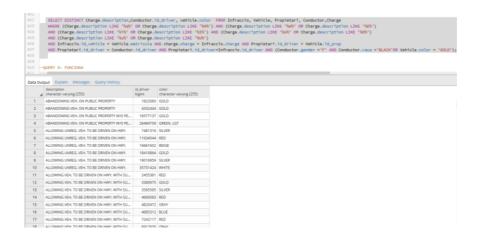


Queri 4

Codi

4	description character varying (255)
1	ABANDONING VEH. ON PUBLIC PROPERTY
2	ABANDONING VEH. ON PUBLIC PROPERTY W/O PE
3	ALLOWING UNREG. VEH. TO BE DRIVEN ON HWY.
4	ALLOWING VEH. TO BE DRIVEN ON HWY. WITH SU
5	ALLOWING VEHICLE TO BE DRIVEN ON HWY. WITH
6	ATTACHING UNAUTHORIZED VEH. REG. PLATE WI
7	ATTEMPT BY DRIV TO ELUDE POLICE IN OFFCAL P
8	ATTEMPT BY DRIVER TO ELUDE POLICE IN OFFICIA
9	ATTEMPT BY DRIVER TO ELUDE POLICE IN OFFICIA
10	ATTEMPT BY DRIVER TO ELUDE UNIFORMED POLI
11	ATTEMPT BY DRIVER TO ELUDE UNIFORMED POLI
12	ATTEMPT BY DRIVER TO ELUDE UNIFORMED POLI
13	BICYCLE, EPAMD, MOTOR SCOOTER OPERATOR C
14	BRAKE HOSE INADEQUATE AND NOT SECURED A
15	BRAKES ON TRUCK ARE INOPERATIVE
16	CARRYING LOOSE MATERIAL LOADED TO WITHIN
17	CAUSING STANDING VEH. TO OBSTRUCT FREE VE
18	COMMERICAL DRIVER FAILURE TO NOTIFY MVA WI

Captures de pantalla



Amb aquesta query podem veure que tot i que els resultats no son els de les solucions, els 3 primers Charges els mostra perquè el cotxe és de color "GOLD".



En el cas del 4t, que el color no és GOLD si busquem la informació del propietari veiem que es una dona de raça negre i per tant podem afirmar que la query és correcta.

Queri 5

Codi

SELECT EXTRACT (year FROM i.Date_OfStop) AS any, COUNT(*) AS nincidents FROM Infraccio AS i
WHERE i.Alcohol=TRUE AND EXTRACT(month FROM i.Date_OfStop)=7 AND EXTRACT (day FROM i.Date_OfStop) BETWEEN 4 AND 5
GROUP BY EXTRACT (year FROM i.Date_OfStop) ORDER BY nincidents DESC LIMIT 1;



```
--QUERY 6: FUNCIONA

SELECT c.gender, COUNT(i.id_infraccio) AS "nincidents" FROM Infraccio AS i, Conductor AS c
WHERE c.id_driver = i.id_driver
GROUP BY c.gender ORDER BY COUNT(i.id_infraccio) DESC LIMIT 1;
```

Resultats



Captures de pantalla

```
388
389
389
390
WHERE c.id_driver = i.id_driver AND c.gender = 'M'
391
GROUP BY c.gender;

Data Output Explain History Messages

nincidents
bigint

1 799072
```

A aquesta queri es demostra com si contem el nombre d'incidents que han tingut persones de gènere masculí surt el mateix nombre.

```
SELECT COUNT(i.id_infraccio) AS "nincidents" FROM Infraccio AS i, Conductor AS c

WHERE c.id_driver = i.id_driver AND c.gender = 'F'

GROUP BY c.gender;

Data Output Explain History Messages

nincidents
bigint

1 395548
```

En canvi, si realitzem la cerca per persones de gènere femení el nombre és molt menor.

SELECT c.gender AS gènere, CAST((COUNT(1.id_infraccio)*100)AS FLOAT) / CAST((SELECT COUNT(1.id_infraccio) FROM Infraccio AS i)AS FLOAT)
AS "incidents_percentatge" FROM Infraccio AS i, Conductor AS c
WHERE c.id_driver = i.id_driver
GROUP BY c.gender

Resultats

4	gènere character (3)	incidents_percentatge double precision		
1	U	0.117220061854067		
2	F	33.0065608118785		
3	М	66.8762191262674		

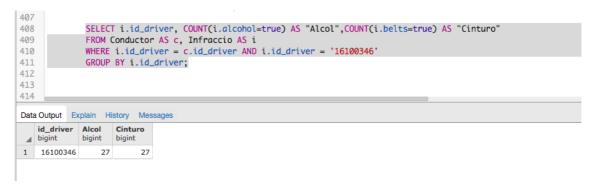
Queri 8

Codi

```
SELECT i.id_driver, p.nom, 24-COUNT(i.alcohol=true)-(COUNT(i.belts=true)) AS "Punts Restants" FROM Conductor AS c, Propietari AS p, Infraccio AS i WHERE c.id_driver = p.id_driver AND i.id_driver = c.id_driver AND (i.alcohol= true OR i.belts=true) GROUP BY i.id_driver,p.nom ORDER BY "Punts Restants" ASC;
```

id_driver bigint	nom character varying (255)	Punts Restants bigint
16100346	Ike Bowers	-30
30772441	Claire Conquer	-30
53983955	Evangelina Carville	-26
23464380	Ellyn Luscott	-24
18147962	Artie Bernt	-14
61871896	Wayne Risely	-12
20651640	Hoebart Josefowicz	-10
55948843	Verina Schimek	-10
86218370	Jany Statham	-10
76574319	Doe Godsal	-10
6013897	Moritz Harrower	-6
8994973	Frederich McKinna	-6
44663568	Darrelle Weafer	-6
7281146	Daisie Oehme	-6

Captures de pantalla



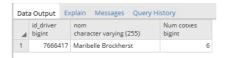
Amb aquesta queri demostrem que els punts son correctes ja que, fixant-nos en el primer conductor de la llista, que té -30 punts, veiem que ha tingut 27 incidents amb alcohol i 27 incidents amb el cinturó, que sumen un total de 54 incidents que si els restem als 24 punts inicials dels conductor ens donen els -30 punts restants que tenim a la queri.

Queri 9

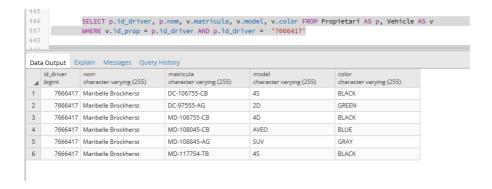
Codi

```
SELECT p.id_driver, p.nom, COUNT(*) AS "Num cotxes" FROM Propietari AS p, Vehicle AS v WHERE v.id_prop = p.id_driver GROUP BY p.id_driver ORDER BY "Num cotxes" DESC LIMIT 1;
```

Resultats



Captures de pantalla



Amb aquesta captura podem veure que tot i que no es el que sortia a les solucions, es coherent.

SELECT p.id_driver AS Identificador, p.nom, v.matricula, v.make AS Marca, v.model, v.year FROM Propietari AS p, Vehicle AS v WHERE v.id_prop = p.id_driver AND v.color='BLACK'
ORDER BY v.year ASC LIMIT 4;

4	identificador bigint	nom character varying (255)	matricula character varying (255)	marca character varying (255)	model character varying (255)	year integer
1	25137178	Elladine Dwelly	VA-7255-HB	HONDA	CIVIC	1900
2	20205890	Thane Gligorijevic	MD-69254-FB	FORD	COBRA	1964
3	8544519	Gaylene Wilsone	MD-71954-GB	GENE	TL	1964
4	18035654	Babb Liptrot	MD-83261-SB	SHELBY REPL	CN	1965

Conclusions

Alhora de realitzar la fase 1, tot hi que hem hagut de anar enrederint la realització de la pràctica a causa de que havien varies conceptes que encara no havien sigut explicats a classe, hem aconseguit anar aprenent sense gaire dificultat com realitzar cada part de la pràctica.

Ens ha sigut de molta utilitat haver acudit i fet tots els laboratoris, ja que cada sessió la podíem extrapolar a diferents parts de la pràctica, alhora que ens servien d'exemple a seguir en el cas de que tinguéssim algun problema.

On hem tingut més problemes, va ser alhora de començar la pràctica, ja que no aconseguíem relacionar totes les diferents entitats fins que vam veure que era necessari crear una entitat Infracció que les relaciones totes. Un cop vam tenir el model conceptual ja vam poder avançar al model lògic i físic.

El segon problema més important a sigut quan ens va caldre ajuntar el codi d'importació amb el model físic, ja que no havíem realitzat abans mai res similar. En aquest moment va ser quan vam adonar-nos de les moltes incoherències que tenia el nostre model físic alhora de voler importar les diferents informacions dels fitxers, per tant vam tenir que reestructurar una part important tant del codi, com del model conceptual i lògic, per corregir els errors que ens frenaven d'aconseguir el correcte funcionament de la pràctica.

Posteriorment realitzant el estudi dels diferents sistemes gestors de bases de dades, ens hem adonat de les moltes solucions que hi ha per un mateix propòsit, i que és molt important saber quins són els punts forts i els punts dèbils de cada sistema per saber quin és el idoni per cada situació.

En el cas de la fase 2, hem tingut que realitzar moltes investigacions sobre quina era la millor manera d'obtenir les informacions requerides. Ha sigut interesant veure com, alhora de agafar les informacions, ens anàvem donant compte de quina manera podríem haver estructurat millor la nostra bbdd per realitzar les quèries més fàcilment. Ens ha enrederit bastant el fet de que al no tenir la bbdd del tot correcta, ens ha provocat que en alguna queri en particular no tinguéssim els mateixos resultats que els del enunciat, i hem pensat que havíem fet malament la queri, fins que hem caigut que el problema era de la bbdd, i que la queri era correcta.

En general, ens ha servit per acabar de entendre el funcionament de les queris i la importància que tenen en els SGBD, per aconseguir la informació exacta.