Programming

Title

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Course	Database Concepts and Applications
Session	
Teacher	
Date	2022-09-27

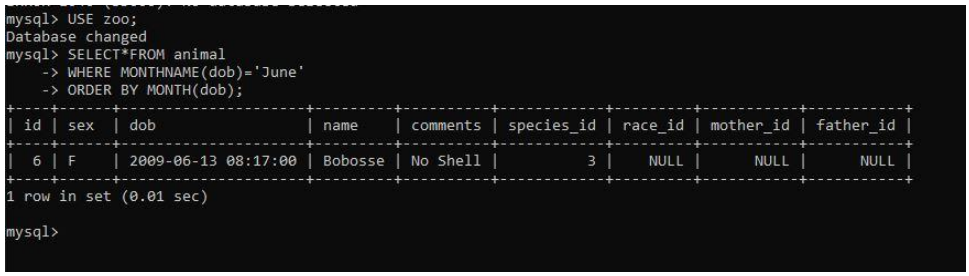
Easy

1. Select all the animals born in June (assuming you don't know the month number of June)

SELECT * FROM animal

WHERE MONTHNAME(dob) = 'June';

ORDER BY MONTH(dob); -- shows all dates in order of month

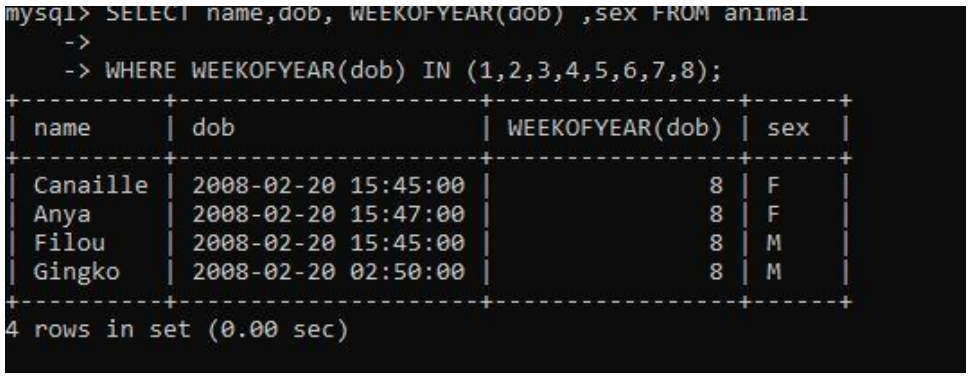


```
mysql> USE zoo;
Database changed
mysql> SELECT*FROM animal
    -> WHERE MONTHNAME(dob)='June'
    -> ORDER BY MONTH(dob);
+----+------+---------------------+---------+----------+------------+---------+-----------+-----------+
| id | sex  | dob                 | name    | comments | species_id | race_id | mother_id | father_id |
+----+------+---------------------+---------+----------+------------+---------+-----------+-----------+
|  6 | F    | 2009-06-13 08:17:00 | Bobosse | No Shell |          3 |    NULL |      NULL |      NULL |
+----+------+---------------------+---------+----------+------------+---------+-----------+-----------+
1 row in set (0.01 sec)

mysql>
```

2. Select all the animals born in the first 8 weeks of the year

SELECT name,dob, WEEKOFYEAR(dob) ,sex FROM animal

WHERE WEEKOFYEAR(dob) IN (1,2,3,4,5,6,7,8);



```
mysql> SELECT name,dob, WEEKOFYEAR(dob) ,sex FROM animal
    ->
    -> WHERE WEEKOFYEAR(dob) IN (1,2,3,4,5,6,7,8);
+----------+---------------------+-----------------+------+
| name     | dob                 | WEEKOFYEAR(dob) | sex  |
+----------+---------------------+-----------------+------+
| Canaille | 2008-02-20 15:45:00 |               8 | F    |
| Anya     | 2008-02-20 15:47:00 |               8 | F    |
| Filou    | 2008-02-20 15:45:00 |               8 | M    |
| Gingko   | 2008-02-20 02:50:00 |               8 | M    |
+----------+---------------------+-----------------+------+
4 rows in set (0.00 sec)
```

3. Display the day (in numbers) and month of birth (in words) of all the turtles and cats born before 2007 (two columns).

SELECT name, DAY(dob) AS days, MONTHNAME(dob)

FROM animal

WHERE (species_id = '3' AND YEAR(dob) < 2007) OR (species_id = 2 AND YEAR(dob) < 2007);

```
mysql> SELECT name, DAY(dob) AS days, MONTHNAME(dob)
    -> FROM animal
    -> WHERE (species_id = '3' AND YEAR(dob) < 2007) OR (species_id = 2 AND YEAR(dob) < 2007);
+---------+------+----------------+
| name    | days | MONTHNAME(dob) |
+---------+------+----------------+
| Caribou |   19 | May            |
| Raccou  |   19 | May            |
| Callune |   19 | May            |
| Feta    |   19 | May            |
| Cawette |   19 | May            |
| Lulla   |   15 | March          |
| Redbul  |   15 | March          |
+---------+------+----------------+
7 rows in set (0.01 sec)
```

4. Display the day (in numbers) and month of birth (in words) of all the turtles and cats born before 2007 (one column).

SELECT name, CONCAT(DAY(dob), ' ', MONTHNAME(dob)) AS 'Date'

FROM animal

WHERE (species_id = '3' AND YEAR(dob) < 2007) OR (species_id = 2 AND YEAR(dob) < 2007);

```
mysql> SELECT name, CONCAT(DAY(dob), '  ', MONTHNAME(dob)) AS 'Date'
    -> FROM animal
    -> WHERE (species_id = '3' AND YEAR(dob) < 2007) OR (species_id = 2 AND YEAR(dob) < 2007);
+---------+-----------+
| name    | Date      |
+---------+-----------+
| Caribou | 19  May   |
| Raccou  | 19  May   |
| Callune | 19  May   |
| Feta    | 19  May   |
| Cawette | 19  May   |
| Lulla   | 15  March |
| Redbul  | 15  March |
+---------+-----------+
7 rows in set (0.00 sec)
```

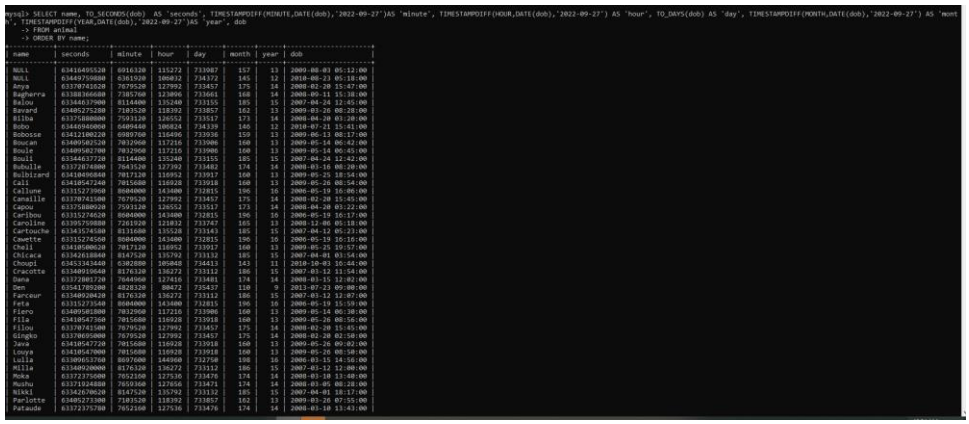
5. Select all the animals born in April, but not April 24, sorted by decreasing birth time (hours, minutes, seconds) and display their date of birth as in the exemple below:

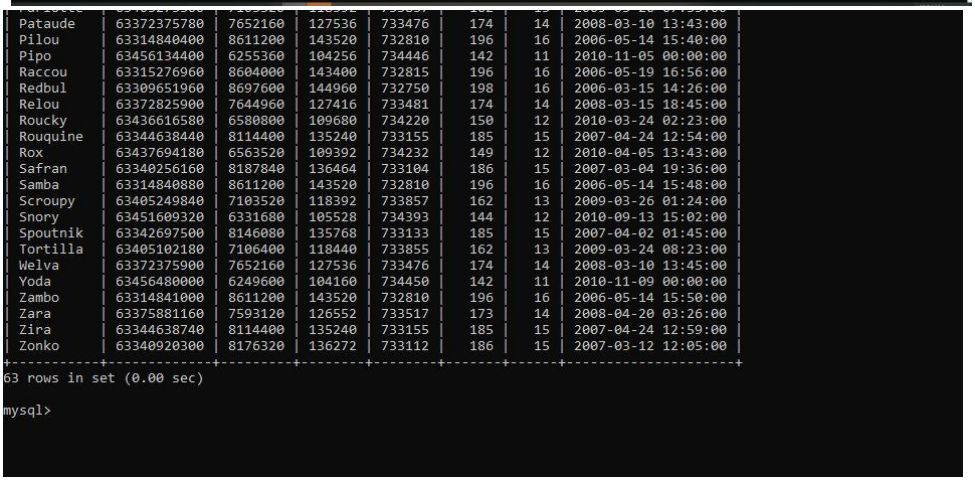
```
SELECT name,  DATE_FORMAT(dob, '%M %D, at %Hh%i %p, in %Y after J.C') AS 'date format'

FROM animal

WHERE MONTHNAME(dob) = 'April' AND DAY(dob) != 24

ORDER BY TIME(dob) DESC;
```

```
mysql> SELECT name,  DATE_FORMAT(dob, '%M %D, at %Hh%i %p, in %Y after J.C') AS 'date format'
    -> FROM animal
    -> WHERE MONTHNAME(dob) = 'April' AND DAY(dob) != 24
    -> ORDER BY TIME(dob) DESC;
+-----------+-----------------------------------------+
| name      | date format                             |
+-----------+-----------------------------------------+
| Nikki     | April 1st, at 18h17 PM, in 2007 after J.C  |
| Rox       | April 5th, at 13h43 PM, in 2010 after J.C  |
| Cartouche | April 12th, at 05h23 AM, in 2007 after J.C |
| Chicaca   | April 1st, at 03h54 AM, in 2007 after J.C  |
| Zara      | April 20th, at 03h26 AM, in 2008 after J.C |
| Capou     | April 20th, at 03h22 AM, in 2008 after J.C |
| Bilba     | April 20th, at 03h20 AM, in 2008 after J.C |
| Spoutnik  | April 2nd, at 01h45 AM, in 2007 after J.C  |
+-----------+-----------------------------------------+
8 rows in set (0.00 sec)

mysql>
```

6. Display all the animal ages in seconds, minutes, hours, days, months, years (I want a column for each)

```
SELECT name, TO_SECONDS(dob) AS 'seconds', TIMESTAMPDIFF(MINUTE,DATE(dob),'2022-09-27')AS 'minute', TIMESTAMPDIFF(HOUR,DATE(dob),'2022-09-27') AS 'hour', TO_DAYS(dob) AS 'day', TIMESTAMPDIFF(MONTH,DATE(dob),'2022-09-27') AS 'month', TIMESTAMPDIFF(YEAR,DATE(dob),'2022-09-27')AS 'year', dob

FROM animal

ORDER BY name
```

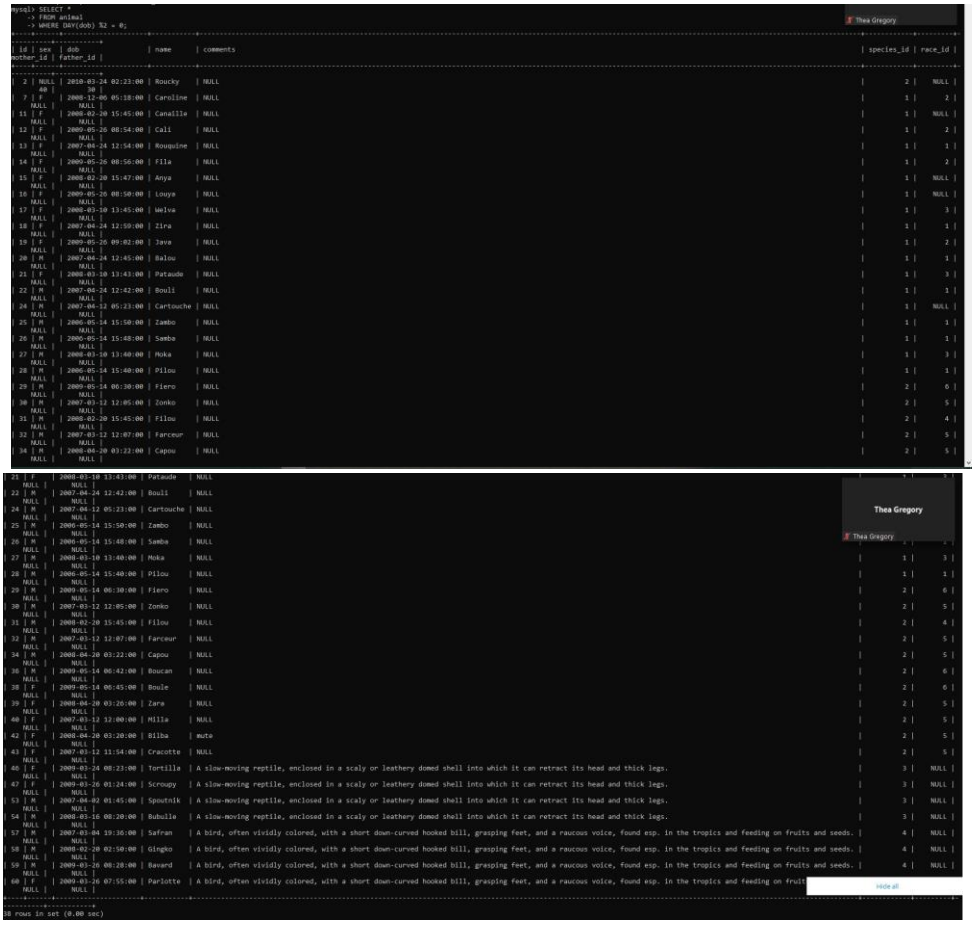




```
| Pataude   | 63372375780 | 7652160 | 127536 | 733476 |   174 |   14 | 2008-03-10 13:43:00 |
| Pilou     | 63314840400 | 8611200 | 143520 | 732810 |   196 |   16 | 2006-05-14 15:40:00 |
| Pipo      | 63456134400 | 6255360 | 104256 | 734446 |   142 |   11 | 2010-11-05 00:00:00 |
| Raccou    | 63315276960 | 8604000 | 143400 | 732815 |   196 |   16 | 2006-05-19 16:56:00 |
| Redbul    | 63309651960 | 8697600 | 144960 | 732750 |   198 |   16 | 2006-03-15 14:26:00 |
| Relou     | 63372825900 | 7644960 | 127416 | 733481 |   174 |   14 | 2008-03-15 18:45:00 |
| Roucky    | 63436616580 | 6580800 | 109680 | 734220 |   150 |   12 | 2010-03-24 02:23:00 |
| Rouquine  | 63344638440 | 8114400 | 135240 | 733155 |   185 |   15 | 2007-04-24 12:54:00 |
| Rox       | 63437694180 | 6563520 | 109392 | 734232 |   149 |   12 | 2010-04-05 13:43:00 |
| Safran    | 63340256160 | 8187840 | 136464 | 733104 |   186 |   15 | 2007-03-04 19:36:00 |
| Samba     | 63314840880 | 8611200 | 143520 | 732810 |   196 |   16 | 2006-05-14 15:48:00 |
| Scroupy   | 63405249840 | 7103520 | 118392 | 733857 |   162 |   13 | 2009-03-26 01:24:00 |
| Snory     | 63451609320 | 6331680 | 105528 | 734393 |   144 |   12 | 2010-09-13 15:02:00 |
| Spoutnik  | 63342697500 | 8146080 | 135768 | 733133 |   185 |   15 | 2007-04-02 01:45:00 |
| Tortilla  | 63405102180 | 7106400 | 118440 | 733855 |   162 |   13 | 2009-03-24 08:23:00 |
| Welva     | 63372375900 | 7652160 | 127536 | 733476 |   174 |   14 | 2008-03-10 13:45:00 |
| Yoda      | 63456480000 | 6249600 | 104160 | 734450 |   142 |   11 | 2010-11-09 00:00:00 |
| Zambo     | 63314841000 | 8611200 | 143520 | 732810 |   196 |   16 | 2006-05-14 15:50:00 |
| Zara      | 63375881160 | 7593120 | 126552 | 733517 |   173 |   14 | 2008-04-20 03:26:00 |
| Zira      | 63344638740 | 8114400 | 135240 | 733155 |   185 |   15 | 2007-04-24 12:59:00 |
| Zonko     | 63340920300 | 8176320 | 136272 | 733112 |   186 |   15 | 2007-03-12 12:05:00 |
+-----------+-------------+---------+--------+--------+-------+------+---------------------+
63 rows in set (0.00 sec)

mysql>
```

7. Which animals have their birthdays in a month with an even number of days.

```
SELECT *

FROM animal

WHERE DAY(dob) %2 = 0;
```



```
mysql> SELECT *
    -> FROM animal
    -> WHERE DAY(dob) %2 = 0;
+----+-----+---------------------+---------+----------+-----------+---------+
| id | sex | dob                 | name    | comments | species_id | race_id |
mother_id | father_id |
+----+-----+---------------------+---------+----------+-----------+---------+
|  2 | NULL | 2010-03-24 02:23:00 | Roucky  | NULL     |          2 |    NULL |
     40 |        30 |
|  7 | F   | 2008-12-06 05:18:00 | Caroline | NULL     |          1 |       2 |
    NULL |      NULL |
| 11 | F   | 2008-02-10 15:45:00 | Canaille | NULL     |          1 |    NULL |
    NULL |      NULL |
| 12 | F   | 2009-05-26 08:54:00 | Cali    | NULL     |          1 |       2 |
    NULL |      NULL |
| 13 | F   | 2007-04-24 12:54:00 | Rouquine | NULL     |          1 |       1 |
    NULL |      NULL |
| 14 | F   | 2009-05-26 08:56:00 | Fila    | NULL     |          1 |       2 |
    NULL |      NULL |
| 15 | F   | 2008-02-20 15:47:00 | Anya    | NULL     |          1 |    NULL |
    NULL |      NULL |
| 16 | F   | 2009-05-26 08:50:00 | Louya   | NULL     |          1 |    NULL |
    NULL |      NULL |
| 17 | F   | 2008-03-10 13:45:00 | Welva   | NULL     |          1 |       3 |
    NULL |      NULL |
| 18 | F   | 2007-04-24 12:59:00 | Zira    | NULL     |          1 |       1 |
    NULL |      NULL |
| 19 | F   | 2009-05-26 09:02:00 | Java    | NULL     |          1 |       2 |
    NULL |      NULL |
| 20 | M   | 2007-04-24 12:45:00 | Balou   | NULL     |          1 |       1 |
    NULL |      NULL |
| 21 | F   | 2008-03-10 13:43:00 | Pataude | NULL     |          1 |       3 |
    NULL |      NULL |
| 22 | M   | 2007-04-24 12:42:00 | Bouli   | NULL     |          1 |       1 |
    NULL |      NULL |
| 24 | M   | 2007-04-12 05:23:00 | Cartouche | NULL     |          1 |    NULL |
    NULL |      NULL |
| 25 | M   | 2006-05-14 15:50:00 | Zambo   | NULL     |          1 |       3 |
    NULL |      NULL |
| 26 | M   | 2006-05-14 15:48:00 | Samba   | NULL     |          1 |       1 |
    NULL |      NULL |
| 27 | M   | 2008-03-10 13:40:00 | Moka    | NULL     |          1 |       3 |
    NULL |      NULL |
| 28 | M   | 2006-05-14 15:40:00 | Pilou   | NULL     |          1 |       1 |
    NULL |      NULL |
| 29 | M   | 2009-05-14 06:30:00 | Fiero   | NULL     |          2 |       6 |
    NULL |      NULL |
| 30 | M   | 2007-03-12 12:05:00 | Zonko   | NULL     |          2 |       5 |
    NULL |      NULL |
| 31 | M   | 2008-02-20 15:45:00 | Filou   | NULL     |          2 |       4 |
    NULL |      NULL |
| 32 | M   | 2007-03-12 12:07:00 | Farceur | NULL     |          2 |       5 |
    NULL |      NULL |
| 34 | M   | 2008-04-20 03:22:00 | Capou   | NULL     |          2 |       5 |
    NULL |      NULL |
| 36 | M   | 2009-05-14 06:42:00 | Boucan  | NULL     |          2 |       6 |
    NULL |      NULL |
| 38 | F   | 2009-05-14 06:45:00 | Boule   | NULL     |          2 |       6 |
    NULL |      NULL |
| 39 | F   | 2008-04-20 03:26:00 | Zara    | NULL     |          2 |       5 |
    NULL |      NULL |
| 40 | F   | 2007-03-12 12:00:00 | Milla   | NULL     |          2 |       5 |
    NULL |      NULL |
| 42 | F   | 2008-04-20 03:20:00 | Bilba   | mute     |          2 |       5 |
    NULL |      NULL |
| 43 | F   | 2007-03-12 11:54:00 | Cracotte | NULL     |          2 |       5 |
    NULL |      NULL |
| 46 | F   | 2009-03-24 08:23:00 | Tortilla | A slow-moving reptile, enclosed in a scaly or leathery domed shell into which it can retract its head and thick legs. |          3 |    NULL |
    NULL |      NULL |
| 47 | F   | 2009-01-26 01:24:00 | Scrouqy | A slow-moving reptile, enclosed in a scaly or leathery domed shell into which it can retract its head and thick legs. |          3 |    NULL |
    NULL |      NULL |
| 53 | M   | 2007-04-02 01:45:00 | Spoutnik | A slow-moving reptile, enclosed in a scaly or leathery domed shell into which it can retract its head and thick legs. |          3 |    NULL |
    NULL |      NULL |
| 54 | M   | 2008-03-16 08:20:00 | Bubulle | A slow-moving reptile, enclosed in a scaly or leathery domed shell into which it can retract its head and thick legs. |          3 |    NULL |
    NULL |      NULL |
| 57 | M   | 2007-03-04 19:36:00 | Safran  | A bird, often vividly colored, with a short down-curved hooked bill, grasping feet, and a raucous voice, found esp. in the tropics and feeding on fruits and seeds. |          4 |    NULL |
    NULL |      NULL |
| 58 | M   | 2008-02-20 02:50:00 | Gingko  | A bird, often vividly colored, with a short down-curved hooked bill, grasping feet, and a raucous voice, found esp. in the tropics and feeding on fruits and seeds. |          4 |    NULL |
    NULL |      NULL |
| 59 | M   | 2009-03-26 08:28:00 | Bavard  | A bird, often vividly colored, with a short down-curved hooked bill, grasping feet, and a raucous voice, found esp. in the tropics and feeding on fruits and seeds. |          4 |    NULL |
    NULL |      NULL |
| 60 | F   | 2009-03-26 07:55:00 | Parlotte | A bird, often vividly colored, with a short down-curved hooked bill, grasping feet, and a raucous voice, found esp. in the tropics and feeding on fruit
    NULL |      NULL |
+----+-----+---------------------+---------+----------+-----------+---------+
38 rows in set (0.00 sec)
```

8. Assuming that cats and dogs should not live more than 4 years. . . which of them should be dead by now. (#sorryNoSoSorry)

SELECT CONCAT(name, ' / ' ,'DECEASED') AS name, current_name AS 'species', YEAR(dob), TIMESTAMPDIFF(YEAR,DATE(dob),'2022-09-27') AS AGE_IN_YEAR

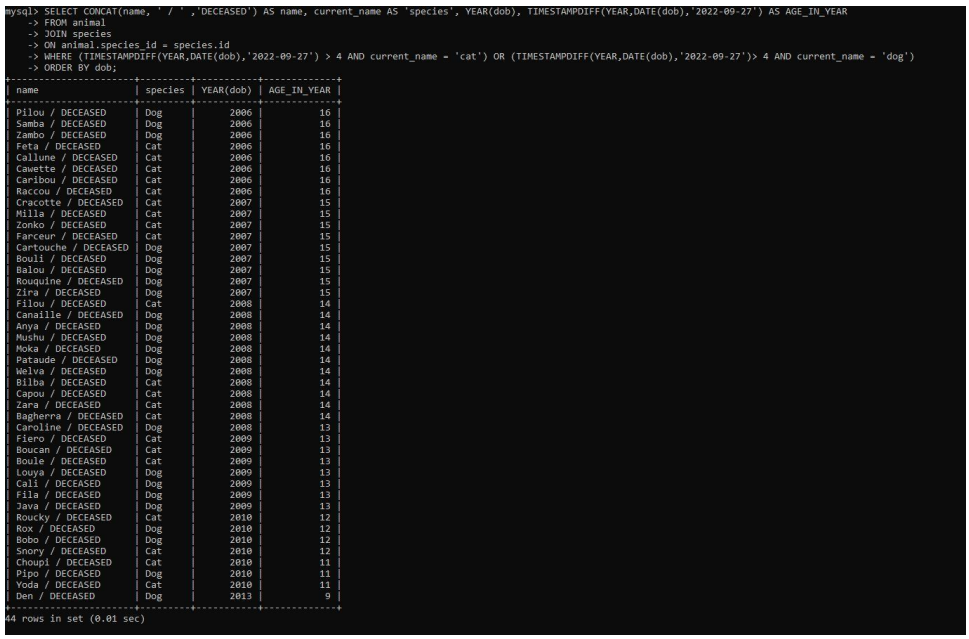
FROM animal

JOIN species

ON animal.species_id = species.id

WHERE (TIMESTAMPDIFF(YEAR,DATE(dob),'2022-09-27') > 4 AND current_name = 'cat') OR (TIMESTAMPDIFF(YEAR,DATE(dob),'2022-09-27')> 4 AND current_name = 'dog')

ORDER BY dob;



```
mysql> SELECT CONCAT(name, ' / ' ,'DECEASED') AS name, current_name AS 'species', YEAR(dob), TIMESTAMPDIFF(YEAR,DATE(dob),'2022-09-27') AS AGE_IN_YEAR
    -> FROM animal
    -> JOIN species
    -> ON animal.species_id = species.id
    -> WHERE (TIMESTAMPDIFF(YEAR,DATE(dob),'2022-09-27') > 4 AND current_name = 'cat') OR (TIMESTAMPDIFF(YEAR,DATE(dob),'2022-09-27')> 4 AND current_name = 'dog')
    -> ORDER BY dob;
+----------------------+---------+-----------+-------------+
| name                 | species | YEAR(dob) | AGE_IN_YEAR |
+----------------------+---------+-----------+-------------+
| Pilou / DECEASED     | Dog     |      2006 |          16 |
| Samba / DECEASED     | Dog     |      2006 |          16 |
| Zambo / DECEASED     | Dog     |      2006 |          16 |
| Feta / DECEASED      | Cat     |      2006 |          16 |
| Callune / DECEASED   | Cat     |      2006 |          16 |
| Cawette / DECEASED   | Cat     |      2006 |          16 |
| Caribou / DECEASED   | Cat     |      2006 |          16 |
| Raccou / DECEASED    | Cat     |      2006 |          16 |
| Cracotte / DECEASED  | Cat     |      2007 |          15 |
| Milla / DECEASED     | Cat     |      2007 |          15 |
| Zonko / DECEASED     | Cat     |      2007 |          15 |
| Farceur / DECEASED   | Cat     |      2007 |          15 |
| Cartouche / DECEASED | Dog     |      2007 |          15 |
| Bouli / DECEASED     | Dog     |      2007 |          15 |
| Balou / DECEASED     | Dog     |      2007 |          15 |
| Rouquine / DECEASED  | Dog     |      2007 |          15 |
| Zira / DECEASED      | Dog     |      2007 |          15 |
| Filou / DECEASED     | Cat     |      2008 |          14 |
| Canaille / DECEASED  | Dog     |      2008 |          14 |
| Anya / DECEASED      | Dog     |      2008 |          14 |
| Mushu / DECEASED     | Dog     |      2008 |          14 |
| Moka / DECEASED      | Dog     |      2008 |          14 |
| Pataude / DECEASED   | Dog     |      2008 |          14 |
| Welva / DECEASED     | Dog     |      2008 |          14 |
| Bilba / DECEASED     | Cat     |      2008 |          14 |
| Capou / DECEASED     | Cat     |      2008 |          14 |
| Zara / DECEASED      | Cat     |      2008 |          14 |
| Bagherra / DECEASED  | Cat     |      2008 |          14 |
| Caroline / DECEASED  | Dog     |      2008 |          13 |
| Fiero / DECEASED     | Cat     |      2009 |          13 |
| Boucan / DECEASED    | Cat     |      2009 |          13 |
| Boule / DECEASED     | Cat     |      2009 |          13 |
| Louya / DECEASED     | Dog     |      2009 |          13 |
| Cali / DECEASED      | Dog     |      2009 |          13 |
| Fila / DECEASED      | Dog     |      2009 |          13 |
| Java / DECEASED      | Dog     |      2009 |          13 |
| Roucky / DECEASED    | Cat     |      2010 |          12 |
| Rox / DECEASED       | Dog     |      2010 |          12 |
| Bobo / DECEASED      | Dog     |      2010 |          12 |
| Snory / DECEASED     | Cat     |      2010 |          12 |
| Chougi / DECEASED    | Cat     |      2010 |          11 |
| Pipo / DECEASED      | Dog     |      2010 |          11 |
| Yoda / DECEASED      | Cat     |      2010 |          11 |
| Den / DECEASED       | Dog     |      2013 |           9 |
+----------------------+---------+-----------+-------------+
44 rows in set (0.01 sec)
```

Medium

1. Moka was supposed to be born on February 27, 2008. Calculate how many days late she was born.

SELECT name, DATE(dob) AS 'birth date', DATEDIFF(dob, '2008-02-27') AS 'days born late'

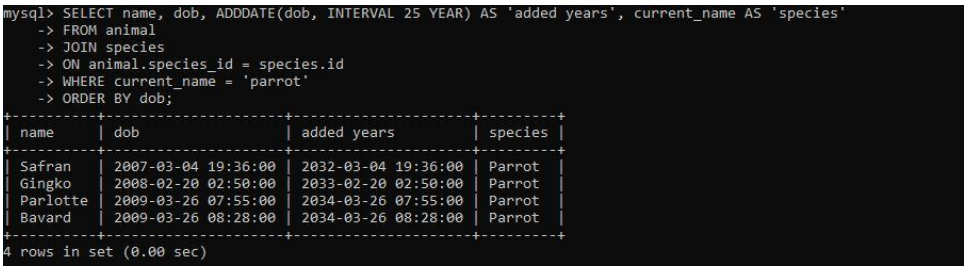
FROM animal

WHERE name = 'Moka';

```
mysql> SELECT name, DATE(dob) AS 'birth date', DATEDIFF(dob, '2008-02-27') AS 'days born late'
    -> FROM animal
    -> WHERE name = 'Moka';
+------+------------+----------------+
| name | birth date | days born late |
+------+------------+----------------+
| Moka | 2008-03-10 |             12 |
+------+------------+----------------+
1 row in set (0.00 sec)
```

2. Display the date that each parrot will celebrate their 25th birthday.

```
SELECT name, dob, ADDDATE(dob, INTERVAL 25 YEAR) AS 'added years', current_name AS 'species'

FROM animal

JOIN species

ON animal.species_id = species.id

WHERE current_name = 'parrot'

ORDER BY dob;
```



```
mysql> SELECT name, dob, ADDDATE(dob, INTERVAL 25 YEAR) AS 'added years', current_name AS 'species'
    -> FROM animal
    -> JOIN species
    -> ON animal.species_id = species.id
    -> WHERE current_name = 'parrot'
    -> ORDER BY dob;
+----------+---------------------+---------------------+---------+
| name     | dob                 | added years         | species |
+----------+---------------------+---------------------+---------+
| Safran   | 2007-03-04 19:36:00 | 2032-03-04 19:36:00 | Parrot  |
| Gingko   | 2008-02-20 02:50:00 | 2033-02-20 02:50:00 | Parrot  |
| Parlotte | 2009-03-26 07:55:00 | 2034-03-26 07:55:00 | Parrot  |
| Bavard   | 2009-03-26 08:28:00 | 2034-03-26 08:28:00 | Parrot  |
+----------+---------------------+---------------------+---------+
4 rows in set (0.00 sec)
```

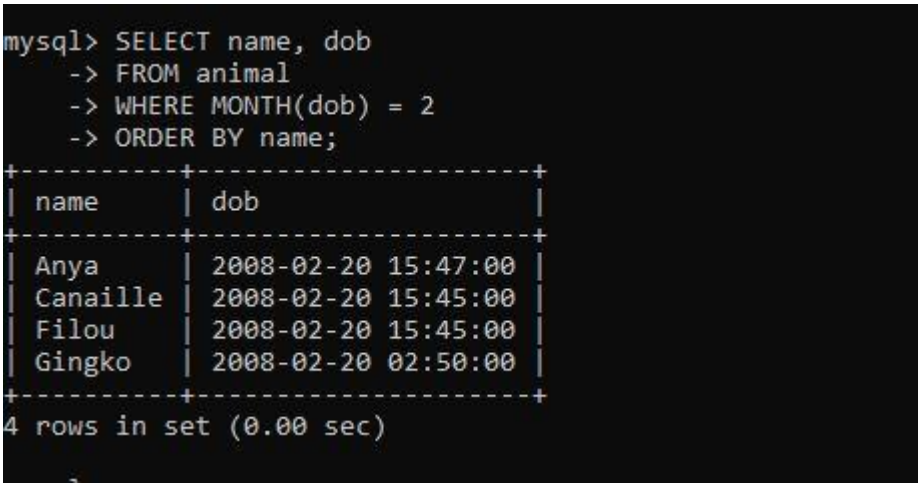
3. Select all the animals born within a month that has exactly 29 days.

SELECT name, dob

FROM animal

WHERE MONTH(dob) = 2

ORDER BY name;

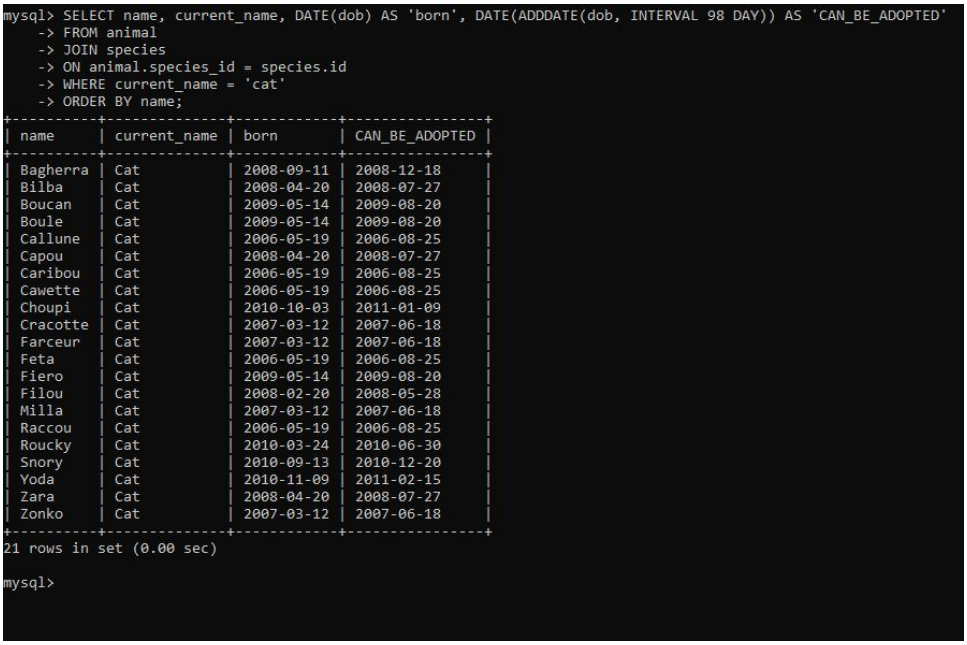


```
mysql> SELECT name, dob
    -> FROM animal
    -> WHERE MONTH(dob) = 2
    -> ORDER BY name;
+----------+---------------------+
| name     | dob                 |
+----------+---------------------+
| Anya     | 2008-02-20 15:47:00 |
| Canaille | 2008-02-20 15:45:00 |
| Filou    | 2008-02-20 15:45:00 |
| Gingko   | 2008-02-20 02:50:00 |
+----------+---------------------+
4 rows in set (0.00 sec)
```

4. After twelve weeks, a kitten is weaned (with some exceptions of course).

Display the date from which a cats may be adopted (passed or future date).

```
SELECT name, current_name, DATE(dob) AS 'born', DATE(ADDDATE(dob, INTERVAL 98 DAY)) AS 'CAN_BE_ADOPTED'

FROM animal

JOIN species

ON animal.species_id = species.id

WHERE current_name = 'cat'

ORDER BY name;
```



```
mysql> SELECT name, current_name, DATE(dob) AS 'born', DATE(ADDDATE(dob, INTERVAL 98 DAY)) AS 'CAN_BE_ADOPTED'
    -> FROM animal
    -> JOIN species
    -> ON animal.species_id = species.id
    -> WHERE current_name = 'cat'
    -> ORDER BY name;
+----------+--------------+------------+----------------+
| name     | current_name | born       | CAN_BE_ADOPTED |
+----------+--------------+------------+----------------+
| Bagherra | Cat          | 2008-09-11 | 2008-12-18     |
| Bilba    | Cat          | 2008-04-20 | 2008-07-27     |
| Boucan   | Cat          | 2009-05-14 | 2009-08-20     |
| Boule    | Cat          | 2009-05-14 | 2009-08-20     |
| Callune  | Cat          | 2006-05-19 | 2006-08-25     |
| Capou    | Cat          | 2008-04-20 | 2008-07-27     |
| Caribou  | Cat          | 2006-05-19 | 2006-08-25     |
| Cawette  | Cat          | 2006-05-19 | 2006-08-25     |
| Choupi   | Cat          | 2010-10-03 | 2011-01-09     |
| Cracotte | Cat          | 2007-03-12 | 2007-06-18     |
| Farceur  | Cat          | 2007-03-12 | 2007-06-18     |
| Feta     | Cat          | 2006-05-19 | 2006-08-25     |
| Fiero    | Cat          | 2009-05-14 | 2009-08-20     |
| Filou    | Cat          | 2008-02-20 | 2008-05-28     |
| Milla    | Cat          | 2007-03-12 | 2007-06-18     |
| Raccou   | Cat          | 2006-05-19 | 2006-08-25     |
| Roucky   | Cat          | 2010-03-24 | 2010-06-30     |
| Snory    | Cat          | 2010-09-13 | 2010-12-20     |
| Yoda     | Cat          | 2010-11-09 | 2011-02-15     |
| Zara     | Cat          | 2008-04-20 | 2008-07-27     |
| Zonko    | Cat          | 2007-03-12 | 2007-06-18     |
+----------+--------------+------------+----------------+
21 rows in set (0.00 sec)

mysql>
```

5. After Rouquine, Zira, Bouli and Balou are part of the same scope.

Calculate how long, in minutes, Balou was born before Zira.

```
SELECT GROUP_CONCAT(name) AS 'names', DATE(dob),MIN(MINUTE(dob) )AS 'MIN-time-IN-MINUTES', MAX(MINUTE(dob)) AS 'MAX-TIME-IN-MINUTES',

MAX(MINUTE(dob))-MINUTE(TIME(dob) ) AS 'DIFFERENCE'

FROM animal

JOIN species

ON animal.species_id = species.id

WHERE name = 'Balou' OR name = 'Zira'

GROUP BY DATE(dob);
```

```
mysql> SELECT GROUP_CONCAT(name) AS 'names', DATE(dob),MIN(MINUTE(dob) )AS 'MIN-time-IN-MINUTES', MAX(MINUTE(dob)) AS 'M
AX-TIME-IN-MINUTES',
    -> MAX(MINUTE(dob))-MINUTE(TIME(dob) ) AS 'DIFFERENCE'
    ->  FROM animal
    -> JOIN species
    -> ON animal.species_id = species.id
    -> WHERE name = 'Balou' OR name = 'Zira'
    -> GROUP BY DATE(dob);
+-----------+-----------+--------------------+--------------------+------------+
| names     | DATE(dob) | MIN-time-IN-MINUTES | MAX-TIME-IN-MINUTES | DIFFERENCE |
+-----------+-----------+--------------------+--------------------+------------+
| Balou,Zira | 2007-04-24 |                 45 |                 59 |         14 |
+-----------+-----------+--------------------+--------------------+------------+
1 row in set (0.00 sec)
```

6. Display the age of each animal in numbers

```
SELECT name,  CONCAT

      (
```

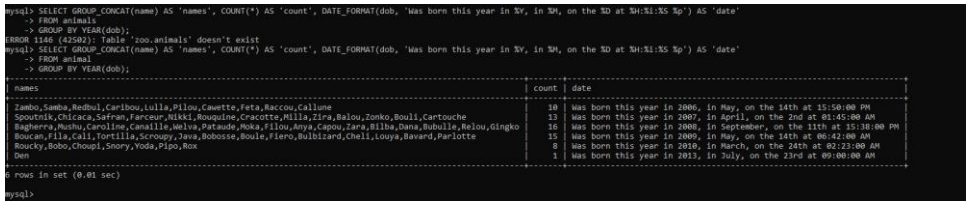
```
        FLOOR((TIMESTAMPDIFF(MONTH, dob, CURDATE()) / 12)), ' YEARS ',
        MOD(TIMESTAMPDIFF(MONTH, dob, CURDATE()), 12) , ' MONTHS'
    ) AS age
FROM animal;
```

```
mysql> SELECT name,  CONCAT
    ->         (
    ->             FLOOR((TIMESTAMPDIFF(MONTH, dob, CURDATE()) / 12)), ' YEARS ',
    ->             MOD(TIMESTAMPDIFF(MONTH, dob, CURDATE()), 12) , ' MONTHS'
    ->         ) AS age
    -> FROM animal;
+----------+-------------------+
| name     | age               |
+----------+-------------------+
| Rox      | 12 YEARS 5 MONTHS |
| Roucky   | 12 YEARS 6 MONTHS |
| Snory    | 12 YEARS 0 MONTHS |
| NULL     | 13 YEARS 1 MONTHS |
| Choupi   | 11 YEARS 11 MONTHS|
| Bobosse  | 13 YEARS 3 MONTHS |
| Caroline | 13 YEARS 9 MONTHS |
| Bagherra | 14 YEARS 0 MONTHS |
| NULL     | 12 YEARS 1 MONTHS |
| Bobo     | 12 YEARS 2 MONTHS |
| Canaille | 14 YEARS 7 MONTHS |
| Cali     | 13 YEARS 4 MONTHS |
| Rouquine | 15 YEARS 5 MONTHS |
| Fila     | 13 YEARS 4 MONTHS |
| Anya     | 14 YEARS 7 MONTHS |
| Louya    | 13 YEARS 4 MONTHS |
| Welva    | 14 YEARS 6 MONTHS |
| Zira     | 15 YEARS 5 MONTHS |
| Java     | 13 YEARS 4 MONTHS |
| Balou    | 15 YEARS 5 MONTHS |
| Pataude  | 14 YEARS 6 MONTHS |
| Bouli    | 15 YEARS 5 MONTHS |
| Cartouche| 15 YEARS 5 MONTHS |
| Zambo    | 16 YEARS 4 MONTHS |
| Samba    | 16 YEARS 4 MONTHS |
| Moka     | 14 YEARS 6 MONTHS |
| Pilou    | 16 YEARS 4 MONTHS |
| Fiero    | 13 YEARS 4 MONTHS |
| Zonko    | 15 YEARS 6 MONTHS |
| Filou    | 14 YEARS 7 MONTHS |
| Farceur  | 15 YEARS 6 MONTHS |
| Caribou  | 16 YEARS 4 MONTHS |
| Capou    | 14 YEARS 5 MONTHS |
| Raccou   | 16 YEARS 4 MONTHS |
| Boucan   | 13 YEARS 4 MONTHS |
| Callune  | 16 YEARS 4 MONTHS |
| Boule    | 13 YEARS 4 MONTHS |
| Zara     | 14 YEARS 5 MONTHS |
| Milla    | 15 YEARS 6 MONTHS |
| Feta     | 16 YEARS 4 MONTHS |
| Bilba    | 14 YEARS 5 MONTHS |
| Cracotte | 15 YEARS 6 MONTHS |
| Cawette  | 16 YEARS 4 MONTHS |
| Nikki    | 15 YEARS 5 MONTHS |
| Tortilla | 13 YEARS 6 MONTHS |
| Scroupy  | 13 YEARS 6 MONTHS |
| Lulla    | 16 YEARS 6 MONTHS |
| Dana     | 14 YEARS 6 MONTHS |
| Cheli    | 13 YEARS 4 MONTHS |
| Cheli    | 13 YEARS 4 MONTHS |
| Chicaca  | 15 YEARS 5 MONTHS |
| Redbul   | 16 YEARS 6 MONTHS |
| Spoutnik | 15 YEARS 5 MONTHS |
| Bubulle  | 14 YEARS 6 MONTHS |
| Relou    | 14 YEARS 6 MONTHS |
| Bulbizard| 13 YEARS 4 MONTHS |
| Safran   | 15 YEARS 6 MONTHS |
| Gingko   | 14 YEARS 7 MONTHS |
| Bavard   | 13 YEARS 6 MONTHS |
| Parlotte | 13 YEARS 6 MONTHS |
| Yoda     | 11 YEARS 10 MONTHS|
| Pipo     | 11 YEARS 10 MONTHS|
| Mushu    | 14 YEARS 6 MONTHS |
| Den      | 9 YEARS 2 MONTHS  |
+----------+-------------------+
63 rows in set (0.00 sec)

mysql>
```

7. Display the animals born in the same year, Display in this format:

"... was born this YYYY, in MM, on DD (name of day), at HH:MM:SS"

```
SELECT GROUP_CONCAT(name) AS 'names', COUNT(*) AS 'count', DATE_FORMAT(dob, 'Was born this year in %Y, in %M, on the %D at %H:%i:%S %p') AS 'date'

FROM animal

GROUP BY YEAR(dob);
```



Medium Hard

1. Rouquine, Zira, Bouli and Balou are part of the same scope.

Calculate how long in minutes elapsed between the first born and last born.

SELECT GROUP_CONCAT(name) AS 'names', DATE(dob),MIN(MINUTE(dob))AS 'MIN-time-IN-MINUTES', MAX(MINUTE(dob)) AS 'MAX-TIME-IN-MINUTES',

MAX(MINUTE(dob))-MINUTE(TIME(dob)) AS 'DIFFERENCE'

FROM animal

JOIN species

ON animal.species_id = species.id

WHERE name = 'Balou' OR name = 'Zira' OR name = 'Bouli ' OR name = 'Rouquine '

GROUP BY DATE(dob);

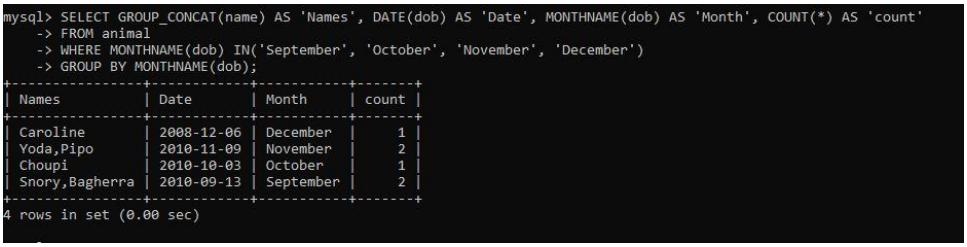
ORDER BY TIME(dob)

```
mysql> SELECT GROUP_CONCAT(name) AS 'names', DATE(dob),MIN(MINUTE(dob) )AS 'MIN-time-IN-MINUTES', MAX(MINUTE(dob)) AS '
AX-TIME-IN-MINUTES',
    -> MAX(MINUTE(dob))-MINUTE(TIME(dob) ) AS 'DIFFERENCE'
    ->  FROM animal
    -> JOIN species
    -> ON animal.species_id = species.id
    -> WHERE name = 'Balou' OR name = 'Zira'  OR name = 'Bouli '  OR name = 'Rouquine '
    -> GROUP BY DATE(dob)
    -> ORDER BY TIME(dob) ;
+-------------------------+------------+--------------------+--------------------+------------+
| names                   | DATE(dob)  | MIN-time-IN-MINUTES | MAX-TIME-IN-MINUTES | DIFFERENCE |
+-------------------------+------------+--------------------+--------------------+------------+
| Balou,Bouli,Rouquine,Zira | 2007-04-24 |                 42 |                 59 |         14 |
+-------------------------+------------+--------------------+--------------------+------------+
1 row in set (0.01 sec)

mysql>
```

```
mysql> SELECT name, DATE(dob),MINUTE(dob)
    ->  FROM animal
    -> JOIN species
    -> ON animal.species_id = species.id
    -> WHERE name = 'Balou' OR name = 'Zira'  OR name = 'Bouli '  OR name = 'Rouquine '
    -> ORDER BY TIME(dob) ;
+----------+------------+-------------+
| name     | DATE(dob)  | MINUTE(dob) |
+----------+------------+-------------+
| Bouli    | 2007-04-24 |          42 |
| Balou    | 2007-04-24 |          45 |
| Rouquine | 2007-04-24 |          54 |
| Zira     | 2007-04-24 |          59 |
+----------+------------+-------------+
4 rows in set (0.00 sec)
```

2. Calculate how many animals are born during a month in which the molds are the most consumables (that is to say the months ending in "ber" [September, October, November and December]).

```
SELECT GROUP_CONCAT(name) AS 'Names', DATE(dob) AS 'Date', MONTHNAME(dob) AS 'Month', COUNT(*) AS 'count'

FROM animal

WHERE MONTHNAME(dob) IN('September', 'October', 'November', 'December')

GROUP BY MONTHNAME(dob);
```



```
mysql> SELECT GROUP_CONCAT(name) AS 'Names', DATE(dob) AS 'Date', MONTHNAME(dob) AS 'Month', COUNT(*) AS 'count'
    -> FROM animal
    -> WHERE MONTHNAME(dob) IN('September', 'October', 'November', 'December')
    -> GROUP BY MONTHNAME(dob);
+----------------+------------+-----------+-------+
| Names          | Date       | Month     | count |
+----------------+------------+-----------+-------+
| Caroline       | 2008-12-06 | December  |     1 |
| Yoda,Pipo      | 2010-11-09 | November  |     2 |
| Choupi         | 2010-10-03 | October   |     1 |
| Snory,Bagherra | 2010-09-13 | September |     2 |
+----------------+------------+-----------+-------+
4 rows in set (0.00 sec)
```

3. For dogs and cats, display the date of birth of litters of at least two individuals (DD / MM / YYYY),

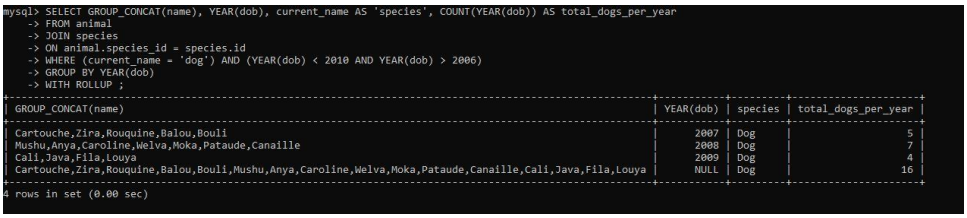
and the number of individuals for each of these litters.

By Litter I mean 'Animals Born on the same date'.

Attention, it is possible that a range of cats was born the same day a litter of dogs.

4. Calculate the # of dogs hat were born each year between 2006 and 2010 Advrage the total (knowing that we had at least one birth every year).

```
SELECT GROUP_CONCAT(name), YEAR(dob), current_name AS 'species', COUNT(YEAR(dob)) AS total_dogs_per_year

FROM animal

JOIN species

ON animal.species_id = species.id

WHERE (current_name = 'dog') AND (YEAR(dob) < 2010 AND YEAR(dob) > 2006)

GROUP BY YEAR(dob)

WITH ROLLUP ;
```



```
mysql> SELECT GROUP_CONCAT(name), YEAR(dob), current_name AS 'species', COUNT(YEAR(dob)) AS total_dogs_per_year
    -> FROM animal
    -> JOIN species
    -> ON animal.species_id = species.id
    -> WHERE (current_name = 'dog') AND (YEAR(dob) < 2010 AND YEAR(dob) > 2006)
    -> GROUP BY YEAR(dob)
    -> WITH ROLLUP ;
+-----------------------------------------------------------------------------------------------------+-----------+---------+---------------------+
| GROUP_CONCAT(name)                                                                                  | YEAR(dob) | species | total_dogs_per_year |
+-----------------------------------------------------------------------------------------------------+-----------+---------+---------------------+
| Cartouche,Zira,Rouquine,Balou,Bouli                                                                 |      2007 | Dog     |                   5 |
| Mushu,Anya,Caroline,Welva,Moka,Pataude,Canaille                                                     |      2008 | Dog     |                   7 |
| Cali,Java,Fila,Louya                                                                                |      2009 | Dog     |                   4 |
| Cartouche,Zira,Rouquine,Balou,Bouli,Mushu,Anya,Caroline,Welva,Moka,Pataude,Canaille,Cali,Java,Fila,Louya |      NULL | Dog     |                  16 |
+-----------------------------------------------------------------------------------------------------+-----------+---------+---------------------+
4 rows in set (0.00 sec)
```

5. Display the date in ISO format of the fifth anniversary of an animals having a father or a mother

```
SELECT name, DATE(dob), DATE_ADD(DATE(dob), INTERVAL 5 YEAR) AS '5th anniversary',mother_id,father_id

FROM animal

WHERE mother_id IS NOT NULL OR father_id IS NOT NULL;
```

```
mysql> SELECT name, DATE(dob), DATE_ADD(DATE(dob), INTERVAL 5 YEAR) AS '5th anniversary',mother_id,father_id
    -> FROM animal
    -> WHERE mother_id IS NOT NULL OR father_id IS NOT NULL;
+--------+------------+-----------------+-----------+-----------+
| name   | DATE(dob)  | 5th anniversary | mother_id | father_id |
+--------+------------+-----------------+-----------+-----------+
| Rox    | 2010-04-05 | 2015-04-05      |        18 |        22 |
| Roucky | 2010-03-24 | 2015-03-24      |        40 |        30 |
| Snory  | 2010-09-13 | 2015-09-13      |        41 |        31 |
| Bobo   | 2010-07-21 | 2015-07-21      |         7 |        21 |
+--------+------------+-----------------+-----------+-----------+
4 rows in set (0.01 sec)
```