

# Задание №7

- 1) В подключенном MySQL репозитории создать базу данных “Друзья человека”.
- 2) Создать таблицы, соответствующие иерархии из вашей диаграммы классов.
- 3) Заполнить таблицы данными о животных, их командах и датами рождения.
- 4) Удалить записи о верблюдах и объединить таблицы лошадей и ослов.
- 5) Создать новую таблицу для животных в возрасте от 1 до 3 лет и вычислить их возраст с точностью до месяца (в отдельном столбце).
- 6) Объединить все созданные таблицы в одну, сохраняя информацию о принадлежности к исходным таблицам.

```
andrey@andrey-VirtualBox:~$ sudo mysql
```

# создаём БД (file: 1-create\_db.sql):

```
mysql> create database HumanFriends;  
mysql> use HumanFriends;
```

# создаём таблицы (file: 2-create\_tables.sql):

```
mysql> CREATE TABLE Cat (  
-> id INT AUTO_INCREMENT,  
-> Name VARCHAR(20),  
-> BirthDay DATE,  
-> Commands TEXT,  
-> PRIMARY KEY(id));  
  
mysql> CREATE TABLE Dog (  
-> id INT AUTO_INCREMENT,  
-> Name VARCHAR(20),  
-> BirthDay DATE,  
-> Commands TEXT,  
-> PRIMARY KEY(id));  
  
mysql> CREATE TABLE Hamster (  
-> id INT AUTO_INCREMENT,  
-> Name VARCHAR(20),  
-> BirthDay DATE,  
-> Commands TEXT,  
-> PRIMARY KEY(id));  
  
mysql> CREATE TABLE Horse (  
-> id INT AUTO_INCREMENT,  
-> Name VARCHAR(20),
```

```

-> BirthDay DATE,
-> Commands TEXT,
-> PRIMARY KEY(id));

mysql> CREATE TABLE Camel (
-> id INT AUTO_INCREMENT,
-> Name VARCHAR(20),
-> BirthDay DATE,
-> Commands TEXT,
-> PRIMARY KEY(id));

mysql> CREATE TABLE Donkey (
-> id INT AUTO_INCREMENT,
-> Name VARCHAR(20),
-> BirthDay DATE,
-> Commands TEXT,
-> PRIMARY KEY(id));

```

```

mysql> show tables;
+-----+
| Tables_in_HumanFriends |
+-----+
| Camel                   |
| Cat                     |
| Dog                     |
| Donkey                  |
| Hamster                 |
| Horse                   |
+-----+

```

# заполняем таблицы (file: 3-insert\_datas.sql):

```

mysql> INSERT INTO Cat (Name, BirthDay, Commands) VALUES
-> ('Whiskers', '2021-05-15', 'Sit, Pounce'),
-> ('Smudge', '2022-02-02', 'Sit, Pounce, Scratch'),
-> ('Oliver', '2022-06-30', 'Meow, Scratch, Jump');

mysql> INSERT INTO Dog (Name, BirthDay, Commands) VALUES
-> ('Fido', '2022-01-01', 'Sit, Stay, Fetch'),
-> ('Buddy', '2020-12-10', 'Sit, Paw, Bark'),
-> ('Bella', '2021-11-11', 'Sit, Stay, Roll');

mysql> INSERT INTO Hamster (Name, BirthDay, Commands) VALUES
-> ('Hammy', '2023-03-10', 'Roll, Hide'),
-> ('Peanut', '2023-08-01', 'Roll, Spin');

mysql> INSERT INTO Horse (Name, BirthDay, Commands) VALUES
-> ('Thunder', '2017-07-21', 'Trot, Canter, Gallop'),
-> ('Storm', '2016-05-05', 'Trot, Canter'),
-> ('Blaze', '2022-02-28', 'Trot, Jump, Gallop');

mysql> INSERT INTO Camel (Name, BirthDay, Commands) VALUES
-> ('Sandy', '2018-11-03', 'Walk, Carry Load'),
-> ('Dune', '2020-12-12', 'Walk, Sit'),
-> ('Sahara', '2017-08-14', 'Walk, Run');

```

```
mysql> INSERT INTO Donkey (Name, BirthDay, Commands) VALUES
-> ('Eeyore', '2019-09-18', 'Walk, Carry Load, Bray'),
-> ('Burro', '2023-01-23', 'Walk, Bray, Kick');
```

```
andrey@andrey-VirtualBox: ~
mysql> SELECT * FROM Cat;
+----+-----+-----+-----+
| id | Name  | BirthDay | Commands |
+----+-----+-----+-----+
| 1  | Whiskers | 2021-05-15 | Sit, Pounce |
| 2  | Smudge  | 2022-02-02 | Sit, Pounce, Scratch |
| 3  | Oliver  | 2022-06-30 | Meow, Scratch, Jump |
+----+-----+-----+-----+
3 rows in set (0,00 sec)

mysql> SELECT * FROM Dog;
+----+-----+-----+-----+
| id | Name  | BirthDay | Commands |
+----+-----+-----+-----+
| 1  | Fido   | 2022-01-01 | Sit, Stay, Fetch |
| 2  | Buddy  | 2020-12-10 | Sit, Paw, Bark |
| 3  | Bella  | 2021-11-11 | Sit, Stay, Roll |
+----+-----+-----+-----+
3 rows in set (0,00 sec)

mysql> SELECT * FROM Hamster;
+----+-----+-----+-----+
| id | Name  | BirthDay | Commands |
+----+-----+-----+-----+
| 1  | Hammy  | 2023-03-10 | Roll, Hide |
| 2  | Peanut | 2023-08-01 | Roll, Spin |
+----+-----+-----+-----+
2 rows in set (0,00 sec)

mysql> SELECT * FROM Horse;
+----+-----+-----+-----+
| id | Name  | BirthDay | Commands |
+----+-----+-----+-----+
| 1  | Thunder | 2017-07-21 | Trot, Canter, Gallop |
| 2  | Storm   | 2016-05-05 | Trot, Canter |
| 3  | Blaze   | 2022-02-28 | Trot, Jump, Gallop |
+----+-----+-----+-----+
3 rows in set (0,00 sec)

mysql> SELECT * FROM Donkey;
+----+-----+-----+-----+
| id | Name  | BirthDay | Commands |
+----+-----+-----+-----+
| 1  | Eeyore | 2019-09-18 | Walk, Carry Load, Bray |
| 2  | Burro  | 2023-01-23 | Walk, Bray, Kick |
+----+-----+-----+-----+
2 rows in set (0,00 sec)
```

# Удаляем записи о верблюдах и объединяем таблицы лошадей и ослов (file: 4-del\_and\_create.sql):

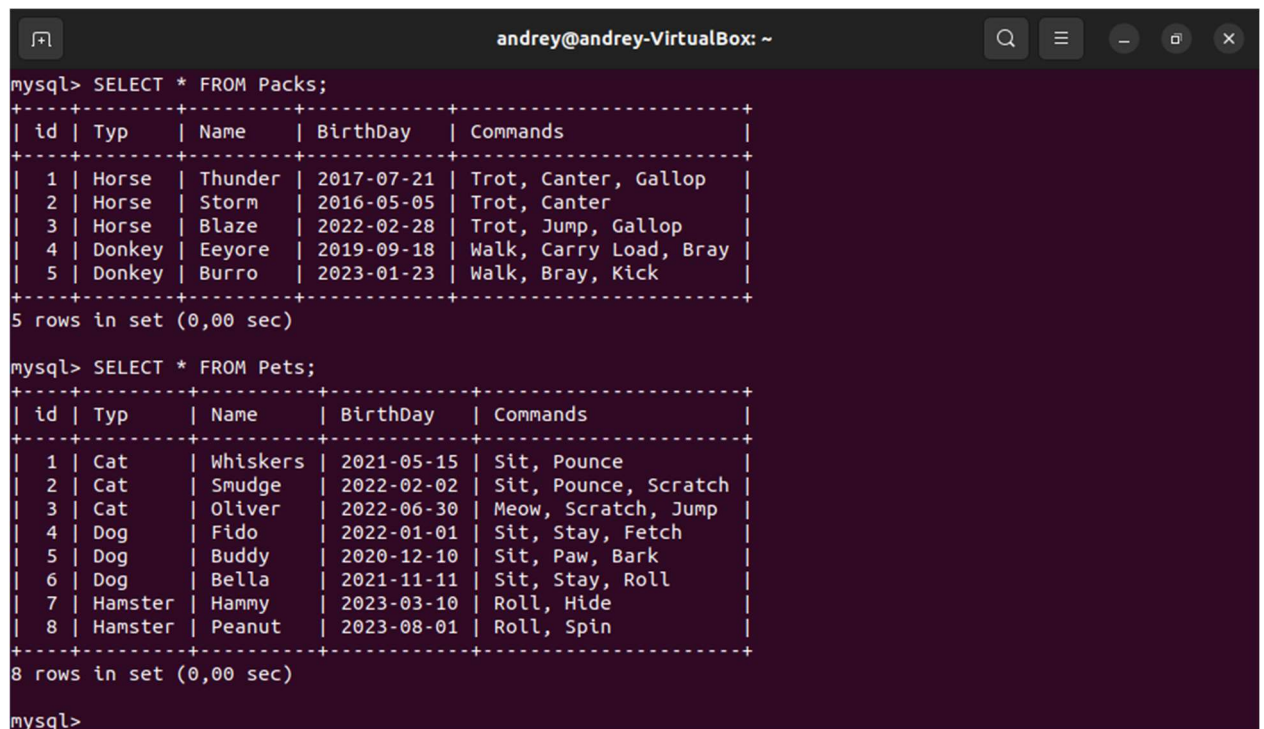
```
mysql> DELETE FROM Camel;

mysql> CREATE TABLE Packs (
-> id INT AUTO_INCREMENT,
-> Typ VARCHAR(12),
-> Name VARCHAR(20),
-> BirthDay DATE,
-> Commands TEXT,
-> PRIMARY KEY(id));

mysql> INSERT INTO Packs (Typ, Name, BirthDay, Commands)
-> SELECT 'Horse', Name, BirthDay, Commands FROM Horse
-> UNION ALL SELECT 'Camel', Name, BirthDay, Commands FROM Camel
-> UNION ALL SELECT 'Donkey', Name, BirthDay, Commands FROM Donkey;
```

# заодно создадим аналогичную таблицу и для домашних животных (file: 4a-create\_pets.sql):

```
mysql> CREATE TABLE Pets (  
-> id INT AUTO_INCREMENT,  
-> Typ VARCHAR(12),  
-> Name VARCHAR(20),  
-> BirthDay DATE,  
-> Commands TEXT,  
-> PRIMARY KEY(id));  
  
mysql> INSERT INTO Pets (Typ, Name, BirthDay, Commands)  
-> SELECT 'Cat', Name, BirthDay, Commands FROM Cat  
-> UNION ALL SELECT 'Dog', Name, BirthDay, Commands FROM Dog  
-> UNION ALL SELECT 'Hamster', Name, BirthDay, Commands FROM Hamster;
```



```
mysql> SELECT * FROM Packs;  
+-----+-----+-----+-----+-----+  
| id | Typ  | Name  | BirthDay | Commands |  
+-----+-----+-----+-----+-----+  
| 1  | Horse | Thunder | 2017-07-21 | Trot, Canter, Gallop |  
| 2  | Horse | Storm  | 2016-05-05 | Trot, Canter |  
| 3  | Horse | Blaze  | 2022-02-28 | Trot, Jump, Gallop |  
| 4  | Donkey | Eeyore  | 2019-09-18 | Walk, Carry Load, Bray |  
| 5  | Donkey | Burro   | 2023-01-23 | Walk, Bray, Kick |  
+-----+-----+-----+-----+-----+  
5 rows in set (0,00 sec)  
  
mysql> SELECT * FROM Pets;  
+-----+-----+-----+-----+-----+  
| id | Typ  | Name  | BirthDay | Commands |  
+-----+-----+-----+-----+-----+  
| 1  | Cat  | Whiskers | 2021-05-15 | Sit, Pounce |  
| 2  | Cat  | Smudge  | 2022-02-02 | Sit, Pounce, Scratch |  
| 3  | Cat  | Oliver  | 2022-06-30 | Meow, Scratch, Jump |  
| 4  | Dog  | Fido    | 2022-01-01 | Sit, Stay, Fetch |  
| 5  | Dog  | Buddy   | 2020-12-10 | Sit, Paw, Bark |  
| 6  | Dog  | Bella   | 2021-11-11 | Sit, Stay, Roll |  
| 7  | Hamster | Hammy   | 2023-03-10 | Roll, Hide |  
| 8  | Hamster | Peanut  | 2023-08-01 | Roll, Spin |  
+-----+-----+-----+-----+-----+  
8 rows in set (0,00 sec)  
  
mysql>
```

# Создать новую таблицу для животных в возрасте от 1 до 3 лет и вычислить их возраст с точностью до месяца (в отдельном столбце) (file: 5-create\_young.sql):

```
mysql> CREATE TABLE YoungAnimals (  
-> id INT AUTO_INCREMENT,  
-> Typ VARCHAR(12),  
-> Name VARCHAR(20),  
-> BirthDay DATE,  
-> Commands TEXT,  
-> Age TEXT,  
-> PRIMARY KEY(id));
```

```
mysql> INSERT INTO YoungAnimals (Typ, Name, BirthDay, Commands, Age)
-> SELECT Typ, Name, BirthDay, Commands,
-> CONCAT(TIMESTAMPDIFF(MONTH, BirthDay, curdate()) div 12, ' year, ',
-> TIMESTAMPDIFF(MONTH, BirthDay, curdate()) % 12, ' month')
-> FROM Pets
-> WHERE
-> TIMESTAMPDIFF(MONTH, BirthDay, curdate()) >= 12 AND
-> TIMESTAMPDIFF(MONTH, BirthDay, curdate()) < 36
-> UNION ALL SELECT Typ, Name, BirthDay, Commands,
-> CONCAT(TIMESTAMPDIFF(MONTH, BirthDay, curdate()) div 12, ' year, ',
-> TIMESTAMPDIFF(MONTH, BirthDay, curdate()) % 12, ' month')
-> FROM Packs
-> WHERE
-> TIMESTAMPDIFF(MONTH, BirthDay, curdate()) >= 12 AND
-> TIMESTAMPDIFF(MONTH, BirthDay, curdate()) < 36
->;
```

```
andrey@andrey-VirtualBox: ~
mysql> INSERT INTO YoungAnimals (Typ, Name, BirthDay, Commands, Age)
-> SELECT Typ, Name, BirthDay, Commands,
-> CONCAT(TIMESTAMPDIFF(MONTH, BirthDay, curdate()) div 12, ' year, ', TIMESTAMPDIFF(MONTH, BirthDay
, curdate()) % 12, ' month')
-> FROM Pets
-> WHERE
-> TIMESTAMPDIFF(MONTH, BirthDay, curdate()) >= 12 AND
-> TIMESTAMPDIFF(MONTH, BirthDay, curdate()) < 36
-> UNION ALL SELECT Typ, Name, BirthDay, Commands,
-> CONCAT(TIMESTAMPDIFF(MONTH, BirthDay, curdate()) div 12, ' year, ', TIMESTAMPDIFF(MONTH, BirthDay
, curdate()) % 12, ' month')
-> FROM Packs
-> WHERE
-> TIMESTAMPDIFF(MONTH, BirthDay, curdate()) >= 12 AND
-> TIMESTAMPDIFF(MONTH, BirthDay, curdate()) < 36
-> ;
Query OK, 7 rows affected (0,02 sec)
Records: 7 Duplicates: 0 Warnings: 0

mysql> SELECT * FROM YoungAnimals;
+-----+-----+-----+-----+-----+-----+
| id | Typ | Name | BirthDay | Commands | Age |
+-----+-----+-----+-----+-----+-----+
| 15 | Cat | Smudge | 2022-02-02 | Sit, Pounce, Scratch | 2 year, 4 month |
| 16 | Cat | Oliver | 2022-06-30 | Meow, Scratch, Jump | 1 year, 11 month |
| 17 | Dog | Fido | 2022-01-01 | Sit, Stay, Fetch | 2 year, 5 month |
| 18 | Dog | Bella | 2021-11-11 | Sit, Stay, Roll | 2 year, 7 month |
| 19 | Hamster | Hammy | 2023-03-10 | Roll, Hide | 1 year, 3 month |
| 20 | Horse | Blaze | 2022-02-28 | Trot, Jump, Gallop | 2 year, 3 month |
| 21 | Donkey | Burro | 2023-01-23 | Walk, Bray, Kick | 1 year, 5 month |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0,00 sec)

mysql>
```

# объединяем все таблицы в одну, с сохранением информации о их принадлежности к исходным таблицам (file: 6-concatenate.sql):

```
mysql> CREATE TABLE AllAnimal (
-> id INT AUTO_INCREMENT,
-> Typ VARCHAR(12),
-> Name VARCHAR(20),
-> BirthDay DATE,
-> Commands TEXT,
-> PRIMARY KEY(id));
```



```
mysql> INSERT INTO AllAnimal (Typ, Name, BirthDay, Commands)
-> SELECT Typ, Name, BirthDay, Commands
-> FROM Pets
-> UNION ALL SELECT Typ, Name, BirthDay, Commands
-> FROM Packs;
```

```
andrey@andrey-VirtualBox: ~
mysql> INSERT INTO AllAnimal (Typ, Name, BirthDay, Commands)
-> SELECT Typ, Name, BirthDay, Commands
-> FROM Pets
-> UNION ALL SELECT Typ, Name, BirthDay, Commands
-> FROM Packs;
Query OK, 13 rows affected (0,02 sec)
Records: 13  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM AllAnimal;
+----+-----+-----+-----+-----+
| id | Typ  | Name  | BirthDay | Commands |
+----+-----+-----+-----+-----+
| 1  | Cat  | Whiskers | 2021-05-15 | Sit, Pounce |
| 2  | Cat  | Smudge  | 2022-02-02 | Sit, Pounce, Scratch |
| 3  | Cat  | Oliver  | 2022-06-30 | Meow, Scratch, Jump |
| 4  | Dog  | Fido    | 2022-01-01 | Sit, Stay, Fetch |
| 5  | Dog  | Buddy   | 2020-12-10 | Sit, Paw, Bark |
| 6  | Dog  | Bella   | 2021-11-11 | Sit, Stay, Roll |
| 7  | Hamster | Hammy   | 2023-03-10 | Roll, Hide |
| 8  | Hamster | Peanut  | 2023-08-01 | Roll, Spin |
| 9  | Horse | Thunder | 2017-07-21 | Trot, Canter, Gallop |
| 10 | Horse | Storm   | 2016-05-05 | Trot, Canter |
| 11 | Horse | Blaze   | 2022-02-28 | Trot, Jump, Gallop |
| 12 | Donkey | Eeyore  | 2019-09-18 | Walk, Carry Load, Bray |
| 13 | Donkey | Burro   | 2023-01-23 | Walk, Bray, Kick |
+----+-----+-----+-----+-----+
13 rows in set (0,00 sec)

mysql>
```

# или можно так (file: 7-concatenate with age.sql):

```
andrey@andrey-VirtualBox: ~
mysql> SELECT * FROM AllAnimal;
+----+-----+-----+-----+-----+-----+
| id | Typ  | Name  | BirthDay | Commands | Age |
+----+-----+-----+-----+-----+-----+
| 1  | Cat  | Whiskers | 2021-05-15 | Sit, Pounce | 3 year, 1 month |
| 2  | Cat  | Smudge  | 2022-02-02 | Sit, Pounce, Scratch | 2 year, 4 month |
| 3  | Cat  | Oliver  | 2022-06-30 | Meow, Scratch, Jump | 1 year, 11 month |
| 4  | Dog  | Fido    | 2022-01-01 | Sit, Stay, Fetch | 2 year, 5 month |
| 5  | Dog  | Buddy   | 2020-12-10 | Sit, Paw, Bark | 3 year, 6 month |
| 6  | Dog  | Bella   | 2021-11-11 | Sit, Stay, Roll | 2 year, 7 month |
| 7  | Hamster | Hammy   | 2023-03-10 | Roll, Hide | 1 year, 3 month |
| 8  | Hamster | Peanut  | 2023-08-01 | Roll, Spin | 0 year, 10 month |
| 9  | Horse | Thunder | 2017-07-21 | Trot, Canter, Gallop | 6 year, 11 month |
| 10 | Horse | Storm   | 2016-05-05 | Trot, Canter | 8 year, 1 month |
| 11 | Horse | Blaze   | 2022-02-28 | Trot, Jump, Gallop | 2 year, 3 month |
| 12 | Donkey | Eeyore  | 2019-09-18 | Walk, Carry Load, Bray | 4 year, 9 month |
| 13 | Donkey | Burro   | 2023-01-23 | Walk, Bray, Kick | 1 year, 5 month |
+----+-----+-----+-----+-----+-----+
13 rows in set (0,00 sec)

mysql>
```

Примечание. Все расчёты с датами в таблицах сделаны на 27.06.2024 г.