

Задание 7. Работа с MySQL (Задача выполняется в случае успешного выполнения задачи “Работа с MySQL в Linux. “Установить MySQL на вашу машину”

7.1. После создания диаграммы классов в 6 пункте, в 7 пункте база данных "Human Friends" должна быть структурирована в соответствии с этой диаграммой. Например, можно создать таблицы, которые будут соответствовать классам "Pets" и "Pack animals", и в этих таблицах будут поля, которые характеризуют каждый тип животных (например, имена, даты рождения, выполняемые команды и т.д.).

7.2 - В ранее подключенном MySQL создать базу данных с названием "Human Friends".

- Создать таблицы, соответствующие иерархии из вашей диаграммы классов.

```
mysql> CREATE TABLE animals
```

```
-> (ID INT PRIMARY KEY AUTO_INCREMENT,
```

```
-> Type VARCHAR(15));
```

```
mysql> INSERT INTO animals (Type)
```

```
-> VALUES
```

```
-> ('pet'),
```

```
-> ('pack animal');
```

```
mysql> CREATE TABLE dog
```

```
-> (ID INT PRIMARY KEY AUTO_INCREMENT,
```

```
-> Name VARCHAR(20),
```

```
-> BirthDate Date,
```

```
-> Commands VARCHAR(50),
```

```
-> TypeID INT,
```

```
-> FOREIGN KEY (TypeID) REFERENCES animals(ID));
```

```
mysql> CREATE TABLE hamster
```

```
-> (ID INT PRIMARY KEY AUTO_INCREMENT,
```

```
-> Name VARCHAR(20),
```

- > BirthDate Date,
- > Commands VARCHAR(50),
- > TypeID INT,
- > FOREIGN KEY (TypeID) REFERENCES animals(ID));

mysql> CREATE TABLE horse

- > (ID INT PRIMARY KEY AUTO_INCREMENT,
- > Name VARCHAR(20),
- > BirthDate Date,
- > Commands VARCHAR(50),
- > TypeID INT,
- > FOREIGN KEY (TypeID) REFERENCES animals(ID));

mysql> CREATE TABLE camel

- > (ID INT PRIMARY KEY AUTO_INCREMENT,
- > Name VARCHAR(20),
- > BirthDate Date,
- > Commands VARCHAR(50),
- > TypeID INT,
- > FOREIGN KEY (TypeID) REFERENCES animals(ID));

mysql> CREATE TABLE donkey

- > (ID INT PRIMARY KEY AUTO_INCREMENT,
- > Name VARCHAR(20),
- > BirthDate Date,
- > Commands VARCHAR(50),
- > TypeID INT,
- > FOREIGN KEY (TypeID) REFERENCES animals(ID));

mysql> CREATE TABLE cat

- > (ID INT PRIMARY KEY AUTO_INCREMENT,
- > Name VARCHAR(20),

- > BirthDate Date,
- > Commands VARCHAR(50),
- > TypeID INT,
- > FOREIGN KEY (TypeID) REFERENCES animals(ID));

- Заполнить таблицы данными о животных, их командах и датами рождения.

```
mysql> INSERT INTO cat (Name, BirthDate, Commands, TypeID)
```

- > VALUES
- > ('Whiskers', '2019-05-15', 'Sit, Pounce', 1),
- > ('Oliver', '2020-06-30', 'Meow, Scratch, Jump', 1),
- > ('Smudge', '2020-02-20', 'Sit, Pounce, Scratch', 1);

```
mysql> INSERT INTO dog (Name, BirthDate, Commands, TypeID)
```

- > VALUES
- > ('Fido', '2020-01-01', 'Sit, Stay, Fetch', 1),
- > ('Buddy', '2018-12-10', 'Sit, Paw, Bark', 1),
- > ('Bella', '2019-11-11', 'Sit, Stay, Roll', 1);

```
mysql> INSERT INTO hamster (Name, BirthDate, Commands, TypeID)
```

- > VALUES
- > ('Hammy', '2021-03-10', 'Roll, Hide', 1),
- > ('Peanut', '2021-08-01', 'Roll, Spin', 1);

```
mysql> INSERT INTO horse (Name, BirthDate, Commands, TypeID)
```

- > VALUES
- > ('Thunder', '2015-07-21', 'Trot, Canter, Gallop', 2),
- > ('Storm', '2014-05-05', 'Trot, Canter', 2),
- > ('Blaze', '2016-02-29', 'Trot, Jump, Gallop', 2);

```
mysql> INSERT INTO camel (Name, BirthDate, Commands, TypeID)
```

```
-> VALUES
```

```
-> ('Dune', '2018-12-12', 'Walk, Bray, Kick', 2),
```

```
-> ('Sahara', '2015-08-14', 'Walk, Run', 2);
```

```
mysql> INSERT INTO donkey (Name, BirthDate, Commands, TypeID)
```

```
-> VALUES
```

```
-> ('Eeyore', '2017-09-18', 'Walk, Bray, Carry Load', 2),
```

```
-> ('Burro', '2019-01-23', 'Walk, Bray, Kick', 2);
```

```
mysql> SELECT * FROM cat;
```

ID	Name	BirthDate	Commands	TypeID
1	Whiskers	2019-05-15	Sit, Pounce	1
2	Oliver	2020-06-30	Meow, Scratch, Jump	1
3	Smudge	2020-02-20	Sit, Pounce, Scratch	1

3 rows in set (0,00 sec)

```
mysql> SELECT * FROM donkey;
```

ID	Name	BirthDate	Commands	TypeID
1	Eeyore	2017-09-18	Walk, Bray, Carry Load	2
2	Burro	2019-01-23	Walk, Bray, Kick	2

2 rows in set (0,00 sec)

- Удалить записи о верблюдах и объединить таблицы лошадей и ослов.

```
mysql> DELETE FROM camel;
```

```
mysql> SELECT * FROM camel;
```

```
mysql> SELECT * FROM camel;
```

ID	Name	BirthDate	Commands	TypeID
4	Sandy	2016-11-03	Walk, Carry Load	2
5	Dune	2018-12-12	Walk, Bray, Kick	2
6	Sahara	2015-08-14	Walk, Run	2

3 rows in set (0,00 sec)

```
mysql> DELETE FROM camel;  
Query OK, 3 rows affected (0,05 sec)
```

```
mysql> SELECT * FROM camel;  
Empty set (0,00 sec)
```

```
mysql> SELECT * FROM horse
```

```
-> UNION SELECT * FROM donkey;
```

```
mysql> SELECT * FROM horse;
+----+-----+-----+-----+-----+
| ID | Name   | BirthDate | Commands           | TypeID |
+----+-----+-----+-----+-----+
| 1  | Thunder | 2015-07-21 | Trot, Canter, Gallop | 2      |
| 2  | Storm   | 2014-05-05 | Trot, Canter        | 2      |
| 3  | Blaze   | 2016-02-29 | Trot, Jump, Gallop  | 2      |
+----+-----+-----+-----+-----+
3 rows in set (0,00 sec)

mysql> SELECT * FROM donkey;
+----+-----+-----+-----+-----+
| ID | Name   | BirthDate | Commands           | TypeID |
+----+-----+-----+-----+-----+
| 1  | Eeyore  | 2017-09-18 | Walk, Bray, Carry Load | 2      |
| 2  | Burro   | 2019-01-23 | Walk, Bray, Kick     | 2      |
+----+-----+-----+-----+-----+
2 rows in set (0,00 sec)

mysql> SELECT * FROM horse
      -> UNION SELECT * FROM donkey;
+----+-----+-----+-----+-----+
| ID | Name   | BirthDate | Commands           | TypeID |
+----+-----+-----+-----+-----+
| 1  | Thunder | 2015-07-21 | Trot, Canter, Gallop | 2      |
| 2  | Storm   | 2014-05-05 | Trot, Canter        | 2      |
| 3  | Blaze   | 2016-02-29 | Trot, Jump, Gallop  | 2      |
| 1  | Eeyore  | 2017-09-18 | Walk, Bray, Carry Load | 2      |
| 2  | Burro   | 2019-01-23 | Walk, Bray, Kick     | 2      |
+----+-----+-----+-----+-----+
5 rows in set (0,05 sec)
```

- Создать новую таблицу для животных в возрасте от 1 до 3 лет и вычислить их возраст с точностью до месяца.

```
mysql> CREATE TEMPORARY TABLE young_pets
```

```
-> SELECT * FROM cat
```

```
-> WHERE DATEDIFF(now(),BirthDate)/365 <=3 AND DATEDIFF(now(),BirthDate)/365 >= 1
```

```
-> UNION
```

```
-> SELECT * FROM dog
```

```
-> WHERE DATEDIFF(now(),BirthDate)/365 <=3 AND DATEDIFF(now(),BirthDate)/365 >= 1
```

```
-> UNION
```

```
-> SELECT * FROM hamster
```

```

-> WHERE DATEDIFF(now(),BirthDate)/365 <=3 AND DATEDIFF(now(),BirthDate)/365 >= 1
-> UNION
-> SELECT * FROM horse
-> WHERE DATEDIFF(now(),BirthDate)/365 <=3 AND DATEDIFF(now(),BirthDate)/365 >= 1
-> UNION
-> SELECT * FROM camel
-> WHERE DATEDIFF(now(),BirthDate)/365 <=3 AND DATEDIFF(now(),BirthDate)/365 >= 1
-> UNION
-> SELECT * FROM donkey
-> WHERE DATEDIFF(now(),BirthDate)/365 <=3 AND DATEDIFF(now(),BirthDate)/365 >= 1;

```

```
mysql> SELECT Name, BirthDate, Commands, TypeID,
```

```

-> CONCAT(TIMESTAMPDIFF(YEAR,BirthDate, now()), 'Yrs',TIMESTAMPDIFF(MONTH,

```

```

-> BirthDate, now())%12,'Mth') as Age

```

```

-> FROM young_pets;

```

```

-- FROM young_pets;

```

Name	BirthDate	Commands	TypeID	Age
Hammy	2021-03-10	Roll, Hide	1	2Yrs7Mth
Peanut	2021-08-01	Roll, Spin	1	2Yrs2Mth

- Объединить все созданные таблицы в одну, сохраняя информацию о принадлежности к исходным таблицам.

```
mysql> CREATE TABLE all_pets
```

```

-> SELECT *, 'cat' as Type FROM cat

```

```

-> UNION

```

```

-> SELECT *, 'dog' as Type FROM dog

```

```

-> UNION

```

```

-> SELECT *, 'hamster' as Type FROM hamster

```

```

-> UNION

```

```

-> SELECT *, 'horse' as Type FROM horse

```

```

-> UNION

```

```

-> SELECT *, 'camel' as Type FROM camel

```

-> UNION

-> SELECT *, 'donkey' as Type FROM donkey;

ID	Name	BirthDate	Commands	TypeID	Type
1	Whiskers	2019-05-15	Sit, Pounce	1	cat
2	Oliver	2020-06-30	Meow, Scratch, Jump	1	cat
3	Smudge	2020-02-20	Sit, Pounce, Scratch	1	cat
1	Fido	2020-01-01	Sit, Stay, Fetch	1	dog
2	Buddy	2018-12-10	Sit, Paw, Bark	1	dog
3	Bella	2019-11-11	Sit, Stay, Roll	1	dog
1	Hammy	2021-03-10	Roll, Hide	1	hamster
2	Peanut	2021-08-01	Roll, Spin	1	hamster
1	Thunder	2015-07-21	Trot, Canter, Gallop	2	horse
2	Storm	2014-05-05	Trot, Canter	2	horse
3	Blaze	2016-02-29	Trot, Jump, Gallop	2	horse
1	Eeyore	2017-09-18	Walk, Bray, Carry Load	2	donkey
2	Burro	2019-01-23	Walk, Bray, Kick	2	donkey