

Создание файлов и их объединение с помощью команды cat, а также переименование и перенос файла в другой каталог с помощью mv

```
root@db-linux:/home/db# cat > pets
cat murzik 2
dog tobik 3
hamster mishka 2
root@db-linux:/home/db# cat pets
cat murzik 2
dog tobik 3
hamster mishka 2
root@db-linux:/home/db# cat > packs
camel jafar 5
donkey napoleon 6
horse julius 7
root@db-linux:/home/db# cat packs
camel jafar 5
donkey napoleon 6
horse julius 7
root@db-linux:/home/db# cat pets packs > all_animals
root@db-linux:/home/db# cat all_animals
cat murzik 2
dog tobik 3
hamster mishka 2
camel jafar 5
donkey napoleon 6
horse julius 7
root@db-linux:/home/db# mv all_animals man_friends
root@db-linux:/home/db# cat man_friends
cat murzik 2
dog tobik 3
hamster mishka 2
camel jafar 5
donkey napoleon 6
horse julius 7
root@db-linux:/home/db# mkdir final_assignment
```

```
root@db-linux:/home/db# mv man_friends final_assignment/
root@db-linux:/home/db# ls final_assignment/
man_friends
root@db-linux:/home/db# -
```

## Установка MySQL

Проверка, уже установил ранее `apt install mysql-server`

```
root@db-linux:/home/db# mysql --version
mysql Ver 8.0.33-0ubuntu0.22.04.2 for Linux on x86_64 ((Ubuntu))
root@db-linux:/home/db# -
```

## Установка DPKG

```
root@db-linux:/home/db# dpkg -i /var/cache/apt/archives/apache2_2.4.52-1ubuntu4.5_amd64.deb
Selecting previously unselected package apache2.
(Reading database ... 195412 files and directories currently installed.)
Preparing to unpack .../apache2_2.4.52-1ubuntu4.5_amd64.deb ...
Unpacking apache2 (2.4.52-1ubuntu4.5) ...
Setting up apache2 (2.4.52-1ubuntu4.5) ...
apache-htcacheclean.service is a disabled or a static unit not running, not starting it.
Processing triggers for ufw (0.36.1-4build1) ...
Processing triggers for man-db (2.10.2-1) ...
root@db-linux:/home/db# -
```

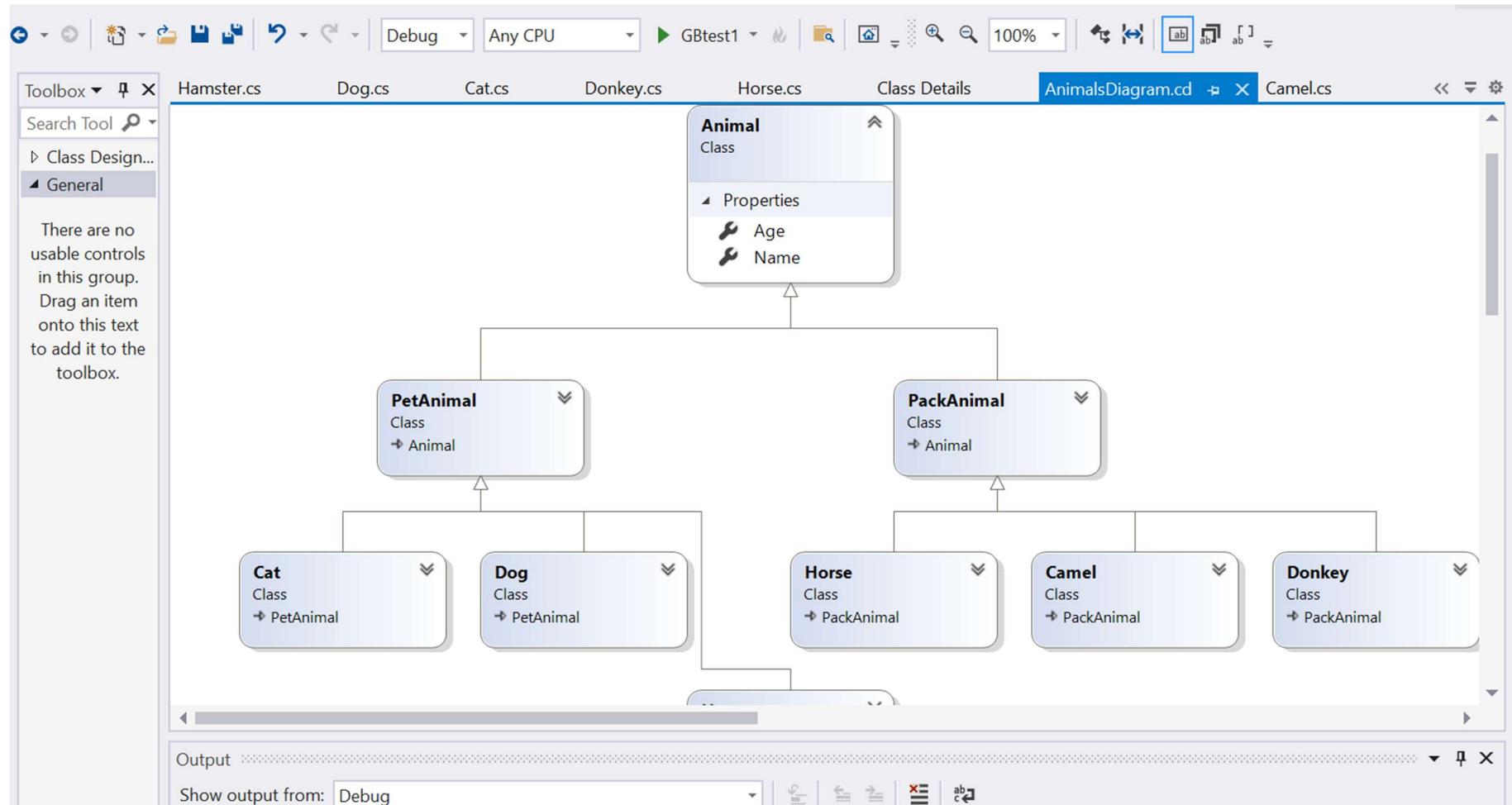
## Проверка

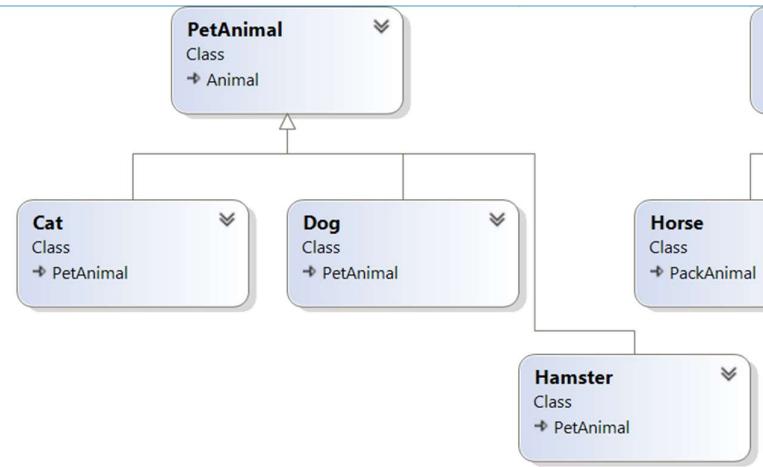
```
root@db-linux:/home/db# dpkg -l apa*
Desired=Unknown/Install/Remove/Purge/Hold
| Status=Not/Inst/Conf-files/Unpacked/half-conf/Half-inst/trig-await/Trig-pend
|/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad)
||/ Name          Version      Architecture Description
+==-=====
ii  apache2        2.4.52-1ubuntu4.5  amd64      Apache HTTP Server
un  apache2-api-20120211  <none>       <none>     (no description available)
un  apache2-api-20120211-openssl11.1  <none>       <none>     (no description available)
ii  apache2-bin    2.4.52-1ubuntu4.5  amd64      Apache HTTP Server (modules and other components)
ii  apache2-data   2.4.52-1ubuntu4.5  all        Apache HTTP Server (common files)
un  apache2-doc    <none>       <none>     (no description available)
un  apache2-suexec-custom  <none>       <none>     (no description available)
un  apache2-suexec-pristine  <none>       <none>     (no description available)
ii  apache2-utils  2.4.52-1ubuntu4.5  amd64      Apache HTTP Server (utility programs)
un  apache2.2-bin  <none>       <none>     (no description available)
un  apache2.2-common <none>       <none>     (no description available)
root@db-linux:/home/db#
```

Удаление

```
root@db-linux:/home/db# sudo apt-get remove apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are
  apache2-data apache2-utils dbconfig-common dbconfig-mysql
  libjs-bootstrap4 libjs-codemirror libjs-jquery libjs-jque
  libjs-sizzle libjs-sphinxdoc libjs-underscore libnginx-mod
  libnginx-mod-mail libnginx-mod-stream libnginx-mod-stream
  php-mariadb-mysql-kbs php-mysql php-nikic-fast-route php-
  php-phpseclib php-psr-cache php-psr-container php-psr-log
  php-symfony-dependency-injection php-symfony-deprecation-
  php-symfony-polyfill-php80 php-symfony-polyfill-php81 php
  php-twig-i18n-extension php-xml php8.1-bz2 php8.1-mysql p
Use 'sudo apt autoremove' to remove them.
The following packages will be REMOVED:
  apache2
0 upgraded, 0 newly installed, 1 to remove and 33 not upgra
After this operation, 546 kB disk space will be freed.
Do you want to continue? [Y/n] y
(Reading database ... 195462 files and directories currentl
Removing apache2 (2.4.52-1ubuntu4.5) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for ufw (0.36.1-4build1) ...
root@db-linux:/home/db#
```

Диаграмма классов животных





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Работа с MySQL

```
mysql> SHOW DATABASES;
+-----+
| Database |
+-----+
| gb      |
| information_schema |
| mysql   |
| performance_schema |
| phpmyadmin |
| sys     |
+-----+
6 rows in set (0,02 sec)

mysql> CREATE DATABASE mans_friends;
Query OK, 1 row affected (0,03 sec)

mysql> USE mans_friends;
Database changed
mysql> SHOW DATABASES;
+-----+
| Database |
+-----+
| gb      |
| information_schema |
| mans_friends |
| mysql   |
| performance_schema |
| phpmyadmin |
| sys     |
+-----+
7 rows in set (0,00 sec)
```

```
mysql> CREATE TABLE all_mans_friends(Id INT AUTO_INCREMENT PRIMARY KEY,
-> animal_type VARCHAR(30));
Query OK, 0 rows affected (0,14 sec)

mysql> INSERT INTO all_mans_friends (animal_type)
-> VALUES ('pets'),('packs');
Query OK, 2 rows affected (0,04 sec)
Records: 2  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM all_mans_friends;
+----+-----+
| Id | animal_type |
+----+-----+
| 1 | pets         |
| 2 | packs        |
+----+-----+
2 rows in set (0,00 sec)
```

```
mysql> CREATE TABLE pets (Id INT AUTO_INCREMENT PRIMARY KEY,
-> pet_Id INT,
-> FOREIGN KEY (pet_Id) REFERENCES all_mans_friends (Id) ON DELETE CASCADE ON UPDATE CASCADE);
Query OK, 0 rows affected (0,12 sec)

mysql> SHOW TABLES;
+-----+
| Tables_in_mans_friends |
+-----+
| all_mans_friends       |
| pets                   |
+-----+
2 rows in set (0,00 sec)
```

```
mysql> CREATE TABLE packs (Id INT AUTO_INCREMENT PRIMARY KEY,
-> pack_Id INT,
-> FOREIGN KEY (pack_Id) REFERENCES all_mans_friends (Id) ON DELETE CASCADE ON UPDATE CASCADE);
Query OK, 0 rows affected (0,11 sec)
```

```
mysql> SHOW TABLES;
+-----+
| Tables_in_mans_friends |
+-----+
| all_mans_friends
| packs
| pets
+-----+
3 rows in set (0,00 sec)
```

```
mysql> ALTER TABLE packs ADD animal_kind VARCHAR(30);
Query OK, 0 rows affected (0,06 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> INSERT INTO pets (animal_kind, pet_Id) VALUES ('cats',1),('dogs',1),('hamsters',1);
Query OK, 3 rows affected (0,03 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

```
mysql> SELECT * FROM pets;
+----+----+-----+
| Id | pet_Id | animal_kind |
+----+----+-----+
| 1 | 1 | cats
| 2 | 1 | dogs
| 3 | 1 | hamsters
+----+----+-----+
3 rows in set (0,00 sec)
```

```
mysql> INSERT INTO packs (animal_kind, pack_Id) VALUES ('horses',2),('donkeys',2),('camels',2);
Query OK, 3 rows affected (0,03 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

```
mysql> INSERT INTO packs (animal_kind, pack_Id) VALUES ('horses',2),('donkeys',2),('camels',2);
Query OK, 3 rows affected (0,03 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

```
mysql> SELECT * FROM packs;
+----+-----+-----+
| Id | pack_Id | animal_kind |
+----+-----+-----+
| 1  | 2      | horses    |
| 2  | 2      | donkeys   |
| 3  | 2      | camels    |
+----+-----+-----+
3 rows in set (0,00 sec)
```

```
mysql> INSERT INTO camels (personal_name, dateofbirth, commands, animal_kind_Id)
-> VALUES ('JAfar','2020-01-01','up, down',3),('Mustafa','2022-01-26','up, down',3),
-> ('Ibragim','2017-12-23','up, down',3);
Query OK, 3 rows affected (0,04 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

```
mysql> SELECT * FROM camels;
+----+-----+-----+-----+-----+
| Id | personal_name | dateofbirth | commands | animal_kind_Id |
+----+-----+-----+-----+-----+
| 1  | JAfar        | 2020-01-01 | up, down |            3 |
| 2  | Mustafa      | 2022-01-26 | up, down |            3 |
| 3  | Ibragim      | 2017-12-23 | up, down |            3 |
+----+-----+-----+-----+
3 rows in set (0,01 sec)
```

```
mysql> CREATE TABLE donkeys (Id INT AUTO_INCREMENT PRIMARY KEY, personal_name VARCHAR(20), dateofbirth DATE,
->           commands VARCHAR(40), animal_kind_Id INT, FOREIGN KEY (animal_kind_Id) REFERENCES packs (Id)
->           ON DELETE CASCADE ON UPDATE CASCADE);
Query OK, 0 rows affected (0,12 sec)
```

```
mysql> SELECT * FROM donkeys;
```

Id	personal_name	dateofbirth	commands	animal_kind_Id
1	Butsefal	2020-09-01	NULL	2
2	Zorki	2020-01-26	NULL	2
3	Shrek	2016-12-23	NULL	2

3 rows in set (0,00 sec)

И так далее другие таблицы:

```
mysql> Select * FROM horses;
```

Id	personal_name	dateofbirth	commands	animal_kind_Id
1	Dodik	2020-12-01	comand11,comand12	1
2	Lucky	2016-07-08	comand11,comand12	1
3	Luser	2021-02-23	comand11,comand12	1

3 rows in set (0,01 sec)

```
mysql> select * from cats;
```

Id	personal_name	dateofbirth	commands	animal_kind_Id
1	Murka	2022-12-01	kis-kis	1
2	Murzic	2011-07-08	kis-kis	1
3	Barsik	2023-01-21	kis-kis	1

3 rows in set (0,00 sec)

```
mysql> select * from dogs;
+----+-----+-----+-----+-----+
| Id | personal_name | dateofbirth | commands | animal_kind_Id |
+----+-----+-----+-----+-----+
| 1  | Bobik        | 2016-12-11 | voice,fas,ffu | 2          |
| 2  | Sharic       | 2021-07-31 | voice,fas,ffu | 2          |
| 3  | Tobik        | 2022-11-21 | voice,fas,ffu | 2          |
+----+-----+-----+-----+-----+
3 rows in set (0,00 sec)
```

```
mysql> select * from hamsters;
+----+-----+-----+-----+-----+
| Id | personal_name | dateofbirth | commands | animal_kind_Id |
+----+-----+-----+-----+-----+
| 1  | Nuf           | 2022-12-11 | NULL     | 3          |
| 2  | Nif           | 2023-02-02 | NULL     | 3          |
| 3  | Naf           | 2023-01-01 | NULL     | 3          |
+----+-----+-----+-----+-----+
3 rows in set (0,00 sec)
```

Для удаления из таблицы верблюдов можно использовать команду

```
SET SQL_SAFE_UPDATES = 0;  
DELETE FROM camels;  
В работе не использовал.
```

**Объединяем лошадей и ослов.**

```
mysql> SELECT * FROM horses UNION SELECT * FROM donkeys;
+----+-----+-----+-----+-----+
| Id | personal_name | dateofbirth | commands | animal_kind_Id |
+----+-----+-----+-----+-----+
| 1  | Dodik        | 2020-12-01 | comand11,comand12 | 1           |
| 2  | Lucky         | 2016-07-08  | comand11,comand12 | 1           |
| 3  | Luser          | 2021-02-23  | comand11,comand12 | 1           |
| 1  | Butsefal      | 2020-09-01  | NULL             | 2           |
| 2  | Zorki          | 2020-01-26  | NULL             | 2           |
| 3  | Shrek          | 2016-12-23  | NULL             | 2           |
+----+-----+-----+-----+-----+
6 rows in set (0,00 sec)
```

Все животные кроме верблюдов

```
mysql> CREATE VIEW all_animals AS
->     SELECT * FROM horses
->     UNION
->     SELECT * FROM donkeys
->     UNION
->     SELECT * FROM dogs
->     UNION
->     SELECT * FROM cats
->     UNION
->     SELECT * FROM hamsters;
Query OK, 0 rows affected (0,03 sec)
```

```
mysql> SELECT * FROM all_animals;
+----+-----+-----+-----+-----+
| Id | personal_name | dateofbirth | commands | animal_kind_Id |
+----+-----+-----+-----+-----+
| 1  | Dodik        | 2020-12-01 | comand11,comand12 | 1      |
| 2  | Lucky         | 2016-07-08 | comand11,comand12 | 1      |
| 3  | Luser          | 2021-02-23 | comand11,comand12 | 1      |
| 1  | Butsefal      | 2020-09-01 | NULL             | 2      |
| 2  | Zorki          | 2020-01-26 | NULL             | 2      |
| 3  | Shrek          | 2016-12-23 | NULL             | 2      |
| 1  | Bobik          | 2016-12-11 | voice,fas,ffu   | 2      |
| 2  | Sharic         | 2021-07-31 | voice,fas,ffu   | 2      |
| 3  | Tobik          | 2022-11-21 | voice,fas,ffu   | 2      |
| 1  | Murka          | 2022-12-01 | kis-kis         | 1      |
| 2  | Murzic         | 2011-07-08 | kis-kis         | 1      |
| 3  | Barsik         | 2023-01-21 | kis-kis         | 1      |
| 1  | Nuf             | 2022-12-11 | NULL             | 3      |
| 2  | Nif             | 2023-02-02 | NULL             | 3      |
| 3  | Naf             | 2023-01-01 | NULL             | 3      |
+----+-----+-----+-----+-----+
15 rows in set (0,00 sec)
```

### Молодые животные

```
mysql> CREATE TABLE youngAnimals
->     SELECT Id,personal_name, dateofbirth,commands,animal_kind_Id,TIMESTAMPDIFF(MONTH, dateofbirth, CURDATE())
->     FROM all_animals
->     WHERE dateofbirth BETWEEN ADDDATE(curdate(), INTERVAL -3 YEAR) AND ADDDATE(CURDATE(), INTERVAL -1 YEAR);
Query OK, 4 rows affected (0,09 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql>
```

```
mysql> SELECT * FROM youngAnimals;
+----+-----+-----+-----+-----+-----+
| Id | personal_name | dateofbirth | commands | animal_kind_Id | AgeInMonths |
+----+-----+-----+-----+-----+-----+
| 1  | Dodik        | 2020-12-01 | comand11,comand12 | 1            | 31           |
| 3  | Luser         | 2021-02-23 | comand11,comand12 | 1            | 29           |
| 1  | Butsefal     | 2020-09-01 | NULL             | 2            | 34           |
| 2  | Sharic        | 2021-07-31 | voice,fas,ffu   | 2            | 23           |
+----+-----+-----+-----+-----+-----+
4 rows in set (0,00 sec)
```

Объединение всех таблиц в одну с указанием исходной таблицы.

```
mysql> CREATE TABLE all_animals_united (
    ->  Id INT AUTO_INCREMENT UNIQUE,
    ->  personal_name VARCHAR(30) NOT NULL,
    ->  commands VARCHAR(30),
    ->  dateofbirth DATE NOT NULL,
    ->  animal_kind_Id INT UNSIGNED NOT NULL,
    ->  source_table VARCHAR(30) NOT NULL,
    ->  PRIMARY KEY (Id)
);    ->  Id INT UNSIGNED NOT NULL AUTO_INCREMENT UNIQUE,
    ->  personal_name VARCHAR(30) NOT NULL,
    ->  commands VARCHAR(30),
    ->  dateofbirth DATE NOT NULL,
    ->  animal_kind_Id INT UNSIGNED NOT NULL,
    ->  source_table VARCHAR(30) NOT NULL,
    ->  PRIMARY KEY (Id)
    -> );
ERROR 4031 (HY000): The client was disconnected by the server because
guring this behavior.
No connection. Trying to reconnect...
Connection id: 12
Current database: mans_friends

Query OK, 0 rows affected (0,45 sec)
```

```
mysql> INSERT INTO all_animals_united (personal_name, commands, dateofbirth, animal_kind_Id, source_
-> SELECT personal_name, command, dateofbirth, animal_kind_Id, 'cats' AS source_table
-> FROM cats;
ERROR 1054 (42S22): Unknown column 'command' in 'field list'
mysql>
mysql>
mysql> INSERT INTO all_animals_united (personal_name, commands, dateofbirth, animal_kind_Id, source_
-> SELECT personal_name, commands, dateofbirth, animal_kind_Id, 'cats' AS source_table
-> FROM cats;
Query OK, 3 rows affected (0,03 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> INSERT INTO all_animals_united (personal_name, commands, dateofbirth, animal_kind_Id, source_
-> SELECT personal_name, commands, dateofbirth, animal_kind_Id, 'dogs' AS source_table
-> FROM dogs;
Query OK, 3 rows affected (0,03 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> INSERT INTO all_animals_united (personal_name, commands, dateofbirth, animal_kind_Id, source_
-> SELECT personal_name, commands, dateofbirth, animal_kind_Id, 'hamsters' AS source_table
-> FROM hamsters;
Query OK, 3 rows affected (0,03 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> INSERT INTO all_animals_united (personal_name, commands, dateofbirth, animal_kind_Id, source_
-> SELECT personal_name, commands, dateofbirth, animal_kind_Id, 'donkeys' AS source_table
-> FROM donkeys;
Query OK, 3 rows affected (0,04 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> INSERT INTO all_animals_united (personal_name, commands, dateofbirth, animal_kind_Id, source_
-> SELECT personal_name, commands, dateofbirth, animal_kind_Id, 'horses' AS source_table
-> FROM horses;
Query OK, 3 rows affected (0,03 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

```
mysql> SELECT * FROM all_animals_united;
```

Id	personal_name	commands	dateofbirth	animal_kind_Id	source_table
1	Murka	kis-kis	2022-12-01	1	cats
2	Murzic	kis-kis	2011-07-08	1	cats
3	Barsik	kis-kis	2023-01-21	1	cats
4	Bobik	voice,fas,ffu	2016-12-11	2	dogs
5	Sharic	voice,fas,ffu	2021-07-31	2	dogs
6	Tobik	voice,fas,ffu	2022-11-21	2	dogs
7	Nuf	NULL	2022-12-11	3	hamsters
8	Nif	NULL	2023-02-02	3	hamsters
9	Naf	NULL	2023-01-01	3	hamsters
10	Butsefal	NULL	2020-09-01	2	donkeys
11	Zorki	NULL	2020-01-26	2	donkeys
12	Shrek	NULL	2016-12-23	2	donkeys
13	Dodik	comand11,comand12	2020-12-01	1	horses
14	Lucky	comand11,comand12	2016-07-08	1	horses
15	Luser	comand11,comand12	2021-02-23	1	horses

15 rows in set (0,00 sec)