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Группа №4828

Итоговая контрольная работа

Задание.

1.

История команд:

cd shared - зайти в директорию;

cat > pet.txt - создать файл pet.txt и наполнить его:

dogs:'Spaz', 'Catty', 'Chappi';
cats:'Ginger', 'Felix', 'Tom';
hamsters:'Cutlet', 'Ralf'.

cat pet.txt - посмотреть содержимое файла;

cat > pack_animals.txt - создать файл pack_animals.txt и наполнить его:

horses: 'Star', 'Blizzard', 'Gamlet';
camels: 'Flame', 'Thorn', 'Tank';
donkeys: 'Ea', 'Goon'.

cat pack_animals.txt - посмотреть содержимое файла;

cat pet.txt pack_animals.txt > animals.txt - объединить два файла pet.txt и pack_animals.txt в файл animals.txt;

cat animals.txt - проверить содержимое файла;

mv -i animals.txt human_friends.txt - переименовать animals.txt в human_friends.txt;

cat human_friends.txt - проверить содержимое файла;

2.

mkdir test - создать директорию test;

mv human_friends.txt test - переместить human_friends.txt в созданную директорию test;

ls test/ - проверить содержимое папки test;

3.

sudo apt update - обновить список доступных пакетов;

sudo apt install mysql-server-8.0 -y -

4.

dpkg -l tree - узнать установлено ли приложение;

apt download tree - скачать пакет приложения с расширением .deb в текущую директорию;

ls - посмотреть содержимое директории;

sudo dpkg -i tree_2.0.2-1_amd64.deb - установить приложение;

dpkg -l tree - убедиться, что приложение установлено;

sudo dpkg -r tree - удалить приложение;

dpkg -l tree - убедиться, что приложение удалено;

7, 8, 9.

sudo mysql -u root -p - войти в MySQL;

```
gav@gav-VirtualBox:~$ sudo mysql -u root -p
[sudo] пароль для gav:
Попробуйте ещё раз.
[sudo] пароль для gav:
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 10
Server version: 8.0.36-0ubuntu0.22.04.1 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

CREATE DATABASE HumanFriends; - создать базу данных “Друзья человека”;
USE HumanFriends; - выбрать базу данных;
CREATE TABLE Animals
(
id INT PRIMARY KEY AUTO_INCREMENT NOT NULL,
name VARCHAR(50) NOT NULL,
class VARCHAR(50) NOT NULL
); - создать таблицу Animals;

```
mysql> CREATE DATABASE HumanFriends;
Query OK, 1 row affected (0,02 sec)

mysql> USE HumanFriends;
Database changed
mysql> ^C
mysql> CREATE TABLE Animals
    -> (
    -> id INT PRIMARY KEY AUTO_INCREMENT NOT NULL,
    -> name VARCHAR(50) NOT NULL,
    -> class VARCHAR(50) NOT NULL
    -> );
Query OK, 0 rows affected (0,13 sec)
```

INSERT INTO Animals
(name, class)
VALUES
('Spaz', 'Pets'),
('Catty', 'Pets'),
('Chappi', 'Pets'),
('Ginger', 'Pets'),
('Felix', 'Pets'),
('Tom', 'Pets'),
('Cutlet', 'Pets'),
('Ralf', 'Pets'),

('Star', 'Pack_animals'),
('Blizzard', 'Pack_animals'),
('Gamlet', 'Pack_animals'),
('Flame', 'Pack_animals'),
('Thorn', 'Pack_animals'),
('Tank', 'Pack_animals'),
('Ea', 'Goon'); - заполнить таблицу Animals;
SELECT * FROM Animals - посмотреть таблицу;

```
mysql> SELECT * FROM Animals;
+----+----------+--------------+
| id | name     | class        |
+----+----------+--------------+
|  1 | Spaz     | Pets         |
|  2 | Catty    | Pets         |
|  3 | Chappi   | Pets         |
|  4 | Ginger   | Pets         |
|  5 | Felix    | Pets         |
|  6 | Tom      | Pets         |
|  7 | Cutlet   | Pets         |
|  8 | Ralf     | Pets         |
|  9 | Star     | Pack_animals |
| 10 | Blizzard | Pack_animals |
| 11 | Gamlet   | Pack_animals |
| 12 | Flame    | Pack_animals |
| 13 | Thorn    | Pack_animals |
| 14 | Tank     | Pack_animals |
| 15 | Ea       | Pack_animals |
| 16 | Goon     | Pack_animals |
+----+----------+--------------+
16 rows in set (0,00 sec)
```

CREATE TABLE Pets
(
name VARCHAR(50) NOT NULL,
type_animal VARCHAR(50) NOT NULL
); - создать таблицу Pets;
INSERT INTO Pets
(name, type_animal)
VALUES

('Spaz', 'Dog'),
('Catty', 'Dog'),
('Chappi', 'Dog'),
('Ginger', 'Cat'),
('Felix', 'Cat'),
('Tom', 'Cat'),
('Cutlet', 'Hamster'),
('Ralf', 'Hamster'); - заполнить таблицу;
SELECT * FROM Pets; - посмотреть таблицу Pets;

```
mysql> SELECT * FROM Pets;
+--------+-------------+
| name   | type_animal |
+--------+-------------+
| Spaz   | Dog         |
| Catty  | Dog         |
| Chappi | Dog         |
| Ginger | Cat         |
| Felix  | Cat         |
| Tom    | Cat         |
| Cutlet | Hamster     |
| Ralf   | Hamster     |
+--------+-------------+
8 rows in set (0,00 sec)
```

CREATE TABLE Pack_animals
(name VARCHAR(50) NOT NULL,
type_animal VARCHAR(50) NOT NULL); - создать таблицу Pack_animals;
INSERT INTO Pack_animals
(name, type_animal)
VALUES
('Star', 'Horse'),
('Blizzard', 'Horse'),
('Gamlet', 'Horse'),
('Flame', 'Camel'),
('Thorn', 'Camel'),
('Tank', 'Camel'),
('Ea', 'Donkey'),
('Goon', 'Donkey'); - заполнить таблицу Pack_animals;
SELECT * FROM Pack_animals; - посмотреть таблицу;

```
mysql> SELECT * FROM Pack_animals;
+----------+-------------+
| name     | type_animal |
+----------+-------------+
| Star     | Horse       |
| Blizzard | Horse       |
| Gamlet   | Horse       |
| Flame    | Camel       |
| Thorn    | Camel       |
| Tank     | Camel       |
| Ea       | Donkey      |
| Goon     | Donkey      |
+----------+-------------+
8 rows in set (0,00 sec)
```

CREATE TABLE Dogs
(name VARCHAR(50) NOT NULL,
date_of_birth DATE,
commands VARCHAR(250)); - создать таблицу Dogs;
INSERT INTO Dogs
(name, date_of_birth, commands)
VALUES
('Spaz', '2020-01-22', 'bark, run, sit'),
('Catty', '2022-07-15', 'bark, run, sit'),
('Chappi', '2021-11-06', 'bark, run, sit'); - заполнить данными таблицу Dogs;
SELECT * FROM Dogs; - посмотреть таблицу Dogs;

```
mysql> SELECT * FROM Dogs;
+--------+---------------+----------------+
| name   | date_of_birth | commands       |
+--------+---------------+----------------+
| Spaz   | 2020-01-22    | bark, run, sit |
| Catty  | 2022-07-15    | bark, run, sit |
| Chappi | 2021-11-06    | bark, run, sit |
+--------+---------------+----------------+
3 rows in set (0,00 sec)
```

CREATE TABLE Cats
(name VARCHAR(50) NOT NULL,
date_of_birth DATE,

commands VARCHAR(250)); - создать таблицу Cats;
INSERT INTO Cats
(name, date_of_birth, commands)
VALUES
('Ginger', '2018-03-21', 'wash, purr, to scratch'),
('Felix', '2018-03-21', 'wash, purr, to scratch'),
('Tom', '2019-04-10', 'wash, purr, to scratch'); - заполнить таблицу Cats;
SELECT * FROM Cats; - вывести таблицу Cats на экран;

```
mysql> SELECT * FROM Cats;
+--------+---------------+-----------------------+
| name   | date_of_birth | commands              |
+--------+---------------+-----------------------+
| Ginger | 2018-03-21    | wash, purr, to scratch |
| Felix  | 2018-03-21    | wash, purr, to scratch |
| Tom    | 2019-04-10    | wash, purr, to scratch |
+--------+---------------+-----------------------+
3 rows in set (0,00 sec)
```

CREATE TABLE Hamsters
(name VARCHAR(50) NOT NULL,
date_of_birth DATE,
commands VARCHAR(250)); - создать таблицу Hamsters;
INSERT INTO Hamsters
(name, date_of_birth, commands)
VALUES
('Cutlet', '2023-11-16', 'hide, spin'),
('Ralf', '2023-09-29', 'hide, spin'); - заполнить таблицу Hamsters данными;
SELECT * FROM Hamsters; - вывести таблицу Hamsters на экран;

```
mysql> SELECT * FROM Hamsters;
+--------+---------------+------------+
| name   | date_of_birth | commands   |
+--------+---------------+------------+
| Cutlet | 2023-11-16    | hide, spin |
| Ralf   | 2023-09-29    | hide, spin |
+--------+---------------+------------+
2 rows in set (0,00 sec)
```

CREATE TABLE Horses
(name VARCHAR(50) NOT NULL,
date_of_birth DATE,
commands VARCHAR(250)); - создать таблицу Horses;
INSERT INTO Horses
(name, date_of_birth, commands)

VALUES
('Star', '2016-11-06', 'trot, canter, gallop'),
('Blizzard', '2015-09-11', 'trot, canter, gallop'),
('Gamlet', '2014-02-23', 'trot, canter, gallop'); - заполнить таблицу Horses;
SELECT * FROM Horses; - вывести таблицу на экран;

```
mysql> SELECT * FROM Horses;
+----------+---------------+----------------------+
| name     | date_of_birth | commands             |
+----------+---------------+----------------------+
| Star     | 2016-11-06    | trot, canter, gallop |
| Blizzard | 2015-09-11    | trot, canter, gallop |
| Gamlet   | 2014-02-23    | trot, canter, gallop |
+----------+---------------+----------------------+
3 rows in set (0,00 sec)
```

CREATE TABLE Camels
(name VARCHAR(50) NOT NULL,
date_of_birth DATE,
commands VARCHAR(250)); - создать таблицу Camels;
INSERT INTO Camels
(name, date_of_birth, commands)
VALUES
('Flame', '2018-01-07', 'pull aload, walk, run'),
('Thorn', '2021-09-01', 'pull aload, walk, run'),
('Tank', '2018-06-23', 'pull aload, walk, run'); - заполнить таблицу Camels;
SELECT * FROM Camels; - вывести таблицу на экран;

```
mysql> SELECT * FROM Camels;
+-------+---------------+----------------------+
| name  | date_of_birth | commands             |
+-------+---------------+----------------------+
| Flame | 2018-01-07    | pull aload, walk, run |
| Thorn | 2021-09-01    | pull aload, walk, run |
| Tank  | 2018-06-23    | pull aload, walk, run |
+-------+---------------+----------------------+
3 rows in set (0,00 sec)
```

CREATE TABLE Donkeys
(name VARCHAR(50) NOT NULL,
date_of_birth DATE,
commands VARCHAR(250)); - создать таблицу Donkeys;
INSERT INTO Donkeys
(name, date_of_birth, commands)
VALUES
('Ea', '2017-01-08', 'pull aload, walk, bray'),

('Goon', '2022-05-03', 'pull aload, walk, bray'); - заполнить таблицу Donkeys;
SELECT * FROM Donkeys; - вывести таблицу на экран;

```
mysql> SELECT * FROM Donkeys;
+------+---------------+------------------------+
| name | date_of_birth | commands               |
+------+---------------+------------------------+
| Ea   | 2017-01-08    | pull aload, walk, bray |
| Goon | 2022-05-03    | pull aload, walk, bray |
+------+---------------+------------------------+
2 rows in set (0,00 sec)
```

10.

DROP TABLE Camels; - удалить таблицу Camels;
SELECT *
FROM Horses
UNION
SELECT *
FROM Donkeys; - объединить таблицы Horses и Donkeys;

```
mysql> SELECT *
    -> FROM Horses
    -> UNION
    -> SELECT *
    -> FROM Donkeys;
+----------+---------------+------------------------
| name     | date_of_birth | commands
+----------+---------------+------------------------
| Star     | 2016-11-06    | trot, canter, gallop
| Blizzard | 2015-09-11    | trot, canter, gallop
| Gamlet   | 2014-02-23    | trot, canter, gallop
| Ea       | 2017-01-08    | pull aload, walk, bray
| Goon     | 2022-05-03    | pull aload, walk, bray
+----------+---------------+------------------------
5 rows in set (0,03 sec)
```

11.

CREATE TABLE Young_animals
SELECT *,
(EXTRACT(MONTH FROM CURDATE()) + EXTRACT(YEAR FROM CURDATE()) * 12) -
(EXTRACT(MONTH FROM date_of_birth) + EXTRACT(YEAR FROM date_of_birth) * 12)
AS age

FROM
(SELECT * FROM Dogs
UNION
SELECT * FROM Cats
UNION
SELECT * FROM Hamsters
UNION
SELECT * FROM Horses
UNION
SELECT * FROM Donkeys) AS a
WHERE date_of_birth BETWEEN DATE_SUB(CURDATE(), INTERVAL 3 YEAR) AND DATE_SUB(CURDATE(), INTERVAL 1 YEAR); - создать таблицу Young_animals с животными возраста от 1 года до 3 лет с указанием возраста выраженного в месяцах;
SELECT * FROM Young_animals; - вывести таблицу на экран;

```
mysql> CREATE TABLE Young_animals
    -> SELECT *,
    -> (EXTRACT(MONTH FROM CURDATE()) + EXTRACT(YEAR FROM CURDATE()) *
12) -
    -> (EXTRACT(MONTH FROM date_of_birth) + EXTRACT(YEAR FROM date_of_b
irth) * 12) AS age
    -> FROM
    -> (SELECT * FROM Dogs
    -> UNION
    -> SELECT * FROM Cats
    -> UNION
    -> SELECT * FROM Hamsters
    -> UNION
    -> SELECT * FROM Horses
    -> UNION
    -> SELECT * FROM Donkeys) AS a
    -> WHERE date_of_birth BETWEEN DATE_SUB(CURDATE(), INTERVAL 3 YEAR)
 AND DATE_SUB(CURDATE(), INTERVAL 1 YEAR);
Query OK, 3 rows affected (0,08 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM Young_animals;
+--------+---------------+------------------------+------+
| name   | date_of_birth | commands               | age  |
+--------+---------------+------------------------+------+
| Catty  | 2022-07-15    | bark, run, sit         |   19 |
| Chappi | 2021-11-06    | bark, run, sit         |   27 |
| Goon   | 2022-05-03    | pull aload, walk, bray |   21 |
+--------+---------------+------------------------+------+
3 rows in set (0,00 sec)
```

12.

SELECT a.id, a.name, p_a.date_of_birth, p_a.commands, a.class, p_a.type_animal
FROM Animals AS a
JOIN (SELECT p.name, p.date_of_birth, p.commands, pA.type_animal
FROM Pets AS pA

JOIN
(SELECT * FROM Dogs UNION SELECT * FROM Cats UNION SELECT * FROM Hamsters) AS p
ON pA.name = p.name) AS p_a
ON a.name = p_a.name
UNION
SELECT a.id, a.name, p_k.date_of_birth, p_k.commands, a.class, p_k.type_animal
FROM Animals AS a
JOIN (SELECT pK.name, pK.date_of_birth, pK.commands, pack.type_animal
FROM Pack_animals AS pack
JOIN
(SELECT * FROM Horses UNION SELECT * FROM Donkeys) AS pK
ON pack.name = pK.name) AS p_k
ON a.name = p_k.name; - объеденить все таблицы;

```
+----+----------+---------------+------------------------+--------------+-------------+
| id | name     | date_of_birth | commands               | class        | type_animal |
+----+----------+---------------+------------------------+--------------+-------------+
|  1 | Spaz     | 2020-01-22    | bark, run, sit         | Pets         | Dog         |
|  2 | Catty    | 2022-07-15    | bark, run, sit         | Pets         | Dog         |
|  3 | Chappi   | 2021-11-06    | bark, run, sit         | Pets         | Dog         |
|  4 | Ginger   | 2018-03-21    | wash, purr, to scratch | Pets         | Cat         |
|  5 | Felix    | 2018-03-21    | wash, purr, to scratch | Pets         | Cat         |
|  6 | Tom      | 2019-04-10    | wash, purr, to scratch | Pets         | Cat         |
|  7 | Cutlet   | 2023-11-16    | hide, spin             | Pets         | Hamster     |
|  8 | Ralf     | 2023-09-29    | hide, spin             | Pets         | Hamster     |
|  9 | Star     | 2016-11-06    | trot, canter, gallop   | Pack_animals | Horse       |
| 10 | Blizzard | 2015-09-11    | trot, canter, gallop   | Pack_animals | Horse       |
| 11 | Gamlet   | 2014-02-23    | trot, canter, gallop   | Pack_animals | Horse       |
| 15 | Ea       | 2017-01-08    | pull aload, walk, bray | Pack_animals | Donkey      |
| 16 | Goon     | 2022-05-03    | pull aload, walk, bray | Pack_animals | Donkey      |
+----+----------+---------------+------------------------+--------------+-------------+
13 rows in set (0,01 sec)
```