

## Laboratory work 4

### CREATION AND USING VIEWS

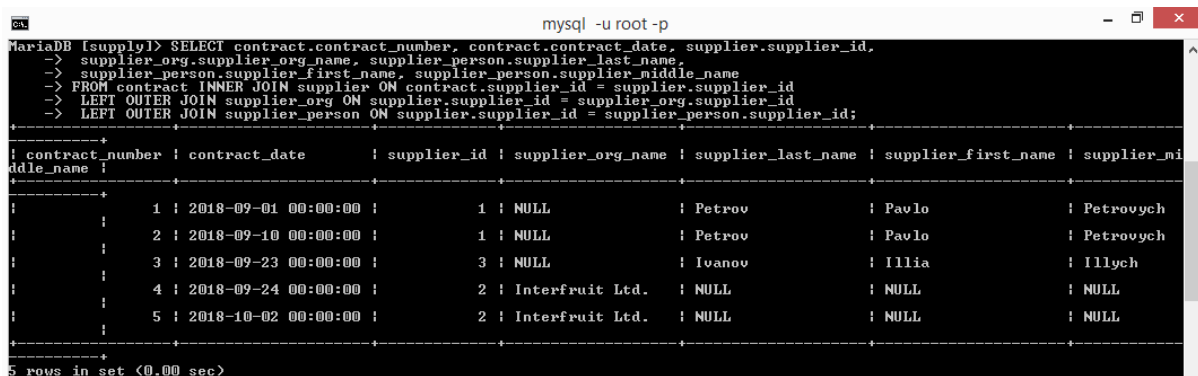
**Goal:** learn how to create and apply views using the MySQL database.

### Progress

#### 1. Create a view that allows to see the name of the supplier when viewing the list of contracts

Creating views is done with the CREATE VIEW operator. Thus, you can create a view that allows you to view the list of contracts with the name of the supplier, based on the next query (figure 4.1).

```
SELECT contract.contract_number, contract.contract_date, supplier.supplier_id,  
       supplier_org.supplier_org_name, supplier_person.supplier_last_name,  
       supplier_person.supplier_first_name, supplier_person.supplier_middle_name  
FROM contract INNER JOIN supplier ON contract.supplier_id = supplier.supplier_id  
LEFT OUTER JOIN supplier_org ON supplier.supplier_id = supplier_org.supplier_id  
LEFT OUTER JOIN supplier_person ON supplier.supplier_id = supplier_person.supplier_id;
```



The screenshot shows a MySQL terminal window with the title 'mysql -u root -p'. The prompt is 'MariaDB [supply]>'. The user has entered a SQL query that joins the 'contract' table with 'supplier', 'supplier\_org', and 'supplier\_person' tables. The results are displayed in a table format with 7 columns: contract\_number, contract\_date, supplier\_id, supplier\_org\_name, supplier\_last\_name, supplier\_first\_name, and supplier\_middle\_name. There are 5 rows of data. The first two rows show suppliers with NULL org names. The last three rows show suppliers with org names, but with NULL first and middle names.

contract_number	contract_date	supplier_id	supplier_org_name	supplier_last_name	supplier_first_name	supplier_middle_name
1	2018-09-01 00:00:00	1	NULL	Petrov	Pavlo	Petrovych
2	2018-09-10 00:00:00	1	NULL	Petrov	Pavlo	Petrovych
3	2018-09-23 00:00:00	3	NULL	Ivanov	Illia	Illych
4	2018-09-24 00:00:00	2	Interfruit Ltd.	NULL	NULL	NULL
5	2018-10-02 00:00:00	2	Interfruit Ltd.	NULL	NULL	NULL

5 rows in set (0.00 sec)

Figure 4.1

The result of this query has a certain disadvantage – the data of suppliers - legal and individual suppliers are shown in different columns, and also there are NULL values present. This problem can be fixed by applying the following query (figure 4.2).

```

SELECT contract.contract_number, contract.contract_date, supplier.supplier_id,
IFNULL(supplier_org.supplier_org_name, CONCAT(supplier_person.supplier_last_name, ' ',
supplier_person.supplier_first_name, ' ', supplier_person.supplier_middle_name)) AS `Supplier`
FROM contract INNER JOIN supplier ON contract.supplier_id = supplier.supplier_id
LEFT OUTER JOIN supplier_org ON supplier.supplier_id = supplier_org.supplier_id
LEFT OUTER JOIN supplier_person ON supplier.supplier_id = supplier_person.supplier_id;

```

```

mysql -u root -p
MariaDB [supply]> SELECT contract.contract_number, contract.contract_date, supplier.supplier_id,
-> IFNULL(supplier_org.supplier_org_name, CONCAT(supplier_person.supplier_last_name, ' ',
-> supplier_person.supplier_first_name, ' ', supplier_person.supplier_middle_name)) AS `Supplier`
-> FROM contract INNER JOIN supplier ON contract.supplier_id = supplier.supplier_id
-> LEFT OUTER JOIN supplier_org ON supplier.supplier_id = supplier_org.supplier_id
-> LEFT OUTER JOIN supplier_person ON supplier.supplier_id = supplier_person.supplier_id;
+-----+-----+-----+-----+
| contract_number | contract_date | supplier_id | Supplier |
+-----+-----+-----+-----+
| 1 | 2018-09-01 00:00:00 | 1 | Petrov Pavlo Petrovych |
| 2 | 2018-09-10 00:00:00 | 1 | Petrov Pavlo Petrovych |
| 3 | 2018-09-23 00:00:00 | 3 | Ivanov Illia Illych |
| 4 | 2018-09-24 00:00:00 | 2 | Interfruit Ltd. |
| 5 | 2018-10-02 00:00:00 | 2 | Interfruit Ltd. |
+-----+-----+-----+-----+
5 rows in set (0.00 sec)

```

Figure 4.2

Now you can create this view with the name `contract_supplier` using the appropriate SQL statement (figure 4.3).

```

mysql -u root -p
MariaDB [supply]> SHOW TABLES;
+-----+
| Tables_in_supply |
+-----+
| contract          |
| contract_supplier |
| supplied          |
| supplier          |
| supplier_org      |
| supplier_person   |
+-----+
6 rows in set (0.00 sec)

MariaDB [supply]> SELECT * FROM contract_supplier;
+-----+-----+-----+-----+
| contract_number | contract_date | supplier_id | Supplier |
+-----+-----+-----+-----+
| 1 | 2018-09-01 00:00:00 | 1 | Petrov Pavlo Petrovych |
| 2 | 2018-09-10 00:00:00 | 1 | Petrov Pavlo Petrovych |
| 3 | 2018-09-23 00:00:00 | 3 | Ivanov Illia Illych |
| 4 | 2018-09-24 00:00:00 | 2 | Interfruit Ltd. |
| 5 | 2018-10-02 00:00:00 | 2 | Interfruit Ltd. |
+-----+-----+-----+-----+
5 rows in set (0.01 sec)

```

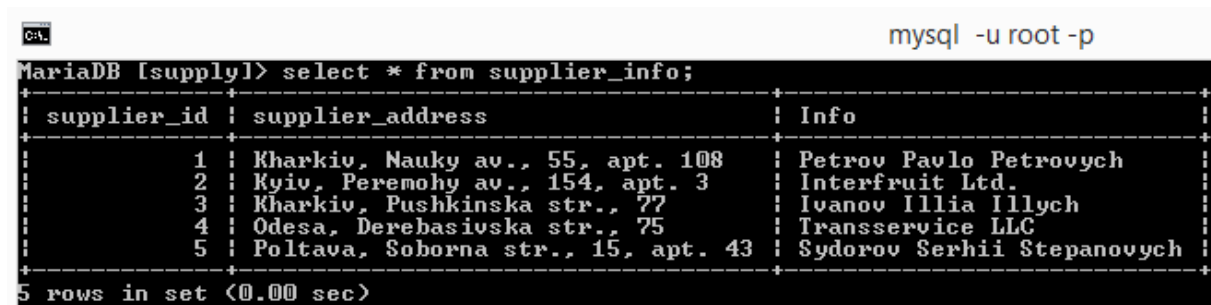
Figure 4.3

## 2. Create a view that allows the user to work with limited supplier data

Suppose that for some users, not all general supplier information (stored in the supplier's table) should be available, but only information about the code and supplier address. In this case, the user should be able to see the data of the

supplier as a business entity (for legal entities – the name, for physical persons – surname, name, and patronymic) (figure 4.4).

```
CREATE VIEW supplier_info AS
SELECT supplier.supplier_id, supplier.supplier_address,
       IFNULL(supplier_org.supplier_org_name, CONCAT(supplier_person.supplier_last_name, ' ',
       supplier_person.supplier_first_name, ' ', supplier_person.supplier_middle_name)) AS `Info`
FROM supplier LEFT OUTER JOIN supplier_org ON supplier.supplier_id = supplier_org.supplier_id
LEFT OUTER JOIN supplier_person ON supplier.supplier_id = supplier_person.supplier_id;
```



```
mysql -u root -p
MariaDB [supply]> select * from supplier_info;
```

supplier_id	supplier_address	Info
1	Kharkiv, Nauky av., 55, apt. 108	Petrov Pavlo Petrovych
2	Kyiv, Peremohy av., 154, apt. 3	Interfruit Ltd.
3	Kharkiv, Pushkinska str., 77	Ivanov Illia Illych
4	Odesa, Derebasivska str., 75	Transservice LLC
5	Poltava, Soborna str., 15, apt. 43	Sydorov Serhii Stepanovych

```
5 rows in set (0.00 sec)
```

Figure 4.4

If necessary, you can delete the view using the DROP VIEW operator.

### 3. Make a report for the laboratory work

The report should include the main stages of laboratory work and screenshots that demonstrate them.

### 4. Questions

1. What is the view?
2. Name views advantages and shortcomings.
3. Which SQL language operator is used to build views?
4. Which SQL language operator is used to remove views?
5. How you can check existence of a view in a database?
6. How to specify the list of columns in order to create a view?
7. What is a vertical view?
8. What is a horizontal view?