

## LABORATORY WORK 4. CREATION AND USAGE OF VIEWS

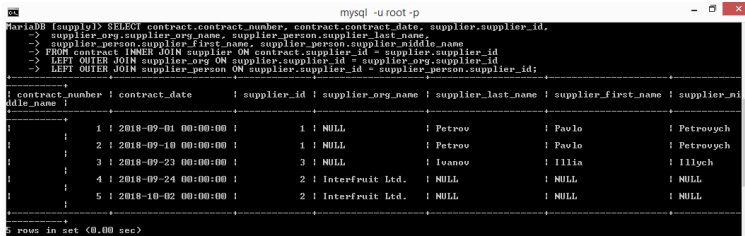
**Goal:** learn how to create and apply views using the MySQL database.

### Progress

#### 1. Create a view that allows seeing 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;
```



```
mysql -u root -p  
MariaDB [supply]> 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;
```

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	Paulo	Petrovych
2	2018-09-10 00:00:00	1	NULL	Petrov	Paulo	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 – Result of view that allows seeing the name of the supplier when viewing the list of contracts

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 – Result of modified query

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 – Result of modified view

## 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, Perevaly av., 154, apt. 3 | Interfruit Ltd. |
| 3 | Kharkiv, Pushkinska str., 77 | Ivanov Iliia Ilych |
| 4 | Odesa, Derebasivska str., 75 | Transservice LLC |
| 5 | Poltava, Soborna str., 15, apt. 43 | Sydarov Serhii Stepanovych |
+-----+-----+-----+
5 rows in set (0.00 sec)

```

Figure 4.4 – Result of view that allows the user to work with limited supplier data

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 the existence of a view in a database?
6. How to specify the list of columns to create a view?
7. What is a vertical view?
8. What is a horizontal view?