## МІНІСТЕРСТВО ОСВІТИ І НАУКИ НАЦІОНАЛЬНИЙ УНІВЕРСИТЕТ «ЛЬВІВСЬКА ПОЛІТЕХНІКА»

Кафедра систем штучного інтелекту



# Лабораторна робота №4 3 курсу "Організація баз даних та знань" Варіант 19

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Тема: "Запити на додавання, зміну та вилучення данних".

**Мета**: Розробити SQL-запити для внесення нових значень в таблиці в режимі одиничного та групового доповнення; розробити SQL-запити для внесення змін в рядки таблиць; розробити SQL-запити для вилучення вибраних рядків.

#### Виконання

Додаємо дні тижня у таблцю week\_days

#### Додаємо назви спеціальностей

```
mysql> select* from lab2.curriculum;
  id
      | subject_name
                                   speciality_id | year | type
                                                        2018
2018
                                                   3
                                                                 Bachelor
        Data Base
   23
                                                   3
        Web Design
                                                                 Bachelor
                                                        2018
2018
2018
2018
        System analysis
                                                                 Bachelor
        Computer networks
Computer circuitry
Philosophy
                                                                 Bachelor
   5
6
7
                                                                 Bachelor
                                                        2018
                                                                 Bachelor
                                                        2018
        MMOR
                                                                 Bachelor
  rows in set (0.00 sec)
```

Заповнюємо таблицю з корпусами НУ ЛП.

### Заповнюємо таблицю з кафедрами

Заповнюємо таблицю з викладачами.

Додаємо предмети, де в поле **speciality\_id** додаємо ідентифікатори спеціальностей з таблиці **speciality** на яку посилається. І в поле **teacher\_id** додаємо ідентифікатори викладачів з таблиці **teachers** на яку також посилається зовнішній ключ.

mysql> select* from lab2.curriculum;								
id   subject_name	speciality_id	teacher_id	year	type				
1   Data Bases   2   Web Design   3   System analysis   4   Computer networks   5   Computer circuitry   6   Philosophy   7   MMOR	3 3 3 3 7 2 6	2 3 4 5 6 7 8	2018   2018   2018   2018   2018   2018   2018	Bachelor   Bachelor   Bachelor   Bachelor   Bachelor   Bachelor				
7 rows in set (0.00 sec)	,							

Заповнюємо таблицю з групами, де поле **speciality\_id** посилається на поле ідентифікатор спеціальностей у таблиці **speciality**.

#### Наповнюємо таблицю **classrooms** класами та аудторіями.

```
mysql> insert into lab2.classrooms (classroom_number, building_id, capacity) values
    -> (117, (select id from lab2.buildings where building_number = 1), 120);
Query OK, 1 row affected (0.24 sec)

mysql> insert into lab2.classrooms (classroom_number, building_id, capacity) values
    -> (409, (select id from lab2.buildings where building_number = 28), 17);
Query OK, 1 row affected (0.16 sec)

mysql> insert into lab2.classrooms (classroom_number, building_id, capacity) values
    -> (201, (select id from lab2.buildings where building_number = 20), 17);
Query OK, 1 row affected (0.16 sec)

mysql> insert into lab2.classrooms (classroom_number, building_id, capacity) values
    -> (501, (select id from lab2.buildings where building_number = 4), 15);
Query OK, 1 row affected (0.36 sec)

mysql> insert into lab2.classrooms (classroom_number, building_id, capacity) values
    -> (0, (select id from lab2.buildings where building_number = 20), 120);
Query OK, 1 row affected (0.30 sec)

mysql> insert into lab2.classrooms (classroom_number, building_id, capacity) values
    -> (124, (select id from lab2.buildings where building_number = 20), 25);
Query OK, 1 row affected (0.17 sec)
```

```
mysql> insert into lab2.classrooms (classroom_number, building_id, capacity) values
-> (124, (select id from lab2.buildings where building_number = 20), 25);
Query OK, 1 row affected (0.17 sec)
mysql> insert into lab2.classrooms (classroom_number, building_id, capacity) values
-> (123b, (select id from lab2.buildings where building_number = 20), 50);
ERROR 1054 (42s22): Unknown column '123b' in 'field list'
mysql> insert into lab2.classrooms (classroom_number, building_id, capacity) values
-> ('123b', (select id from lab2.buildings where building_number = 20), 50);
Query OK, 1 row affected (0.22 sec)
mysql> insert into lab2.classrooms (classroom_number, building_id, capacity) values
-> ('321', (select id from lab2.buildings where building_number = 4), 25);
Query OK, 1 row affected (0.21 sec)
mysql> insert into lab2.classrooms (classroom_number, building_id, capacity) values
-> ('125', (select id from lab2.buildings where building_number = 20), 25);
Query OK, 1 row affected (0.14 sec)
mysql> insert into lab2.classrooms (classroom_number, building_id, capacity) values
-> ('109', (select id from lab2.buildings where building_number = 1), 35);
Query OK, 1 row affected (0.20 sec)
mysql> select* from lab2.classrooms;
    id | classroom_number | building_id | capacity
                                                                                       2
11
                                                                                                                120
       1234567
                 117
                                                                                                                  17
17
15
                 409
                 201
501
                                                                                       \vec{10}
                                                                                       5
10
                                                                                                                120
25
50
25
25
25
35
                124
123b
321
125
                                                                                       10
                                                                                       \bar{10}
       .
8
9
                                                                                       10
                 109
     10
10 rows in set (0.02 sec)
```

#### Заповнення таблиці schedule даними з усіх інших таблць.

```
mysql> insert into lab2.schedule
-- (weekDay_id, number, subject_id, type, teacher_id, group_id, classroom_id, parity)
-> values
-> ((select id from week_days where week_day = 'Monday'), 1, (select id from curriculum where subject_name = 'Computer networks'), 'Lecture', (select id from teachers where name = 'Burov Y. V.'), (select id from groupes where group_name = 'KN-210'), (select id from classrooms where classroom_number = 117), 'no_matter');

mysql> insert into lab2.schedule
-> (weekDay_id, number, subject_id, type, teacher_id, group_id, classroom_id, parity)
-> values
-> ((select id from week_days where week_day = 'Monday'), 2, (select id from curriculum where subject_name = 'Computer circuitry'), 'Lecture', (select id from classrooms where name = 'Panchak R. T.'), (select id from group es where group_name = 'KN-210'), (select id from classrooms where classroom_number = 117), 'no_matter');

mysql> insert into lab2.schedule
-> (weekDay_id, number, subject_id, type, teacher_id, group_id, classroom_id, parity)
-> values
-> ((select id from week_days where week_day = 'Tuesday'), 1, (select id from curriculum where subject_name = 'System analysis'), 'Laboratory', (select id from classrooms where classroom_number = 201), 'denominator');

mysql> insert into lab2.schedule
-> (weekDay_id, number, subject_id, type, teacher_id, group_id, classroom_id, parity)
-> values
-> (select id from week_days where week_day = 'Tuesday'), 1, (select id from curriculum where subject_name = 'Computer circcuitry'), 'Laboratory', (select id from classrooms where classroom_number = 201), 'denominator');

mysql> insert into lab2.schedule
-> (weekDay_id, number, subject_id, type, teacher_id, group_id, classroom_id, parity)
-> values
-> ((select id from week_days where week_day = 'Tuesday'), 1, (select id from curriculum where subject_name = 'Computer circcuitry'), 'Laboratory', (select id from classrooms where classroom_number = 501), 'numerator');

mysql> insert into lab2.schedule
-> (weekDay_id, number, subject_id, type, teacher_id,
```

```
ysql> insert into lab2.schedule
-> (weekDay_id, number, subject_id, type, teacher_id, group_id, classroom_id, parity)
-> (weekbay_1d, number, subject_1d, type, teacher_1d, group_1d, classroom_1d, parity)
-> values
-> ((select id from week_days where week_day = 'Tuesday'), 5, (select id from curriculum where subject_name
- 'Computer networks'), 'Laboratory', (select id from teachers where name = 'Rzheuskiy A. V.'), (select id from
groupes where group_name = 'KN-210'), (select id from classrooms where classroom_number = 409), 'no_matter');
Query OK, 1 row affected (0.18 sec)
            l> insert into lab2.schedule
-> (weekDay_id, number, subject_id, type, teacher_id, group_id, classroom_id, parity)
-> (weekbayin, number, subjectin, type, teacherin, groupin, classrooming, parity)
-> values
-> ((select id from week_days where week_day = 'Wednesday'), 1, (select id from curriculum where subject_nam
e = 'MMRO'), 'Laboratory', (select id from teachers where name = 'Peleshyshyn 0. P.'), (select id from groupes w
here group_name = 'KN-210'), (select id from classrooms where classroom_number = 201), 'no_matter');
Query OK, 1 row affected (0.29 sec)
 mysql> insert into lab2.schedule
-> (weekDay_id, number, subject_id, type, teacher_id, group_id, classroom_id, parity)
-> (weekbay id, number, Subject_id, type, teacher_id, group_id, classroom_id, parity)
-> values
-> ((select id from week_days where week_day = 'Wednesday'), 2, (select id from curriculum where subject_nam
e = 'Data Bases'), 'Laboratory', (select id from teachers where name = 'Melnykova N. I.'), (select id from group
es where group_name = 'KN-210'), (select id from classrooms where classroom_number = 124), 'no_matter');
Query OK, 1 row affected (0.20 sec)
mysql> insert into lab2.schedule
-> (weekDay_id, number, subject_id, type, teacher_id, group_id, classroom_id, parity)
-> (weekbay id, number, Subject_id, type, teacher_id, group_id, classroom_id, parity)
-> values
-> ((select id from week_days where week_day = 'Wednesday'), 3, (select id from curriculum where subject_nam
e = 'System analysis'), 'Practical', (select id from teachers where name = 'Boyko N. I.'), (select id from group
es where group_name = 'KN-210'), (select id from classrooms where classroom_number = 123), 'denominator');
Query OK, 1 row affected (0.16 sec)
mysql> insert into lab2.schedule
-> (weekDay_id, number, subject_id, type, teacher_id, group_id, classroom_id, parity)
-> values
-> ((select id from week_days where week_day = 'Wednesday'), 4, (select id from curriculum where subject_nam
e = 'MMRO'), 'Lecture', (select id from teachers where name = 'Boyko N. I.'), (select id from groupes where grou
p_name = 'KN-210'), (select id from classrooms where classroom_number = 0), 'no_matter');
Query OK, 1 row affected (0.42 sec)
```

id   weekDay_id	number	subject_id	type	teacher_id	group_id	classroom_id	parity
1   1 2   1 3   2 4   2 5   2 6   2 7   3 8   3 9   3 10   3 11   3	1 2 1 1 3 5 1 2 3 3 4	5 3 5 1 4 7 1 1 3 7	Lecture Lecture Laboratory Laboratory Lecture Laboratory Laboratory Laboratory Laboratory Laboratory	9 6 11 13 2 5 8 2 2 2 4 4	3 3 3 3 3 3 3 3 3 3	1 1 3 4 5 2 3 6 6 7 5	no_matter no_matter denominator numerator no_matter no_matter no_matter numerator denominator no_matter

Тепер використаємо функцію **UPDATE** змінимо у таблиці schedule ідентифікатор дисципліни у полі з id = 7. Зараз там стоїть subject\_id = 7. Поставимо id дисципліни *DATA BASES*.

```
mysql> update lab2.schedule set subject_id = (select id from lab2.curriculum where subject_name = 'Data Bases') where id = 7; Query OK, 1 row affected (0.18 sec) Rows matched: 1 Changed: 1 Warnings: 0
```

mysql> select* from schedule;									
id   weekDay_id	number	subject_id	type	teacher_id	group_id	classroom_id	parity		
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 2 1 3 5 1 2 3 3 4	4 5 3 5 1 4 1 1 1 3 7	Lecture Lecture Laboratory Laboratory Lecture Laboratory Laboratory Laboratory Laboratory Laboratory	9 6 11 13 2 5 8 2 2 2 4 4	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	1 3 4 5 2 3 6 6 7 5	no_matter no_matter denominator numerator no_matter no_matter no_matter no_matter numerator denominator no_matter		
mysql> select subj +   subject_name   +   Data Bases   +	++ 11 rows in set (0.01 sec)  mysql> select subject_name from curriculum where id = 1; ++   subject_name   ++								

Бачимо, що у полі з id = 7, subject\_id тепер дорівнює 1. І одразу перевіряємо чи справді під 1 є бази даних і бачимо, що це так, отже запит пройшов успішно.

Далі спробуємо видалити останній запис до бази даних командою **DELETE.** 

ysql> select* from s	- Semeda i C						
id   weekDay_id   r	number	subject_id	type	teacher_id	group_id	classroom_id	parity
1	1   2   1   3   5   2   3   3	4   5   3   1   4   1   1   1   3	Lecture Lecture Laboratory Laboratory Lecture Laboratory Laboratory Laboratory Laboratory Practical	9 6 11 13 2 5 8 2 2 4 1	3 3 3 3 3 3 3 3 3	1 1 3 4 5 2 3 6 6 7	no_matter no_matter denominator numerator no_matter no_matter no_matter no_matter no_matter denominator

Спробуємо більш складний запит **DELETE**. Видалимо поле де subject\_id дорівнює id такої дисципліни як **Computer networks**.

Як бачимо зникли поля з id = 1 та 6.

**Висновки:** в ході проведеної лаборатороної роботи я розробив SQL-запити для внесення нових значень в таблиці в режимі одиничного та групового

доповнення, розробиті SQL-запити для внесення змін в рядки таблиць, розробив SQL-запити для вилучення вибраних рядків.