

## Лабораторная работа №8

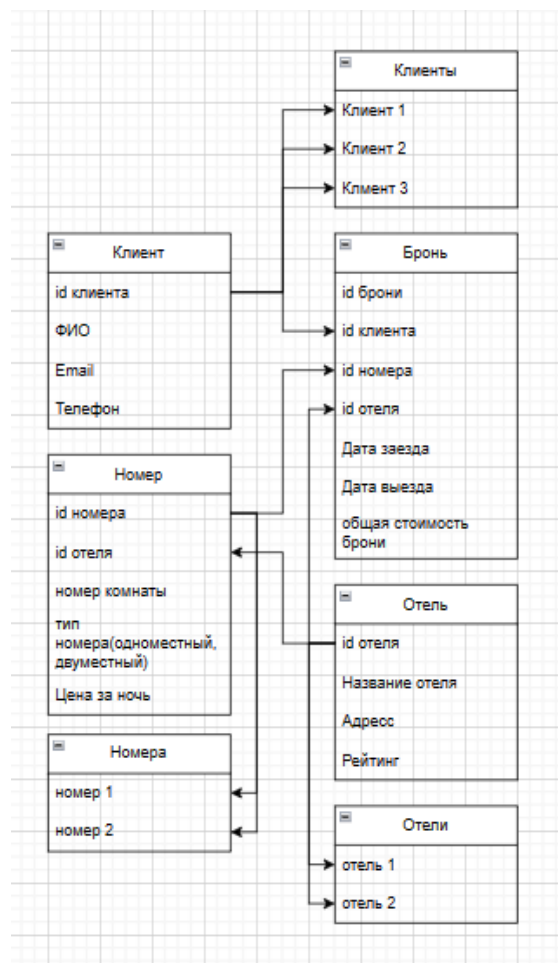
### Цель работы:

#### 1. Написать SELECT-запросы:

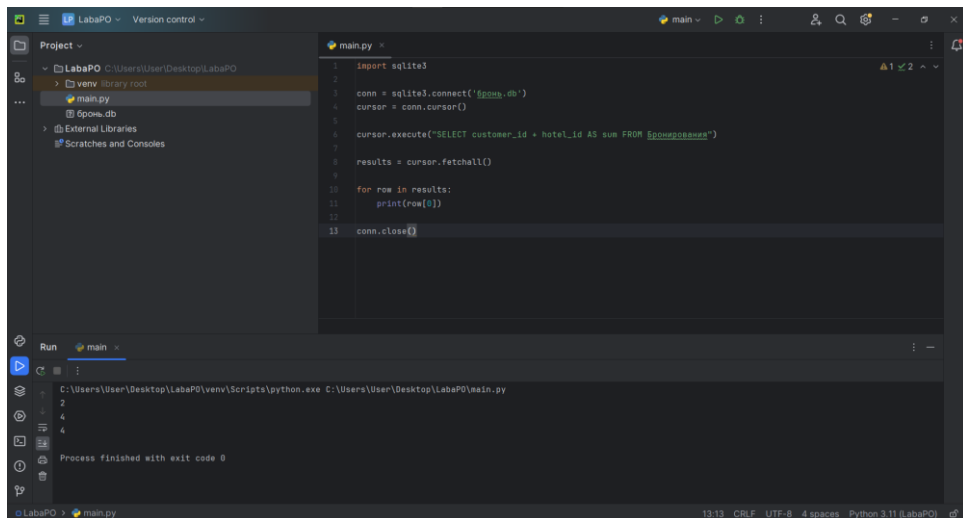
- с использованием арифметических операций
- с фильтрацией по условиям
- с использованием оператора IN, BETWEEN
- с использованием оператора LIKE
- с сортировкой
- с использованием оператора LIMIT

#### 2. Написать INSERT/UPDATE/DELETE запросы

### Схема БД



### SELECT-запрос с использованием арифметических операций



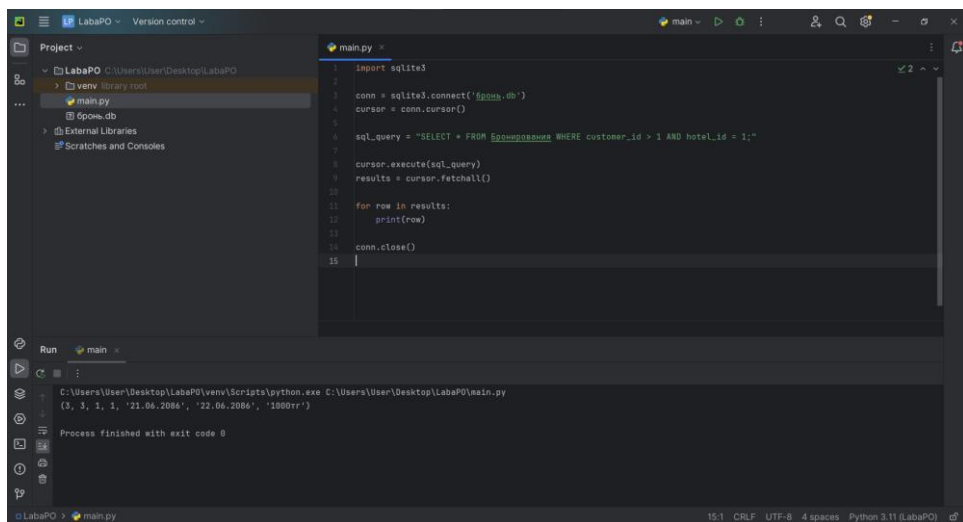
```
1 import sqlite3
2
3 conn = sqlite3.connect('gpona.db')
4 cursor = conn.cursor()
5
6 cursor.execute("SELECT customer_id + hotel_id AS sum FROM Spomozhnyye")
7
8 results = cursor.fetchall()
9
10 for row in results:
11     print(row[0])
12
13 conn.close()
```

Run main

C:\Users\User\Desktop\LabaPO\venv\Scripts\python.exe C:\Users\User\Desktop\LabaPO\main.py

Process finished with exit code 0

## SELECT-запрос с фильтрацией по условиям



```
1 import sqlite3
2
3 conn = sqlite3.connect('gpona.db')
4 cursor = conn.cursor()
5
6 sql_query = "SELECT * FROM Spomozhnyye WHERE customer_id > 1 AND hotel_id = 1;"
7
8 cursor.execute(sql_query)
9 results = cursor.fetchall()
10
11 for row in results:
12     print(row)
13
14 conn.close()
```

Run main

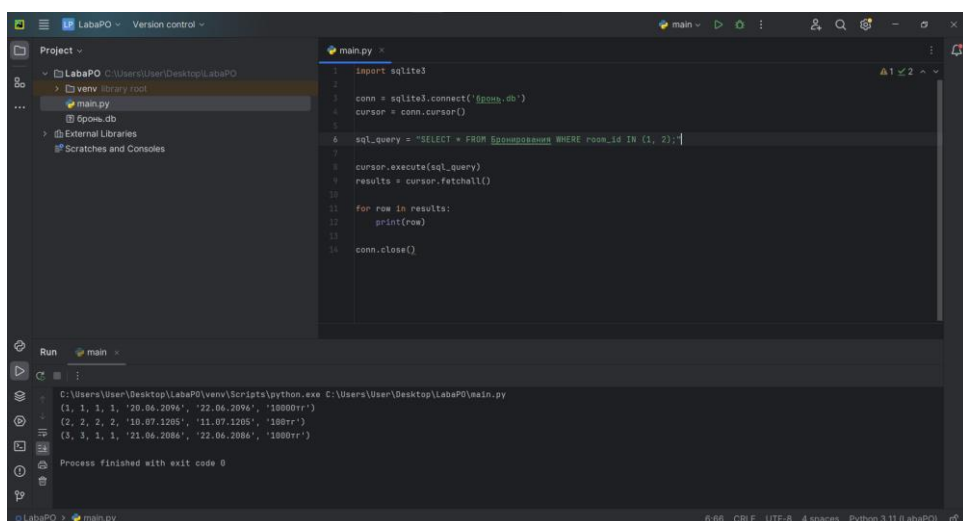
C:\Users\User\Desktop\LabaPO\venv\Scripts\python.exe C:\Users\User\Desktop\LabaPO\main.py

(3, 3, 1, 1, '21.06.2086', '22.06.2086', '1800rr')

Process finished with exit code 0

## SELECT-запрос с использованием оператора IN, BETWEEN

### IN



```
1 import sqlite3
2
3 conn = sqlite3.connect('gpona.db')
4 cursor = conn.cursor()
5
6 sql_query = "SELECT * FROM Spomozhnyye WHERE room_id IN (1, 2);;"
7
8 cursor.execute(sql_query)
9 results = cursor.fetchall()
10
11 for row in results:
12     print(row)
13
14 conn.close()
```

Run main

C:\Users\User\Desktop\LabaPO\venv\Scripts\python.exe C:\Users\User\Desktop\LabaPO\main.py

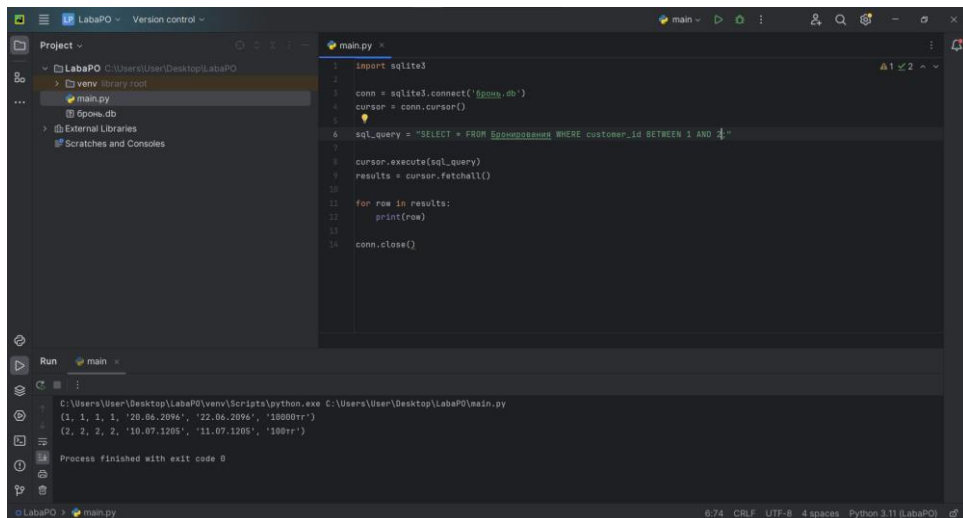
(1, 1, 1, 1, '20.06.2086', '22.06.2086', '1800rr')

(2, 2, 2, 2, '10.07.1285', '11.07.1285', '180rr')

(3, 3, 1, 1, '21.06.2086', '22.06.2086', '1800rr')

Process finished with exit code 0

## Between



The screenshot shows an IDE with a project named 'LabaPO'. The file explorer on the left shows a directory structure with 'venv', 'main.py', and 'Spews.db'. The 'main.py' file is open in the editor, showing the following code:

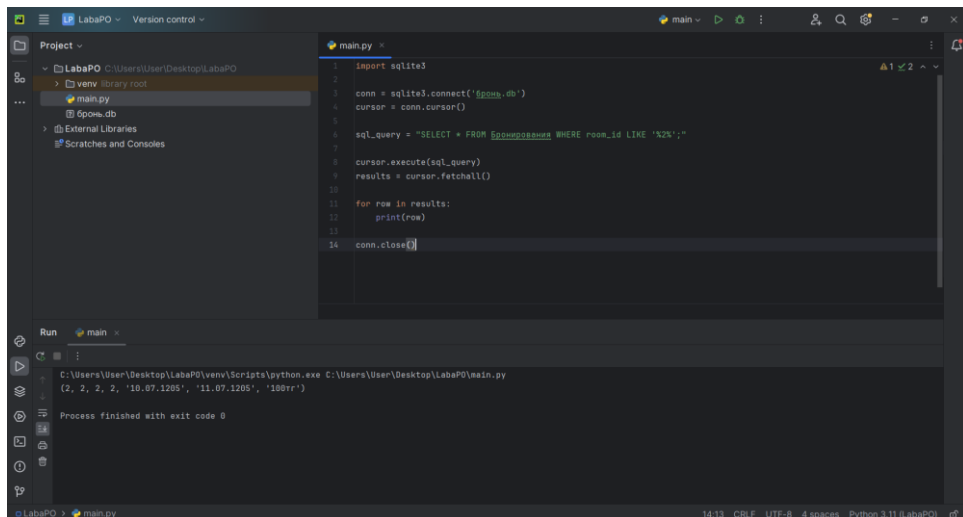
```
1 import sqlalchemy
2
3 conn = sqlalchemy.connect('spews.db')
4 cursor = conn.cursor()
5
6 sql_query = "SELECT * FROM Spewospev WHERE customer_id BETWEEN 1 AND 4"
7
8 cursor.execute(sql_query)
9 results = cursor.fetchall()
10
11 for row in results:
12     print(row)
13
14 conn.close()
```

The Run console at the bottom shows the output of the script:

```
C:\Users\User\Desktop\LabaPO\venv\Scripts\python.exe C:\Users\User\Desktop\LabaPO\main.py
(1, 1, 1, 1, '20.06.2096', '22.06.2096', '1800rrr')
(2, 2, 2, 2, '10.07.1205', '11.07.1205', '180rrr')
```

Process finished with exit code 0

## SELECT - запрос с использованием оператора LIKE



The screenshot shows the same IDE environment as the previous one. The 'main.py' file is open, showing the following code:

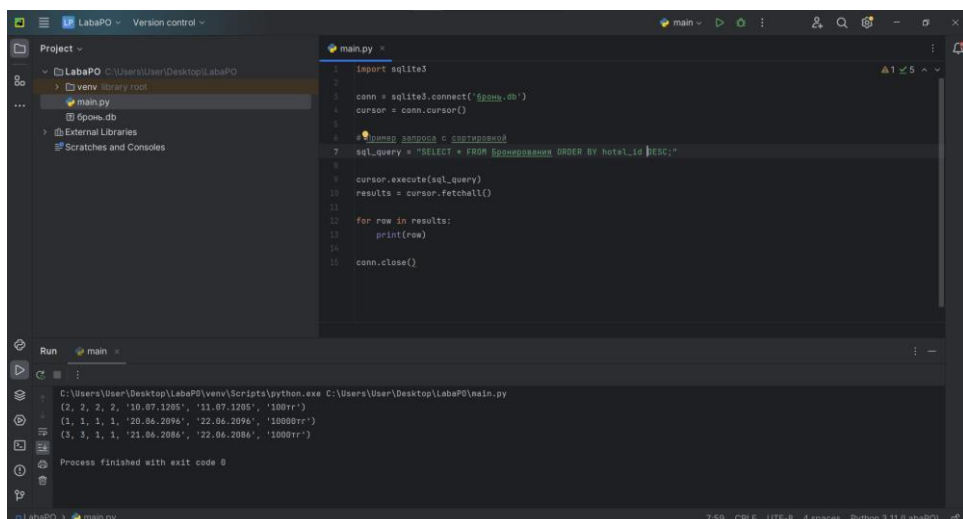
```
1 import sqlalchemy
2
3 conn = sqlalchemy.connect('spews.db')
4 cursor = conn.cursor()
5
6 sql_query = "SELECT * FROM Spewospev WHERE room_id LIKE '32%'"
7
8 cursor.execute(sql_query)
9 results = cursor.fetchall()
10
11 for row in results:
12     print(row)
13
14 conn.close()
```

The Run console at the bottom shows the output of the script:

```
C:\Users\User\Desktop\LabaPO\venv\Scripts\python.exe C:\Users\User\Desktop\LabaPO\main.py
(2, 2, 2, 2, '10.07.1205', '11.07.1205', '180rrr')
```

Process finished with exit code 0

## SELECT - запрос с сортировкой



The screenshot shows the same IDE environment as the previous ones. The 'main.py' file is open, showing the following code:

```
1 import sqlalchemy
2
3 conn = sqlalchemy.connect('spews.db')
4 cursor = conn.cursor()
5
6 # Запрос с сортировкой
7 sql_query = "SELECT * FROM Spewospev ORDER BY hotel_id DESC;"
8
9 cursor.execute(sql_query)
10 results = cursor.fetchall()
11
12 for row in results:
13     print(row)
14
15 conn.close()
```

The Run console at the bottom shows the output of the script:

```
C:\Users\User\Desktop\LabaPO\venv\Scripts\python.exe C:\Users\User\Desktop\LabaPO\main.py
(2, 2, 2, 2, '10.07.1205', '11.07.1205', '180rrr')
(1, 1, 1, 1, '20.06.2096', '22.06.2096', '1800rrr')
(3, 3, 1, 1, '21.06.2086', '22.06.2086', '1800rrr')
```

Process finished with exit code 0

## SELECT - запрос с использованием оператора LIMIT

The screenshot shows the PyCharm IDE interface. The top toolbar includes icons for file operations, version control, and running code. The 'Project' view on the left shows the file structure of the 'Labapo' project, including a 'venv' directory and a 'main.py' file. The 'main.py' file is open in the editor, showing a Python script that connects to a SQLite3 database, executes a query, and prints the results. The script is run successfully, and the output is displayed in the 'Run' console.

```

1 import sqlite3
2
3 conn = sqlite3.connect('spowa.db')
4 cursor = conn.cursor()
5
6 # Execute pandas c ncholls@whw Operators LIMIT
7 sql_query = "SELECT * FROM ncholls LIMIT 5;"
8
9 cursor.execute(sql_query)
10 results = cursor.fetchall()
11
12 for row in results:
13     print(row)
14
15 conn.close()

```

The 'Run' console shows the output of the script, which is a list of five rows of data. The process finished with exit code 0.

```

(1, 'Dolchi', 'Gabana', 'Shwet@fumeil.ru', '88005553535')
(2, 'Uge', 'Chaga', 'Voni@mail.fu', '22204443521')
(3, 'German', 'Fuman', 'Gere@fumeil.ru', '57893475983475')

```

## INSERT/UPDATE/DELETE запросы

# INSERT

The screenshot displays the PyCharm IDE interface. The top toolbar includes icons for file operations and a 'Run' button. The 'Project' view on the left shows the file structure of the 'labaPO' project, including a 'venv' directory and a '1.py' file. The main editor window shows the code in '1.py', which is a Python script that connects to a SQLite database, inserts data, and commits the transaction. The 'Run' view at the bottom shows the execution command and a successful completion message.

```

1.py
2.py
3.py
6poww.db
External Libraries
Scratches and Consoles

Run
1
C:\Users\User\Desktop\labaPO\venv\Scripts\python.exe C:\Users\User\Desktop\labaPO\1.py
Process finished with exit code 0
labaPO > 1.py

```

3	5	5	4	4	21/01/2000	21/01/2000	200011
4	4	NULL	NULL	NULL	2003	2004	200

## UPDATE

```
1 import sqlite3
2
3 conn = sqlite3.connect('6poms.db')
4 cursor = conn.cursor()
5
6 sql_update_query = "UPDATE 6poms SET total_price = 4 WHERE total_price = 2;"
7
8 cursor.execute(sql_update_query)
9 conn.commit()
10
11 conn.close()
```

Run

C:\Users\User\Desktop\LabaPO\venv\Scripts\python.exe C:\Users\User\Desktop\LabaPO\2.py

Process finished with exit code 0

	reservation_id	customer_id	hotel_id	room_id	check_in_date	check_out_date	total_price
1	1	1	1	1	20.06.2096	22.06.2096	10000rr
2	2	3	3	2	10.07.1205	11.07.1205	100rr
3	3	3	3	1	21.06.2086	22.06.2086	1000rr
4	4	NULL	NULL	NULL	2003	2004	2000

## DELETE

```
1 import sqlite3
2
3 conn = sqlite3.connect('6poms.db')
4 cursor = conn.cursor()
5
6 sql_delete_query = "DELETE FROM 6poms WHERE reservation_id = '4';"
7
8 cursor.execute(sql_delete_query)
9 conn.commit()
10
11 conn.close()
```

Run

C:\Users\User\Desktop\LabaPO\venv\Scripts\python.exe C:\Users\User\Desktop\LabaPO\3.py

Process finished with exit code 0

	reservation_id	customer_id	hotel_id	room_id	check_in_date	check_out_date	total_price
1	1	1	1	1	20.06.2096	22.06.2096	10000rr
2	2	3	3	2	10.07.1205	11.07.1205	100rr
3	3	3	3	1	21.06.2086	22.06.2086	1000rr