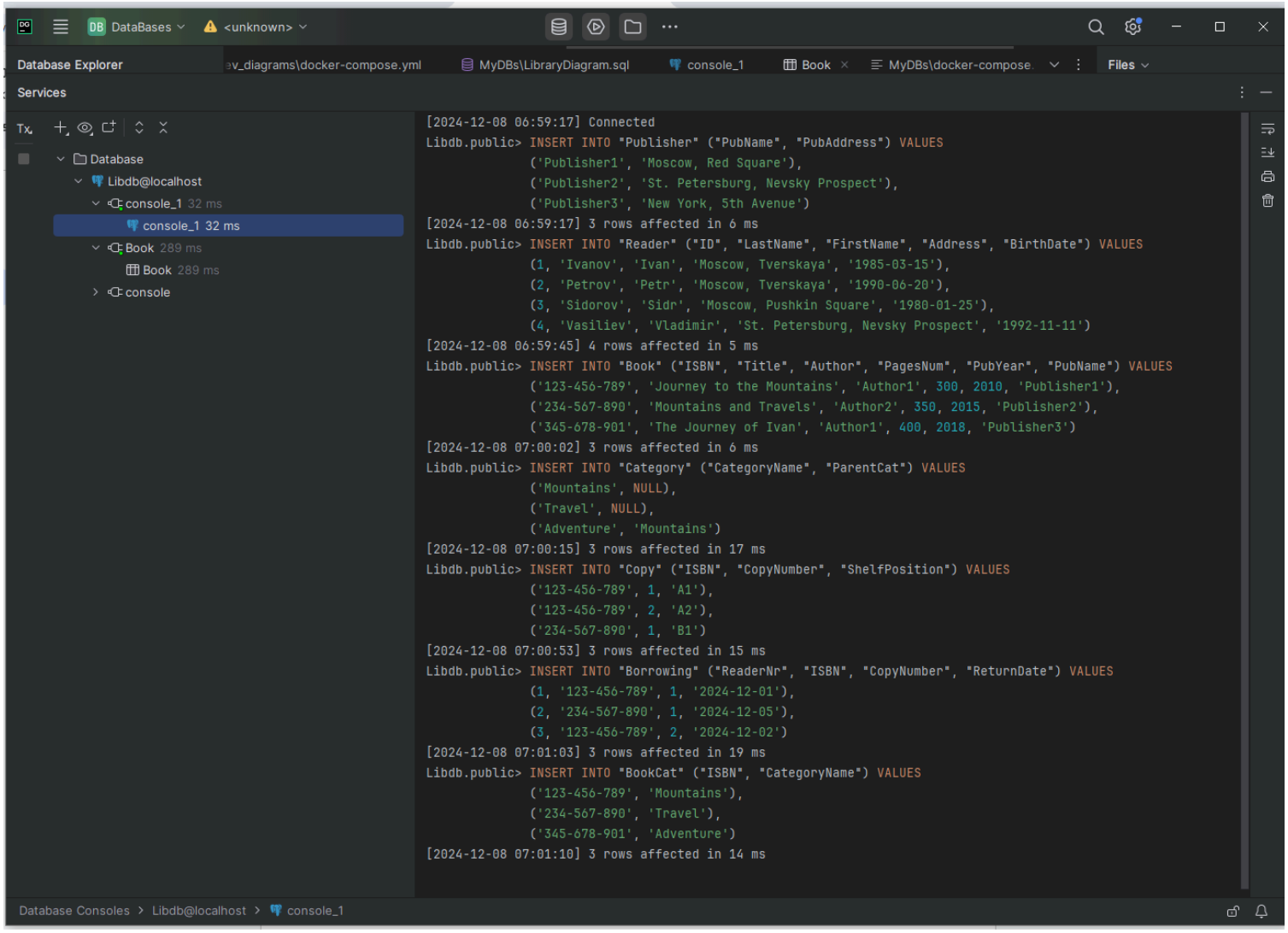
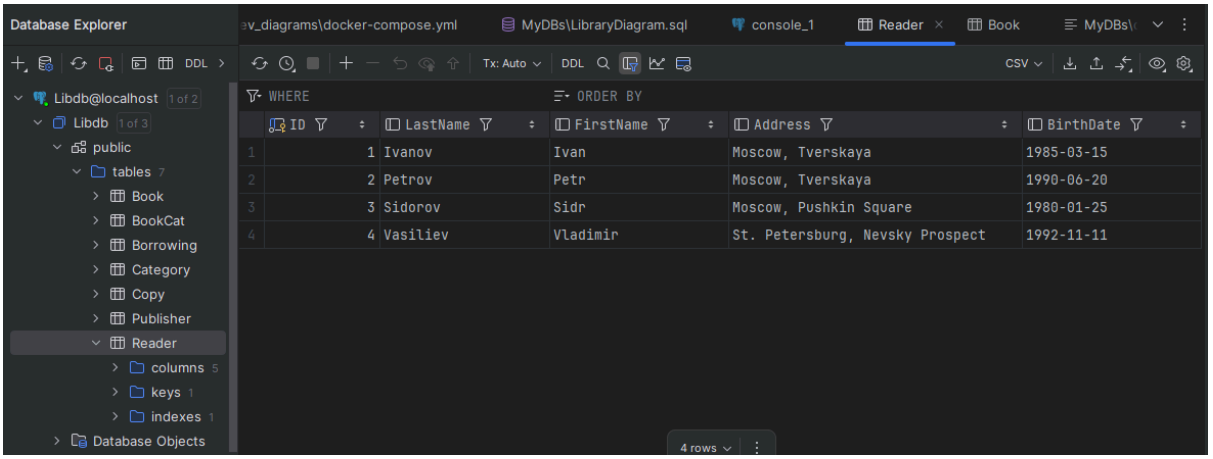
Задание 5
Лим В. БПИ225

Задача 1:

Сгенерировал и вставил данные в базу:

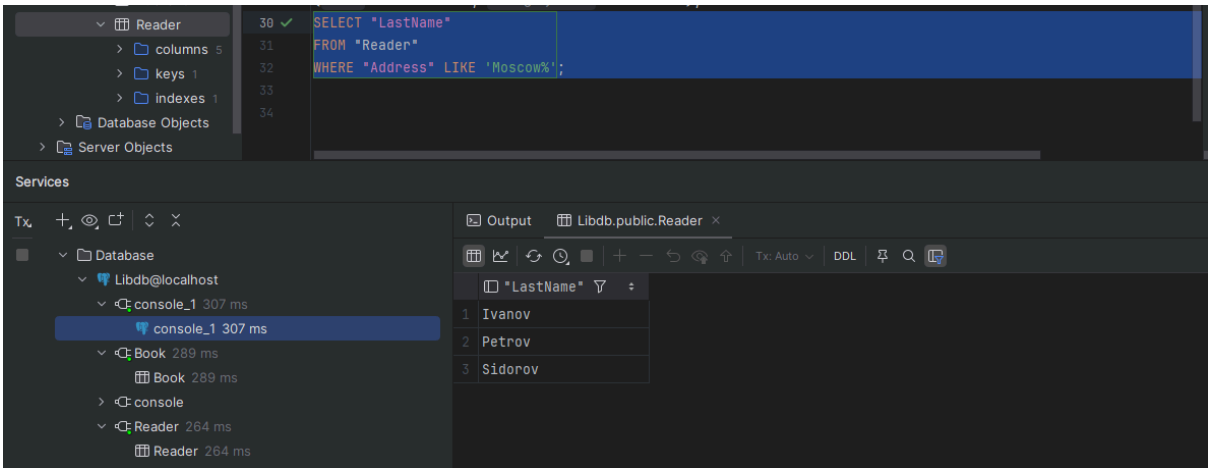


a) **Какие фамилии читателей в Москве?**
Таблица Reader:



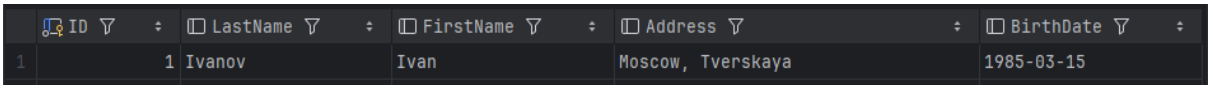
Запрос:
SELECT "LastName" FROM "Reader" WHERE "Address" LIKE 'Moscow%';

Результат:



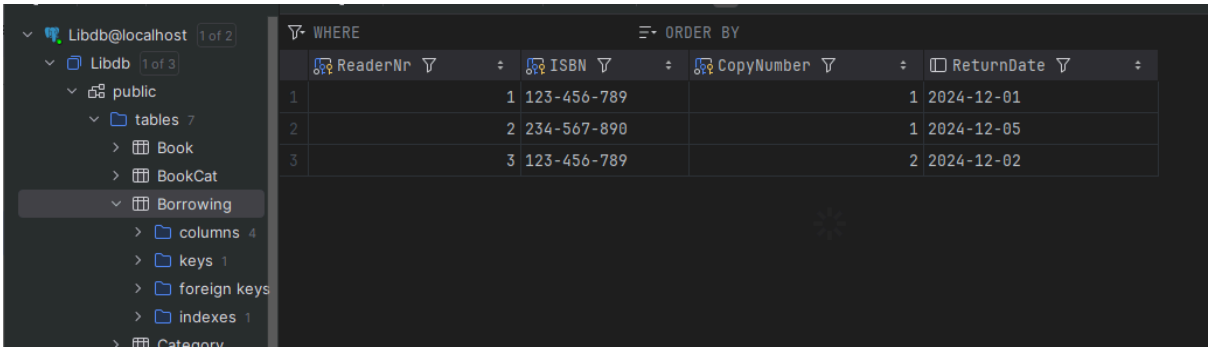
Все правильно✔

б) Какие книги (author, title) брал Иван Иванов?
Иван Иванов имеет id 1:



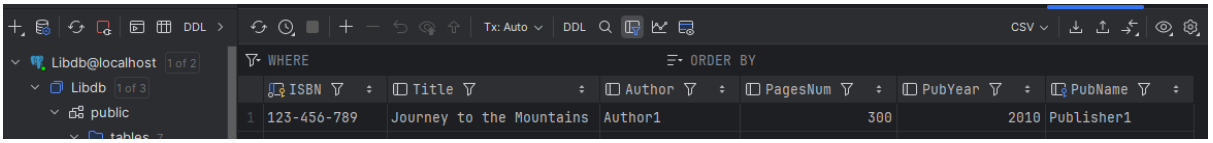
	ID	LastName	FirstName	Address	BirthDate
1	1	Ivanov	Ivan	Moscow, Tverskaya	1985-03-15

Таблица Borrowing:



	ReaderNr	ISBN	CopyNumber	ReturnDate
1	1	123-456-789	1	2024-12-01
2	2	234-567-890	1	2024-12-05
3	3	123-456-789	2	2024-12-02

Таблица Book чтобы удостовериться потом через ISBN книги:

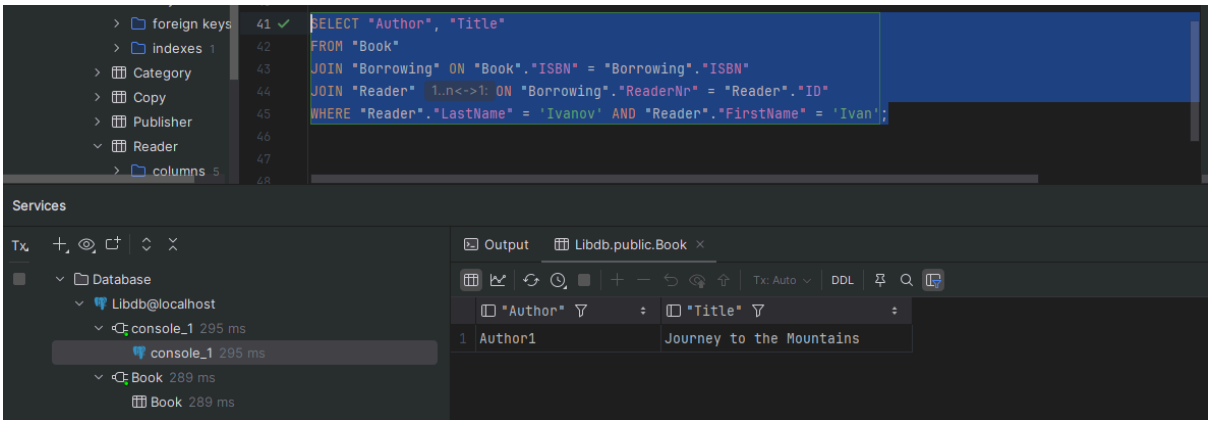


	ISBN	Title	Author	PagesNum	PubYear	PubName
1	123-456-789	Journey to the Mountains	Author1	300	2010	Publisher1

Запрос:

```
SELECT "Author", "Title" FROM "Book" JOIN "Borrowing" ON "Book"."ISBN" =
"Borrowing"."ISBN" JOIN "Reader" ON "Borrowing"."ReaderNr" = "Reader"."ID"
WHERE "Reader"."LastName" = 'Ivanov' AND "Reader"."FirstName" = 'Ivan';
```

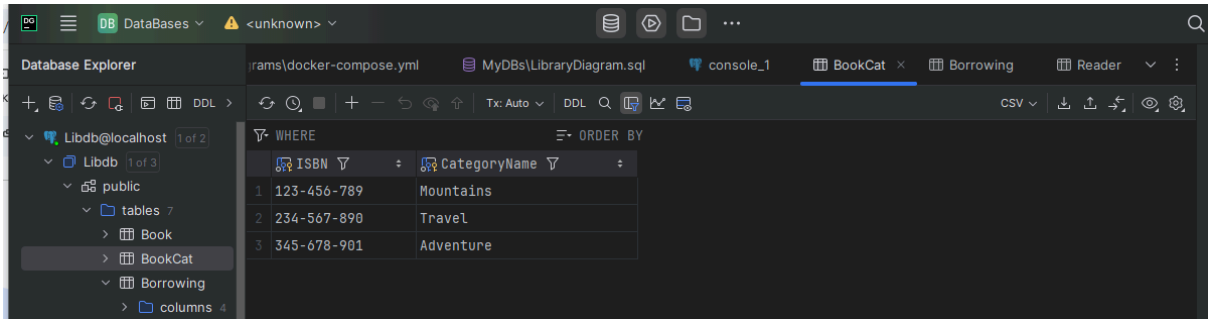
Результат:



Все правильно✔

в) Какие книги (ISBN) из категории "Горы" не относятся к категории "Путешествия"?

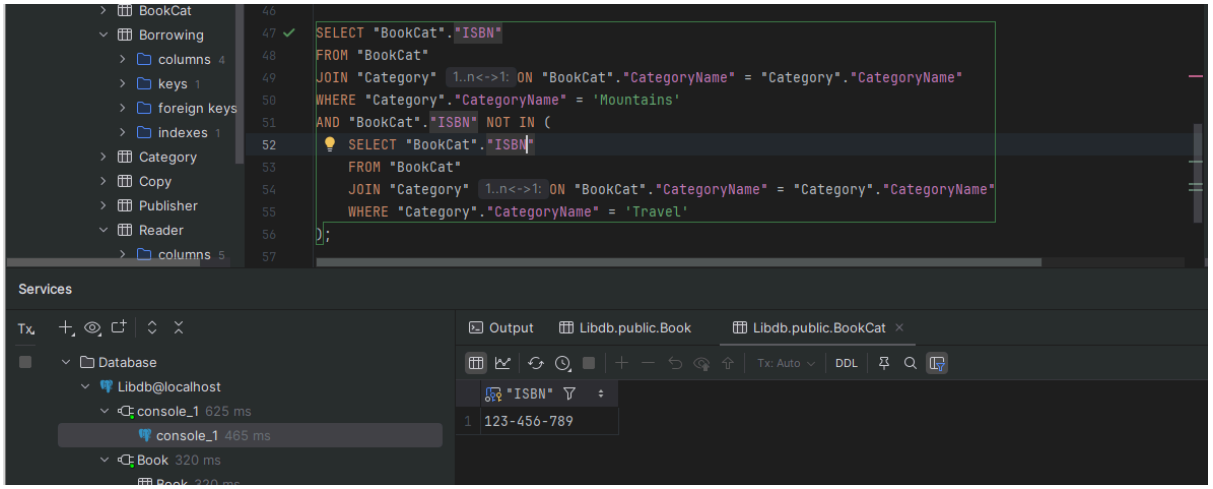
В таблице BookCat у нас только одна книга в категории “Mountains” и она не относится к категории “Travel”



Запрос:

```
SELECT "BookCat"."ISBN"
FROM "BookCat"
JOIN "Category" ON "BookCat"."CategoryName" = "Category"."CategoryName"
WHERE "Category"."CategoryName" = 'Mountains'
AND "BookCat"."ISBN" NOT IN (
    SELECT "BookCat"."ISBN"
    FROM "BookCat"
    JOIN "Category" ON "BookCat"."CategoryName" = "Category"."CategoryName"
    WHERE "Category"."CategoryName" = 'Travel'
);
```

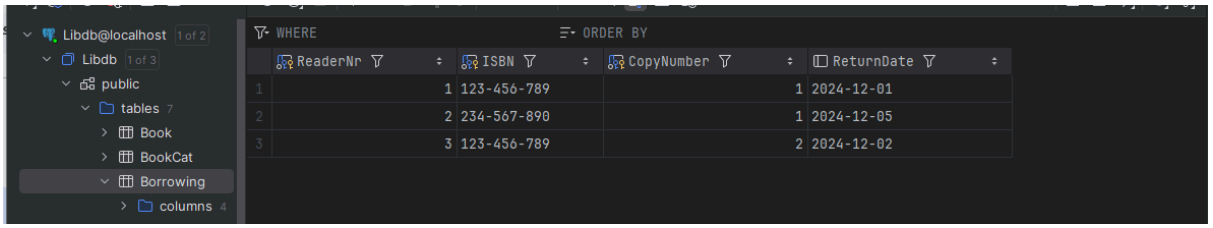
Результат:



Все правильно✔

г) Какие читатели (LastName, FirstName) вернули копию книги?

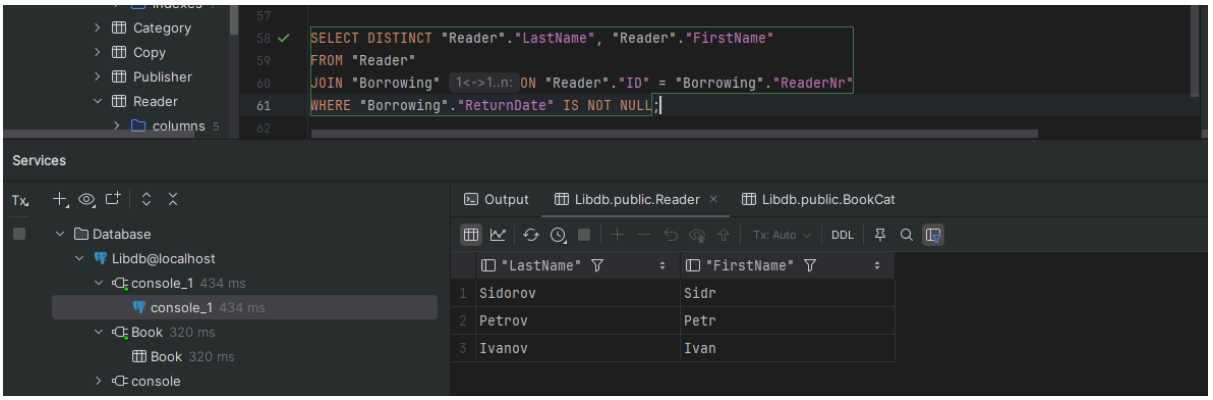
Из таблицы Borrowing видно, что все свои книги вернули:



Запрос:

SELECT DISTINCT "Reader"."LastName", "Reader"."FirstName" FROM "Reader" JOIN "Borrowing" ON "Reader"."ID" = "Borrowing"."ReaderNr" WHERE "Borrowing"."ReturnDate" IS NOT NULL;

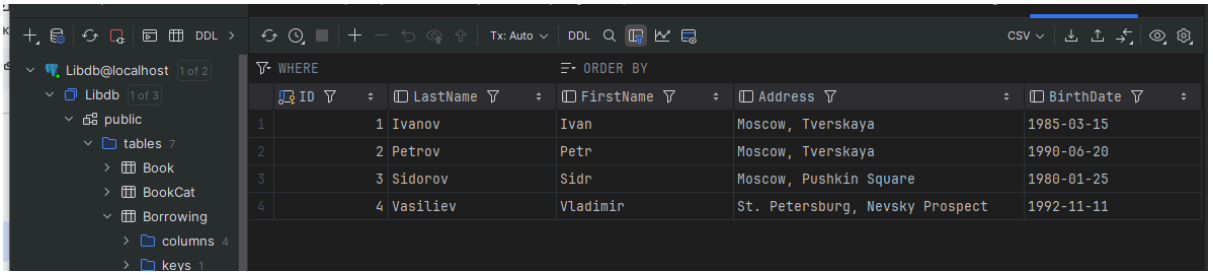
Результат:

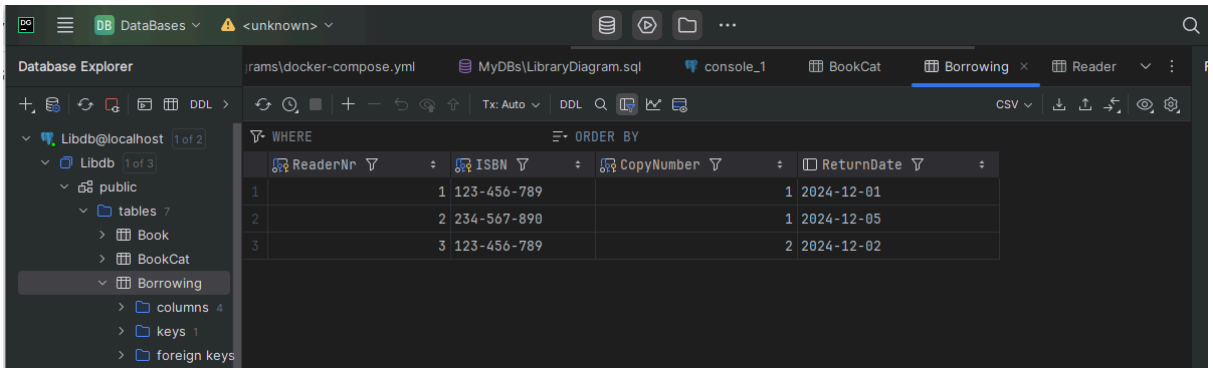


Все правильно✔

д) Какие читатели (LastName, FirstName) брали хотя бы одну книгу (не копию), которую брал также Иван Иванов (не включайте Ивана Иванова в результат)?

Из таблицы Borrowing и Reader мы видим, что Петр Петров взял ту же книгу, что и Иван Иванов:

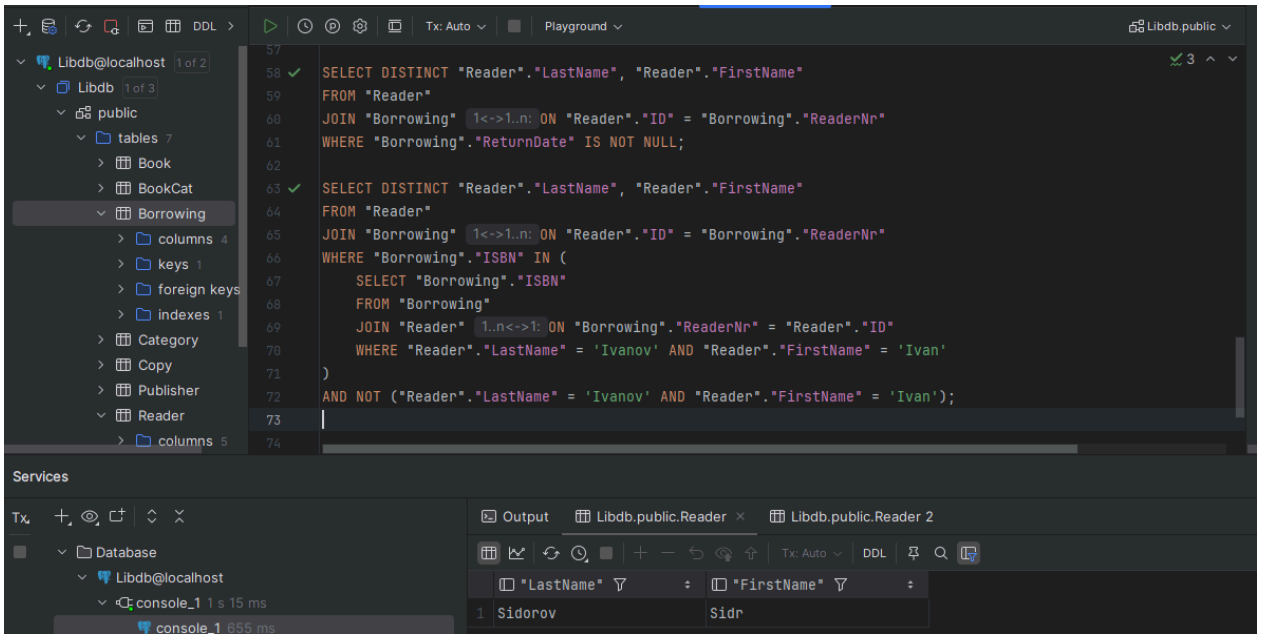




Запрос:

```
SELECT DISTINCT "Reader"."LastName", "Reader"."FirstName" FROM "Reader" JOIN "Borrowing" ON "Reader"."ID" = "Borrowing"."ReaderNr" WHERE "Borrowing"."ISBN" IN ( SELECT "Borrowing"."ISBN" FROM "Borrowing" JOIN "Reader" ON "Borrowing"."ReaderNr" = "Reader"."ID" WHERE "Reader"."LastName" = 'Ivanov' AND "Reader"."FirstName" = 'Ivan' ) AND NOT ("Reader"."LastName" = 'Ivanov' AND "Reader"."FirstName" = 'Ivan');
```

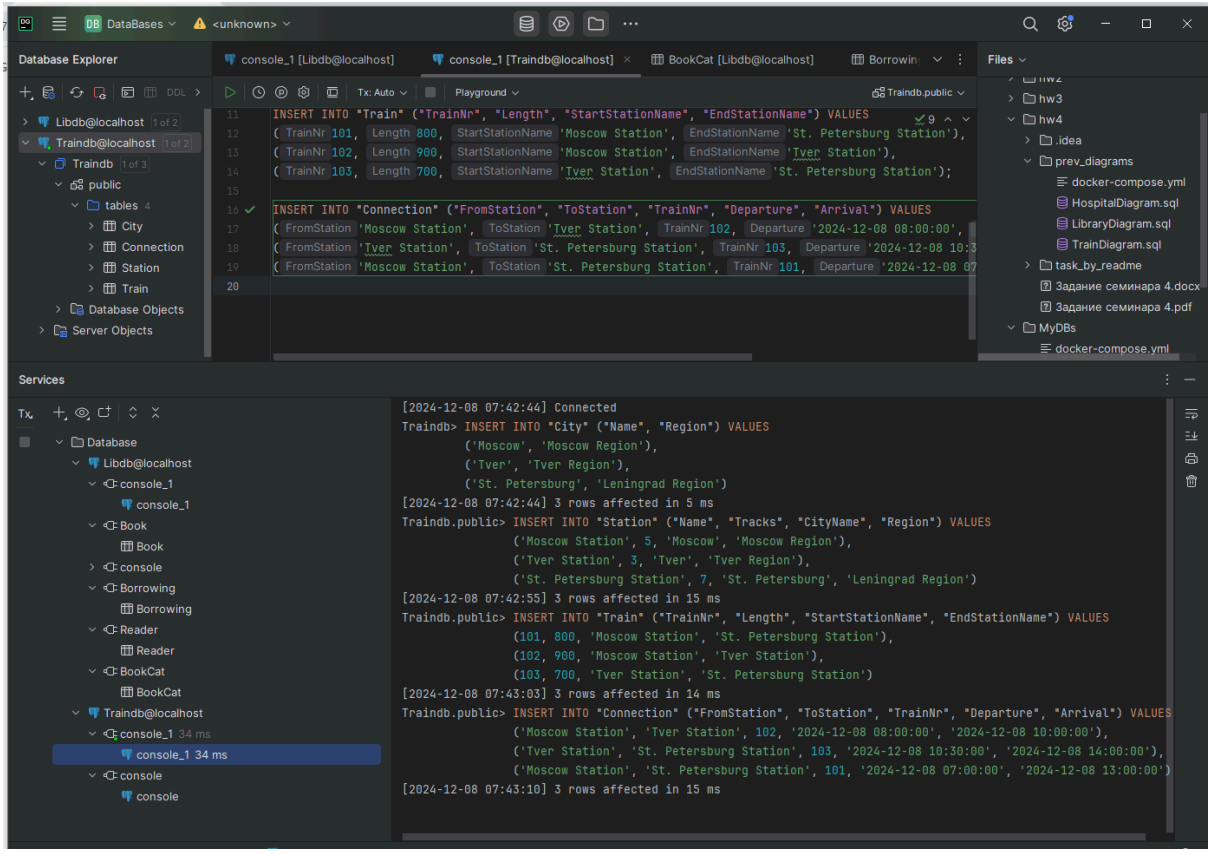
Результат:



Все правильно✔

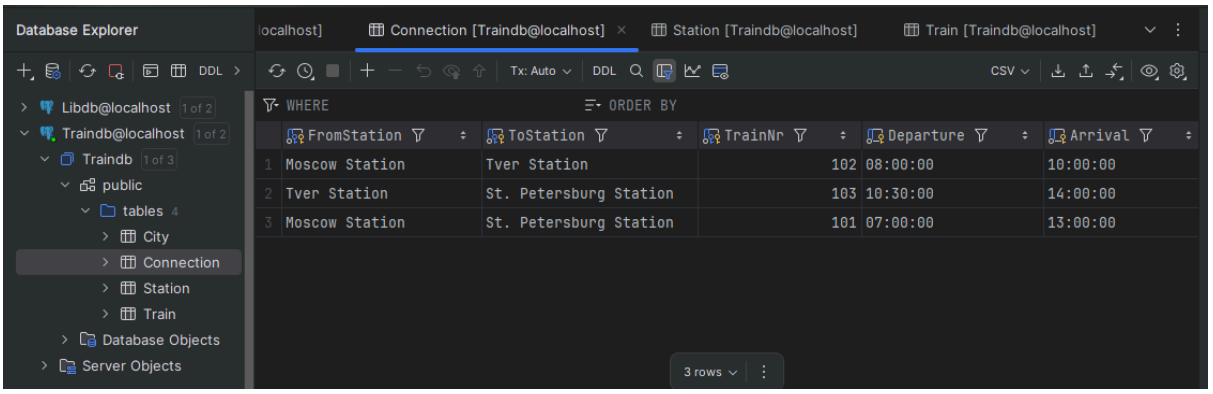
Задача 2:

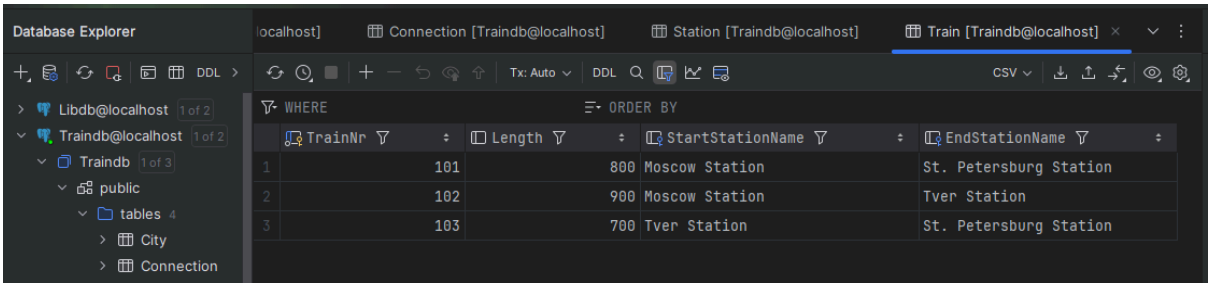
Заполняю таблицу данными:



a) Найдите все прямые рейсы из Москвы в Тверь:

По таблице Train и Connection видно, что прямой только 102 в 8:00:

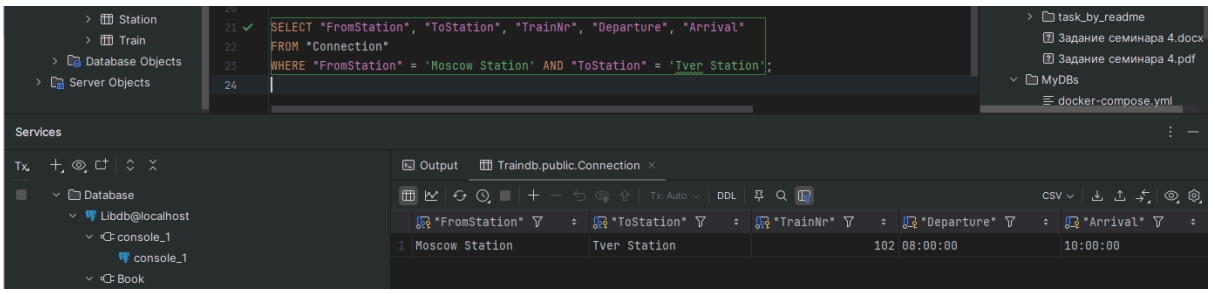




Запрос:

```
SELECT "FromStation", "ToStation", "TrainNr", "Departure", "Arrival"
FROM "Connection"
WHERE "FromStation" = 'Moscow Station' AND "ToStation" = 'Tver Station';
```

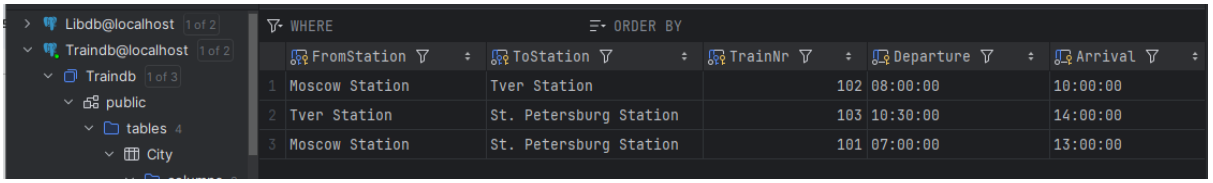
Результат:



Все правильно✔

б) Найдите все многосегментные маршруты, имеющие точно однодневный трансфер из Москвы в Санкт-Петербург.

У нас из составных есть только маршрут Москва-Тверь -> Тверь-Питер:

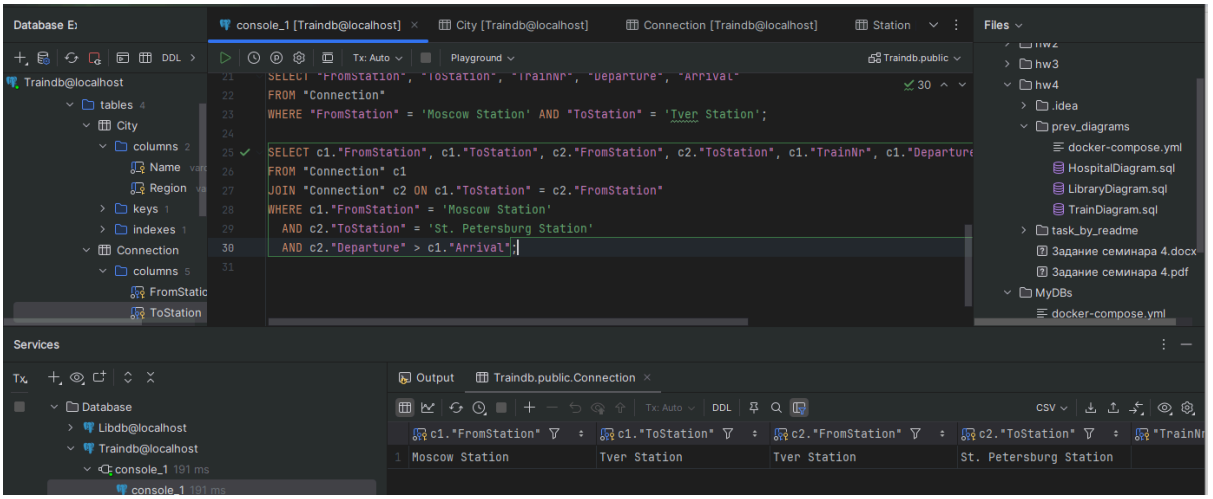


	FromStation	ToStation	TrainNr	Departure	Arrival
1	Moscow Station	Tver Station	102	08:00:00	10:00:00
2	Tver Station	St. Petersburg Station	103	10:30:00	14:00:00
3	Moscow Station	St. Petersburg Station	101	07:00:00	13:00:00

Запрос:

```
SELECT c1."FromStation", c1."ToStation", c2."FromStation", c2."ToStation",
c1."TrainNr", c1."Departure", c2."Arrival"
FROM "Connection" c1
JOIN "Connection" c2 ON c1."ToStation" = c2."FromStation"
WHERE c1."FromStation" = 'Moscow Station'
  AND c2."ToStation" = 'St. Petersburg Station'
  AND c2."Departure" > c1."Arrival";
```

Результат:



Все правильно✔