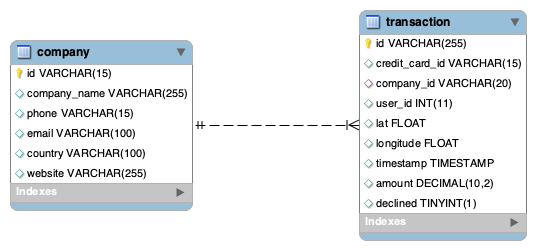
**Task 2.01. Basic SQL**

**Level 1.**

**Exercise1.**

The database *´transactions´* was created from the provided files *´estructura\_dades.sql´* and *´dades\_introduir.sql´* in MySQL Workbench. Database contains information from a company that sells products online.

**ER diagram**



Database has relational structure and consists from two tables:

* *´company´* - corporate information of the companies

All variables are strings of different length

Primary key - ´*id*´ - uniquely identify each company

* *´transaction´* - data related to the transactions performed by companies

Variables *id, credit\_card\_id* and *company\_id* are strings, *user\_id* and *declined* have type integer, *lat* and *longitude* are floats, *amount* has decimal format (with up to 10 digits in total and 2 decimal places), and *timestamp* has datetime format.

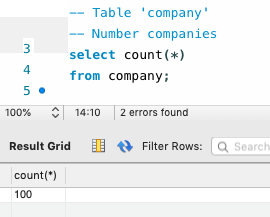
Primary key - ´*id*´ - uniquely identify each transaction

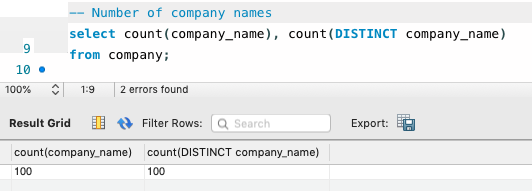
Foreign key - ´*company\_id*´ - links this tabel with table ´*company*´ (column ´*id*´), links each transaction to the company that made the transaction. Also ´*user\_id*´ and ´*credit\_card\_id*´ could be foreign keys for tables like *user* and *credit\_card* if existed.

**Tables overview**

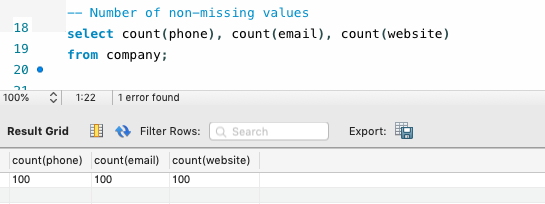
***´company´***

There are 100 different companies. All company names are unique.



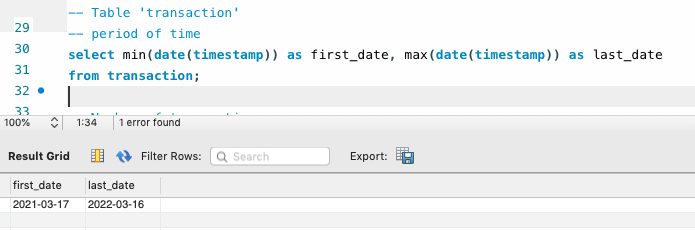


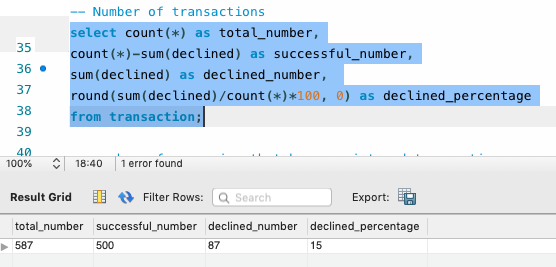
There are no missing values in the corporate information (email, pone, website).



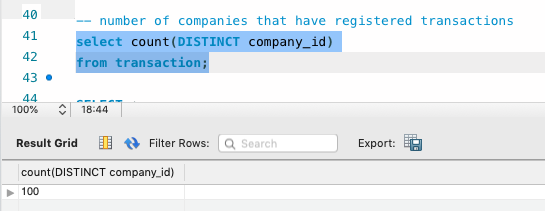
***´transaction´***

During period from ´2021-03-17´ to ´2022-03-16´ 587 transactions were performed, only 87 of them were declined (around 15%).

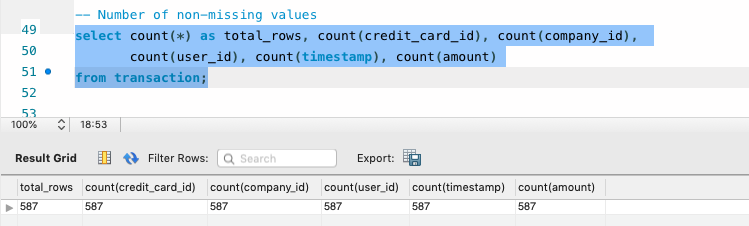




100 companies have registered transactions, what allow to assume that all companies from *‘company’* table may have at least 1 transaction.

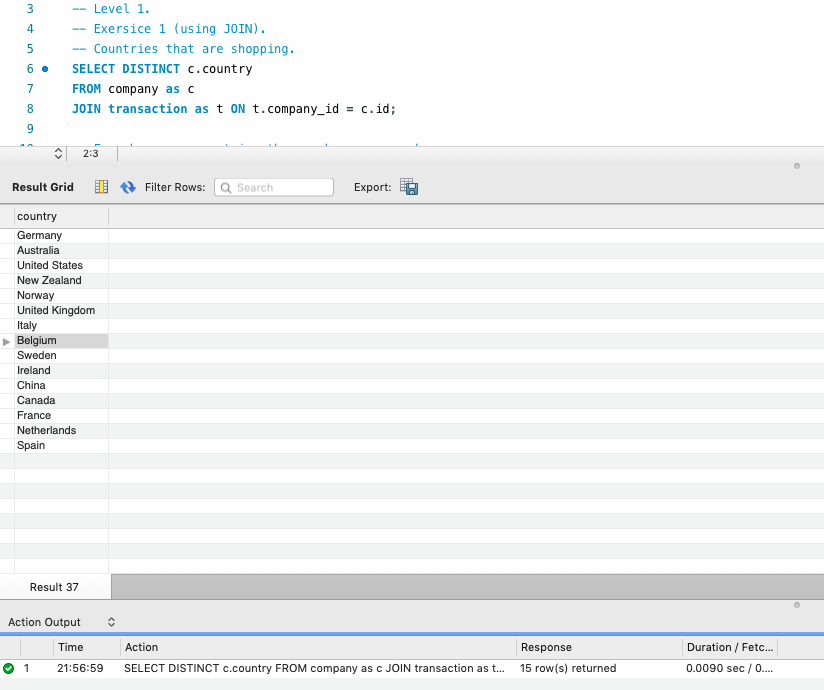


There are no missing values in the information about transactions.

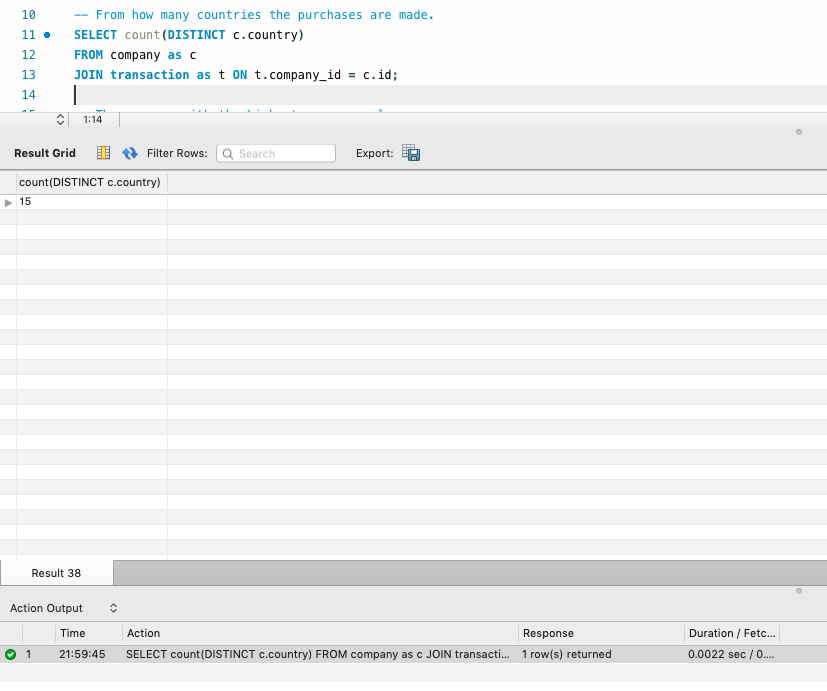


**Exercise 2.**

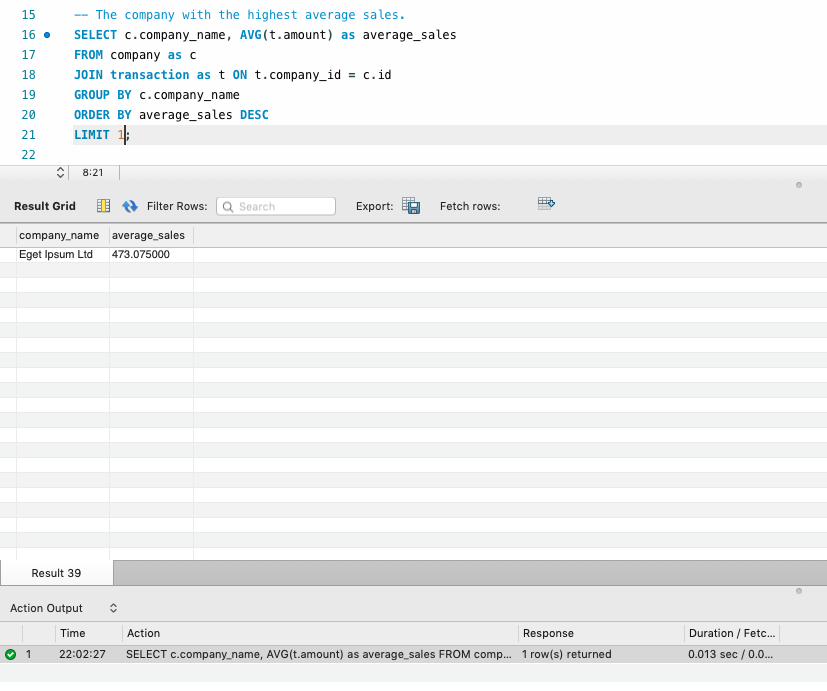
* List of countries that make purchases (using JOIN)



* From how many countries the purchases are made? (using JOIN)



* Company with the highest average sales (using JOIN).

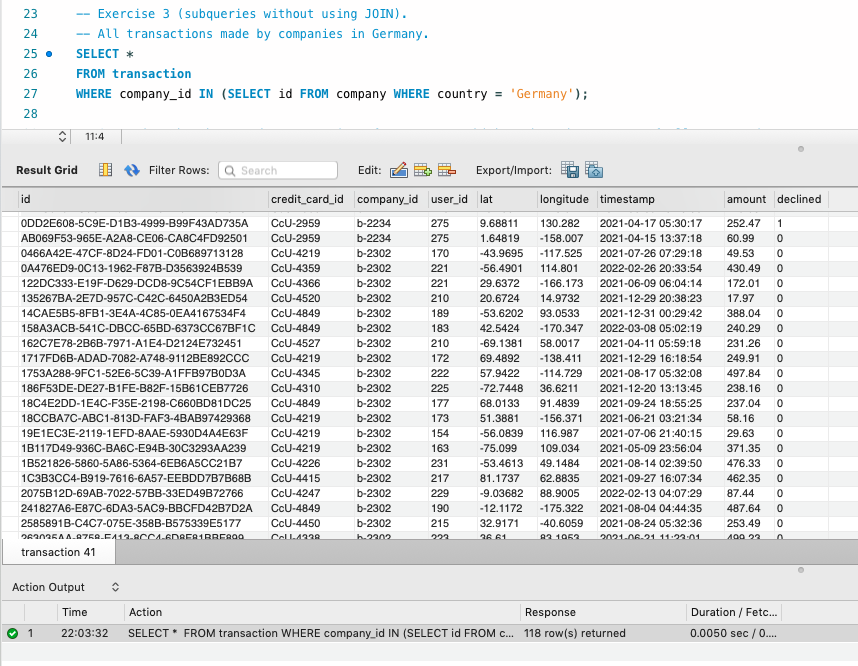


*\*\* All transactions are taken into account, if we consider only successful transactions as sales, then declined transactions should be ignored*.

**Exercise 3.**

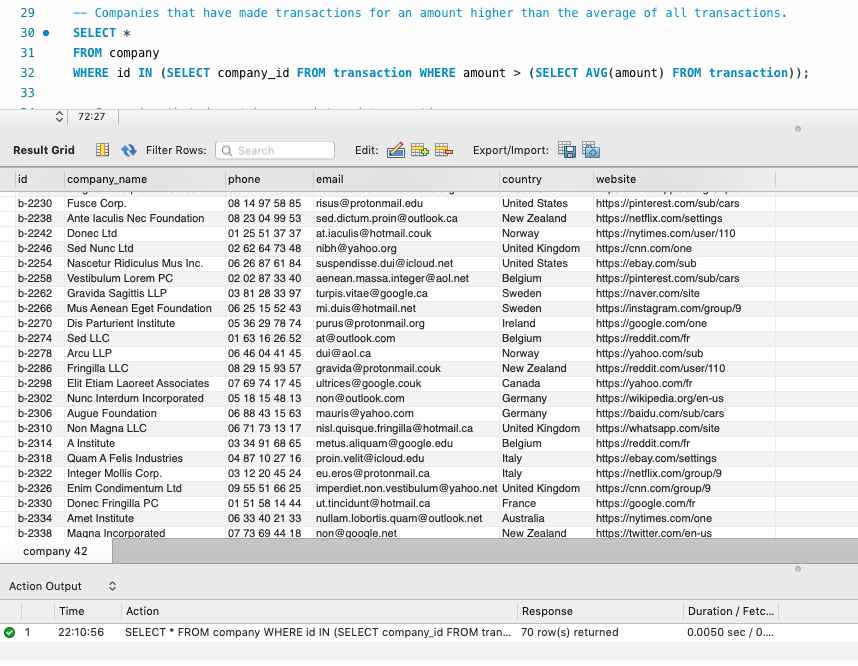
* All transactions made by companies in Germany

(subqueries without using JOIN).



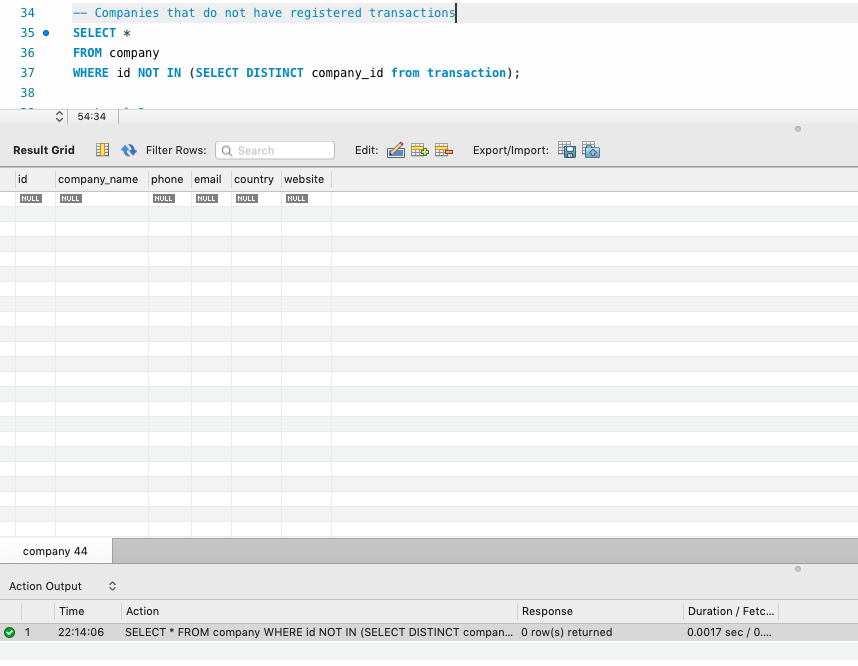
* List of companies that have made transactions for an amount higher than the average of all transactions

(subqueries without using JOIN).



* Companies that do not have registered transactions will be removed from the system, provide the list of these companies

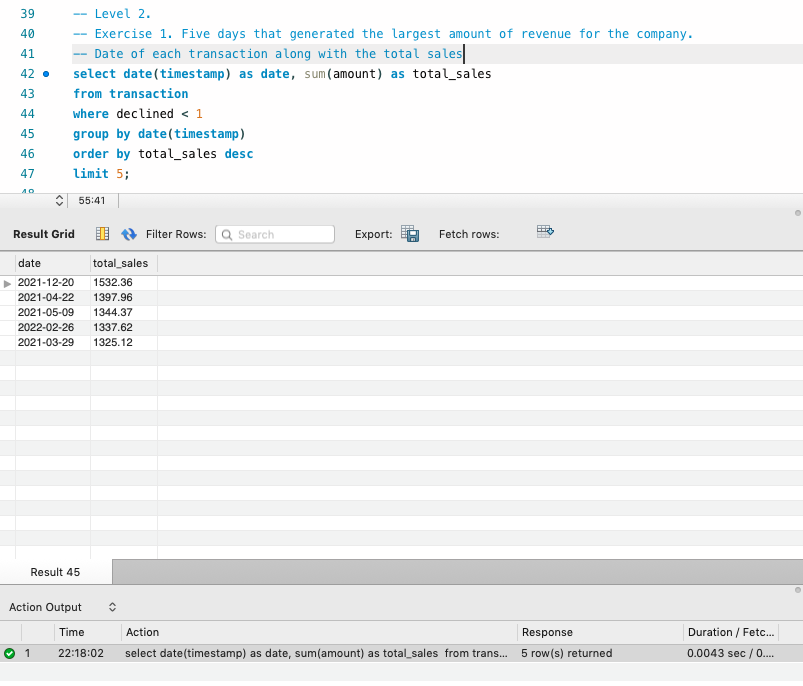
(subqueries without using JOIN).



**Level 2.**

**Exercise1.**

Five days that generated the largest amount of revenue for the company (date of each transaction along with the total sales)

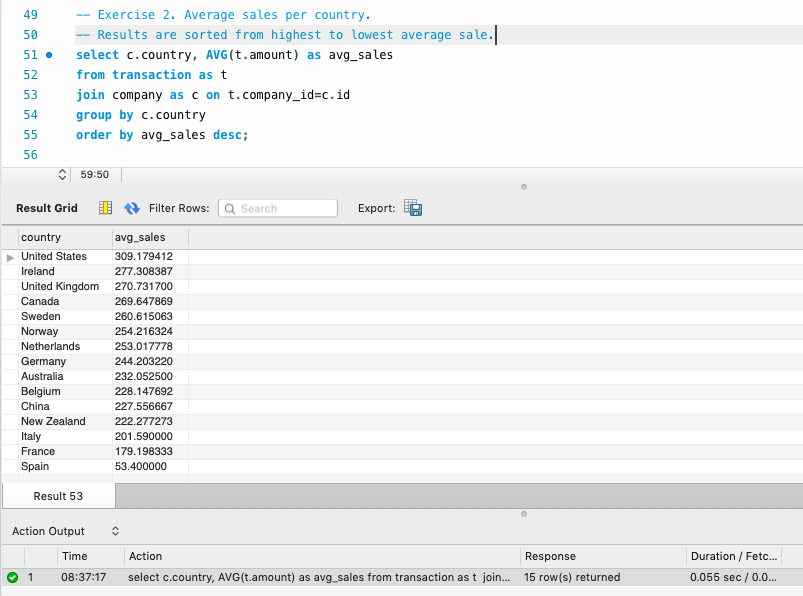


*\*\* Declined transactions were not taking into account because they did not generate any profit for the company.*

**Exercise2.**

Average sales per country.

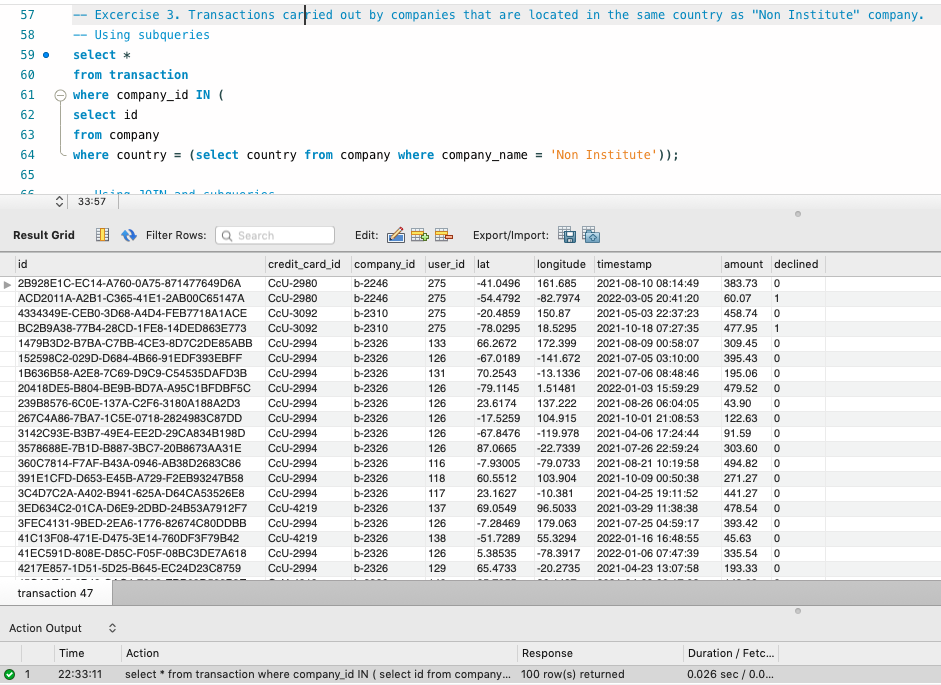
Results are sorted from highest to lowest average sale.



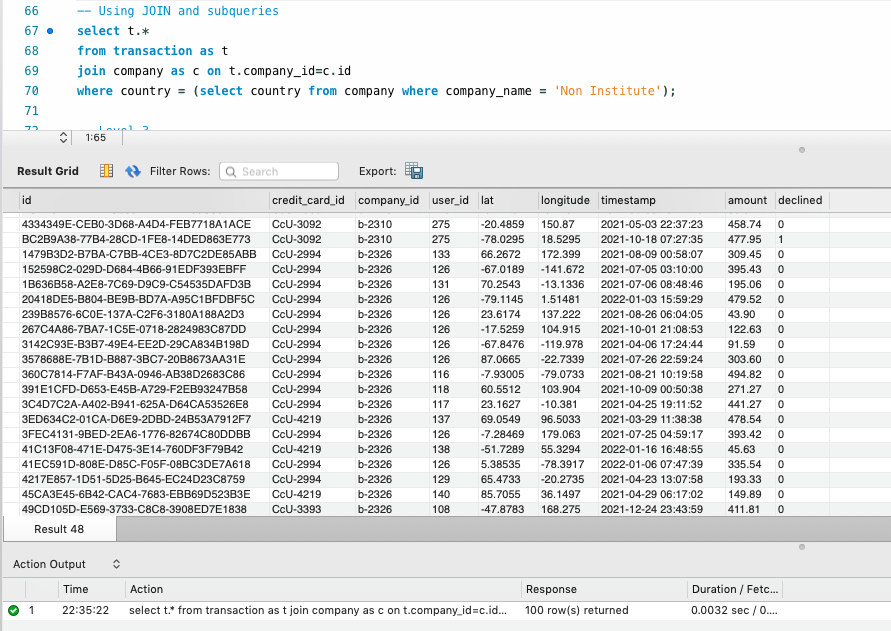
**Exercise3.**

Transactions carried out by companies that are located in the same country as "Non Institute" company.

* using only subqueries



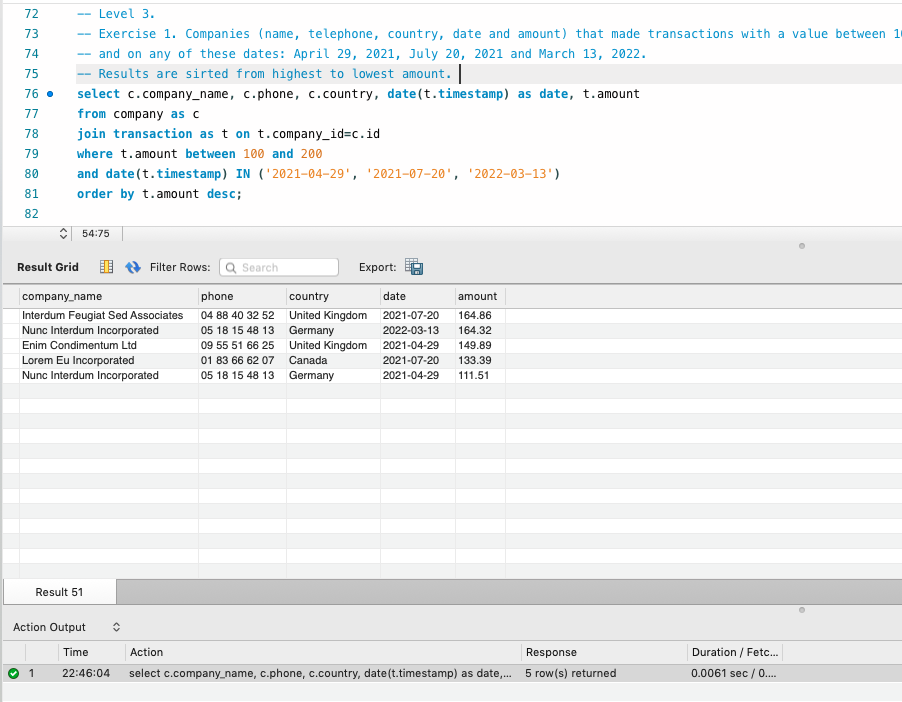
* Using JOIN and Subqueries



**Level 3.**

**Exercise1.**

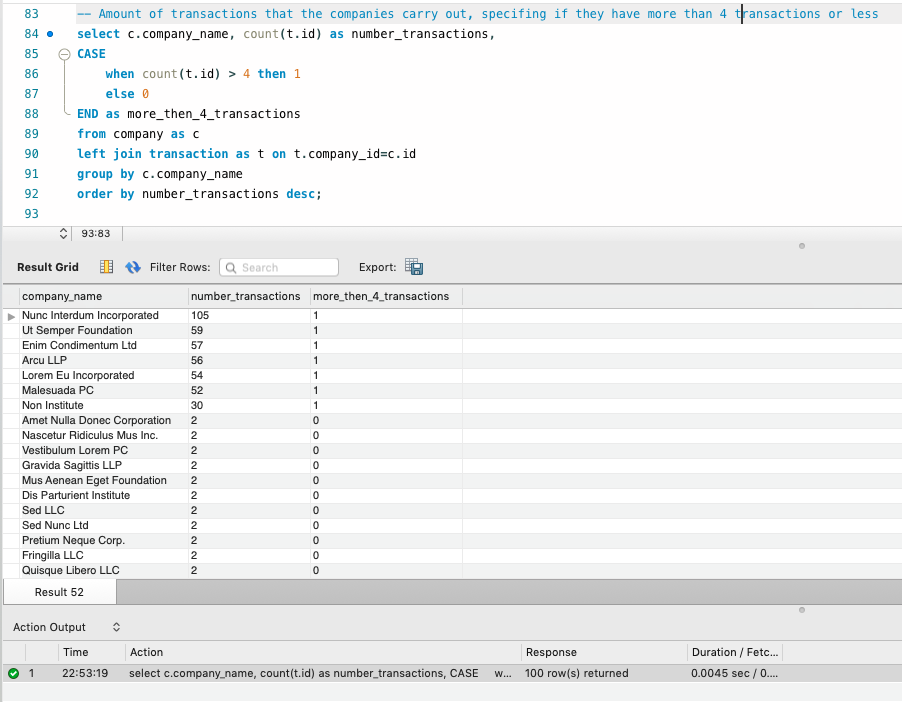
List of companies (name, telephone, country, date and amount) that made transactions with a value between 100 and 200 euros and on any of these dates: April 29, 2021, July 20, 2021 and March 13, 2022 (results are sorted from highest to lowest amount).



*\*\* Values 100 and 200 are included*

**Exercise2.**

List of companies with the amount of transactions they have made, specifying whether they have made more than 4 transactions or less.



*\*\* Left JOIN was used to provide information about all the companies from the ‘company’ table, regardless of whether they made any transaction.*