**Step 4. Exploratory data analysis (Python)**

In addition to the data you retrieved in the previous tasks, you've been given a second file. You now have these two CSVs:

[/datasets/project\_sql\_result\_01.csv](https://practicum-content.s3.us-west-1.amazonaws.com/learning-materials/data-analyst-eng/moved_project_sql_result_01.csv). It contains the following data:

*company\_name*: taxi company name

*trips\_amount*: the number of rides for each taxi company on November 15-16, 2017.

[/datasets/project\_sql\_result\_04.csv](https://practicum-content.s3.us-west-1.amazonaws.com/learning-materials/data-analyst-eng/moved_project_sql_result_04.csv). It contains the following data:

*dropoff\_location\_name*: Chicago neighborhoods where rides ended

*average\_trips*: the average number of rides that ended in each neighborhood in November 2017.

For these two datasets you now need to

* import the files
* study the data they contain
* make sure the data types are correct
* identify the top 10 neighborhoods in terms of drop-offs
* make graphs: taxi companies and number of rides, top 10 neighborhoods by number of dropoffs
* draw conclusions based on each graph and explain the results

**Step 5. Testing hypotheses (Python)**

[/datasets/project\_sql\_result\_07.csv](https://practicum-content.s3.us-west-1.amazonaws.com/learning-materials/data-analyst-eng/moved_project_sql_result_07.csv) — the result of the last query. It contains data on rides from the Loop to O'Hare International Airport. Remember, these are the table's field values:

* *start\_ts*
  + pickup date and time
* *weather\_conditions*
  + weather conditions at the moment the ride started
* *duration\_seconds*
  + ride duration in seconds

Test the hypothesis:

"The average duration of rides from the Loop to O'Hare International Airport changes on rainy Saturdays."

Decide where to set the significance level (alpha) on your own.

Explain:

* how you formed the null and alternative hypotheses
* what criterion you used to test the hypotheses and why