

## 1. Generating transactions with transactions.py

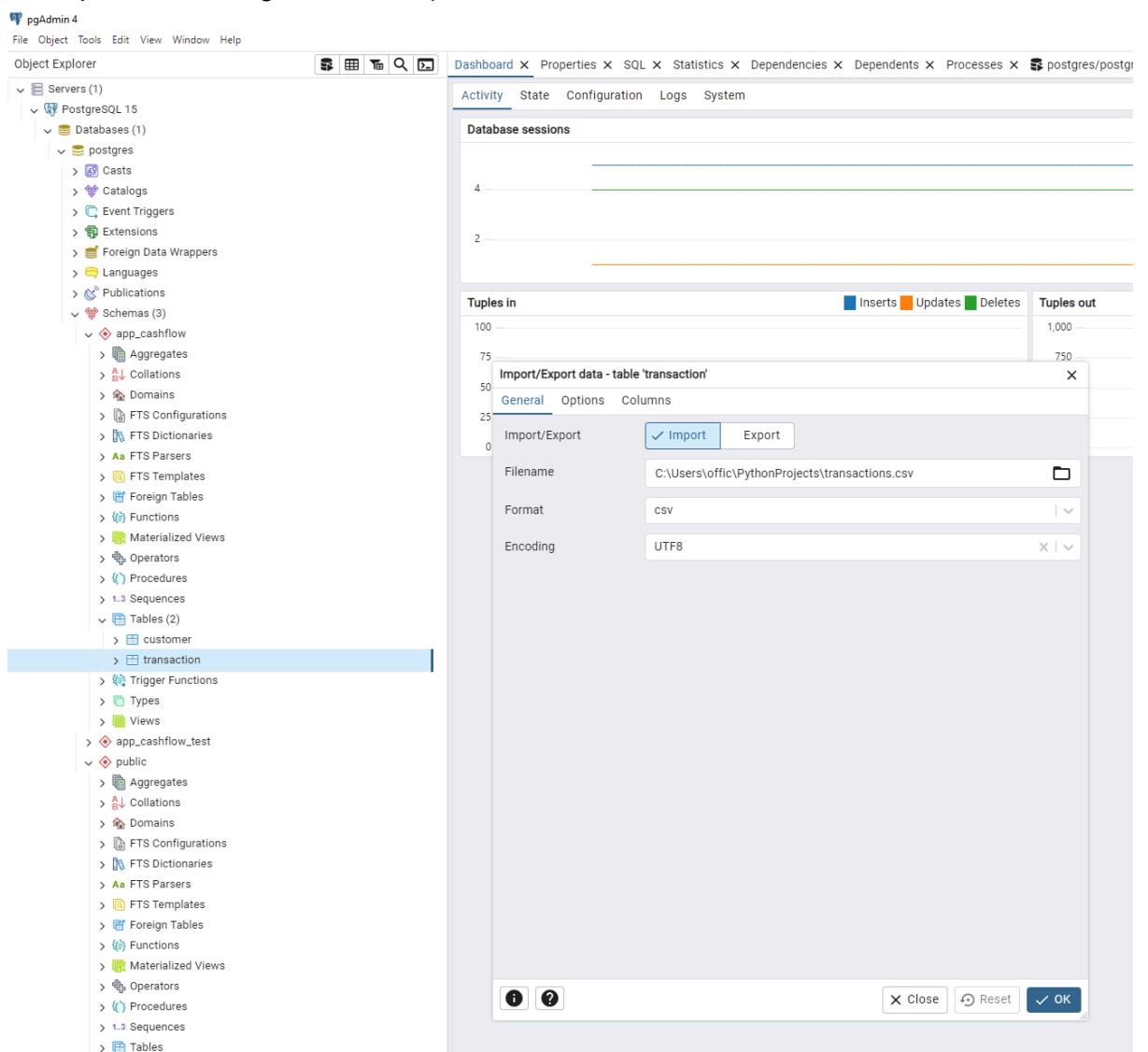
- When generating transactions with transactions.py file the exchange\_rates.csv file should be in the same folder as the transactions.py file, it will load the exchange rates from 01.01.2023 - 29.11.2024 from there.
- Look for the descriptions on top of defined functions that names are listed below:

- generate\_transactions\_1(num\_transactions, transaction\_id, seb\_customer=None)
- generate\_transactions\_seb\_2a(num\_transactions, id, selected\_seb\_customers)
- generate\_transactions\_seb\_2b(num\_transactions, id, selected\_seb\_customers, type)
- generate\_transactions\_3(num\_transactions, transaction\_id, dc, selected\_seb\_customers, counterparties)
- generate\_transactions\_4(num\_transactions, transaction\_id, dc, selected\_seb\_customers, counterparties)

- functions are called in the bottom of the **transactions.py** file from `def main():` function.
- SEB Customer companies, in list `seb_customers_companies` are hard coded along with their bank accounts `seb_customers_ibans_companies`. Company with id = “000001” and name “**Oval-O Eesti AS**” represents a chain store in Estonia with 30 different bank accounts. Chain stores from the same parent company in different countries are hardcoded in list `oval_group_counterparties` so it is possible to generate transactions between them. Also since these are stores, many customers should be of Private type.
- SEB Customer companies with ids “000002” to “000008” in list `seb_customers_companies` represent companies with different activities, but belong to the same parent, so transactions between them could be more significant.

## 2. How to add “customers.csv” and “transactions.csv” to database via PgAdmin

1. open PgAdmin -> Servers -> Databases -> postgres -> Schemas -> app\_cashflow -> Tables -> customer (transaction second time) (right click opens menu) -> Import/Export Data ...
2. First choose path to customers.csv file (second time path to transactions.csv, picture corresponds to adding transactions)



### 3. Switch Header on, put Null Strings null

The screenshot shows the pgAdmin 4 interface with the following details:

- Object Explorer:** Shows the database structure under the 'PostgreSQL 15' server. The 'transaction' table is selected.
- Dashboard:** Shows activity metrics for database sessions.
- Import/Export data - table 'transaction' dialog:**
  - Tuples in:** Displays activity counts for Inserts, Updates, Deletes, and Tuples out.
  - General tab:** Contains settings for OID, Header (which is currently off), Delimiter, Quote, Escape, and NULL Strings. The NULL Strings field is set to 'null'.
  - Options tab:** Contains options for FTS Dictionaries, FTS Parsers, FTS Templates, Foreign Tables, Functions, Materialized Views, Operators, Procedures, and Sequences.
  - Columns tab:** Not visible in the screenshot.

4. In case of transactions, from the columns tab, remove the “id” column, it does not exist in the csv file, the database will create it automatically. But if you don’t remove it, you will get an error, because it will be looked during Import and it will give an error. (It took about 35 seconds to import a million rows of transactions).

The screenshot shows the PgAdmin 4 interface. The left sidebar is the Object Explorer, displaying the database structure. The main area shows a query editor with two commands:

```

1 DROP table app_cashflow.transaction;
2 DROP table app_cashflow.customer;

```

A modal dialog titled "Import/Export data - table 'transaction'" is open. It has tabs for General, Options, and Columns. The Columns tab is selected, showing a list of columns with checkboxes. Most checkboxes are checked, except for the first one which is crossed out with a red X. Below the list is a note: "An optional list of columns to be copied. If no column list is specified, all columns of the table will be copied." A dropdown menu labeled "NOT NULL columns..." is shown. The Data Output tab is also visible. At the bottom right of the modal are buttons for Close, Reset, and OK.