Databases. Lab 3

Exercise 2.

(1) Order country entries by id asc, then show the 12th to 17th rows:

Note: Order by can't be expressed in relational algebra, as well as LIMIT & OFFSET

$\sigma_{\top}(country)$.

Where $\top$ - stands for true in propositional logic

(2) List all addresses in a city whose name starts with "A"

$cities\_with\_A \leftarrow \pi_{city\_id}(\sigma_{city\ LIKE\ 'A\%'}(city))$

$\pi_{address}(\sigma_{city\_id \in cities\_with\_A}(address))$

(3). List all customers first name, last name & the city they live in.

$T_1 \leftarrow \pi_{address\_id, city}(city) \bowtie_{city\_id=} address$

$T_2 \leftarrow Customer \bowtie_{=address\_id} T_1$

$\pi_{customer.first\_name, customer.last\_name, T_2.city}(T_2)$

(4) Find all customers with at least one payment whose amount is greater than $11.

$T_1 \leftarrow \Pi_{customer\_id}(\sigma_{amount>11}(payment))$

$\Pi_{first\_name, last\_name}(\sigma_{customer\_id \in T_1}(customer))$

⑤ Find all duplicated first names in the customer table.

$first\_names \leftarrow \Pi_{first\_name}(customer)$

$T_1(first\_name, count) \leftarrow first\_name\ \mathcal{F}_{count(first\_name)}(first\_names)$

$\sigma_{count>1}(T_1)$