

Relational Algebra Examples

Give an expression in the relational algebra for each of the following queries:

branch (*branch_name*, *branch_city*, *assets*)
customer (*customer_name*, *customer_street*, *customer_city*)
account (*account_number*, *branch_name*, *balance*)
loan (*loan_number*, *branch_name*, *amount*)
depositor (*customer_name*, *account_number*)
borrower (*customer_name*, *loan_number*)

a. Find the names of all customers who live in “Stamford”.

a. $\pi_{customer_name} (\sigma_{customer_city = \text{“Stamford”}} (customer))$

b. Find the names and account numbers of all customers who live in “Brooklyn” who have deposit accounts.

b. $\pi_{customer_name, account_number} (depositor \bowtie (\sigma_{customer_city = \text{“Brooklyn”}} (customer)))$

c. Find the names, loan numbers and amounts of all customers who have loans at the “Mianus” branch.

c. $\pi_{customer_name, loan_number, amount} (\sigma_{(branch_name = \text{“Mianus”})} (loan \bowtie borrower))$