

## Tutorial: Relational Algebra

This tutorial uses the schema from Pizza. You are encouraged to use the relational algebra evaluator<sup>1</sup> for testing. Alternatively, you may simply write a more relaxed version of relational algebra that is closer to SQL query.

1. Translate the following queries into relational algebra.
  - (a) Find all pizzas that Alice likes but not pizzas that Bob likes.
  - (b) Find all customer-restaurant pairs  $(C, R)$  where  $C$  and  $R$  both located in the same area and  $C$  likes some pizza that is sold by  $R$  where the price of the pizza is less than \$15.
  - (c) For all customer, find the pizza that they do not like (i.e., not in their likes table). The result should be the pair  $(cname, pizza)$ .

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<sup>1</sup><https://relational-algebra-evaluator.onrender.com/>