

Relational Algebra of the first 5 Queries for ACR Database.

- 1) $\Pi\{\text{cust_code}, \text{cust_surname}, \text{city}, \text{street}, \text{street_number}, \text{postal_code}, \text{phone_number}\}(\text{Customer})$.
- 2) $\Pi\{\text{rental_code}, \text{rental_date}, \text{return_date} \mid \sigma\{\text{Rental.rental_value} > 200 \wedge \text{Rented_from.rental_code} = \text{Rental.rental_code} \wedge \text{Return_to.rental_code} = \text{Rental.rental_code}\}\}(\text{Rental} \times \text{Customer} \times \text{Return_to} \times \text{Rented_from})$.
- 3) $\Pi\{\text{cust_code}, \text{cust_name}, \text{cust_surname}, \text{phone_number}, \text{rental_code} \mid \sigma\{\text{Customer.cust_code} = \text{Rents.cust_code} \wedge \text{Rental.rental_code} = \text{Rents.rental_code}\}\}(\text{Customer} \times \text{Rents} \times \text{Rental})$.
- 4) $\delta\{\text{rental_value} \leftarrow \text{rental_value} * 0.95\}(\text{Rental})$
- 5) $\Pi\{\text{cust_name}, \text{cust_surname}, \text{phone_number} \mid \sigma\{\text{Region.code} = 10025 \wedge \text{Region.code} = \text{Lives_in.code} \wedge \text{Customer.cust_code} = \text{Lives_in.cust_code} \wedge \text{Rental.rental_code} = \text{Rented_from.rental_code} \wedge \text{Rental.rental_code} = \text{Return_to.rental_code} \wedge \text{Rented_from.rental_date} < '20100923 00:00:00 \text{ AM}' \wedge \text{Return_to.return_date} > '20100923 00:00:00 \text{ AM}'\}\}(\text{Customer} \times \text{Region} \times \text{Rented_from} \times \text{Return_to} \times \text{Rental} \times \text{Lives_in} \times \text{Rents})$