

Question 2 Homework 5

To convert the SQL query to a relational algebra tree, we first analyze the SQL that identifies customers who ordered both 'Bose QuietComfort Earbuds' and 'Beats Fit Pro' using **Orders** and **OrderItems**. The relational algebra involves:

1. **Selection** to filter **OrderItems** for the two specific products.
2. **Join** to link **Orders** with **OrderItems** where the order IDs match.
3. **Projection** to display the customer ID and item name.
4. **Grouping** to aggregate results by customer ID, counting distinct item names.
5. **Selection** again to ensure only customers who ordered both items are shown.

The relational algebra tree represents these operations sequentially from filtering and joining to aggregation and final selection, ensuring that only relevant data meeting all conditions is included.