# Task E: Joins, Grouping, Operators (Reinforcement)

## 1. \*\*Average Order Value by City (Delivered Only)\*\*     - Output: city, avg\_order\_value, delivered\_orders\_count. Order by `avg\_order\_value` desc. Use `HAVING` to keep cities with at least 2 delivered orders.

**SELECT**

*c*.city,

**AVG**(*p*.amount) **AS** *avg\_order\_value*,

**COUNT**(**DISTINCT** *o*.order\_id) **AS** *delivered\_orders\_count*

**FROM** training\_ecom.customers *c*

**JOIN** training\_ecom.orders *o* **ON** *c*.customer\_id = *o*.customer\_id

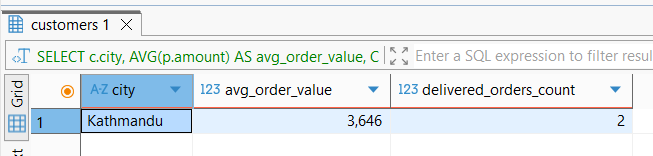
**JOIN** training\_ecom.payments *p* **ON** *o*.order\_id = *p*.order\_id

**WHERE** *o*.status = 'delivered'

**GROUP** **BY** *c*.city

**HAVING** **COUNT**(**DISTINCT** *o*.order\_id) >= 2

**ORDER** **BY** *avg\_order\_value* **DESC**;



## 2. \*\*Category Mix per Customer\*\*     - For each customer, list categories purchased and the \*\*count of distinct orders\*\* per category. Order by customer and count desc.

**SELECT**

*c*.customer\_id,

*c*.full\_name,

*p*.category,

**COUNT**(**DISTINCT** *o*.order\_id) **AS** *order\_count*

**FROM** training\_ecom.customers *c*

**JOIN** training\_ecom.orders *o* **ON** *c*.customer\_id = *o*.customer\_id

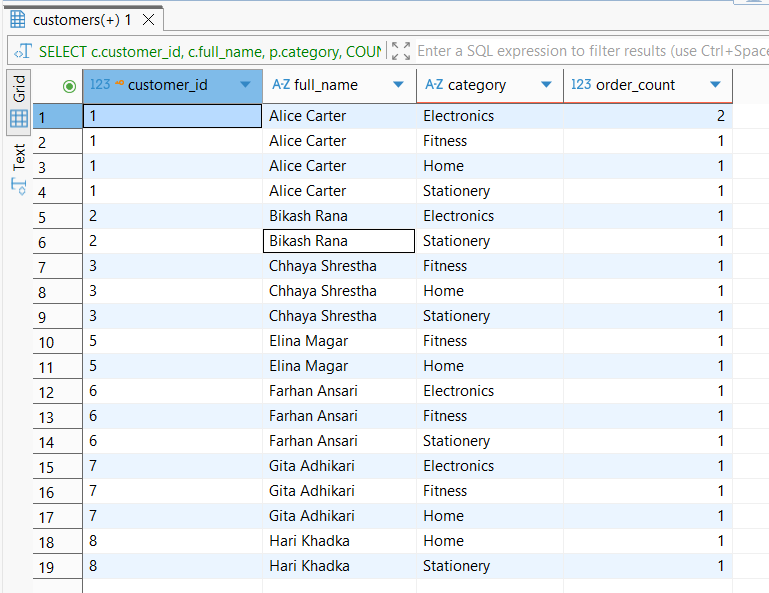
**JOIN** training\_ecom.order\_items *oi* **ON** *o*.order\_id = *oi*.order\_id

**JOIN** training\_ecom.products *p* **ON** *oi*.product\_id = *p*.product\_id

**WHERE** *o*.status != 'cancelled'

**GROUP** **BY** *c*.customer\_id, *c*.full\_name, *p*.category

**ORDER** **BY** *c*.customer\_id, *order\_count* **DESC**;



## 3. \*\*Set Ops: Overlapping Customers\*\*     - Split customers into two sets: those who bought `Electronics` and those who bought `Fitness`. Show:       - `UNION` of both sets,       - `INTERSECT` (bought both),       - `EXCEPT` (bought Electronics but not Fitness).

## -- UNION: Customers who bought Electronics or Fitness

**SELECT**

*c*.customer\_id,

*c*.full\_name

**FROM** training\_ecom.customers *c*

**JOIN** training\_ecom.orders *o* **ON** *c*.customer\_id = *o*.customer\_id

**JOIN** training\_ecom.order\_items *oi* **ON** *o*.order\_id = *oi*.order\_id

**JOIN** training\_ecom.products *p* **ON** *oi*.product\_id = *p*.product\_id

**WHERE** *p*.category = 'Electronics' **AND** *o*.status != 'cancelled'

**UNION**

**SELECT**

*c*.customer\_id,

*c*.full\_name

**FROM** training\_ecom.customers *c*

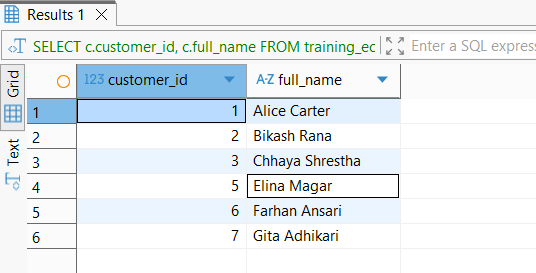
**JOIN** training\_ecom.orders *o* **ON** *c*.customer\_id = *o*.customer\_id

**JOIN** training\_ecom.order\_items *oi* **ON** *o*.order\_id = *oi*.order\_id

**JOIN** training\_ecom.products *p* **ON** *oi*.product\_id = *p*.product\_id

**WHERE** *p*.category = 'Fitness' **AND** *o*.status != 'cancelled'

**ORDER** **BY** customer\_id;



## -- INTERSECT: Customers who bought both Electronics and Fitness

**SELECT**

*c*.customer\_id,

*c*.full\_name

**FROM** training\_ecom.customers *c*

**JOIN** training\_ecom.orders *o* **ON** *c*.customer\_id = *o*.customer\_id

**JOIN** training\_ecom.order\_items *oi* **ON** *o*.order\_id = *o*.order\_id

**JOIN** training\_ecom.products *p* **ON** *oi*.product\_id = *p*.product\_id

**WHERE** *p*.category = 'Electronics' **AND** *o*.status != 'cancelled'

**INTERSECT**

**SELECT**

*c*.customer\_id,

*c*.full\_name

**FROM** training\_ecom.customers *c*

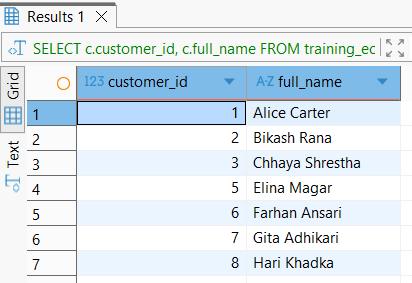
**JOIN** training\_ecom.orders *o* **ON** *c*.customer\_id = *o*.customer\_id

**JOIN** training\_ecom.order\_items *oi* **ON** *o*.order\_id = *o*.order\_id

**JOIN** training\_ecom.products *p* **ON** *oi*.product\_id = *p*.product\_id

**WHERE** *p*.category = 'Fitness' **AND** *o*.status != 'cancelled'

**ORDER** **BY** customer\_id;



## -- EXCEPT: Electronics but not Fitness

**SELECT**

*c*.customer\_id,

*c*.full\_name

**FROM** training\_ecom.customers *c*

**JOIN** training\_ecom.orders *o* **ON** *c*.customer\_id = *o*.customer\_id

**JOIN** training\_ecom.order\_items *oi* **ON** *o*.order\_id = *o*.order\_id

**JOIN** training\_ecom.products *p* **ON** *oi*.product\_id = *p*.product\_id

**WHERE** *p*.category = 'Electronics' **AND** *o*.status != 'cancelled'

**EXCEPT**

**SELECT**

*c*.customer\_id,

*c*.full\_name

**FROM** training\_ecom.customers *c*

**JOIN** training\_ecom.orders *o* **ON** *c*.customer\_id = *o*.customer\_id

**JOIN** training\_ecom.order\_items *oi* **ON** *o*.order\_id = *o*.order\_id

**JOIN** training\_ecom.products *p* **ON** *oi*.product\_id = *p*.product\_id

**WHERE** *p*.category = 'Fitness' **AND** *o*.status != 'cancelled'

**ORDER** **BY** customer\_id;

