

# 2025 CpSc H Q1 1

## Section: Database Design and Development

# Topic: Entity-Relationship Diagrams and Data Modelling

## Question Summary

Draw an ERD for a laundry company database with entities Customer, Order, Item, and OrderItem. Show entity names and cardinalities (attributes not required).

## Worked Solution

Interpretation of the schema (based on primary/foreign keys listed):

- A Customer places many Orders → 1 Customer : Many Orders (1:M).

- Each Order contains many OrderItems → 1 Order : Many OrderItems (1:M).
- Each Item can appear in many OrderItems → 1 Item : Many OrderItems (1:M).

Therefore, Order and Item are in a many-to-many relationship, resolved by the associative entity OrderItem (with its own identifier orderItemID and FKs to both Order and Item).

## ERD (cardinalities)

## Customer Order Item

(customerID) (orderID) (itemID)

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OrderItem (orderItemID, orderID\*, itemID\*, quantity, price)

MM

## Final Answer

**Entities:** Customer, Order, Item, OrderItem.

### Relationships & cardinalities:

- Customer 1 — MOrder
- Order 1 — MOrderItem
- Item 1 — MOrderItem

Thus Order M — MItem via OrderItem (associative entity).

## Revision Tips

- Use an associative/bridge entity to resolve many-to-many relationships.
- Cardinality: 1:1, 1:M, M:N (resolved to two 1:M via an associative entity).
- Show only entity names and crow's-foot/1 notation when attributes are not requested.

