# Extra Problem Solving Session

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**By:**

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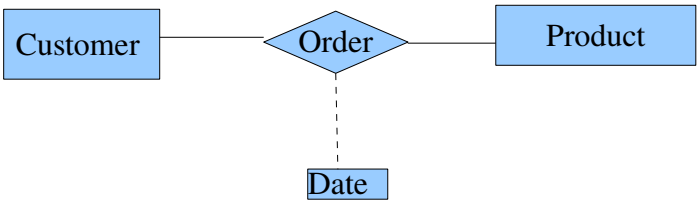
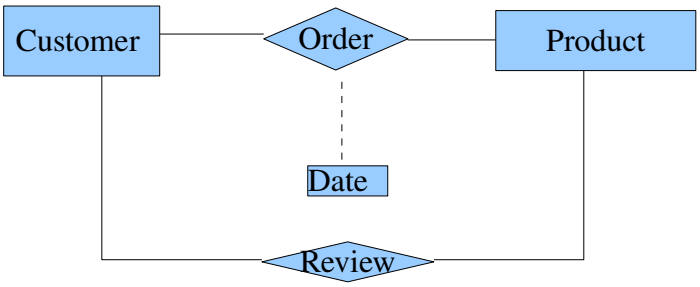
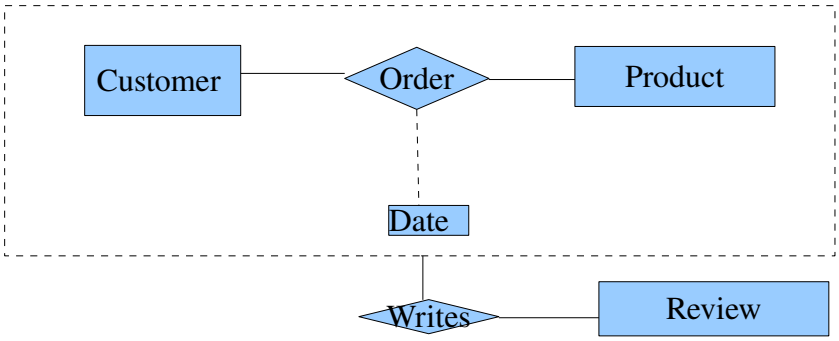
**Problem 1 ::** Design ER Diagram for a Shop where People Order some Products.
**Solution ::**



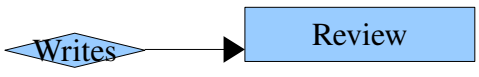

**Problem 2 ::**What changes should be made if people can give Review about Products ?
**Solution ::**




**Problem 3 ::**What if we add Constraint that Review should be Given By only Custmoer Who have Purchased Atleast One Product ?
**Solution ::** Use Aggregation, Treat Order Relation as an entity Set .




**Problem 4 ::** What if Customer is allowed to write atmost one Review per Product?
**Solution ::**

- 


but for multiple orders we can make only 1 Review here . So Rejected .

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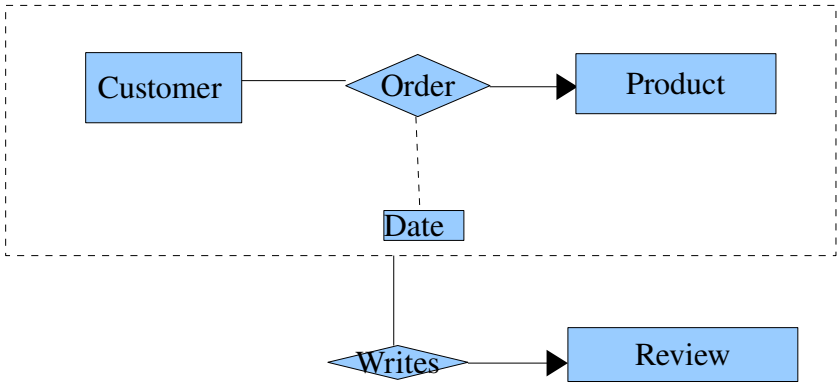
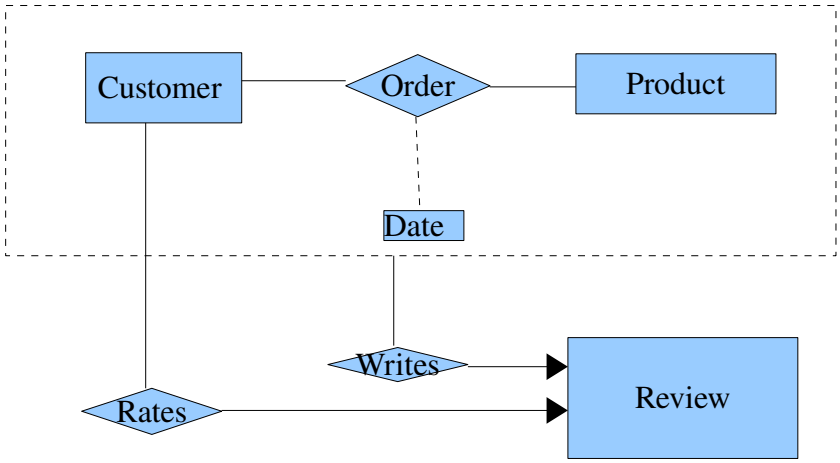
but here Customer can place review for same order here. So Rejected.

- now Order can have only 1 Product .and our Constraint of writing Review atmost once per Product buyed is also satisfied .




**Problem 5 ::** What changes should be made to allow Rating of Review by another customers ?
**Solution ::**




**<u>Conversion of ER Diagram to Relational Schema</u>**

for Attributes of type :-

- **Simple** : Make a Column corresponding to each.
- **Composite** : Make Columns for each lowest level attribute.
- **Multivalued** : Make seprate Tables .
- **Derived** : No need to add them inside Table.
- In **Aggregation** (Multi to Single Relation) :
  1) Seprate Table For Relation
  2) Optimise by adding attribute in the multi side.

**Relatinal Model Basic Operators are π, ∞,σ , Set Operations .**

Note :: compatability issues should be taken care of for set operations.

Now Let
Customer have attributes like cid , cname , address etc.
Product have attributes like pid , pname , price , weight etc.
Review have attribute rid.
Rates have attribute value .

**Problem 1 ::** Select all cname .

**Solution ::** $\pi_{cname}$ (Customer)

**Problem 2 ::** Select Customer ID who have ordered Products .

**Solution ::** R1 = $\pi_{cid}$ ( $\sigma_{pid=x}$ (Order) )

**Problem 3 ::** Now get Customer's Name and Addresses in above output Relation.

**Solution ::** $\pi_{cname\ ,\ address}$ (Customer X R1)

**Problem 4 ::** Now give list of all Customer ID who have bought Product X and placed Reviews also ? Also give the Review Ids ?

**Solution ::** R2 = $\pi_{cid\ ,\ rid}$ ( $\sigma_{pid=x \text{ and rid is not null}}$ (Order))

**Problem 5 ::** Now only Review ID who have Rating above 4 ? Names and Addresses also ?

**Solution ::** R3 = $\pi_{value > 4}$ (Rates)

R4 = $\pi_{rid}$ (R2)
R5 = R4 ∞ R2
here R5 gives rid's and for names and addresses ( Customer ∞ R5 ) .

**Question ::** Difference between `with` and `view` operator in Sql ?

**Answer ::** with - is local to a particular query . i.e. For temporary relation .
view - persistent across multiple queries .