**ER Diagram to Third**

**Normal Form**

**1a. Handle all of the entities** -> Customer, Order,Item, City, Storage

**Customer** (Customer\_Name, Phone\_Number, Address)

**Order** (Order\_Number, Date)

**Item** (Item\_ID, Color, Size, Description)

**City** (City\_Name, State, HeadQuartersAddr)

**Store** (Store\_ID, Manager, Address)

**1b. No strong entities that are subtypes**

**1c. No weak entities**

**2a. Handle relationships**

**No, one-to-one relationships**

**2b. one-to-many relationships** -> Order, Store

**Order** (Order\_Num, Date, Customer\_Name†)

**Store** (Store\_ID, Manager, Address, City\_Name†)

**2c. many-to-many relationships ->** ordered in, stored in, hold

**ordered in** (Item\_ID†, Order\_Num†, Quantity)

**stored in** (City\_Name†, Item\_ID†, Quantity)

**hold** (Item\_ID†, Store\_ID†, Quantity)

**2d. Relationships of degree** **> 2**

**None**

**List of foreign keys (\_\_\_\_\_\_\_†)**

**Order** (Order\_Num, Date, Customer\_Name†)

* Customer\_Name† (FK), the home relation is Order

**Store** (Store\_ID, Manager, Address, City\_Name†)

* City\_Name† (FK), the home relation is Store

**ordered\_in** (Item\_ID†, Order\_Num†, Quantity)

* Item\_ID†, Order\_Num† (FKs)

**stored\_in** (City\_Name†, Item\_ID†, Quantity)

* City\_Name†, Item\_ID† (FKs)

**hold** (Item\_ID†, Store\_ID†, Quantity)

* Item\_ID†, Store\_ID† (FKs)

**Final Schema**

**Customer** (Customer\_Name, Phone\_Number, Address)

**Order** (Order\_Num, Date, Customer\_Name†)

**Item** (Item\_ID, Color, Size, Description)

**City** (City\_Name, State, HeadQuartersAddr)

**Store** (Store\_ID, Manager, Address, City\_Name†)

**ordered\_in** (Item\_ID†, Order\_Num†, Quantity)

**stored\_in** (City\_Name†, Item\_ID†, Quantity)

**hold** (Item\_ID†, Store\_ID†, Quantity)