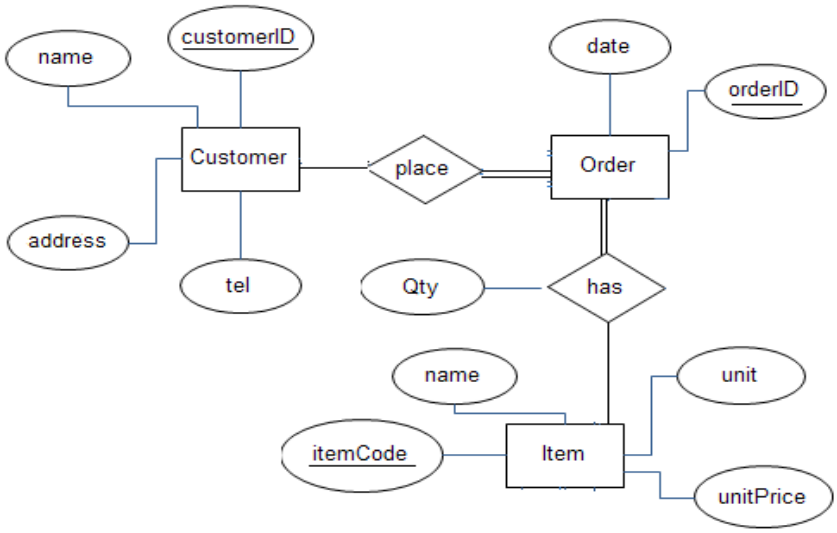
DB Sheet

Question 1:

Map the following ER diagram to relational model



Question 2:

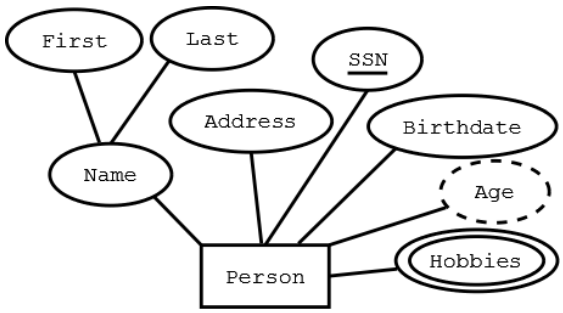
Use the normalization technique to design the following relation into relational database. Illustrate the resulted relation in each normal form. These relations represent a real estate agent office for renting properties

The agent stores data about property and the client who will rent the property. Property type is like flat, house, store…..Clients may rent different properties. The amount of rent may change from client to client ***6pts.***

R= PropertyNo, PropertyAdd, type, OwnerID, OwnerName {ClientNo, ClientName, Start_date, Finish_date, rent_amount}}

Question 3:

Draw the Relational schema for the following diagram



Question 4:

Draw the ER diagram for the following requirements

(a) Danube keeps track of products, sales, customers and cashiers. Each of these has a unique ID. A customer can have many products sold to them, but only one cashier will handle each sale.

(b) A bicycle shop keeps track of the many parts for each bicycle, and the supplier for each part. One part can have multiple suppliers. Parts, bicycles and suppliers have unique IDs and suppliers have multiple addresses.

Question 5:

Consider the following relations, primary keys are underlined, foreign keys are italic:

12pts.

Hotel (hotelNo, hotelName, city)
Room (room#, *hotelNo*, type, price)
Guest (guestID, guestName, address)
Booking (*hotelNo*,*Room#*, *guestID*, dateFrom, dateTo, amount_paid)

Write the syntax of queries to retrieve the following data:

a. Retrieve each hotel name with the number of rooms in it

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b. Retrieve the room# in Hilton hotel that has never been booked

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c. Retrieve each guest name and the name of hotel he/she reserved starting from 1/1/2020 in Jeddah

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d. Retrieve hotel name and the total price of all rooms in each hotel if the total price is greater than 20.000 SAR

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Question 6:

Draw an ER-diagram, using the following requirements

ABC real estate firm lists property for sale. The following describes this organization.

- The firm has a number of sales offices in several states. Attributes of sales office include Office Number (identifier) and Location.
- Each sales office is assigned one or more employees. Attributes of employee include Employee ID (identifier) and Employee Name. An employee must be assigned to only one sales office.
- For each sales office, there is always one employee assigned to manage that office. An employee may manage only the sales office to which he or she is assigned.
- The firm lists property for sale. Attributes of property include Property ID (identifier) and Location. Components of Location include Address, City, State, and Zip Code.
- Each unit of property must be listed with one (and only one) of the sales offices. A sales office may have any number of properties listed or may have no properties listed.
- Each unit of property has one or more owners. Attributes of owners are Owner ID (identifier) and Owner Name. An owner may own one or more units of property. It is important to specify the percentage owned by each owner for each property

Note: cardinality and participation should be illustrated