IS 475/675 - HW #1

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1)

a. Customer is a strong entity because it is independent of its relations to Does Business In and Order (requires a minimum cardinality of zero).

b. Order is a weak entity because it is dependent on both Customer and Order Line (requires a minimum cardinality of one).

c. The purpose of the Works In entity is to express a potential many-to-many relationship between Employees and Work Centers.

d. Since an Employee can work in zero to many work centers and a Work Center can have one to many Employees working in it, there must be an associative entity in between the two entities (Works In) to express the potential many-to-many relationship.

e. The Works In entity is an associative entity so its primary key is the composition of the Employee foreign key (Employee ID) and Work Center foreign key (Work Center ID).

f. A non-key attribute that may be stored in the Works In entity would be Time Worked.

g.

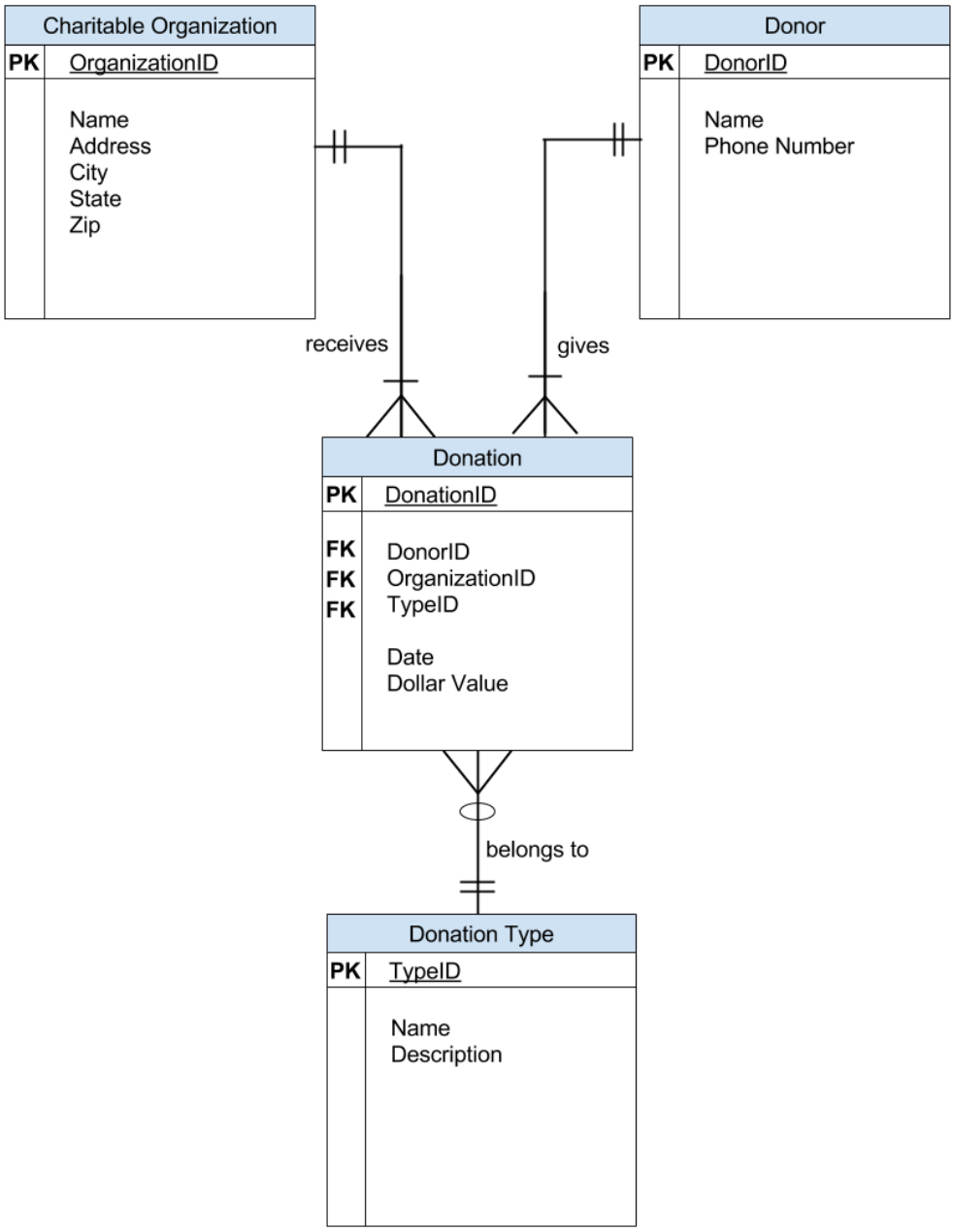
WORK CENTER	
Work Center ID	**Work Center Location**
1	Front
2	Side
3	Back

EMPLOYEE		
Employee ID	**Employee Name**	**Employee Address**
1	Amy	1234 Main St. Reno, NV 89501
2	Bob	1234 First St. Reno, NV 89502
3	Carol	1234 Second St. Reno, NV 89503

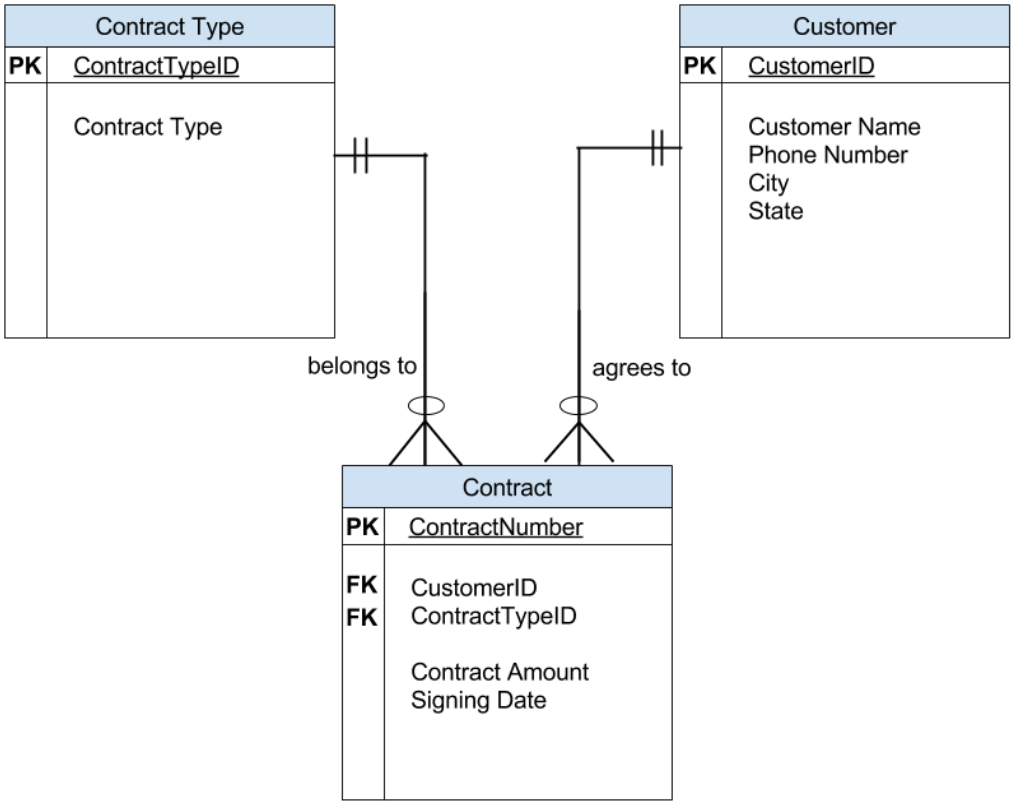
WORKS IN		
Work Center ID	**Employee ID**	**Time Worked**
3	2	5
2	1	10
1	3	15

h. Employee Name and Employee Address are both composite attributes because they have information that can be utilized further upon dissection. For example: Employee Address = 1234 Main St. Reno, NV 89501. Each piece of information extracted (Street Address, City, State, Postal Code) is a component attribute which is a detailed meaningful bit of information.

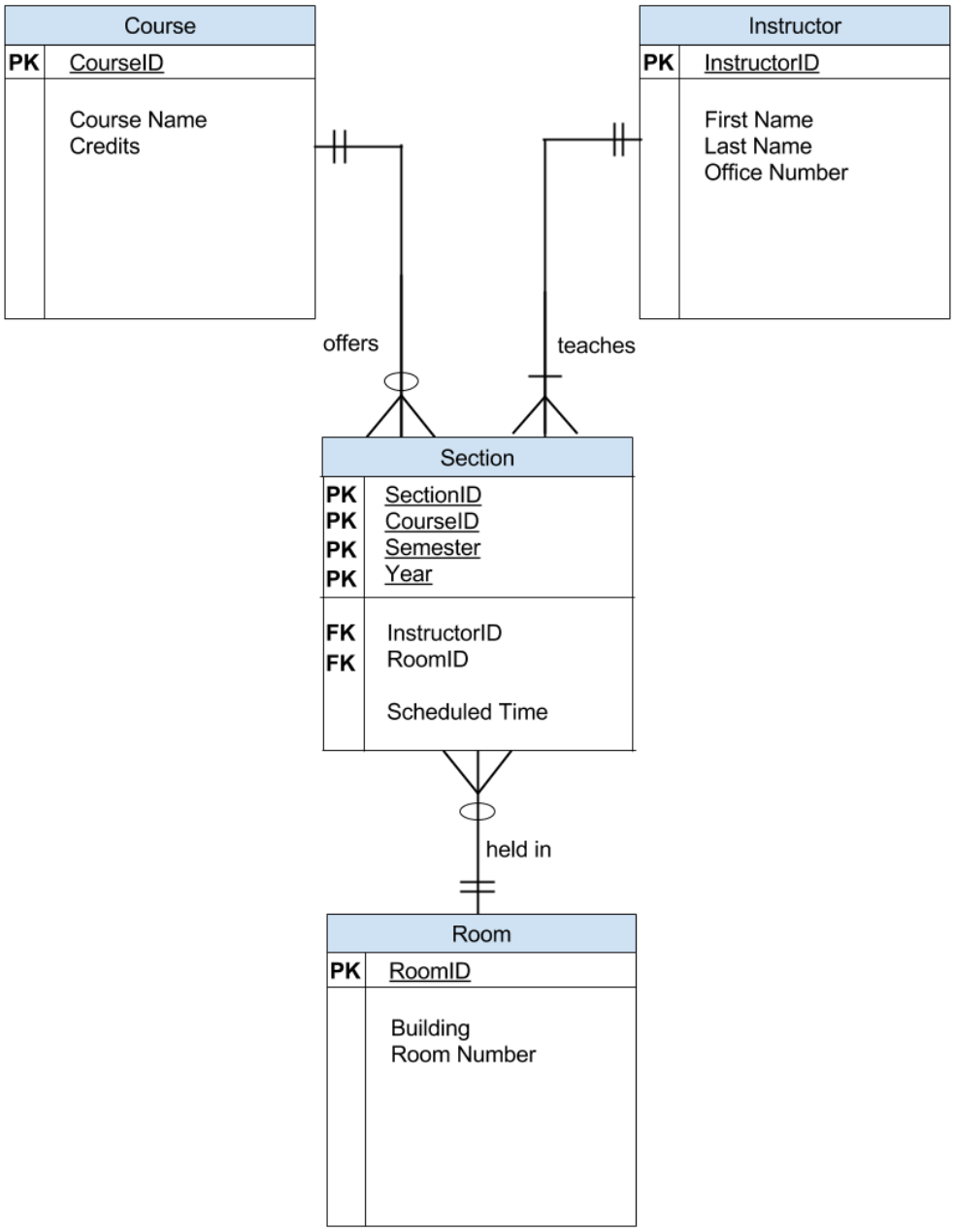
2)


Charitable Organization
PK OrganizationID
Name
Address
City
State
Zip
Donor
PK DonorID
Name
Phone Number
receives
gives
Donation
PK DonationID
FK DonorID
FK OrganizationID
FK TypeID
Date
Dollar Value
belongs to
Donation Type
PK TypeID
Name
Description

3)


Contract Type
PK
ContractTypeID
Contract Type
Customer
PK
CustomerID
Customer Name
Phone Number
City
State
belongs to
agrees to
Contract
PK
ContractNumber
FK
CustomerID
FK
ContractTypeID
Contract Amount
Signing Date

4)


Course
PK CourseID
Course Name
Credits
Instructor
PK InstructorID
First Name
Last Name
Office Number
offers
teaches
Section
PK SectionID
PK CourseID
PK Semester
PK Year
FK InstructorID
FK RoomID
Scheduled Time
held in
Room
PK RoomID
Building
Room Number