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Assignment 2

Due date: 9/14/15

CSCI 466/566

1.a

* MusicCD is in second normal form. MusicID, Title, Artist, GenreName are the primary keys.
* Report is in second normal form. ReportID, Title, DepartmentName are the primary keys.
* OrderItem is in second normal form. OrderNo is the primary key.

1.b

* MusicCD(Title, ArtistID - FK, GenreName – FK)
* Artist(ArtistID, artist)
* Genre(GenreName,CenreContact)
* Report(Title, DepartmentID – FK, AuthorID - FK)
* Department(DepartmentID, DepartmentName, DepartmentContact)
* Author(AuthorID, AuthorName)
* OrderItem(OrderNumber, ItemNumber – FK, Quantity,Discount, Shipped)
* Item(ItemNumber, LineCost, SellingPrice)

2.a

* Pet is in first normal for and Primary keys are pet\_id, procedureNo, visit\_date - fk

2.b

* Pet(TypeID – FK, Name, Age, OwnerID – FK)
* Procedure(Procedure\_No, Date, Procedure\_Name
* Owner(OwnerID, Name)
* Type(TypeID, Type)

3.Given the following relation(s) and functional dependencies, answer the questions.  
R (H, I, J, K, L, M, N, O)

FDs  
H, I → J, K, L J→ M  
K→ N  
L→ O

1. what normal form is the relation currently in? If it is not in 1NF, convert it to 1NF

* no
* H->I,J,K,M

1. after the previous step, if the relation is not in 2NF, convert it to 2NF

* no, H->K

1. after the previous step, if the relation is not in 3NF, covert it to 3NF

* yes, 3NF

4.Given the following relation and notes, answer the questions.

customer ( custno, cust\_name, cust\_addr, cust\_phone, (artist\_id,

artist\_name, art\_title, pur\_date, price) )

Notes: The DeKalb Art Gallery wishes to maintain data on their customers, artists and paintings. They may have several paintings by each artist in the gallery at one time. Paintings may be bought and sold several times. In other words, the gallery may sell a painting, then buy it back at a later date and sell it to another customer.

1. determine and list the functional dependencies.

* Custno -> cust\_name, cust\_addr, cust\_phone
* Artistid -> artist\_name, art\_title
* Pur\_date -> price

1. what normal form is the relation currently in? If it is not in 1NF, convert it to 1NF

* yes, 1NF

1. after the previous step, if the relation is not in 2NF, convert it to 2NF

* yes, 2NF

1. after the previous step, if the relation is not in 3NF, covert it to 3NF

* yes, 3NF