CSCI 466/566 Assignment 2 Spring 2017

Normalization

100 points

For each of the following relations, convert them into 3NF by the steps we used in class.

(1) price(product, sName, uPrice, qty, storeLocation, unitWeight)

Fds:

product, sname -> qty

sName -> storeLocation

product -> uprice, unitWeight

Is this relation in 1NF? If not, why isn't it? Then put it in 1NF.

Yes, this relation is in 1NF.

Is this relation in 2NF? If not, why isn't it? Then put it in 2NF.

No. Because there are non-keys which do not depend on the entire primary key.

Is this relation in 3NF? If not, why isn't it? Then put it in 3NF.

(2) person(personID, name, country, (phone, type))

FDs:

personID -> name, country, phone

name -> country

phone -> type

Is this relation in 1NF? If not, why isn't it? Then put it in 1NF.

Is this relation in 2NF? If not, why isn't it? Then put it in 2NF.

Is this relation in 3NF? If not, why isn't it? Then put it in 3NF.

(3) PetStore(storeBranchName, storeAddr, storeManager, (customerName, customerAddr, customerPhone, (petName, petBreed, petSex, price) ) )

FDs:

storeBranchName -> storeAddr, storeManager

customerName -> customerAddr, customerPhone

customerName, petName -> petBreed, petSex

customerName, storeBranchName -> petName

petBreed -> price

Is this relation in 1NF? If not, why isn't it? Then put it in 1NF.

Is this relation in 2NF? If not, why isn't it? Then put it in 2NF.

Is this relation in 3NF? If not, why isn't it? Then put it in 3NF.

(4) StockExchange(company, symbol, headquarters, date, close_price)

FDs:

symbol, date -> company, headquarters, close_price

symbol -> company, headquarters

Is this relation in 1NF? If not, why isn't it? Then put it in 1NF.

Is this relation in 2NF? If not, why isn't it? Then put it in 2NF.

Is this relation in 3NF? If not, why isn't it? Then put it in 3NF.