Harrison Pierce

Assignment #5 CSCI 360 Fall 2018

50 pts. Due 11/15/18

Show every step of your normalization process for credits. Steps include finding PK(CK), identifying violations of NF’s and decompositions.

1. (30 pts) Normalize the following table into 3-rd NF:

* R(x, y, z) Here x🡪y, y🡪z
* T(x, y, z, w) Here x🡪y, z 🡪 w
* Q(x, y, z) Here x 🡪 y, x🡪 z

---------------------------------------------------------------

* R(x, y, z) Here x🡪y, y🡪z

There is no violation of 1NF

No violation of 2NF

There is violation of 3NF: Transitive FD

R1(x,y) R2(y,z)

---------------------------------------------------------------

* T(x, y, z, w) Here x🡪y, z 🡪 w

No violation of 1NF

Violation of 2NF: x🡪y z🡪w

R1(x,z)

R2(x,y)

R3(z,w)

---------------------------------------------------------------

* Q(x, y, z) Here x 🡪 y, x🡪 z

No violation of 1NF

No violation of 2NF

No violation of 3NF

Q1(x,y) Q2(x,y)

---------------------------------------------------------------

1. (20 pts)Convert the following table to an equivalent collection of tables that is in third normal form. This table contains information about patients of a dentist. Each patient belongs to a household.

Patient (HouseholdNum, HouseholdName, Street, City State, Zip, Balance, PatientNum, PatientName, ServiceCode, Description, Fee, Date)

The following dependencies exist in the Patient table:

PatientNum 🡪 HouseholdNum, HouseholdName, Street, City, State, Zip, Balance, PatientName

HouseholdNum 🡪 HouseholdName, Street, City, State Zip, Balance

ServiceCode 🡪 Description, Fee

PatientNum, ServiceCode 🡪 Date

Patient(PetientNum, HouseholdNum, PatientName)

Household(HouseholdNum, HouseHoldName, Street, City, State, Zip, Balance)

Service(ServiceCode, Description, Fee)

Appointment(PatientNum, ServiceCode, Date)