Database Management System – cs422 DE

Assignment 6 – Week 9

This assignment is based on lecture 8 (chapter 16 & 17).

- Submit your *own work* on time. No credit will be given if the assignment is submitted after the due date.
- Note that the completed assignment should be submitted in .doc, .docx, .rtf or .pdf format only.
- In MCQs, if you think that your answer needs more explanation to get credit then please write it down.
- You are encouraged to discuss these questions in the Sakai forum.

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(1) 3NF essentially identifies

A. 1-* relationships
B. * - * relationships
C. 1-1 relationships
D. None of the above

ANS: A

(2) While checking our tables for normalization, if we find that they are not even in 2NF then we must have missed some

A. 1-* relationships
B. * - * relationships
C. 1-1 relationships
D. None of the above

ANS: B

MUM-DBMS

(3) How to identify parent and child entities in a relationship?

ANS: In database we can decide parent child entity with foreign key and that relation which contains foreign key that is child entity and which has Primary key that referenced to another relation as foreign key that is parent entity.

(4) Solve review question 17.2/ 16.2 (a,b,c,d,g,i) from 5th /4th edition of the course text book.

ANS:

a) strong entity types : If a relation includes all the simple attributes that entity is called strong entity. There must be a primary key on this.

b) weak entity types : If the primary key is partially or fully derived from other attributes then is is known as weak entity types.

c) one-to-many (I :*) binary relationship types: Let's take two relation table1 and table2. If onr records of table1 linked with many records of table2 and the records of table2 is linked to one record of table2 then this relation knows as one-to-many relations.

d) one-to-one (I : I) binary relationship types: If one records on table1 is related to one records of table2 then this is known as one-to-one relationship and vice-versa. In one to one relation there is mandatory or option relation in between tables and table is connected through foreign key.

g) many-to-many (*:*) binary relationship types: If many records of table1 is linked to the many records id many records of table2 and many records from table2 is linked to the many records of table1 then this relationship is many-to-many. Directly there is no any many to many relationship but there is one to many relationship. To maintain many-to-many we should manage third join table.

i) multi-valued attributes: A multi-valued attribute is one that stores multiple values for each instance of an entity.

(5) Discuss how the technique of normalization can be used to validate the relations derived from the conceptual data model. (17.3/16.3)
ANS: The normalization techniques helps to meet the minimum requirements of database, which means required number of relation, required number of attributes, with less data redundancy and more accurate data.

(6) Solve exercise 17.8/16.8 from the 5th /4th edition of the course text book. In the ERD, only those attributes are listed which are PK for that entity. You are required to add more attributes to the relations which will be logically applicable to that entity.
ANS:

PaymentMethod: (pMethodNo, paymentMethodName)
Invoice: (invoiceNo, date, orderNo(FK), cardNo, pMethodNo(FK))
Product: (productNo, name, details)
Customer: (customerNo, name, email, phone, dob, address)
Order: (orderNo, orderedOn, deliveredOn, address, customerNo(FK), employeeNo(FK))
OrderDetails: (orderDetailsNo, orderNo(FK), productNo(FK), price, qty, tax)
Employee: (employeeNo, name, gender, email, position, joinedOn)
Shipment: (shipmentNo, orderNo(FK), productNo(FK), shipsOn, orderDetailsNo(FK), sMethodNo(FK))
ShipmentMethod: (sMethodNo, paymentMethodName)