CS 631 – DATABASE MANAGEMENT SYSTEMS DESIGN

ONLINE HOTEL RESERVATION PROJECT

DELIVERABLE – 2

Prof : Ananya Dass

Made By : Neel Patel (nap73@njit.edu) & Jasminkumar Patel (jp878@njit.edu)

GOAL :

The goal of this project deliverable is to design a relational database schema based on our conceptual schema design of deliverable 1. Using the practice of data model mapping we created a relational schema from the enhanced ER (EER) schema which is presented in our first deliverable.

PROCESS OF EER TO RELATIONAL MAPPING :

Step 1:

For each regular (non-weak) entity type E in the EER schema, create a relation R that includes all the simple (single-valued) attributes of E. Include only the simple components of composite attributes.

Step 2:

For each weak entity type W in the ER schema with owner entity type E, create a relation R and include all simple (single-valued) attributes (or simple components of composite attributes) of W as attributes of R. In addition, include as foreign key attributes of R the primary key attribute(s) of the owner entity type(s).

Step3:

For each binary 1:1 relationship type R in the ER schema, identify the relations S and T that correspond to the entity types participating in R. Choose one of the relations – say S – and include as foreign key in S the primary key of T. Include all the simple (single-valued) attributes (or simple components of composite attributes) of the 1:1 relationship type as attributes of S.

Step4:

For each regular binary 1:N relationship type R, identify the relation S that represents the participating entity type at the N-side of the relationship type. Include as foreign key in S the primary key of the relation T that represents the other entity type participating in R. Include any simple (single-valued) attributes (or simple components of composite attributes) of the 1:N relationship type as attributes of S.

Step5:

For each binary M:N relationship type R, create a new relation S to represent R. Include as foreign key attributes in S the primary keys of the relations that represent the participating entity types. Also include as attribute of S any simple (single-valued) attribute (or simple component of composite attribute) of the M:N relationship type.

Step6:

For each multivalued attribute A create a new relation R. Relation R will include an attribute corresponding to A (or its simple component attributes if A is composite), plus the primary key attribute K -- as a foreign key in R-- of the relation corresponding to the entity type or relationship type that has A as an attribute.

Step7:

For each regular n-ary relationship type R, where n > 2, create a new relation S to represent R. Include as foreign key attributes in S the primary keys of the relations that represent the participating entity types. Also include any simple (single-valued) attributes (or simple component attributes of a composite attribute) of the n-ary relationship type as attributes of S.

Step8:

Do the superclass/subclass part.

-> Apart from the above mentions, primary key – foreign keys and connections should be accurately identified

Problems :

We used the online tool for drawing relational schema from our EER which was really complex and time consuming process, but was good learning process.

References Used :

Lecture Slides, Youtube Videos of tutorials.

RELATIONAL SCHEMA : ONLINE HOTEL RESERVATION MANAGEMENT SYSTEM

S_REVIEW
- H_ID
- S_TYPE
- R_ID
- C_ID
- TEXT
- RATING

HOTEL
- H_ID
- STREET
- STATE
- COUNTRY
- ZIP

ROOM_RESERVATION
- H_ID
- R_NUMBER
- IN_DATE
- INVOICE_NUMBER
- OUT_DATE

BREAKFAST
- H_ID
- B_TYPE
- B_DESCRIPTION
- B_PRICE

OFFER_ROOM
- H_ID
- R_NUMBER
- S_DATE
- E_DATE
- DISCOUNT

PHONE_NUM
- H_ID
- PHONE_NUMBER

SERVICES
- H_ID
- S_TYPE
- S_PRICE

ROOM
- HOTEL_ID
- R_NUMBER
- R_DESCRIPTION
- FLOOR
- PRICE
- CAPACITY
- R_TYPE

RESERVATION
- INVOICE_NUMBER
- C_ID
- C_NUM
- R_DATE

CUSTOMER
- C_ID
- NAME
- ADDRESS
- PHONE
- EMAIL

BREAKFAST_INC
- H_ID
- R_NUMBER
- IN_DATE
- B_TYPE
- NO_OF_ORDER

R_REVIEW
- H_ID
- R_NUMBER
- C_ID
- R_ID
- TEXT
- RATING

CREDIT_CARD
- C_NUM
- BAddr
- CTYPE
- CODE
- EXP_DATE
- NAME

B_REVIEW
- H_ID
- B_TYPE
- R_ID
- C_ID
- TEXT
- RATING

SERVICES_CON
- H_ID
- R_NUMBER
- IN_DATE
- S_TYPE