

Database Design Project Deliverable #2

logical (relational) model

CIS8040 Database Management Systems, spring 2010, Jack Zheng

Deliverable content

The following parts should be included and compiled into a single document/report.

- 1) Cover page.
- 2) A complete ERD (Visio 2007 format) embedded in the document. 2. A logical model diagram using Visio 2007 format, showing tables, columns, data types and keys
- 3) Data dictionary (see templates at the end of this document):
 - a) Table definition: definition and description for each table.
 - b) Attribute definition: description of all attributes, and their data types and constraints.
- 4) Table/query mapping table: a query is any database operation that retrieves data to meet user needs but does not change the data. Identify the most important queries (at least 10; as complete as possible) that support the business activities in your designated functional area. Use the mapping table to indicate which tables are involved in each query.
- 5) Table/operation mapping matrix: an operation is any database operation that may change the data (insert, modify or delete). Identify the most important operations (at least 10; as complete as possible) that support the business activities in your designated functional area. Use the mapping table to indicate relevant table(s) involved in each operation.
- 6) Revised entity relationship diagram from deliverable #1 as an appendix. Summarize the revisions.

Submission - Due Date: 3/30/2010 Tuesday

All required files are submitted through myRobinson

- a) A written formal report in Word or PDF format (with the diagram embedded).
- b) A Visio 2007 file with the original logical diagram.
- c) A Visio 2007 file with the revised ER diagram.

Grading

Grading is base on the quality and completeness of your report and the logical diagram.

Data dictionary templates (with some examples)

1. Table Definitions

Table	Description	Design Decisions and Justifications
Customer	Customer table records all information of customers. It directly corresponds to the Customer entity in ERD.	(See if this is needed ... explain when the table is not completely consistent with the entity in the conceptual model.)
...		

2. Table and query mapping table

Query \ Table	Q1	Q2	Q3	Q4	...
Customer	X	X			
Contact	X				
Order			X		
Product			X		
...					

Q1: Get a customer list by certain attributes, for example, class and state.
 Q2: Get the customers who ordered a certain item in a certain time period.
 Q3: Get a list of top selling items in a certain time period.
 etc.

3. Table and operation mapping table

Operation \ Entity	O1	O2	O3	O4	...
Customer	X	X			
Contact	X		X		
...					

O1: new customer registration (add new customer data)
 O2: a customer modifies contact data (update customer contact)
 etc.

4. Attribute Definitions (organized by table) //better to use the landscape paper orientation

Table: Customer

Attribute Name	Description	Data Type and Length	Key	Required?	Other Requirements (Constraints)	Design Decisions and Justifications
First Name	Customer's first name.	50 variable characters	Primary Key	Yes	Required	50 should be enough – current data shows the max length is less than 30.
State	The US state in which customer lives.	2 character, fixed length		No	Limited to 50 US states	"State" table is not needed.
Class	The classification of customers	Integer	Foreign Key → CustomerClass.ClassID: on update cascade on delete null (include referential integrity constraints)	Yes

...