Data Model Project 2
Fall 2017

1. Introduction

This project aims on designing and implementing an information system using relational database. The project should be done by group work. You should start with a business domain (ex. bicycle renting), and define business requirements and corresponding system functions. In order to fulfill business requirements, you then design a data model representing the business domain (ERD). The data dictionary is defined accordingly. Finally, you implement the system by building user interface, and creating the data schema.

2. System Requirement

Your system must provide apprehensive UI and acceptable SQL command. Additionally, feel free to select any kinds of programming languages, likes C, C++, JAVA or Visual Basic.

Basic functions to be achieved:

(1) Contain multiple attributes in one relation
(2) Provide basic attribute type such as integers, double, and strings (fixed lengths)
(3) Support relational algebra such like select, project, and join
(4) Support predicate with Boolean expression: namely, AND and OR operators
(5) Insert tuples into a relation
(6) Update and delete tuples from a relation under a specified condition 交易處理
(7) Query optimization and transaction management are not required but you are encouraged to have some implementation of what we discussed in class. Grading would be favorable to groups with efforts. 查詢優化
(8) Advanced topics such as views and stored procedures are also welcomed.

You need to design a complete system to support the selected business domain. Yet, you can choose only to implement parts of system as long as these system modules fulfill the above requirements.

3. Deliverables

(1) Presentation

(2) Report (written in English)

The project needs a detail system design and implementation report. The report should include

- business requirement analysis

- data model design using ERD
- data dictionary
- system requirement analysis (how to make sure data model sufficient for designed system functions)
- SQL statements for schema creation and demo data insertion (turn in .sql script along with the report)
- system environment (tools and system structure)
- demo for implemented system functions and SQL statements for system functions implemented
- mapping between implemented system functions and project requirements
- list contributions/tasks of each member

The purpose of this report is to help TA and me to easily understand the design issues and any features of your system. Remember the quality is more important than quantity.

(3) Implementation of system module(s)

4. Deadlines

November 28th , 2017 ---- email deliverables (1) before 10am

November 30th , 2017 ---- present your project, demo the system, and hand in deliverables (2) in class and email deliverables (2) & (3) before 11pm on 11/30