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Course: Data Mgt and Database Design

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Beginning Database Design Solutions

Chapter 1 Answers

Exercise 1:

The book provides Read, little Create, Update, Delete from CRUD, retrieval, easy error corrections, ease of use and sharing features. However, it lacks most of other features like a database does.

Exercise 2

The catalog in this book offer chapter topics for generally searching data. The contents could indicate more details which readers want to look for.

Exercise 3

CRUD is an acronym from Create, Read, Update, and Delete. Create is to create new data in the database. Read in to get data from the database. Update is to modify data in the database. Delete is to delete the existing data in the database.

Exercise 4

For CRUD: A chalk board creates data by using chalks to write on the board. Users read date by looking at the board. To update data from the board by erasing data and adding new data on the board. To delete data from the board by erasing data from it.

A chalkboard has more advantages than this book in the following features: CRUD,

retrieval, consistency, easy error correction, backups, ease of use, security and sharing due to less information on a chalkboard than this book. But for the persistence, low cost and extensibility and portability, this book might have more advantages.

Exercise 5

A recipe card file's database is better than the database of this book in the following features: CRUD, retrieval, consistency, easy error correction, backups, low cost and extensibility and security. The only feature is the book's database greater than recipe card file's in persistence, and the other features are hard to compare.

Exercise 6

ACID stands for Atomicity, Consistency, Isolation, and Durability. Atomicity is that transactions are atomic. The operations in a transaction either all happen or none of them happen. Consistency is, before and after the transaction, it ensures that the database is in a consistent state. Isolation means only the transaction makers can check the detail of transaction while others cannot. Durability means that a transaction will never lost once it is committed.

Exercise 7

Considering that transaction 1 or transaction 2 won't be the first transaction because when either one happens, one of the account's balance would drop below zero. Therefore, transaction 3 happens first. Then either transaction 1 or transactions 2 happens secondly, and the other one happens last.

So the order is 3 to 1 to 2 or 3 to 2 to 1.

Exercise 8

The confidential data won't be stored in personal computer. The data will be saved remotely. Therefore, users are not worried about data disclosure.

Chapter 2

Exercise 1

The dog and the ancestors can be organized in a hierarchical database or a relational database because they can be connected as a tree.

Exercise 2

A hierarchical database or a relational database enables to easily query the dog's ancestors and its descendants because the dog's breeding system can be viewed as a tree.

Exercise 3

A flat file or an INI file can store the application settings.

Exercise 4

A spreadsheet can arrange the data and easily view the trends graphically.

Exercise 5

A spreadsheet can also meet the requirements.

Beginning SQL

Chapter 1

Exercise 1

The location is redundant because it stores the whole address. To alter the film club

table, it might use a foreign key to access to another table, location table, which splits the location information into three units, such as street, city and state.

Exercise 2

First drop attendance table and create attendance table in order to alter the location to foreign key which accesses to location table.

```
Drop table Attendance;
Create table Attendance
(MeetingDate date not null,
MemberAttended char(1) not null,
MemberId smallint not null,
LocationId smallint not null);
```

Then create location table and create three columns to store address information.

```
Create table Location
    (Location ID not null auto_increment primary_key,
    Street varchar(80) not null,
    City varchar(30) not null,
    State varchar(20) not null);
```

Chapter 2

Exercise 1

```
Insert into MemberDetails (MemberId, FirstName, LastName, DateOfBirth, Street,
City, State, ZipCode, Email, DateOfJoining)
```

values (7, ‘John’, ‘Jackson’, ‘1974-05-27’, ‘Long Lane’, ‘Orange Town’, ‘New State’, ‘88992’, ‘jjackson@mailme.net’, ‘2005-11-21’);

Insert into MemberDetails (MemberId, FirstName, LastName, DateOfBirth, Street, City, State, ZipCode, Email, DateOfJoining)

values (8, ‘Jack’, ‘Johnson’, ‘1945-06-09’, ‘Main Street’, ‘Big City’, ‘Mega State’, ‘34566’, ‘jjohnson@me.com’, ‘2005-06-02’);

Insert into MemberDetails (MemberId, FirstName, LastName, DateOfBirth, Street, City, State, ZipCode, Email, DateOfJoining)

values (9, ‘Seymour’, ‘Botts’, ‘1956-10-21’, ‘Long Lane’, ‘Windy Village’, ‘Golden State’, ‘65422’, ‘Seymour@botts.org’, ‘2005-07-17’);

Exercise 2

Delete from FavCategory where MemberId = 2;

Delete from Attendance where MemberId = 2;

Delete from MemberDetails where MemberId = 2;

Exercise 3

Update MemberDetails set City = ‘Big City’ where Street = ‘Long Lane’ AND City = ‘Orange Town’;