Answers to Guide 8

* SQL : structured query language; domain-specific language designed for managing data help in RDBMS.
  + On what two theoretical languages is SQL based?
    - Originally based on relational algebra and tuple relational calculus
  + What is the difference between data “queries”, data “manipulation”, and data “definition”?
    - Data query language (DQL)
      * Computer languages used to make queries in databases and information systems.
    - Data definition language (DDL)
      * A syntax similar to computer programming languages for defining data structures, especially database schemas.
    - Data control language (DCL)
      * A syntax similar to computer programming languages used to control access to data stored in a database (component of SQL)
    - Data manipulation language (DML)
      * A computer programming language used for adding (inserting), deleting, and modifying (updating) data in a database.
* SQL Data Definition
  + Be able to write a DDL command that creates a “Book” table with four columns:
    - ISBN, of type VARCHAR(25) (a variant-length string of up to 25 characters)
    - title, of type VARCHAR(50)
    - author, of type VARCHAR(25)
    - price, of type REAL (a real number)
    - Example of a DDL command
* **CREATE** **TABLE** Book (
* ID INTEGER **PRIMARY** **KEY**,
* ISBN VARCHAR(25) **not** **null**,
* title VARCHAR(50) **not** **null**,
* author VARCHAR(25) **not** **null**,
* price REAL **not** **null**
* );
* SQL Queries
  + Be able to explain what the following query would do on the relational table you just built.
    - SELECT title
    - FROM Book
    - WHERE price < 50.00;
    - SELECT – determine which columns will be returned in the results; in this case, the “title” column will be returned.
    - FROM – specifies the table that will be queried to retrieve the desired results; in this case, the table named “Book”
    - WHERE – optional clause that specifies which data values or rows will be returned or displayed, based on the criteria described after the keyword where.
    - <http://www.sqlcourse.com/select.html>
  + Be able to modify the command to return all the columns
    - SELECT \*
    - FROM Book
    - WHERE price < 50.00;
  + Be able to explain what the query would return for a book whose prices is NULL
    - The output would return the string “NULL”