Chapter 6 Exercises

SQL is a comprehensive database language and has statements for data definitions, queries, and updates...

1. What does SQL stand for?

Structured Query Language

1. What type(s) of DBMS language(s) would SQL be considered (from Chapter 2, pages 39 – 40 in the textbook)?

DML + DDL

1. What is the advantage of using a standardized language such as SQL to define and manipulate our database(s) within the context of a relational DBMS?

It’s portable i.e., the base implementation must be implemented by the RDBMS vendor.

1. What is a schema?

Collection of tables, and other things (types, domains, constraints, authorization grants, views, etc...) generally 1:1 with database applications i.e., your API’s.

1. What are the two required components for creating a schema in SQL?

CREATE SCHEMA X AUTHORIZATION Y – DDL (Schema name, authorization identifier)

1. What is the default schema, and what does it stand for?

dbo (Database owner)

1. What is a collection of schemas referred to as?

Catalog, referred to as the database.

1. What is the name of the special schema that includes information on all the schemas of the database and all the element descriptors of those schemas?

INFORMATION\_SCHEMA

*For questions 9 – 12 please select the letter corresponding to the correct position for each piece of SQL within the DDL statement for creating the STUDENT table below...*

CREATE TABLE **UNIVERSITY.**STUDENT

(

1. **B. C. D.**

);

1. CONSTRAINT PK\_STUDENT\_SSN (C)
2. CHAR(9) (B)
3. PRIMARY KEY (D)
4. Ssn (A)
5. What types of constraints can be specified directly within the CREATE table statement from above?

All the constraints within the schema-based constraints

1. Modify the DDL statement from questions 9 – 12 to create the STUDENT table *explicitly* within the UNIVERSITY schema instead of the *implicitly* the default defined for the current database user.
2. The STUDENT table would be considered one of these types, which along with its attributes is always created and stored as a file by the DBMS?

Base tables (relations)

1. Describe the main difference between the two main character string datatypes, CHAR and VARCHAR.

CHAR – padded with blank spaces.

VARCHAR – not padded with blank space.

CHAR(10), VARCHAR(10)

‘NATE ’ VS. ‘NATE’

*For floating point data, we define a decimal numeric data type of the following form (where i and j are non-negative integers)....*

*DECIMAL( i, j )*

1. What is i (i.e., give its name, and describe what it means)?

Precision – total number of digits

1. What is j (i.e., give its name, and describe what it means)?

Scale – number of digits after the decimal

1. What is the smallest “i” we can specify to represent the value 1.1?

2

1. What is the smallest “j” we can specify to represent the value 1.1?

1

1. True or false, the default value is included in any new tuple if an explicit value is not provided for that attribute?

True\*

1. The UNIQUE keyword specifies alternate unique keys known as what?

Candidate keys

1. What is the default referential triggered action when referential integrity is violated (when tuples are updated, or deleted)?

RESTRICT (CASCADE, SET NULL, SET DEFAULT) – qualified with ON DELETE or ON UPDATE

1. What are the other referential triggered action(s), in general when would or wouldn’t you use each one?

*For questions 25 – 32 please refer to the following select-from-where block...*

*SELECT <attribute list>*

*FROM <table list>*

*WHERE <condition>;*

1. Compared to the comparison operators in Java, those in SQL which are used in the <condition> after the WHERE keyword, are the same except for which operator(s) (give the operator(s) in Java and SQL)?

<>, != (= or ==)

1. Describe the difference between a selection condition and a join condition (give an example).

Selection condition attributename = ‘’, join condition attributename = someotherattributename;

1. True or false, in SQL the same name can be used for two (or more) attributes if the attributes are in different tables?

True

1. Renaming tables in the FROM clause to avoid repeated typing of long tables is referred to as what?

Aliasing

1. To retrieve all the attribute values of the selected tuples, we do not have to list the attribute names explicitly in SQL; we just specify this, which stands for all the attributes?

\*, relationname.\*

1. This optional keyword can be added after the SELECT keyword and preserves the function of the query.

SELECT ALL = SELECT

1. Describe an efficient algorithm for removing duplicates from a list of tuples.
2. What’s the difference between “%” and “\_” in terms of use in the WHERE <condition>?
3. What is the default ordering when using the ORDER BY clause without specifying *explicitly* what the ordering should be?

ASC Other is DESC

1. Explain two of the different ways we can INSERT tuples into a relation.
2. True or false, zero, one or many tuples may be deleted by a single DELETE command?
3. True or false, I can update multiple relations with a single UPDATE command?