Zachary Shin
CS 101
December 13, 2020

CS 101 Project 2 Database Outline

(a) Learning Objectives

By the end of the presentation, audience will be able to:

- Demonstrate and explain additional skills and relational operations in SQLite from relational operations into Lab11.sqlite
- Explain new functions that can be used in SQL
- Apply challenging computing tools and techniques onto real-world instances
- Solve problems at many levels of abstractions
- Gain additional insight, interpret data, and solve problems using computation
- Display relational operations able to obtain information about a database
- Create and manipulate database by using multiple tables
- Manage and manipulate structured data in Lab11.sqlite (or specific toward databases

(b) Overview

- Manipulation
  - Explain functions of statements including (but not limited to): CREATE, INSERT, ALTER, UPDATE, AND DELETE FROM using SQLite
  - Demonstrate **constraints** using SQLite (add info about how a column can be used are invoked after specifying the data type for a column)
- Queries
  - Explain the purpose of **query** (retrieve info stored in a database)
  - Show the functions of more complex queries by using **query keywords** and **functionality**
  - Demonstrate operations including (but not limited to): AS, DISTINCT, WHERE, LIKE, %, IS NULL, BETWEEN, AND, OR, ORDER BY, LIMIT, or CASE using SQLite
  - Discuss the differences between the functionalities of the statements
- Aggregate Functions
  - Describe certain functions in order to perform complex database operations clearly and easily
  - Compare and contrast **column references**
  - Demonstrate aggregate functions including (but not limited to) by using SQLite: COUNT(), SUM(), MAX/MIN(), AVG(), ROUND(), GROUP BY(), and HAVING()
- Multiple Tables
  - Combine tables manually and with SQL
  - Explain and demonstrate INNER JOIN and LEFT JOIN using SQLite
  - Compare and contrast **primary key and foreign key**
  - Demonstrates operators including (but not limited to): CROSS JOIN, UNION, and WITH using SQLite

(c) Citations MLA

Zachary Shin
CS 101
December 13, 2020

An Easy Way to Master SQLite Fast. 9 July 2020, www.sqlitetutorial.net/.

Brookshear, J. Glenn, and Dennis Brylow. *Computer Science: An Overview*. 12th ed., Pearson
      Education, Inc., 2015.

"Learn SQL In 20 Minutes." *Tutorialzine*, 27 Jan. 2016, tutorialzine.com/2016/01/learn-sql-in-
      20-minutes.

ProgrammingKnowledge. "SQLite Tutorial 1 : Getting Started with SQLite and Installation."
      YouTube. YouTube, May 26, 2013. https://www.youtube.com/watch?v=U7nfe4adDw8.

someguy683. "SQLite Tutorial For Beginners - Make A Database In No Time - 2020."
      YouTube. YouTube, December 13, 2019.
      https://www.youtube.com/watch?v=HQKwgk6XkIA.

"SQL Tutorial: Learn SQL For Free." *Codecademy*, www.codecademy.com/learn/learn-sql.