CS105 Lab 2: SQL & SQLite

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Objectives

- Review of SELECT
- Setting up SQLite and a database
- Trying out queries in SQLite

SQL - SELECT

- SELECT <column>
  FROM <table>
  WHERE <condition> ;

- Can have many columns separated by “, ”
- Only focusing on single table queries
- May have several conditions linked by connectives

SQL - SELECT

- SELECT *
  FROM Enrolled;
  - The * means 'all columns'
  - Leaving off the WHERE clause implies 'all rows'
  - Returns a table with every tuple from the table “Enrolled”

SQL - SELECT

- SELECT course
  FROM Enrolled;
  - Returns table with one column, the name of every course in “Enrolled”
- SELECT course, credit_status
  FROM Enrolled;
  - Returns table with two columns, course and credit_status for every course in “Enrolled”

SELECT - WHERE

- WHERE clause uses conditions to select rows
  - Conditions must evaluate to True or False
  - Examples:
    - name = 'Alan Turing'
    - end_time != '17:30:00'
    - room > 5000
    - capacity <= 100

SELECT – Logical Connectives

- You can connect conditions of WHERE with AND, OR, and NOT
  - 1000 < room AND room < 4000
  - dept = 'english' OR dept = 'comp sci'
  - NOT (dept = 'english' OR dept = 'comp sci')

SELECT - LIKE

- Can use pattern matching on strings with the LIKE keyword
  - Wildcard for a single character is '_'
  - Wildcard for 0 or more characters is '%'
    - WHERE name LIKE '_o_'
      - Matches with Rob but not Robert
    - WHERE name LIKE ''_o%'
      - Matches with Rob and Robert

SQL - SELECT

- Putting it all together:
  - SELECT end_time, room
    FROM Course
    WHERE start_time = '12:00:00' OR
      start_time = '17:30:00';

- Returns the end time and room of every course that starts at 12 or 5:30pm.

Practice

- How would I write a query that selects all the columns from a table named “Cars” where the cars were made between 1970 and 1975?
  - Cars(ID, make, model, year, color)
  - SELECT *
    FROM Cars
    WHERE 1970 < year AND year < 1975

SQLite Add-On

1. On the lab page is a link to install the Add-On
2. Install the Add-On and when prompted, restart Firefox

SQLite

Once SQLite add on is installed:

1. Open up Firefox
2. Right click the top of your Firefox window and make sure Menu Bar is checked off
3. Then go to Tools → SQLite Manager

This Lab

- Open up SQLite in Firefox
- Run the queries on the lab page
- Answer the exercise questions
- Submit your answers in a text file under the “Lab” directory on WebSubmit

- Let me know if you have questions!