SQL Assignment

• Goal: To build a simple database application

• Due Date: April 14, 2017 by 2:00PM

• All Projects are individual assignments
Plan

(1/5)
SQL Assignment Overview

(2/5)
SQLite3, and the C++ api

(3/5)
Data set description

(4/5)
Questions

(5/5)
Midterm paper distribution
(1/5) SQL Assignment Overview

• Step 1: Load the data into SQLite3
  – write a **C++ program** that embeds SQL calls to create the appropriate tables and then load the data from the tables.
  – Make sure to drop the tables if they already exist.

• Step 2: Write the desired queries
  – Try to write a **single query**
  – Cannot write a query? -> Queries-readme.txt.
  – Query results -> results.txt.
(2/5). SQLite3, and the C++ api

• [https://sqlite.org/cintro.html](https://sqlite.org/cintro.html)

• Two primary objects
  – The database connection object: `sqlite3`
  – The prepared statement object: `sqlite3_stmt`

• Bunch of methods built upon the objects. Understand which API to use when and how to use it.
(2/5). SQLite3, and the C++ api

• Some sample API’s are as follows-

• sqlite3_open()
  – First SQLite API call. Opens a connection to an SQLite database file and Returns a database connection object.
  – Other APIs require the pointer to the database connection object

• sqlite3_exec()
  – Execute SQL commands provided as an argument
  – A simplified API which is equivalent to a combination of four other API’s
(2/5). SQLite3, and the C++ api

• Sample API’s contd.
• sqlite3_close()
  – Destructor for sqlite3 object

• Show Sample code
(3/5) Dataset Description

• USDA National Nutrient Database
• Described in

(3/5) Dataset Description

Diagram showing the relationships between different file types:

- **Food Description File**
  - NDB No.
  - Food Group Code

- **Footnote File**
  - NDB No.

- **Nutrient Data File**
  - NDB No.
  - Nutrient No.
  - Source Code
  - Derivation Code

- **Weight File**
  - NDB No.

- **LanguaL Factor File**
  - NDB No.
  - Factor Code

- **Food Group Description File**
  - Food Group Code

- **Nutrient Definition File**
  - Nutrient No.

- **Source Code File**
  - Source Code

- **Data Derivation Code**
  - Description File
  - Data Derivation Code

- **Sources of Data Link File**
  - NDB No.
  - DataSrc ID

- **Sources of Data File**
  - DataSrc ID

- **LanguaL Factors Description File**
  - Factor Code
(4/5) Questions
(5/5) Midterm paper distribution

• Four batches, ordered based on last name
  – A-F
  – G-L
  – M-R
  – S-Z

• Any corrections? Direct it to Prof. Patel