

# SQL File Testing Project – Task List, 09/15/2020

To do:

- Evaluation Files
  - o Better formatting (even field widths)
- Parsing
  - o Rewrite student submission parsing (works generally, but not good code and possible additional parsing issues could be found)
- Test Structure
  - o Can range expressions be passed to JavaScript engine? If so, can use in COND tests.
- Better Tests
  - o **Need to be able to test for clauses (e.g. SELECT, FROM, WHERE, GROUP BY) within nested subqueries as well as at top level**
  - o Test position of DISTINCT – at top level or another level (or multiple?) (may be additional test)
- GUI
  - o **Rewrite GUI in SWT or JavaFX to allow resizable window**
  - o **Fix correct storage of last working directory (currently resets to one level up)**
- Additional Tests (implement test, add unit tests)
  - o Is table X present in submitted query? (not sure where this fits in current structure or if we need to expand test options)
  - o Test for self join – is a single table (or multiple tables) present multiple times in same FROM clause?
    - Table could also be present multiple times in nested subqueries
  - o **Style test – better test for SQL statement not all on one line, broken into multiple lines by keyword, though may want to allow some flexibility (e.g. SELECT and FROM on one line, JOIN and ON, WHERE and AND/OR, etc.?)**
    - **Right now, just count CRs**
  - o **Condition – Column Count compared with expression**
  - o **Condition – count of SQL-92 style joins (with comma-separated tables)**
    - **Will follow from fixing table count bug, count of commas not including functions and select clause**
  - o Other style tests – e.g. consistent capitalization (challenging?)
- Additional utilities
  - o Additional methods to do partial parsing by breaking off parts of query string, e.g. WHERE clause, GROUP BY clause, etc.

- Problem – what to do if nested subqueries? Need recursive parsing. Ryan has started this, made some utilities for this.
- Redirect system.err output to a file instead of console
- **Add other DAOs – PostgreSQL, etc.**
- Additional unit tests beyond SQL tests, query
- Develop standalone executable JAR file for distribution
  - Requires fixing or replacing console display to use display area in GUI to show progress, which is currently not working
- Internationalization – e.g. “points” in USA, “marks” in New Zealand