

## Basic outline of paper contents and flow

1. Introduction
  - a. Discussion of poor practice: workarounds used to pull whole tables from SQL Server and MS Access databases in lieu of efficient coding
  - b. Allusion to upcoming example of a matching procedure whose runtime was reduced from over an hour to a few minutes by use of efficient methods
2. Overview of ODBC, the concept of DSNs, and how they relate to libname
  - a. Explanation of what a DSN is
  - b. Examples of how to set up user DSNs for SQL Server and MS Access databases via the Windows ODBC menus
  - c. Libname syntax/how to reference database tables with a libname
3. Using PROC SQL to run commands in SAS that “talk to” database tables
  - a. Simple select query examples (with create table/create view)
  - b. Insert and delete query examples
  - c. Update query examples
  - d. Examples of potential problems unrelated to syntax, e.g. database rule violations and how they appear in log output
4. Using PROC SQL to run pass-through queries
  - a. Example of simple SQL code (e.g. select query) run via a pass-through
  - b. Example of a pass-through that uses macro variables
  - c. Return to matching procedure example, this time with code and log output comparison of earlier legacy routine and current routine that runs the matching procedure via a pass-through
5. Conclusion