1. **SSURGO Structure Metadata Tables**
   1. Created an empty SQLite database and copied certain tables from soildb\_US\_2003.mdb
      1. All mdstat\* tables
      2. ‘SYSTEM - Template Database Information’
      3. Should have also copied the ‘month’ table
      4. Note. Need to fix coldesc in mdstattabcols table
2. **Display TemplateMetadataTables.sqlite database in DB Browser**
   1. Browse through the contents of a couple of tables
   2. The contents of these metadata tables were used recreate the SSURGO schema in a SQLite database.
   3. Display SQL for CreateTables, RegisterTables and CreateIndexes in NotePad ++
3. **Display template\_0512\_spatialindexes\_diet.gpkg database in DB Browser**
   1. The soil attribute tables in this database was created using the SQL from Step II
   2. The spatial tables and spatial indexes in this database were created using QGIS
   3. A few issues including a column named ‘notnull’ which SQLite does not allow
4. **Demo the ‘Import SSURGO Data Into SSURGO-SQLite Template’ tool**
   1. Tabular import is first, using Python sqlite3 library and csv reader
      1. Note. My method of converting empty strings to null values (Python None) is not efficient
      2. In my current template database (gpkg) I have dropped 6 columns from the cointerp table
   2. Spatial import follows tabular, using Python osgeo library
      1. Note. My method is slow because each polygon geometry has to be validated. The method ‘.MakeValid) was not available to me. The arcpy method (Append) apparently does this automatically and much faster.
   3. Also included 2 spatial views in the new template geopackage
      1. Spatial views seem to work well and will probably be useful in the Soil Data Viewer replacement
      2. Created spatial views using mupolygon and the mapunit and muaggatt tables
   4. Output size of geopackage is much larger compared to the source data. Lack of compression.
5. **Raster storage in a geopackage appears to be a problem**
   1. Geopackage does not accept 32-bit integer data types, which are necessary for mukey-rasters
   2. Standalone GeoTIFF does accommodate 32-bit unsigned values
   3. Created raster attribute tables that are compatible with ArcGIS Pro and QGIS
6. **Demo SSURGO-Lite database in ArcMap**