

**Topic 01: Biotic inventory and related activities.**

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**Topic 01, Exercise 02: 24 Jan 2006**

Today we build the interactive, Web-accessible key to conifer genera of MU's campus. I have compiled everyone's scorings of their genera into one master Excel sheet. Excel provided us with a convenient way to manage our scoring process and will also allow us to save some time as we format a .txt data file that the program SLIKS can use.

SLIKS stands for "Stinger's Lightweight Interactive Key Software" and is available for free at <http://www.stingersplace.com/SLIKS/>. "Stinger" is a plant systematist who works at the USDA and one of his jobs is managing and programming for the USDA PLANTS Database. Although there are many interactive key programs available, SLIKS is novel in that it runs (via JavaScripts) on any computer operating system and through most Web browsers.

**Procedure:**

1. Conifer-data.xls contains our datamatrix and character plus character state definitions. Open it.
2. On the first sheet labeled "Datamatrix", execute FILE > SAVE AS > .CSV FILE". Name it "Conifer-data01.csv. A CSV (comma separated variable) file is simple a text version of your spreadsheet where the columns divisions are denoted by commas.

Thus, the hypothetical spreadsheet entry:

Pinus (pine)	2	1
LEAF CLUSTERING	borne singly	on short, stubby side shoots

Becomes:

Pinus (pine), 2, 1

LEAF CLUSTERING, borne singly, "on short, stubby side shoots"

Note that in the second row, "on short, stubby side shoots" is enclosed by quotes because it contains a comma. In order for this comma NOT to be recognized as a column delimiter, the entire phrase is automatically enclosed by quotes by Excel when you save as a CSV file.

3. Now save the second sheet in Conifer-data.xls labeled "characters\_in\_rows" as a CSV file with the name Conifer-data02.csv.
4. Working within your BIOL 471\SLIKS\ directory on the computer, rename these CSV files to have a .TXT extension, rather than a .CSV extension.

5. Open from your BIOL 471\SLIKS\ directory the file maple.js by right clicking on the file and selecting a text editor called Word Pad “OPEN WITH > NOTEPAD”. Notepad is a simple program included with all MS Windows operating systems.

The first major block of text lists the characters and their character state definitions for the maple key. Our version of this information is included in Conifer-data02.txt.

You will note that the SLIKS data file maple.js is formatted for SLIKS. The formatting is basically an elaborated version of our CSV file. We saved our character definitions information in CSV format to speed up the process of constructing our own SLIKS file. However, we need to convert this conifer file into the same format as the first block of the sample maple.js file by adding brackets (“[“ and “]”), adding and deleting some quotes in the right places, and then terminating each line but the last line with commas of their own.

FIRST, execute an “EDIT > REPLACE” command to change all lone commas to a comma enclosed by quotes (Fig. 1).

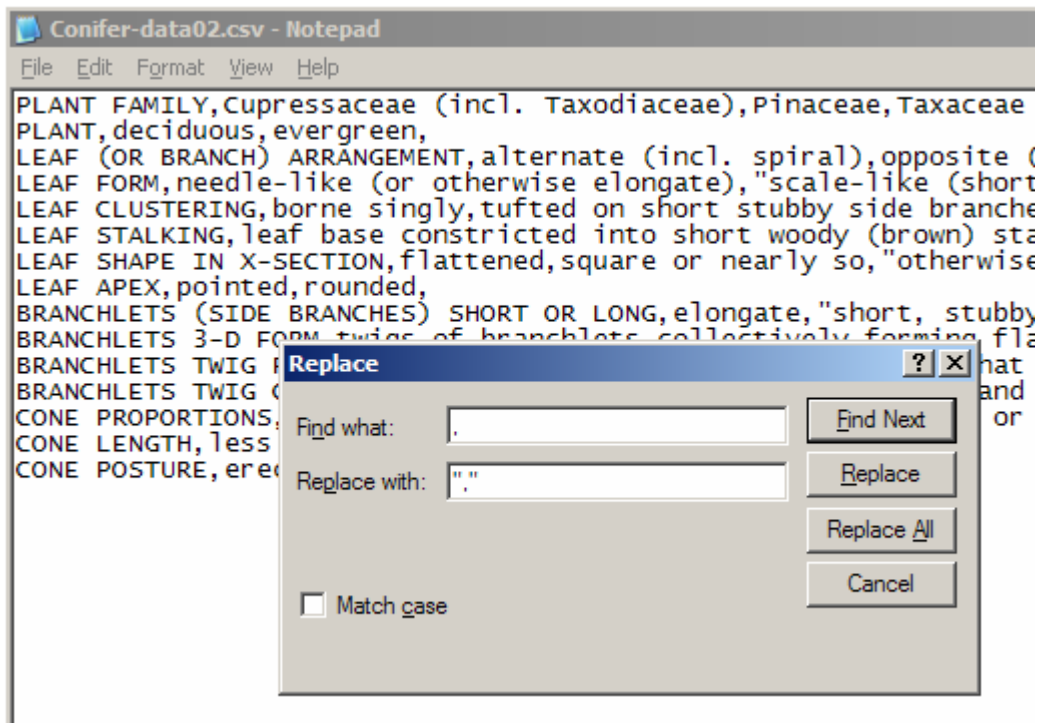


Fig. 1. Converting all lone commas to a comma enclosed by quotes.

SECOND, add the brackets to the beginning and end of each line as in maple.js  
THIRD, add and delete quotes such that each original column entry is enclosed by just a pair of quotes and separated by a comma.

Save your file as Conifer-key-file.txt, and keep it open.

6. Next, open Conifer-data01.txt in NOTEPAD. It should look like Fig. 2.

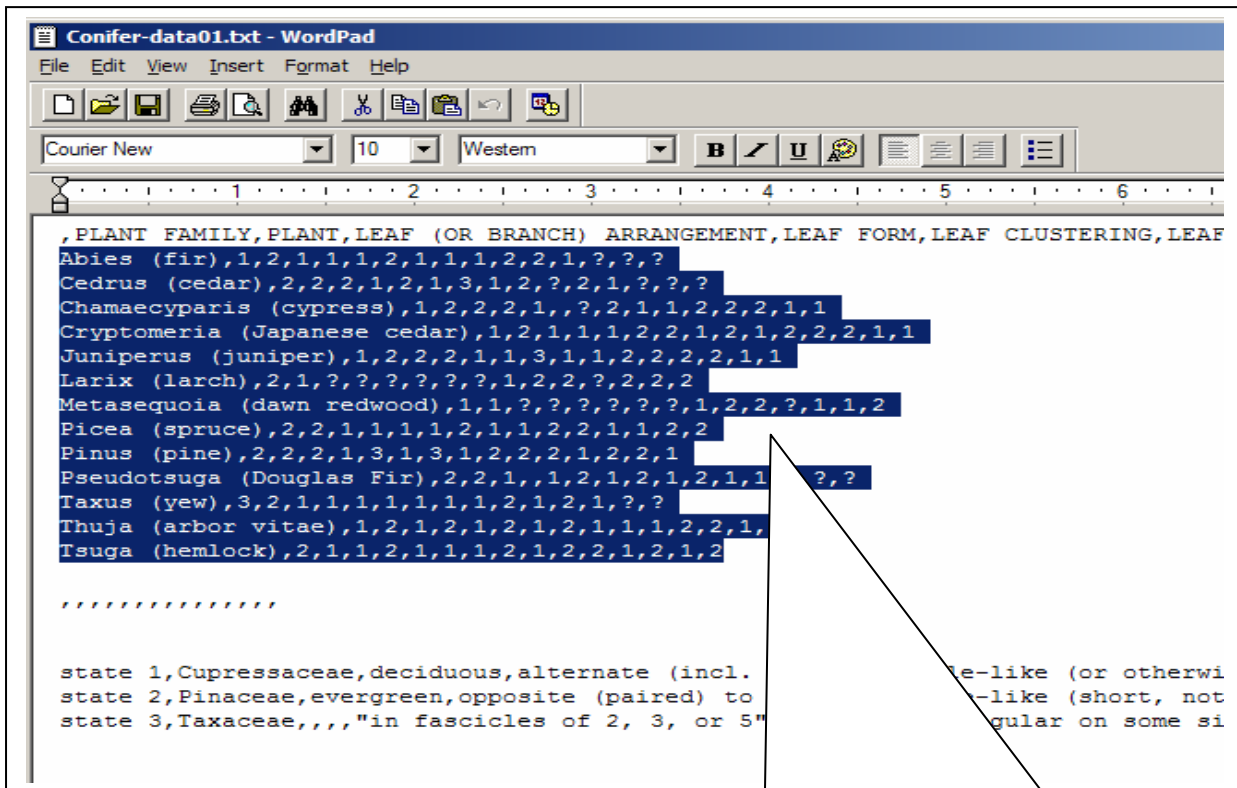


Fig. 2. Conifer-data01.txt as seen in a simple text editor.

7. Delete everything above and below the highlighted datamatrix portion. These character and character state titles were used only during the Excel phase to facilitate our scoring the genera for their numerical character states.

8. Then do a EDIT > REPLACE to replace all commas by commas in quotes (Fig. 3).

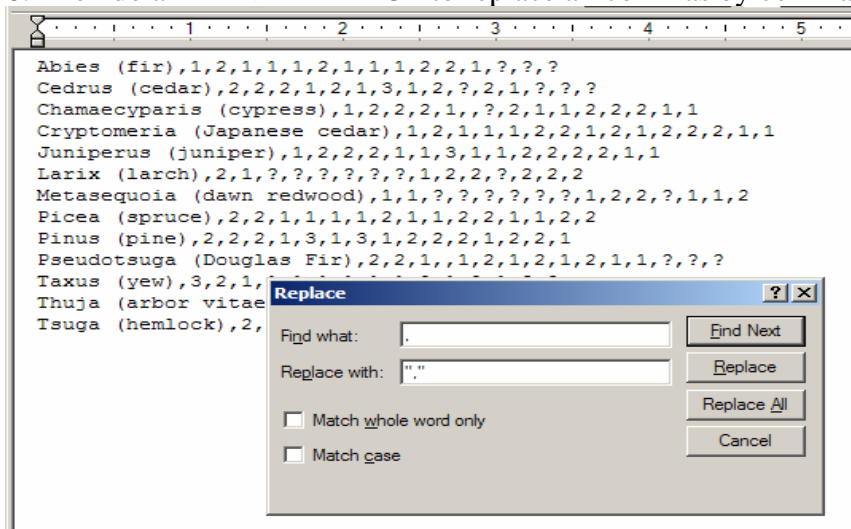


Fig. 3.



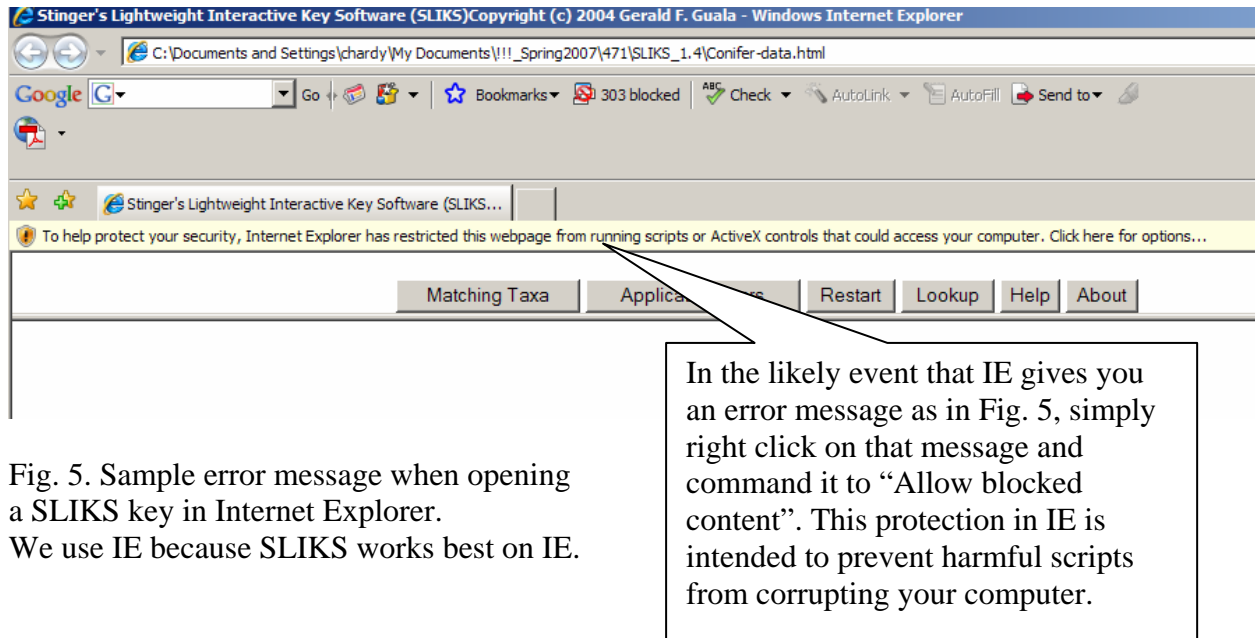


Fig. 5. Sample error message when opening a SLIKS key in Internet Explorer. We use IE because SLIKS works best on IE.

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ASSIGNMENT # 1 (20 pts):

1. Complete this key and fill in all missing values (i.e., “?”) where appropriate.
2. Also, check the accuracy of the scoring. I have not check yet for accuracy of your scoring. Doing so on your part will take study with books, in the herbarium, and looking at the actual plants.
3. Read the documentation and information about SLIKS at the SLIKS website.  
Also, read the article by Brach et al. that is included on the course website.
4. By Monday I expect you to have read the article and the SLIKS Website.

**WORK ALONE:**

5. By Wednesday, at the beginning of class, submit your key data file (.js file) to me electronically, along with a hard copy of a 4-5 page report (double spaced) detailing the methods involved in your building your own key to conifer genera, also providing an overview of the key itself, and then a discussion section where you discuss features of SLIKS and your dataset itself that could be improved upon.

You will be evaluated on

1. Accuracy and functionality of your Conifer key (work alone on this). (10 pts)
2. Clarity and quality of your report. (10 pts)
3. Cite and list all references in proper bibliographic style.