

## Homework 4

CS 310  
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Consider the following lexicon  $\mathcal{E}$ :

WORD  $\rightarrow$   $[[\text{:alpha:}]]+(\backslash-[[\text{:alpha:}]]+)^*$   
PUNCT  $\rightarrow$   $\backslash.\|\?|,|;$   
QUOTE  $\rightarrow$   $"[^"]^*"$   
SPACE  $\rightarrow$   $[[\text{:space:}]]+$

- 1 Give the lexical NFA  $\mathcal{N}(\mathcal{E})$  constructed from  $\mathcal{E}$ .
- 2 Give the lexical DFA  $\mathcal{D}(\mathcal{N}(\mathcal{E}))$  constructed from  $\mathcal{E}$ .
- 3 Use the Generic Interpreter (**gi**) to implement a lexical analyzer w.r.t.  $\mathcal{E}$ . **gi** is available and documented at

<http://www.csupomona.edu/~carich/gi/>

Example lexical analyzers are in the course notes—Implementations 1.9.2 and 1.9.3. Turn in your Java source code and its output when run on an input of your choice containing a lexical error and on the following input (available on the course web site):

Well, this is a not-so-tough "challenge". No?