I. Elements of Language
   A. Parts of Speech
      Correlation between English parts of speech and words in programming languages [F&G Ch.3]
      1. Nouns: Identifiers
         a. Natural Language: person, place, or thing
         b. PL's: variables, constants, functions, types
         c. Issues:
            (1). First-class objects
            (2). Naming Objects: LISP names can exist w/out being bound, Pascal names can be
                 bound simultaneously to different objects in different scopes, C names can be bound
                 through a pointer to an object that doesn't exist any more
      2. Pronouns: Pointers. Must be bound to an object before becoming meaningful.
         a. Natural Lang: refers to a noun
         b. PL's: pointer. Used to label dynamically created objects, can have dangling pointer
      3. Adjectives: Data Types
         a. Natural Lang.: describe the size, shape and characteristics of objects
         b. PL's: data types give size, structure, & encoding. These characteristics may be inherited
            (OOP)
      4. Verbs: action words
         a. Natural Lang.: actions or states of being (e.g. It runs, He wept)
         b. PL's: action words like RETURN, BREAK, STOP, GOTO, :=.
            (1). Procedure & Function calls, and arithmetic operators are like action verbs.
            (2). Relational Operators (e.g. <=) are like states of being
            (3). Different syntactic forms for verbs: Pascal vs. LISP [F&G p. 52]
            (4). Domain of verbs indicates where it can appropriately be used. Similarly for domain
                of function. [F&G p. 53]
      5. Propositions & Conjunctions
         a. Natural Lang: Used to denote time, position, conditionals, and the relationship of phrases
         b. PL's: While, IF, CASE
   B. Metalanguage used to describe language
      Can use English to describe English
      1. Words: Lexical Tokens. Lexer used to get lexemes according to some set of rules and delimiters
         [F&G p. 55]
      2. Sentences: Statements
         a. Originally fixed-format (card input, 80 cols.)
         b. Later became free-form, w/statement separators (e.g. ";"")
         a. Some English words (e.g. pronouns) are understood to apply to the entire paragraph.
         b. PL's: scope can be indicated in distinct ways [F&G pp. 60-62]
      4. Footnotes: Comments
         a. Natural Lang: conveys something about the text
         b. PL's: provides info. about program that is not part of the prog.