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CSCE A331

Programming Language Concepts

Assignment 1

1. Fifty fearless firefighters found foliage for friendly florists.
2. C++ type checking is static, meaning types are checked before runtime.
3. 1, 3, 5
4. This language contains strings with either zero or multiples of 2 x’s followed by either zero or multiples of 2 y’s.
5. 3, 4, 5, 7
6. a(a|b)\*
   1. Leftmost
      1. S->SS, (SS)
      2. S->A, (AS)
      3. A->xy, (xyS)
      4. S->A, (xyA)
      5. A->xy (xyxy)
   2. Rightmost
      1. S->SS, (SS)
      2. S->A, (SA)
      3. A->xy, (Sxy)
      4. S->A, (Axy)
      5. A->xy, (xyxy)
   3. xyxyxy



* 1. Non-ambiguous
     1. S -> xyS
     2. S -> epsilon
  2. axx(x)\*
  3. DFA



* + 1. <a> ::= “a”
    2. <x> ::= “x”
    3. <words> ::= <a><x><x>{<x>}
  1. Yes, it doesn’t dictate in which order the 0 or more x’s at the end of the words are expanded out.