

CS 3723: Programming Languages

Feb 3, 2012

You Name:

1. Rewrite the following BNF to be non-ambiguous. Enforce that $*$ has higher precedence than $+$, and both $*$ and $+$ are left associative.

$E ::= E + E \mid E * E \mid (E) \mid N$

2. Give a CFG to describe the set of strings over $\{(), [], \}\}$ which form balanced parentheses and brackets. For example, $()$, $()()$, $((()))$, and $([]())$ are in the language, but $)()$, $(()$, and $[$ are not in the language. If your grammar ambiguous? If yes, rewrite it to be non-ambiguous.