Lab 9

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May 7, 2024

1 Crafting a Compiler Exercises

We can fix the grammar by splitting up DeclList's definitons into two differing statements:

1 DeclList → DecList1 ; Declist2

2 DeclList1 -> Decl

3 DecList2 -> DeclList ; Decl

-> | Decl

3 Decl → Type ; IDList

4 IdList → IdList , id

5 | id

6 Type → ScalarType

7 | array (ScalarTypeList) of Type

8 ScalarType → id

9 | Bound . . Bound

10 Bound → Sign intconstant

11 | id

12 Sign → +

13 |

14 |

15 ScalarTypelist → ScalarTypeList , ScalarType

16 | ScalarType

Everything that's unchanged is fine by LL(1) standards.

2 Dragon Book Exercises

Given the grammar(s)...

a) 000111 -> 00S11

00S11 -> 0S1

0S1 -> S

b) aaa*a++ -> aSS*a++

aSSa*a++ -> aSa++

aSa++ -> aSS++

aSS++ -> aS+

aS+ -> SS+

SS+ -> S