Variant. 19

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S->Ag

A->AbD

A->C

C->e

C->CfD

D->e

Because this grammar is ambiguous because of D-> e and C->e, so I changed D->h

Simple precedence parsing:

S->Ag

A->AbD

A->C

C->e

C->CfD

D->h

1. First/ Last table

|  |  |  |
| --- | --- | --- |
|  | First | Last |
| S | A, C, e | g |
| A | A, C, e | D, C, e, h |
| D | h | h |
| C | C, e | e, D, h |

1. Precedence signs < = >

First rule:

S-> Ag => A=g

A-> AbD => A=b, b=D

C-> CfD => C=f, f=D

Second rule:

A-> AbD => b < First(D) (b<{h})

C-> CfD => f < First(D) (f<{h})

Third rule:

S-> Ag => Last(A) ({D, C, e, h}) > g

A-> AbD => Last(A) ({D, C, e, h}) > b

C-> CfD => Last(C) ({e, D, h}) > f

1. Simple precedence matrix

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | S | A | C | D | b | e | f | g | h | $ |
| S |  |  |  |  |  |  |  |  |  | > |
| A |  |  |  |  | = |  |  | = |  | > |
| C |  |  |  |  | > |  | = | > |  | > |
| D |  |  |  |  | > |  | > | > |  | > |
| b |  |  |  | = |  |  |  |  | < | > |
| e |  |  |  |  | > |  | > | > |  | > |
| f |  |  |  | = |  |  |  |  | < | > |
| g |  |  |  |  |  |  |  |  |  | > |
| h |  |  |  |  | > |  | > | > |  | > |
| $ | < | < | < | < | < | < | < | < | < |  |

1. Parsing

Input: efhfhbhg

$<e>f<h>f<h>b<h>g>$

$<C=f<h>f<h>b<h>g>$

$<C=f=D>f<h>b<h>g>$

$<C=f=D>f=D>b<h>g>$

$<C=f=D>f=D>b=D>g>$

$<C=f=D>b=D>g>$

$<C>b=D>g>$

$<A=b=D>g>$

$<A=g>$

$<S>$

The string was parsed.