

Simple Precedence Parsing - Variant 7

$G=(VN, VT, P, S,)$, $VN=\{S, A, B, C\}$, $VT=\{a,b,c\}$,

$P=\{$

1. $S \rightarrow aA$
2. $A \rightarrow C$
3. $A \rightarrow C b A$
4. $C \rightarrow d B$
5. $B \rightarrow b$
6. $B \rightarrow a B$ }

1. First & Last

| | FIRST | LAST |
|---|-------|------------|
| S | a | A, C, B, b |
| A | C, d | A, C, B, b |
| B | b, a | b, B |
| C | d | B, b |

2. Precedence Signs

1. Rule \odot
1. $S \rightarrow aA \Leftrightarrow a = A$
 - $A \rightarrow C$
 - $A \rightarrow C b A \Leftrightarrow C = b, b = A$
 - $C \rightarrow d B \Leftrightarrow d = B$
 - $B \rightarrow b$
 - $B \rightarrow a B \Leftrightarrow a = B$

3. Rule \odot

1. $A \rightarrow C b A \Leftrightarrow \text{Last}(C) > b$
 $\{B, b\} > b$

2. Rule \ominus

1. $S \rightarrow aA \Leftrightarrow a < \text{First}(A)$
 $a < \{C, d\}$
- $A \rightarrow C$
- $A \rightarrow C b A \Leftrightarrow b < \text{First}(A)$
 $b < \{C, d\}$
- $C \rightarrow d B \Leftrightarrow d < \text{First}(B)$
 $d < \{b, a\}$
- $B \rightarrow a$
- $B \rightarrow a B \Leftrightarrow a < \text{First}(B)$
 $a < \{b, a\}$

3. Precedence Table

| | S | A | B | C | a | b | c | d | \$ |
|----|---|---|---|---|---|---|---|---|----|
| S | | | | | | | | | > |
| A | | | | | | | | | > |
| B | | | | | | > | | | > |
| C | | | | | | = | | | > |
| a | | = | = | < | < | < | | < | > |
| b | | = | | < | | > | | < | > |
| c | | | | | | | | | > |
| d | | | = | | < | < | | | > |
| \$ | < | < | < | < | < | < | < | < | > |

4. Parsing

W = adbbdb

1. \$adbbdb\$

~~\$<a<db\$~~
~~\$<a<d=B>bB\$~~

\$<a<db<d\$

\$<a<d=B>b<d=B>\$

\$<a<C=b<C>\$

\$<a<C=b=A>\$

\$<a=A>\$

\$<S>\$