

shift/reduce conflicts

shift/reduce Conflicts

%%

```
Prog      : StmtSeq      {};  
StmtSeq   : Stmt StmtSeq {};  
StmtSeq   : {};  
Stmt      : Id '=' Expr ';' {};  
Expr      : Expr '+' Expr {};  
Expr      : Id {};  
Id        : Ident {};
```

%%

shift/reduce Conflicts

yacc -d -v file.y

y.output

State 13 conflicts: 1 shift/reduce

Grammar

0 \$accept: Prog \$end

1 Prog: StmtSeq

2 StmtSeq: Stmt StmtSeq

3 | /* empty */

4 Stmt: Id '=' Expr ';'

5 Expr: Expr '+' Expr

6 | Id

7 Id: Ident

shift/reduce Conflicts

yacc -d -v file.y

y.output

Terminals, with rules where they appear

\$end (0) 0
'+' (43) 5
';' (59) 4
'=' (61) 4
error (256)
Ident (258) 7

Nonterminals, with rules where they appear

\$accept (7)
 on left: 0
Prog (8)
 on left: 1, on right: 0
StmtSeq (9)
 on left: 2 3, on right: 1 2
Stmt (10)
 on left: 4, on right: 2
Expr (11)
 on left: 5 6, on right: 4 5
Id (12)
 on left: 7, on right: 4 6

shift/reduce Conflicts

yacc -d -v file.y
y.output

state 0

0 \$accept: . Prog \$end

Ident shift, and go to state 1

\$default reduce using rule 3 (StmtSeq)

Prog go to state 2

StmtSeq go to state 3

Stmt go to state 4

Id go to state 5

state 1

7 Id: Ident .

\$default reduce using rule 7 (Id)

shift/reduce Conflicts

```
yacc -d -v file.y  
y.output
```

state 2

0 \$accept: Prog . \$end

\$end shift, and go to state 6

state 3

1 Prog: StmtSeq .

\$default reduce using rule 1 (Prog)

state 4

2 StmtSeq: Stmt . StmtSeq

Ident shift, and go to state 1

\$default reduce using rule 3 (StmtSeq)

StmtSeq go to state 7

Stmt go to state 4

Id go to state 5

shift/reduce Conflicts

state 5

4 Stmt: Id . '=' Expr ';'

'=' shift, and go to state 8

state 6

0 \$accept: Prog \$end .

\$default accept

state 7

2 StmtSeq: Stmt StmtSeq .

\$default reduce using rule 2 (StmtSeq)

shift/reduce Conflicts

state 8

4 Stmt: Id '=' . Expr ';'

Ident shift, and go to state 1

Expr go to state 9

Id go to state 10

state 9

4 Stmt: Id '=' Expr . ';'

5 Expr: Expr . '+' Expr

';' shift, and go to state 11

'+' shift, and go to state 12

shift/reduce Conflicts

state 10

6 Expr: Id .

\$default reduce using rule 6 (Expr)

state 11

4 Stmt: Id '=' Expr ';' .

\$default reduce using rule 4 (Stmt)

shift/reduce Conflicts

state 12

5 Expr: Expr '+' . Expr

Ident shift, and go to state 1

Expr go to state 13

Id go to state 10

state 13

5 Expr: Expr . '+' Expr

5 | Expr '+' Expr .

'+' shift, and go to state 12

'+' [reduce using rule 5 (Expr)]

\$default reduce using rule 5 (Expr)