

March 7, 2014

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MINI-PL INTERPRETER

58144 COMPILERS PROJECT

Grammar:

```
< prog > → < stmts >
< stmts > → < stmt > ; < stmts' >
< stmts' > → ε | < stmts >
< stmt > → var < ident' > : < type > < stmt' >
           | < ident > := < expr >
           | for < ident > in < expr > .. < expr > do < stmts > end for
           | read < ident >
           | print < expr >
           | assert ( < expr > )
< stmt' > → ε | := < expr >
< expr > → < opnd > < expr' >
< expr' > → ε | < op > < opnd >
< opnd > → < int >
           | < string >
           | < opnd' > < bool >
           | < ident >
           | ( < expr > )
< opnd' > → ε | < unary >
< type > → int | string | bool
< reserved keyword > → var | for | end | in | do | read | print | assert
                     | int | string | bool | true | false
< unary > → !
< op > → + | - | * | / | < | > | <= | >= | != | = | &
```

< ident' > adds identifier to symbol table, where as < ident > looks the identifier from the symbol table. Operators >, <=, >= and != are added, because they are very easy to implement.

Predict sets:

Production	Predict set
$\langle prog \rangle$	var, $\langle ident \rangle$, for, read, print, assert
$\langle stmts \rangle$	var, $\langle ident \rangle$, for, read, print, assert
$\langle stmts' \rangle$	\$\$ var, $\langle ident \rangle$, for, read, print, assert
$\langle stmt \rangle$	var $\langle ident \rangle$ for read print assert
$\langle stmt' \rangle$; :=
$\langle expr \rangle$	i, s, !, b, $\langle ident \rangle$, (
$\langle expr' \rangle$;, .., do i, s, !, b, $\langle ident \rangle$, (
$\langle opnd \rangle$	i s !, b $\langle ident \rangle$ (
$\langle opnd' \rangle$	b !
$\langle type \rangle$	int string bool