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Info file generated by Happy Version 1.19.5 from parser/Grammar.y

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state 6 contains 1 shift/reduce conflicts. state 7 contains 1 shift/reduce conflicts.  
state 8 contains 1 shift/reduce conflicts.



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Grammar

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Grammar

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%start\_parser -> Prog (0) Prog -> Dcls (1) Ins -> (2) Ins -> Ins PRINT "("  
STRING PrntArgs ")" ";" (3) Ins -> Ins READ "(" ID ")" ";" (4) Ins -> Ins  
WRITE "(" ID ")" ";" (5) Ins -> Ins ID "=" Exp ";" (6) Ins -> Ins ID "\*=" "  
Exp ";" (7) Ins -> Ins ID "+=" Exp ";" (8) Ins -> Ins BREAK ";" (9) Ins ->  
Ins CONTINUE ";" (10) Ins -> Ins RETURN ";" (11) Ins -> Ins EXIT ";"  
(12) Ins -> Ins FREE "(" ID ")" ";" (13) Ins -> Ins FREE "(" DATAID ")"  
";" (14) Ins -> Ins READ "(" DATAID ")" ";" (15) Ins -> Ins IF ";"  
SmplDcls Ins NextIf Else END (16) Ins -> Ins WHILE Exp ":" SmplDcls Ins  
END (17) Ins -> Ins FOR ID "=" INT "|" INT ":" SmplDcls Ins  
END (18) Ins -> Ins FOR ID "=" INT "|" INT ":" SmplDcls Ins END (19)  
Ins -> Ins FOR ID "=" ENUM "|" ENUM ":" SmplDcls Ins END (20) Ins ->  
Ins BEGIN SmplDcls Ins END (21) PrntArgs -> (22) PrntArgs -> PrntArgs  
"," Exp (23) NextIf -> (24) NextIf -> NextIf ELIF ":" Ins (25) Else -> (26)  
Else -> ELSE ";" Ins (27) SmplDcls -> (28) SmplDcls -> SmplDcls IsGlob  
PrimType Ptrs ID ";" (29) SmplDcls -> SmplDcls IsGlob PrimType  
EmptyArrs ID ";" (30) SmplDcls -> SmplDcls IsGlob PrimType StaticArrs  
ID ";" (31) SmplDcls -> SmplDcls IsGlob PrimType ID ";" (32) Dcls -> (33)  
Dcls -> Dcls FUNC PrimType ID "(" Parameter ")" ";" SmplDcls Ins END  
(34) Dcls -> Dcls IsGlob PrimType Ptrs ID ";" (35) Dcls -> Dcls IsGlob  
PrimType EmptyArrs ID ";" (36) Dcls -> Dcls IsGlob PrimType StaticArrs  
ID ";" (37) Dcls -> Dcls IsGlob PrimType ID ";" (38) Dcls -> Dcls DataType  
DATAID ";" (39) Dcls -> Dcls ENUMDEC DATAID "{" EnumConsList "}"  
(40) Dcls -> Dcls STRUCTDEC DATAID "{" FieldsList "}" (41) Dcls ->  
Dcls UNIONDEC DATAID "{" FieldsList "}" (42) IsGlob -> (43) IsGlob ->  
GLOBAL (44) PrimType -> INTDEC (45) PrimType -> BOOLDEC (46)  
PrimType -> CHARDEC (47) PrimType -> VOIDDEC (48) PrimType ->  
FLOATDEC (49) DataType -> ENUMDEC (50) DataType ->  
STRUCTDEC (51) DataType -> UNIONDEC (52) Parameter -> (53)  
Parameter -> Parameters PrimType ID (54) Parameter -> Parameters  
DataType DATAID (55) Parameters -> (56) Parameters -> Parameters  
PrimType ID "," (57) Parameters -> Parameters DataType DATAID "," (58)  
EnumConsList -> ENUM (59) EnumConsList -> EnumConsList ";" ENUM  
(60) FieldsList -> ID "::" PrimType (61) FieldsList -> DATAID "::"  
DATAID (62) FieldsList -> FieldsList ";" ID "::" PrimType (63) FieldsList  
-> FieldsList ";" DATAID "::" DATAID (64) Ptrs -> "\*" (65) Ptrs -> Ptrs  
"\*" (66) EmptyArrs -> "[" "]" (67) EmptyArrs -> EmptyArrs "[" "]" (68)  
StaticArrs -> "[" INT "]" (69) StaticArrs -> StaticArrs "[" INT "]" (70) Exp  
-> Exp "+" Exp (71) Exp -> Exp "-" Exp (72) Exp -> Exp "^" Exp (73)  
Exp -> Exp "\*" Exp (74) Exp -> Exp "/" Exp (75) Exp -> Exp "/" Exp  
(76) Exp -> Exp "%" Exp (77) Exp -> "-" Exp (78) Exp -> Exp OR Exp  
(79) Exp -> Exp "||" Exp (80) Exp -> Exp AND Exp (81) Exp -> Exp "&&"  
Exp (82) Exp -> Exp "!" Exp (83) Exp -> Exp "<" Exp (84) Exp -> Exp "<=" "  
Exp (85) Exp -> Exp ">" Exp (86) Exp -> Exp ">=" Exp (87) Exp -> Exp  
"==" Exp (88) Exp -> Exp "!=" Exp (89) Exp -> Exp "!!" Exp (90) Exp ->  
Exp "." Exp (91) Exp -> ID "[" Exp "]" (92) Exp -> ID "(" Exp ")" (93) Exp  
-> "\*" Exp (94) Exp -> "(" Exp ")" (95) Exp -> Term (96) Exp ->  
MALLOC "(" Exp ")" (97) Exp -> SIZEOF "(" Exp ")" (98) Exp ->  
SIZEOF "(" PrimType ")" (99) Exp -> GET "(" ENUM ")" (100) Term ->  
TRUE (101) Term -> FALSE (102) Term -> ID (103) Term -> DATAID  
(104) Term -> FLOAT (105) Term -> INT (106) Term -> CHAR (107)

## Terminals

ID	{ TkId	_ _ }
DATAID	{ TkDId	_ _ }
INTDEC	{ TkInt	_ }
BOOLDEC	{ TkBool	_ }
CHARDEC	{ TkChar	_ }
VOIDDEC	{ TkVoid	_ }
FLOATDEC	{ TkFloat	_ }
STRUCTDEC	{ TkStruct	_ }
UNIONDEC	{ TkUnion	_ }
ENUMDEC	{ TkEnum	_ }
GLOBAL	{ TKGlobal	_ }
"["	{ TkLBracket	_ }
"]"	{ TkRBracket	_ }
"{"	{ TkLCurly	_ }
"}"	{ TkRCurly	_ }
"("	{ TkLRound	_ }
")"	{ TkRRound	_ }
" "	{ TkPipe	_ }
": ":"	{ TkDColon	_ }
":"	{ TkColon	_ }
";"	{ TkSColon	_ }
","	{ TkComma	_ }
"*="	{ TkTEQ	_ }
"+="	{ TkPEQ	_ }
"."	{ TkDot	_ }
"!"	{ TkExcMark	_ }
"!!"	{ TkExcArr	_ }
"!="	{ TkNEQ	_ }
"&&"	{ TkDAmp	_ }
"  "	{ TkPOr	_ }
AND	{ TkAnd	_ }
OR	{ TkOr	_ }
">="	{ TkGE	_ }
"<="	{ TkLE	_ }
">"	{ TkGT	_ }
"<"	{ TkLT	_ }
"/"	{ TkIDiv	_ }
"//"	{ TkDiv	_ }
"+"	{ TkSum	_ }
"-"	{ TkMin	_ }

"^"	{ TkPower _ }
"*"	{ TkTimes _ }
"%"	{ TkMod _ }
"=="	{ TkEq _ }
"="	{ TkAssign _ }
FUNC	{ TkFunc _ }
IF	{ TkIf _ }
ELIF	{ TkElif _ }
ELSE	{ TkElse _ }
END	{ TkEnd _ }
WHILE	{ TkWhile _ }
FOR	{ TkFor _ }
BEGIN	{ TkBegin _ }
BREAK	{ TkBreak _ }
CONTINUE	{ TkContinue _ }
RETURN	{ TkReturn _ }
EXIT	{ TkExit _ }
READ	{ TkRead _ }
WRITE	{ TkWrite _ }
PRINT	{ TkPrint _ }
MALLOC	{ TkAlloc _ }
FREE	{ TkFree _ }
SIZEOF	{ TkSizeOf _ }
GET	{ TkGet _ }
TRUE	{ TkTrue _ }
FALSE	{ TkFalse _ }
CHAR	{ TkCharVal _ _ }
STRING	{ TkString _ _ }
INT	{ TkNum _ _ }
FLOAT	{ TkFloatVal _ _ }
ENUM	{ TkEnumCons _ _ }

---

#### Non-terminals

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%start\_parser rule 0 Prog rule 1 Ins rules 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21 PrntArgs rules 22, 23 NextIf rules 24, 25 Else rules 26, 27 SmplDcls rules 28, 29, 30, 31, 32 Dcls rules 33, 34, 35, 36, 37, 38, 39, 40, 41, 42 IsGlob rules 43, 44 PrimType rules 45, 46, 47, 48, 49 DataType rules 50, 51, 52 Parameter rules 53, 54, 55 Parameters rules 56, 57, 58 EnumConsList rules 59, 60 FieldsList rules 61, 62, 63, 64 Ptrs rules 65, 66 EmptyArrs rules 67, 68 StaticArrs rules 69, 70 Exp rules 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100 Term rules 101, 102, 103, 104, 105, 106, 107

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## States

### State 0

INTDEC	reduce using rule 33
BOOLDEC	reduce using rule 33
CHARDEC	reduce using rule 33
VOIDDEC	reduce using rule 33
FLOATDEC	reduce using rule 33
STRUCTDEC	reduce using rule 33
UNIONDEC	reduce using rule 33
ENUMDEC	reduce using rule 33
GLOBAL	reduce using rule 33
FUNC	reduce using rule 33
%eof	reduce using rule 33

Prog	goto state 3
Dcls	goto state 2

### State 1

Dcls	goto state 2
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### State 2

Prog -> Dcls .	(rule 1)
Dcls -> Dcls . FUNC PrimType ID "(" Parameter ")" ":" Smp1Dcls Ins END	(rule 34)
Dcls -> Dcls . IsGlob PrimType Ptrs ID ";"	(rule 35)
Dcls -> Dcls . IsGlob PrimType EmptyArrs ID ";"	(rule 36)
Dcls -> Dcls . IsGlob PrimType StaticArrs ID ";"	(rule 37)
Dcls -> Dcls . IsGlob PrimType ID ";"	(rule 38)
Dcls -> Dcls . DataType DATAID ";"	(rule 39)
Dcls -> Dcls . ENUMDEC DATAID "{" EnumConsList "}"	(rule 40)
Dcls -> Dcls . STRUCTDEC DATAID "{" FieldsList "}"	(rule 41)
Dcls -> Dcls . UNIONDEC DATAID "{" FieldsList "}"	(rule 42)

INTDEC	reduce using rule 43
BOOLDEC	reduce using rule 43
CHARDEC	reduce using rule 43
VOIDDEC	reduce using rule 43
FLOATDEC	reduce using rule 43
STRUCTDEC	shift, and enter state 6
UNIONDEC	shift, and enter state 7
ENUMDEC	shift, and enter state 8

```

GLOBAL      shift, and enter state 9
FUNC        shift, and enter state 10
%eof        reduce using rule 1

```

```

IsGlob      goto state 4
DataType    goto state 5

```

State 3

```

%start_parser -> Prog .                (rule 0)

%eof      accept

```

State 4

```

Dcls -> Dcls IsGlob . PrimType Ptrs ID ";"      (rule 35)
Dcls -> Dcls IsGlob . PrimType EmptyArrs ID ";"  (rule 36)
Dcls -> Dcls IsGlob . PrimType StaticArrs ID ";" (rule 37)
Dcls -> Dcls IsGlob . PrimType ID ";"            (rule 38)

```

```

INTDEC      shift, and enter state 12
BOOLDEC     shift, and enter state 13
CHARDEC     shift, and enter state 14
VOIDDEC     shift, and enter state 15
FLOATDEC    shift, and enter state 16

```

```

PrimType    goto state 21

```

State 5

```

Dcls -> Dcls DataType . DATAID ";"            (rule 39)

DATAID      shift, and enter state 20

```

State 6

```

Dcls -> Dcls STRUCTDEC . DATAID "{" FieldsList "}" (rule 41)
DataType -> STRUCTDEC .                             (rule 51)

```

```

DATAID      shift, and enter state 19
             (reduce using rule 51)

```

State 7

Dcls -> Dcls UNIONDEC . DATAID "{" FieldsList "}" (rule 42)  
DataType -> UNIONDEC . (rule 52)

DATAID shift, and enter state 18  
(reduce using rule 52)

State 8

Dcls -> Dcls ENUMDEC . DATAID "{" EnumConsList "}" (rule 40)  
DataType -> ENUMDEC . (rule 50)

DATAID shift, and enter state 17  
(reduce using rule 50)

State 9

IsGlob -> GLOBAL . (rule 44)

INTDEC reduce using rule 44  
BOOLDEC reduce using rule 44  
CHARDEC reduce using rule 44  
VOIDDEC reduce using rule 44  
FLOATDEC reduce using rule 44

State 10

Dcls -> Dcls FUNC . PrimType ID "(" Parameter ")" ":" SmplDcls Ins END (rule 34)

INTDEC shift, and enter state 12  
BOOLDEC shift, and enter state 13  
CHARDEC shift, and enter state 14  
VOIDDEC shift, and enter state 15  
FLOATDEC shift, and enter state 16

PrimType goto state 11

State 11

Dcls -> Dcls FUNC PrimType . ID "(" Parameter ")" ":" SmplDcls Ins END (rule 34)

ID shift, and enter state 32

State 12



PrimType -> INTDEC . (rule 45)

ID	reduce using rule 45
"["	reduce using rule 45
"}"	reduce using rule 45
")"	reduce using rule 45
","	reduce using rule 45
"*"	reduce using rule 45

State 13

PrimType -> BOOLDEC . (rule 46)

ID	reduce using rule 46
"["	reduce using rule 46
"}"	reduce using rule 46
")"	reduce using rule 46
","	reduce using rule 46
"*"	reduce using rule 46

State 14

PrimType -> CHARDEC . (rule 47)

ID	reduce using rule 47
"["	reduce using rule 47
"}"	reduce using rule 47
")"	reduce using rule 47
","	reduce using rule 47
"*"	reduce using rule 47

State 15

PrimType -> VOIDDEC . (rule 48)

ID	reduce using rule 48
"["	reduce using rule 48
"}"	reduce using rule 48
")"	reduce using rule 48
","	reduce using rule 48
"*"	reduce using rule 48

State 16

PrimType -> FLOATDEC . (rule 49)

ID	reduce using rule 49
"["	reduce using rule 49
"}"	reduce using rule 49
")"	reduce using rule 49
","	reduce using rule 49
"*"	reduce using rule 49

State 17

Dcls -> Dcls ENUMDEC DATAID . "{" EnumConsList "}" (rule 40)

"{" shift, and enter state 31

State 18

Dcls -> Dcls UNIONDEC DATAID . "{" FieldsList "}" (rule 42)

"{" shift, and enter state 30

State 19

Dcls -> Dcls STRUCTDEC DATAID . "{" FieldsList "}" (rule 41)

"{" shift, and enter state 29

State 20

Dcls -> Dcls DataType DATAID . ";" (rule 39)

";" shift, and enter state 28

State 21

Dcls -> Dcls IsGlob PrimType . Ptrs ID ";" (rule 35)

Dcls -> Dcls IsGlob PrimType . EmptyArrs ID ";" (rule 36)

Dcls -> Dcls IsGlob PrimType . StaticArrs ID ";" (rule 37)

Dcls -> Dcls IsGlob PrimType . ID ";" (rule 38)

ID	shift, and enter state 25
"["	shift, and enter state 26
"*"	shift, and enter state 27

```
Ptrs      goto state 22
EmptyArrs goto state 23
StaticArrs goto state 24
```

State 22

```
Dcls -> Dcls IsGlob PrimType Ptrs . ID ";"      (rule 35)
Ptrs -> Ptrs . "*"                             (rule 66)

ID      shift, and enter state 47
"*"     shift, and enter state 48
```

State 23

```
Dcls -> Dcls IsGlob PrimType EmptyArrs . ID ";" (rule 36)
EmptyArrs -> EmptyArrs . "[" "]"               (rule 68)

ID      shift, and enter state 45
"["     shift, and enter state 46
```

State 24

```
Dcls -> Dcls IsGlob PrimType StaticArrs . ID ";" (rule 37)
StaticArrs -> StaticArrs . "[" INT "]"           (rule 70)

ID      shift, and enter state 43
"["     shift, and enter state 44
```

State 25

```
Dcls -> Dcls IsGlob PrimType ID . ";"           (rule 38)

";"     shift, and enter state 42
```

State 26

```
EmptyArrs -> "[" . "]"                         (rule 67)
StaticArrs -> "[" . INT "]"                   (rule 69)

"]"     shift, and enter state 40
INT     shift, and enter state 41
```

State 27

Ptrs -> "\*" . (rule 65)

ID	reduce using rule 65
"*"	reduce using rule 65

State 28

Dcls -> Dcls DataType DATAID ";" . (rule 39)

INTDEC	reduce using rule 39
BOOLDEC	reduce using rule 39
CHARDEC	reduce using rule 39
VOIDDEC	reduce using rule 39
FLOATDEC	reduce using rule 39
STRUCTDEC	reduce using rule 39
UNIONDEC	reduce using rule 39
ENUMDEC	reduce using rule 39
GLOBAL	reduce using rule 39
FUNC	reduce using rule 39
%eof	reduce using rule 39

State 29

Dcls -> Dcls STRUCTDEC DATAID "{" . FieldsList "}" (rule 41)

ID	shift, and enter state 37
DATAID	shift, and enter state 38

FieldsList goto state 39

State 30

Dcls -> Dcls UNIONDEC DATAID "{" . FieldsList "}" (rule 42)

ID	shift, and enter state 37
DATAID	shift, and enter state 38

FieldsList goto state 36

State 31

```

Dcls -> Dcls ENUMDEC DATAID "{" . EnumConsList "}"      (rule 40)

ENUM                shift, and enter state 35

EnumConsList       goto state 34

State 32

Dcls -> Dcls FUNC PrimType ID . "(" Parameter ")" ":" SmplDcls Ins END      (rule 34)

"("                shift, and enter state 33

State 33

Dcls -> Dcls FUNC PrimType ID "(" . Parameter ")" ":" SmplDcls Ins END      (rule 34)

INTDEC             reduce using rule 56
BOOLDEC            reduce using rule 56
CHARDEC            reduce using rule 56
VOIDDEC            reduce using rule 56
FLOATDEC           reduce using rule 56
STRUCTDEC          reduce using rule 56
UNIONDEC           reduce using rule 56
ENUMDEC            reduce using rule 56
")"                reduce using rule 53

Parameter          goto state 62
Parameters          goto state 63

State 34

Dcls -> Dcls ENUMDEC DATAID "{" EnumConsList . "}"      (rule 40)
EnumConsList -> EnumConsList . "," ENUM                  (rule 60)

"}"                shift, and enter state 60
","                shift, and enter state 61

State 35

EnumConsList -> ENUM .                                     (rule 59)

"}"                reduce using rule 59
","                reduce using rule 59

```

State 36

```
Dcls -> Dcls UNIONDEC DATAID "{" FieldsList . "}"      (rule 42)
FieldsList -> FieldsList . "," ID "::" PrimType          (rule 63)
FieldsList -> FieldsList . "," DATAID "::" DATAID      (rule 64)
```

```
"}"          shift, and enter state 59
","          shift, and enter state 56
```

State 37

```
FieldsList -> ID . "::" PrimType                          (rule 61)
```

```
"::"          shift, and enter state 58
```

State 38

```
FieldsList -> DATAID . "::" DATAID                      (rule 62)
```

```
"::"          shift, and enter state 57
```

State 39

```
Dcls -> Dcls STRUCTDEC DATAID "{" FieldsList . "}"      (rule 41)
FieldsList -> FieldsList . "," ID "::" PrimType          (rule 63)
FieldsList -> FieldsList . "," DATAID "::" DATAID      (rule 64)
```

```
"}"          shift, and enter state 55
","          shift, and enter state 56
```

State 40

```
EmptyArrs -> "[" "]" .                                    (rule 67)
```

```
ID           reduce using rule 67
"["          reduce using rule 67
```

State 41

```
StaticArrs -> "[" INT . "]"                              (rule 69)
```

```
"]"          shift, and enter state 54
```

State 42

Dcls -> Dcls IsGlob PrimType ID ";" . (rule 38)

INTDEC	reduce using rule 38
BOOLDEC	reduce using rule 38
CHARDEC	reduce using rule 38
VOIDDEC	reduce using rule 38
FLOATDEC	reduce using rule 38
STRUCTDEC	reduce using rule 38
UNIONDEC	reduce using rule 38
ENUMDEC	reduce using rule 38
GLOBAL	reduce using rule 38
FUNC	reduce using rule 38
%eof	reduce using rule 38

State 43

Dcls -> Dcls IsGlob PrimType StaticArrs ID . ";" (rule 37)

";" shift, and enter state 53

State 44

StaticArrs -> StaticArrs "[" . INT "]" (rule 70)

INT shift, and enter state 52

State 45

Dcls -> Dcls IsGlob PrimType EmptyArrs ID . ";" (rule 36)

";" shift, and enter state 51

State 46

EmptyArrs -> EmptyArrs "[" . "]" (rule 68)

"]" shift, and enter state 50

State 47

Dcls -> Dcls IsGlob PrimType Ptrs ID . ";" (rule 35)

"," shift, and enter state 49

State 48

Ptrs -> Ptrs "\*" . (rule 66)

ID reduce using rule 66

"\*" reduce using rule 66

State 49

Dcls -> Dcls IsGlob PrimType Ptrs ID ";" . (rule 35)

INTDEC reduce using rule 35

BOOLDEC reduce using rule 35

CHARDEC reduce using rule 35

VOIDDEC reduce using rule 35

FLOATDEC reduce using rule 35

STRUCTDEC reduce using rule 35

UNIONDEC reduce using rule 35

ENUMDEC reduce using rule 35

GLOBAL reduce using rule 35

FUNC reduce using rule 35

%eof reduce using rule 35

State 50

EmptyArrs -> EmptyArrs "[" "]" . (rule 68)

ID reduce using rule 68

"[" reduce using rule 68

State 51

Dcls -> Dcls IsGlob PrimType EmptyArrs ID ";" . (rule 36)

INTDEC reduce using rule 36

BOOLDEC reduce using rule 36

CHARDEC reduce using rule 36

VOIDDEC reduce using rule 36

FLOATDEC reduce using rule 36

STRUCTDEC reduce using rule 36



UNIONDEC	reduce using rule 36
ENUMDEC	reduce using rule 36
GLOBAL	reduce using rule 36
FUNC	reduce using rule 36
%eof	reduce using rule 36

State 52

StaticArrs -> StaticArrs "[" INT . "]" (rule 70)

"]" shift, and enter state 75

State 53

Dcls -> Dcls IsGlob PrimType StaticArrs ID ";" . (rule 37)

INTDEC	reduce using rule 37
BOOLDEC	reduce using rule 37
CHARDEC	reduce using rule 37
VOIDDEC	reduce using rule 37
FLOATDEC	reduce using rule 37
STRUCTDEC	reduce using rule 37
UNIONDEC	reduce using rule 37
ENUMDEC	reduce using rule 37
GLOBAL	reduce using rule 37
FUNC	reduce using rule 37
%eof	reduce using rule 37

State 54

StaticArrs -> "[" INT "]" . (rule 69)

ID	reduce using rule 69
"["	reduce using rule 69

State 55

Dcls -> Dcls STRUCTDEC DATAID "{" FieldsList "}" . (rule 41)

INTDEC	reduce using rule 41
BOOLDEC	reduce using rule 41
CHARDEC	reduce using rule 41
VOIDDEC	reduce using rule 41
FLOATDEC	reduce using rule 41

STRUCTDEC	reduce using rule 41
UNIONDEC	reduce using rule 41
ENUMDEC	reduce using rule 41
GLOBAL	reduce using rule 41
FUNC	reduce using rule 41
%eof	reduce using rule 41

State 56

FieldsList -> FieldsList "," . ID "::" PrimType	(rule 63)
FieldsList -> FieldsList "," . DATAID "::" DATAID	(rule 64)

ID	shift, and enter state 73
DATAID	shift, and enter state 74

State 57

FieldsList -> DATAID "::" . DATAID	(rule 62)
------------------------------------	-----------

DATAID	shift, and enter state 72
--------	---------------------------

State 58

FieldsList -> ID "::" . PrimType	(rule 61)
----------------------------------	-----------

INTDEC	shift, and enter state 12
BOOLDEC	shift, and enter state 13
CHARDEC	shift, and enter state 14
VOIDDEC	shift, and enter state 15
FLOATDEC	shift, and enter state 16

PrimType	goto state 71
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State 59

Dcls -> Dcls UNIONDEC DATAID "{" FieldsList "}" .	(rule 42)
---	-----------

INTDEC	reduce using rule 42
BOOLDEC	reduce using rule 42
CHARDEC	reduce using rule 42
VOIDDEC	reduce using rule 42
FLOATDEC	reduce using rule 42
STRUCTDEC	reduce using rule 42
UNIONDEC	reduce using rule 42

```

ENUMDEC      reduce using rule 42
GLOBAL       reduce using rule 42
FUNC         reduce using rule 42
%eof         reduce using rule 42

```

State 60

```
Dcls -> Dcls ENUMDEC DATAID "{" EnumConsList "}" .      (rule 40)
```

```

INTDEC      reduce using rule 40
BOOLDEC     reduce using rule 40
CHARDEC     reduce using rule 40
VOIDDEC     reduce using rule 40
FLOATDEC    reduce using rule 40
STRUCTDEC   reduce using rule 40
UNIONDEC    reduce using rule 40
ENUMDEC     reduce using rule 40
GLOBAL      reduce using rule 40
FUNC        reduce using rule 40
%eof        reduce using rule 40

```

State 61

```
EnumConsList -> EnumConsList "," . ENUM      (rule 60)
```

```
ENUM          shift, and enter state 70
```

State 62

```
Dcls -> Dcls FUNC PrimType ID "(" Parameter . ")" ":" SmplDcls Ins END      (rule 34)
```

```
 ")"          shift, and enter state 69
```

State 63

```

Parameter -> Parameters . PrimType ID      (rule 54)
Parameter -> Parameters . DataType DATAID (rule 55)
Parameters -> Parameters . PrimType ID ",", (rule 57)
Parameters -> Parameters . DataType DATAID " , " (rule 58)

```

```

INTDEC      shift, and enter state 12
BOOLDEC     shift, and enter state 13
CHARDEC     shift, and enter state 14
VOIDDEC     shift, and enter state 15

```

FLOATDEC        shift, and enter state 16  
STRUCTDEC       shift, and enter state 66  
UNIONDEC        shift, and enter state 67  
ENUMDEC         shift, and enter state 68

PrimType        goto state 64  
DataType        goto state 65

State 64

Parameter -> Parameters PrimType . ID                (rule 54)  
Parameters -> Parameters PrimType . ID ","          (rule 57)

ID               shift, and enter state 80

State 65

Parameter -> Parameters DataType . DATAID        (rule 55)  
Parameters -> Parameters DataType . DATAID ","    (rule 58)

DATAID           shift, and enter state 79

State 66

DataType -> STRUCTDEC .                            (rule 51)

DATAID           reduce using rule 51

State 67

DataType -> UNIONDEC .                            (rule 52)

DATAID           reduce using rule 52

State 68

DataType -> ENUMDEC .                             (rule 50)

DATAID           reduce using rule 50

State 69

Dcls -> Dcls FUNC PrimType ID "(" Parameter ")" . ":" SmplDcls Ins END (rule 34)

":" shift, and enter state 78

State 70

EnumConsList -> EnumConsList "," ENUM . (rule 60)

"}" reduce using rule 60

"," reduce using rule 60

State 71

FieldsList -> ID ":@" PrimType . (rule 61)

"}" reduce using rule 61

"," reduce using rule 61

State 72

FieldsList -> DATAID ":@" DATAID . (rule 62)

"}" reduce using rule 62

"," reduce using rule 62

State 73

FieldsList -> FieldsList "," ID . ":@" PrimType (rule 63)

":" shift, and enter state 77

State 74

FieldsList -> FieldsList "," DATAID . ":@" DATAID (rule 64)

":" shift, and enter state 76

State 75

StaticArrs -> StaticArrs "[" INT "]" . (rule 70)

ID reduce using rule 70

"[" reduce using rule 70

State 76

FieldsList -> FieldsList "," DATAID "::" . DATAID (rule 64)

DATAID shift, and enter state 85

State 77

FieldsList -> FieldsList "," ID "::" . PrimType (rule 63)

INTDEC shift, and enter state 12

BOOLDEC shift, and enter state 13

CHARDEC shift, and enter state 14

VOIDDEC shift, and enter state 15

FLOATDEC shift, and enter state 16

PrimType goto state 84

State 78

Dcls -> Dcls FUNC PrimType ID "(" Parameter ")" ":" . SmplDcls Ins END (rule 34)

ID reduce using rule 28

INTDEC reduce using rule 28

BOOLDEC reduce using rule 28

CHARDEC reduce using rule 28

VOIDDEC reduce using rule 28

FLOATDEC reduce using rule 28

GLOBAL reduce using rule 28

IF reduce using rule 28

END reduce using rule 28

WHILE reduce using rule 28

FOR reduce using rule 28

BEGIN reduce using rule 28

BREAK reduce using rule 28

CONTINUE reduce using rule 28

RETURN reduce using rule 28

EXIT reduce using rule 28

READ reduce using rule 28

WRITE reduce using rule 28

PRINT reduce using rule 28

FREE reduce using rule 28

SmplDcls goto state 83

State 79

Parameter -> Parameters DataType DATAID . (rule 55)

Parameters -> Parameters DataType DATAID . "," (rule 58)

)" reduce using rule 55

"," shift, and enter state 82

State 80

Parameter -> Parameters PrimType ID . (rule 54)

Parameters -> Parameters PrimType ID . "," (rule 57)

)" reduce using rule 54

"," shift, and enter state 81

State 81

Parameters -> Parameters PrimType ID "," . (rule 57)

INTDEC reduce using rule 57

BOOLDEC reduce using rule 57

CHARDEC reduce using rule 57

VOIDDEC reduce using rule 57

FLOATDEC reduce using rule 57

STRUCTDEC reduce using rule 57

UNIONDEC reduce using rule 57

ENUMDEC reduce using rule 57

State 82

Parameters -> Parameters DataType DATAID "," . (rule 58)

INTDEC reduce using rule 58

BOOLDEC reduce using rule 58

CHARDEC reduce using rule 58

VOIDDEC reduce using rule 58

FLOATDEC reduce using rule 58

STRUCTDEC reduce using rule 58

UNIONDEC reduce using rule 58

ENUMDEC reduce using rule 58

State 83

```

SmplDcls -> SmplDcls . IsGlob PrimType Ptrs ID ";"      (rule 29)
SmplDcls -> SmplDcls . IsGlob PrimType EmptyArrs ID ";"  (rule 30)
SmplDcls -> SmplDcls . IsGlob PrimType StaticArrs ID ";" (rule 31)
SmplDcls -> SmplDcls . IsGlob PrimType ID ";"           (rule 32)
Dcls -> Dcls FUNC PrimType ID "(" Parameter ")" ":" SmplDcls . Ins END (rule 34)

```

```

ID          reduce using rule 2
INTDEC      reduce using rule 43
BOOLDEC     reduce using rule 43
CHARDEC     reduce using rule 43
VOIDDEC     reduce using rule 43
FLOATDEC    reduce using rule 43
GLOBAL      shift, and enter state 9
IF          reduce using rule 2
END         reduce using rule 2
WHILE       reduce using rule 2
FOR         reduce using rule 2
BEGIN       reduce using rule 2
BREAK       reduce using rule 2
CONTINUE    reduce using rule 2
RETURN      reduce using rule 2
EXIT        reduce using rule 2
READ        reduce using rule 2
WRITE       reduce using rule 2
PRINT       reduce using rule 2
FREE        reduce using rule 2

```

```

Ins        goto state 86
IsGlob     goto state 87

```

State 84

```

FieldsList -> FieldsList "," ID ":" PrimType .      (rule 63)

```

```

"}"        reduce using rule 63
","        reduce using rule 63

```

State 85

```

FieldsList -> FieldsList "," DATAID ":" DATAID . (rule 64)

```

```

"}"        reduce using rule 64
","        reduce using rule 64

```

State 86



```

Ins -> Ins . PRINT "(" STRING PrntArgs ")" ";" (rule 3)
Ins -> Ins . READ "(" ID ")" ";" (rule 4)
Ins -> Ins . WRITE "(" ID ")" ";" (rule 5)
Ins -> Ins . ID "=" Exp ";" (rule 6)
Ins -> Ins . ID "*=" Exp ";" (rule 7)
Ins -> Ins . ID "+=" Exp ";" (rule 8)
Ins -> Ins . BREAK ";" (rule 9)
Ins -> Ins . CONTINUE ";" (rule 10)
Ins -> Ins . RETURN ";" (rule 11)
Ins -> Ins . EXIT ";" (rule 12)
Ins -> Ins . FREE "(" ID ")" ";" (rule 13)
Ins -> Ins . FREE "(" DATAID ")" ";" (rule 14)
Ins -> Ins . READ "(" DATAID ")" ";" (rule 15)
Ins -> Ins . IF ":" SmplDcls Ins NextIf Else END (rule 16)
Ins -> Ins . WHILE Exp ":" SmplDcls Ins END (rule 17)
Ins -> Ins . FOR ID "=" INT "|" INT "|" INT ":" SmplDcls Ins END (rule 18)
Ins -> Ins . FOR ID "=" INT "|" INT ":" SmplDcls Ins END (rule 19)
Ins -> Ins . FOR ID "=" ENUM "|" ENUM ":" SmplDcls Ins END (rule 20)
Ins -> Ins . BEGIN SmplDcls Ins END (rule 21)
Dcls -> Dcls FUNC PrimType ID "(" Parameter ")" ":" SmplDcls Ins . END (rule 34)

```

```

ID          shift, and enter state 89
IF          shift, and enter state 90
END         shift, and enter state 91
WHILE       shift, and enter state 92
FOR         shift, and enter state 93
BEGIN       shift, and enter state 94
BREAK       shift, and enter state 95
CONTINUE    shift, and enter state 96
RETURN      shift, and enter state 97
EXIT        shift, and enter state 98
READ        shift, and enter state 99
WRITE       shift, and enter state 100
PRINT       shift, and enter state 101
FREE        shift, and enter state 102

```

State 87

```

SmplDcls -> SmplDcls IsGlob . PrimType Ptrs ID ";" (rule 29)
SmplDcls -> SmplDcls IsGlob . PrimType EmptyArrs ID ";" (rule 30)
SmplDcls -> SmplDcls IsGlob . PrimType StaticArrs ID ";" (rule 31)
SmplDcls -> SmplDcls IsGlob . PrimType ID ";" (rule 32)

```

```

INTDEC      shift, and enter state 12
BOOLDEC     shift, and enter state 13

```

CHARDEC            shift, and enter state 14  
VOIDDEC            shift, and enter state 15  
FLOATDEC           shift, and enter state 16

PrimType           goto state 88

State 88

SmplDcls -> SmplDcls IsGlob PrimType . Ptrs ID ";"        (rule 29)  
SmplDcls -> SmplDcls IsGlob PrimType . EmptyArrs ID ";"    (rule 30)  
SmplDcls -> SmplDcls IsGlob PrimType . StaticArrs ID ";"    (rule 31)  
SmplDcls -> SmplDcls IsGlob PrimType . ID ";"            (rule 32)

ID                shift, and enter state 136  
"["                shift, and enter state 26  
"\*"                shift, and enter state 27

Ptrs              goto state 133  
EmptyArrs          goto state 134  
StaticArrs         goto state 135

State 89

Ins -> Ins ID . "=" Exp ";"                                (rule 6)  
Ins -> Ins ID . "\*=" Exp ";"                                (rule 7)  
Ins -> Ins ID . "+=" Exp ";"                                (rule 8)

"\*="              shift, and enter state 130  
"+="              shift, and enter state 131  
"="                shift, and enter state 132

State 90

Ins -> Ins IF . ":" SmplDcls Ins NextIf Else END        (rule 16)

":"                shift, and enter state 129

State 91

Dcls -> Dcls FUNC PrimType ID "(" Parameter ")" ":" SmplDcls Ins END .        (rule 34)

INTDEC            reduce using rule 34  
BOOLDEC           reduce using rule 34  
CHARDEC            reduce using rule 34

VOIDDEC	reduce using rule 34
FLOATDEC	reduce using rule 34
STRUCTDEC	reduce using rule 34
UNIONDEC	reduce using rule 34
ENUMDEC	reduce using rule 34
GLOBAL	reduce using rule 34
FUNC	reduce using rule 34
%eof	reduce using rule 34

State 92

Ins -> Ins WHILE . Exp ":" SmplDcls Ins END (rule 17)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"_"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 113
Term	goto state 114

State 93

Ins -> Ins FOR . ID "=" INT "|" INT "|" INT ":" SmplDcls Ins END (rule 18)

Ins -> Ins FOR . ID "=" INT "|" INT ":" SmplDcls Ins END (rule 19)

Ins -> Ins FOR . ID "=" ENUM "|" ENUM ":" SmplDcls Ins END (rule 20)

ID	shift, and enter state 112
----	----------------------------

State 94

Ins -> Ins BEGIN . SmplDcls Ins END (rule 21)

ID	reduce using rule 28
----	----------------------



State 99

```
Ins -> Ins READ . "(" ID ")" ";" (rule 4)
Ins -> Ins READ . "(" DATAID ")" ";" (rule 15)
```

"(" shift, and enter state 106

State 100

```
Ins -> Ins WRITE . "(" ID ")" ";" (rule 5)
```

"(" shift, and enter state 105

State 101

```
Ins -> Ins PRINT . "(" STRING PrntArgs ")" ";" (rule 3)
```

"(" shift, and enter state 104

State 102

```
Ins -> Ins FREE . "(" ID ")" ";" (rule 13)
Ins -> Ins FREE . "(" DATAID ")" ";" (rule 14)
```

"(" shift, and enter state 103

State 103

```
Ins -> Ins FREE "(" . ID ")" ";" (rule 13)
Ins -> Ins FREE "(" . DATAID ")" ";" (rule 14)
```

ID shift, and enter state 180

DATAID shift, and enter state 181

State 104

```
Ins -> Ins PRINT "(" . STRING PrntArgs ")" ";" (rule 3)
```

STRING shift, and enter state 179

State 105

Ins -> Ins WRITE "(" . ID ")" ";" (rule 5)

ID shift, and enter state 178

State 106

Ins -> Ins READ "(" . ID ")" ";" (rule 4)

Ins -> Ins READ "(" . DATAID ")" ";" (rule 15)

ID shift, and enter state 176

DATAID shift, and enter state 177

State 107

Ins -> Ins EXIT ";" . (rule 12)

ID	reduce using rule 12
IF	reduce using rule 12
ELIF	reduce using rule 12
ELSE	reduce using rule 12
END	reduce using rule 12
WHILE	reduce using rule 12
FOR	reduce using rule 12
BEGIN	reduce using rule 12
BREAK	reduce using rule 12
CONTINUE	reduce using rule 12
RETURN	reduce using rule 12
EXIT	reduce using rule 12
READ	reduce using rule 12
WRITE	reduce using rule 12
PRINT	reduce using rule 12
FREE	reduce using rule 12

State 108

Ins -> Ins RETURN ";" . (rule 11)

ID	reduce using rule 11
IF	reduce using rule 11
ELIF	reduce using rule 11
ELSE	reduce using rule 11
END	reduce using rule 11
WHILE	reduce using rule 11
FOR	reduce using rule 11

BEGIN	reduce using rule 11
BREAK	reduce using rule 11
CONTINUE	reduce using rule 11
RETURN	reduce using rule 11
EXIT	reduce using rule 11
READ	reduce using rule 11
WRITE	reduce using rule 11
PRINT	reduce using rule 11
FREE	reduce using rule 11

State 109

Ins -> Ins CONTINUE ";" . (rule 10)

ID	reduce using rule 10
IF	reduce using rule 10
ELIF	reduce using rule 10
ELSE	reduce using rule 10
END	reduce using rule 10
WHILE	reduce using rule 10
FOR	reduce using rule 10
BEGIN	reduce using rule 10
BREAK	reduce using rule 10
CONTINUE	reduce using rule 10
RETURN	reduce using rule 10
EXIT	reduce using rule 10
READ	reduce using rule 10
WRITE	reduce using rule 10
PRINT	reduce using rule 10
FREE	reduce using rule 10

State 110

Ins -> Ins BREAK ";" . (rule 9)

ID	reduce using rule 9
IF	reduce using rule 9
ELIF	reduce using rule 9
ELSE	reduce using rule 9
END	reduce using rule 9
WHILE	reduce using rule 9
FOR	reduce using rule 9
BEGIN	reduce using rule 9
BREAK	reduce using rule 9
CONTINUE	reduce using rule 9

RETURN	reduce using rule 9
EXIT	reduce using rule 9
READ	reduce using rule 9
WRITE	reduce using rule 9
PRINT	reduce using rule 9
FREE	reduce using rule 9

State 111

Ins -> Ins BEGIN Smp1Dcls . Ins END	(rule 21)
Smp1Dcls -> Smp1Dcls . IsGlob PrimType Ptrs ID ";"	(rule 29)
Smp1Dcls -> Smp1Dcls . IsGlob PrimType EmptyArrs ID ";"	(rule 30)
Smp1Dcls -> Smp1Dcls . IsGlob PrimType StaticArrs ID ";"	(rule 31)
Smp1Dcls -> Smp1Dcls . IsGlob PrimType ID ";"	(rule 32)

ID	reduce using rule 2
INTDEC	reduce using rule 43
BOOLDEC	reduce using rule 43
CHARDEC	reduce using rule 43
VOIDDEC	reduce using rule 43
FLOATDEC	reduce using rule 43
GLOBAL	shift, and enter state 9
IF	reduce using rule 2
END	reduce using rule 2
WHILE	reduce using rule 2
FOR	reduce using rule 2
BEGIN	reduce using rule 2
BREAK	reduce using rule 2
CONTINUE	reduce using rule 2
RETURN	reduce using rule 2
EXIT	reduce using rule 2
READ	reduce using rule 2
WRITE	reduce using rule 2
PRINT	reduce using rule 2
FREE	reduce using rule 2

Ins	goto state 175
IsGlob	goto state 87

State 112

Ins -> Ins FOR ID . "=" INT " " INT " " INT ":" Smp1Dcls Ins END	(rule 18)
Ins -> Ins FOR ID . "=" INT " " INT ":" Smp1Dcls Ins END	(rule 19)
Ins -> Ins FOR ID . "=" ENUM " " ENUM ":" Smp1Dcls Ins END	(rule 20)

"="	shift, and enter state 174
-----	----------------------------



# State 113

Ins -> Ins WHILE Exp . ":" Smp1Dcls Ins END	(rule 17)
Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

":"	shift, and enter state 154
."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	shift, and enter state 157
"&&"	shift, and enter state 158
"  "	shift, and enter state 159
AND	shift, and enter state 160
OR	shift, and enter state 161
">="	shift, and enter state 162
"<="	shift, and enter state 163
">"	shift, and enter state 164
"<"	shift, and enter state 165
"/"	shift, and enter state 166
//"	shift, and enter state 167
+"	shift, and enter state 168
-"	shift, and enter state 169
^"	shift, and enter state 170
*"	shift, and enter state 171
%"	shift, and enter state 172
"=="	shift, and enter state 173

# State 114

Exp -> Term . (rule 96)

" ] "	reduce using rule 96
" ) "	reduce using rule 96
" : "	reduce using rule 96
" ; "	reduce using rule 96
" , "	reduce using rule 96
" . "	reduce using rule 96
" ! ! "	reduce using rule 96
" ! = "	reduce using rule 96
" & & "	reduce using rule 96
"     "	reduce using rule 96
AND	reduce using rule 96
OR	reduce using rule 96
" > = "	reduce using rule 96
" < = "	reduce using rule 96
" > "	reduce using rule 96
" < "	reduce using rule 96
" / "	reduce using rule 96
" / / "	reduce using rule 96
" + "	reduce using rule 96
" - "	reduce using rule 96
" ^ "	reduce using rule 96
" * "	reduce using rule 96
" % "	reduce using rule 96
" = = "	reduce using rule 96

State 115

Exp -> ID . "[ " Exp " ] "	(rule 92)
Exp -> ID . "( " Exp " ) "	(rule 93)
Term -> ID .	(rule 103)

" [ "	shift, and enter state 152
" ] "	reduce using rule 103
" ( "	shift, and enter state 153
" ) "	reduce using rule 103
" : "	reduce using rule 103
" ; "	reduce using rule 103
" , "	reduce using rule 103
" . "	reduce using rule 103
" ! ! "	reduce using rule 103
" ! = "	reduce using rule 103
" & & "	reduce using rule 103
"     "	reduce using rule 103

AND	reduce using rule 103
OR	reduce using rule 103
">="	reduce using rule 103
"<="	reduce using rule 103
">"	reduce using rule 103
"<"	reduce using rule 103
"/"	reduce using rule 103
"//"	reduce using rule 103
"+"	reduce using rule 103
"-"	reduce using rule 103
"^"	reduce using rule 103
"*"	reduce using rule 103
"%"	reduce using rule 103
"=="	reduce using rule 103

State 116

Term -> DATAID . (rule 104)

"]"	reduce using rule 104
")"	reduce using rule 104
":"	reduce using rule 104
";"	reduce using rule 104
","	reduce using rule 104
."	reduce using rule 104
"!!"	reduce using rule 104
"!="	reduce using rule 104
"&&"	reduce using rule 104
"  "	reduce using rule 104
AND	reduce using rule 104
OR	reduce using rule 104
">="	reduce using rule 104
"<="	reduce using rule 104
">"	reduce using rule 104
"<"	reduce using rule 104
"/"	reduce using rule 104
"//"	reduce using rule 104
"+"	reduce using rule 104
"-"	reduce using rule 104
"^"	reduce using rule 104
"*"	reduce using rule 104
"%"	reduce using rule 104
"=="	reduce using rule 104

State 117

Exp -> "(" . Exp ")" (rule 95)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
!"	shift, and enter state 118
"-"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128
Exp	goto state 151
Term	goto state 114

State 118

Exp -> "!" . Exp (rule 83)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
!"	shift, and enter state 118
"-"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128
Exp	goto state 150
Term	goto state 114

State 119

Exp -> "-" . Exp (rule 78)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
!"	shift, and enter state 118
"_"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 149
Term	goto state 114

State 120

Exp -> "\*" . Exp (rule 94)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
!"	shift, and enter state 118
"_"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 148
Term	goto state 114

State 121

Exp -> MALLOC . "(" Exp ")" (rule 97)

"("	shift, and enter state 147
-----	----------------------------

State 122

Exp -> SIZEOF . "(" Exp ")" (rule 98)

Exp -> SIZEOF . "(" PrimType ")" (rule 99)

"(" shift, and enter state 146

State 123

Exp -> GET . "(" ENUM ")" (rule 100)

"(" shift, and enter state 145

State 124

Term -> TRUE . (rule 101)

"]" reduce using rule 101  
")" reduce using rule 101  
":" reduce using rule 101  
";" reduce using rule 101  
"," reduce using rule 101  
"." reduce using rule 101  
"!!" reduce using rule 101  
"!=" reduce using rule 101  
"&&" reduce using rule 101  
"||" reduce using rule 101  
AND reduce using rule 101  
OR reduce using rule 101  
">=" reduce using rule 101  
"<=" reduce using rule 101  
">" reduce using rule 101  
"<" reduce using rule 101  
"/" reduce using rule 101  
"//" reduce using rule 101  
"+" reduce using rule 101  
"- " reduce using rule 101  
"^" reduce using rule 101  
"\*" reduce using rule 101  
%" reduce using rule 101  
"==" reduce using rule 101

State 125

Term -> FALSE . (rule 102)

"]"	reduce using rule 102
")"	reduce using rule 102
":"	reduce using rule 102
";"	reduce using rule 102
","	reduce using rule 102
"."	reduce using rule 102
"!!"	reduce using rule 102
"!="	reduce using rule 102
"&&"	reduce using rule 102
"  "	reduce using rule 102
AND	reduce using rule 102
OR	reduce using rule 102
">="	reduce using rule 102
"<="	reduce using rule 102
">"	reduce using rule 102
"<"	reduce using rule 102
"/"	reduce using rule 102
"//"	reduce using rule 102
"+"	reduce using rule 102
"-"	reduce using rule 102
"^"	reduce using rule 102
"*"	reduce using rule 102
"%"	reduce using rule 102
"=="	reduce using rule 102

State 126

Term -> CHAR . (rule 107)

"]"	reduce using rule 107
")"	reduce using rule 107
":"	reduce using rule 107
";"	reduce using rule 107
","	reduce using rule 107
"."	reduce using rule 107
"!!"	reduce using rule 107
"!="	reduce using rule 107
"&&"	reduce using rule 107
"  "	reduce using rule 107
AND	reduce using rule 107
OR	reduce using rule 107
">="	reduce using rule 107
"<="	reduce using rule 107

">"	reduce using rule 107
"<"	reduce using rule 107
"/"	reduce using rule 107
"//"	reduce using rule 107
"+"	reduce using rule 107
"-"	reduce using rule 107
"^"	reduce using rule 107
"*"	reduce using rule 107
"%"	reduce using rule 107
"=="	reduce using rule 107

State 127

Term -> INT . (rule 106)

"]"	reduce using rule 106
")"	reduce using rule 106
":"	reduce using rule 106
";"	reduce using rule 106
","	reduce using rule 106
"."	reduce using rule 106
"!!"	reduce using rule 106
"!="	reduce using rule 106
"&&"	reduce using rule 106
"  "	reduce using rule 106
AND	reduce using rule 106
OR	reduce using rule 106
">="	reduce using rule 106
"<="	reduce using rule 106
">"	reduce using rule 106
"<"	reduce using rule 106
"/"	reduce using rule 106
"//"	reduce using rule 106
"+"	reduce using rule 106
"-"	reduce using rule 106
"^"	reduce using rule 106
"*"	reduce using rule 106
"%"	reduce using rule 106
"=="	reduce using rule 106

State 128

Term -> FLOAT . (rule 105)

"]"	reduce using rule 105
-----	-----------------------



" )"	reduce using rule 105
" :"	reduce using rule 105
" ;"	reduce using rule 105
" ,"	reduce using rule 105
" ."	reduce using rule 105
" ! !"	reduce using rule 105
" !="	reduce using rule 105
" & &"	reduce using rule 105
"    "	reduce using rule 105
AND	reduce using rule 105
OR	reduce using rule 105
" > ="	reduce using rule 105
" < ="	reduce using rule 105
" > "	reduce using rule 105
" < "	reduce using rule 105
" /"	reduce using rule 105
" / /"	reduce using rule 105
" +"	reduce using rule 105
" -"	reduce using rule 105
" ^"	reduce using rule 105
" *"	reduce using rule 105
" %"	reduce using rule 105
" = ="	reduce using rule 105

State 129

Ins -> Ins IF ":" . Smp1Dcls Ins NextIf Else END (rule 16)

ID	reduce using rule 28
INTDEC	reduce using rule 28
BOOLDEC	reduce using rule 28
CHARDEC	reduce using rule 28
VOIDDEC	reduce using rule 28
FLOATDEC	reduce using rule 28
GLOBAL	reduce using rule 28
IF	reduce using rule 28
ELIF	reduce using rule 28
ELSE	reduce using rule 28
END	reduce using rule 28
WHILE	reduce using rule 28
FOR	reduce using rule 28
BEGIN	reduce using rule 28
BREAK	reduce using rule 28
CONTINUE	reduce using rule 28
RETURN	reduce using rule 28

EXIT	reduce using rule 28
READ	reduce using rule 28
WRITE	reduce using rule 28
PRINT	reduce using rule 28
FREE	reduce using rule 28

SmplDcls	goto state 144
----------	----------------

State 130

Ins -> Ins ID	"*=" . Exp ";"	(rule 7)
---------------	----------------	----------

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"-"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 143
Term	goto state 114

State 131

Ins -> Ins ID	"+=" . Exp ";"	(rule 8)
---------------	----------------	----------

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"-"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125

CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 142
Term	goto state 114

State 132

Ins -> Ins ID "=" . Exp ";" (rule 6)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"_"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 141
Term	goto state 114

State 133

SmplDcls -> SmplDcls IsGlob PrimType Ptrs . ID ";" (rule 29)  
 Ptrs -> Ptrs . "\*" (rule 66)

ID	shift, and enter state 140
"*"	shift, and enter state 48

State 134

SmplDcls -> SmplDcls IsGlob PrimType EmptyArrs . ID ";" (rule 30)  
 EmptyArrs -> EmptyArrs . "[" "]" (rule 68)

ID	shift, and enter state 139
"["	shift, and enter state 46

State 135

```
SmplDcls -> SmplDcls IsGlob PrimType StaticArrs . ID ";"      (rule 31)
StaticArrs -> StaticArrs . "[" INT "]"                        (rule 70)
```

```
ID          shift, and enter state 138
"["         shift, and enter state 44
```

State 136

```
SmplDcls -> SmplDcls IsGlob PrimType ID . ";"      (rule 32)
```

```
;"         shift, and enter state 137
```

State 137

```
SmplDcls -> SmplDcls IsGlob PrimType ID ";" .      (rule 32)
```

```
ID          reduce using rule 32
INTDEC      reduce using rule 32
BOOLDEC     reduce using rule 32
CHARDEC     reduce using rule 32
VOIDDEC     reduce using rule 32
FLOATDEC    reduce using rule 32
GLOBAL      reduce using rule 32
IF          reduce using rule 32
ELIF        reduce using rule 32
ELSE        reduce using rule 32
END         reduce using rule 32
WHILE       reduce using rule 32
FOR         reduce using rule 32
BEGIN       reduce using rule 32
BREAK       reduce using rule 32
CONTINUE    reduce using rule 32
RETURN      reduce using rule 32
EXIT        reduce using rule 32
READ        reduce using rule 32
WRITE       reduce using rule 32
PRINT       reduce using rule 32
FREE        reduce using rule 32
```

State 138

```
SmplDcls -> SmplDcls IsGlob PrimType StaticArrs ID . ";"      (rule 31)
```

```
;"         shift, and enter state 224
```

State 139

SmplDcls -> SmplDcls IsGlob PrimType EmptyArrs ID . ";" (rule 30)

";" shift, and enter state 223

State 140

SmplDcls -> SmplDcls IsGlob PrimType Ptrs ID . ";" (rule 29)

";" shift, and enter state 222

State 141

Ins -> Ins ID "=" Exp . ";" (rule 6)

Exp -> Exp . "+" Exp (rule 71)

Exp -> Exp . "-" Exp (rule 72)

Exp -> Exp . "^" Exp (rule 73)

Exp -> Exp . "\*" Exp (rule 74)

Exp -> Exp . "/" Exp (rule 75)

Exp -> Exp . "//" Exp (rule 76)

Exp -> Exp . "%" Exp (rule 77)

Exp -> Exp . OR Exp (rule 79)

Exp -> Exp . "||" Exp (rule 80)

Exp -> Exp . AND Exp (rule 81)

Exp -> Exp . "&&" Exp (rule 82)

Exp -> Exp . "<" Exp (rule 84)

Exp -> Exp . "<=" Exp (rule 85)

Exp -> Exp . ">" Exp (rule 86)

Exp -> Exp . ">=" Exp (rule 87)

Exp -> Exp . "==" Exp (rule 88)

Exp -> Exp . "!=" Exp (rule 89)

Exp -> Exp . "!!" Exp (rule 90)

Exp -> Exp . "." Exp (rule 91)

";" shift, and enter state 221

"." shift, and enter state 155

"!!" shift, and enter state 156

"!=" shift, and enter state 157

"&&" shift, and enter state 158

"||" shift, and enter state 159

AND shift, and enter state 160

OR shift, and enter state 161

">=" shift, and enter state 162

"<="	shift, and enter state 163
">"	shift, and enter state 164
"<"	shift, and enter state 165
"/"	shift, and enter state 166
"//"	shift, and enter state 167
"+"	shift, and enter state 168
"-"	shift, and enter state 169
"^"	shift, and enter state 170
"*"	shift, and enter state 171
"%"	shift, and enter state 172
"=="	shift, and enter state 173

State 142

Ins -> Ins ID "+=" Exp . ";"	(rule 8)
Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

";"	shift, and enter state 220
"."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	shift, and enter state 157
"&&"	shift, and enter state 158
"  "	shift, and enter state 159
AND	shift, and enter state 160
OR	shift, and enter state 161
">="	shift, and enter state 162
"<="	shift, and enter state 163

">"	shift, and enter state 164
"<"	shift, and enter state 165
"/"	shift, and enter state 166
"//"	shift, and enter state 167
"+"	shift, and enter state 168
"-"	shift, and enter state 169
"^"	shift, and enter state 170
"*"	shift, and enter state 171
"%"	shift, and enter state 172
"=="	shift, and enter state 173

#### State 143

Ins -> Ins ID "*" Exp . ";"	(rule 7)
Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

;"	shift, and enter state 219
."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	shift, and enter state 157
"&&"	shift, and enter state 158
"  "	shift, and enter state 159
AND	shift, and enter state 160
OR	shift, and enter state 161
">="	shift, and enter state 162
"<="	shift, and enter state 163
">"	shift, and enter state 164

"<"	shift, and enter state 165
"/"	shift, and enter state 166
"//"	shift, and enter state 167
"+"	shift, and enter state 168
"-"	shift, and enter state 169
"^"	shift, and enter state 170
"*"	shift, and enter state 171
"%"	shift, and enter state 172
"=="	shift, and enter state 173

State 144

Ins -> Ins IF ":" Smp1Dcls . Ins NextIf Else END	(rule 16)
Smp1Dcls -> Smp1Dcls . IsGlob PrimType Ptrs ID ";"	(rule 29)
Smp1Dcls -> Smp1Dcls . IsGlob PrimType EmptyArrs ID ";"	(rule 30)
Smp1Dcls -> Smp1Dcls . IsGlob PrimType StaticArrs ID ";"	(rule 31)
Smp1Dcls -> Smp1Dcls . IsGlob PrimType ID ";"	(rule 32)

ID	reduce using rule 2
INTDEC	reduce using rule 43
BOOLDEC	reduce using rule 43
CHARDEC	reduce using rule 43
VOIDDEC	reduce using rule 43
FLOATDEC	reduce using rule 43
GLOBAL	shift, and enter state 9
IF	reduce using rule 2
ELIF	reduce using rule 2
ELSE	reduce using rule 2
END	reduce using rule 2
WHILE	reduce using rule 2
FOR	reduce using rule 2
BEGIN	reduce using rule 2
BREAK	reduce using rule 2
CONTINUE	reduce using rule 2
RETURN	reduce using rule 2
EXIT	reduce using rule 2
READ	reduce using rule 2
WRITE	reduce using rule 2
PRINT	reduce using rule 2
FREE	reduce using rule 2

Ins	goto state 218
IsGlob	goto state 87

State 145



Exp -> GET "(" . ENUM ")" (rule 100)

ENUM shift, and enter state 217

State 146

Exp -> SIZEOF "(" . Exp ")" (rule 98)

Exp -> SIZEOF "(" . PrimType ")" (rule 99)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
INTDEC	shift, and enter state 12
BOOLDEC	shift, and enter state 13
CHARDEC	shift, and enter state 14
VOIDDEC	shift, and enter state 15
FLOATDEC	shift, and enter state 16
"("	shift, and enter state 117
"!"	shift, and enter state 118
"-"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

PrimType goto state 215

Exp goto state 216

Term goto state 114

State 147

Exp -> MALLOC "(" . Exp ")" (rule 97)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"-"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122

GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 214
Term	goto state 114

State 148

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)
Exp -> "*" Exp .	(rule 94)

"]"	reduce using rule 94
")"	reduce using rule 94
":"	reduce using rule 94
";"	reduce using rule 94
","	reduce using rule 94
."	reduce using rule 94
"!!"	reduce using rule 94
"!="	reduce using rule 94
"&&"	reduce using rule 94
"  "	reduce using rule 94
AND	reduce using rule 94
OR	reduce using rule 94

">="	reduce using rule 94
"<="	reduce using rule 94
">"	reduce using rule 94
"<"	reduce using rule 94
"/"	reduce using rule 94
"//"	reduce using rule 94
"+"	reduce using rule 94
"-"	reduce using rule 94
"^"	reduce using rule 94
"*"	reduce using rule 94
"%"	reduce using rule 94
"=="	reduce using rule 94

State 149

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> "-" Exp .	(rule 78)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

  

"]"	reduce using rule 78
")"	reduce using rule 78
":"	reduce using rule 78
";"	reduce using rule 78
","	reduce using rule 78
."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	reduce using rule 78
"&&"	reduce using rule 78

"  "	reduce using rule 78
AND	reduce using rule 78
OR	reduce using rule 78
">="	reduce using rule 78
"<="	reduce using rule 78
">"	reduce using rule 78
"<"	reduce using rule 78
"/"	reduce using rule 78
"//"	reduce using rule 78
"+"	reduce using rule 78
"-"	reduce using rule 78
"^"	reduce using rule 78
"*"	reduce using rule 78
"%"	reduce using rule 78
"=="	reduce using rule 78

State 150

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> "!" Exp .	(rule 83)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)
"]"	reduce using rule 83
")"	reduce using rule 83
":"	reduce using rule 83
";"	reduce using rule 83
",,"	reduce using rule 83
"."	shift, and enter state 155

"!!"	shift, and enter state 156
"!="	reduce using rule 83
"&&"	reduce using rule 83
"  "	reduce using rule 83
AND	reduce using rule 83
OR	reduce using rule 83
">="	reduce using rule 83
"<="	reduce using rule 83
">"	reduce using rule 83
"<"	reduce using rule 83
"/"	shift, and enter state 166
"//"	shift, and enter state 167
"+"	shift, and enter state 168
"-"	shift, and enter state 169
"^"	shift, and enter state 170
"*"	shift, and enter state 171
"%"	shift, and enter state 172
"=="	reduce using rule 83

#### State 151

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)
Exp -> "(" Exp . ")"	(rule 95)
"")	shift, and enter state 213
"."	shift, and enter state 155
"!!"	shift, and enter state 156

"!="	shift, and enter state 157
"&&"	shift, and enter state 158
"  "	shift, and enter state 159
AND	shift, and enter state 160
OR	shift, and enter state 161
">="	shift, and enter state 162
"<="	shift, and enter state 163
">"	shift, and enter state 164
"<"	shift, and enter state 165
"/"	shift, and enter state 166
"//"	shift, and enter state 167
+"	shift, and enter state 168
-"	shift, and enter state 169
"^"	shift, and enter state 170
"*"	shift, and enter state 171
"%"	shift, and enter state 172
"=="	shift, and enter state 173

State 152

Exp -> ID "[" . Exp "]" (rule 92)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
-"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 212
Term	goto state 114

State 153

Exp -> ID "(" . Exp ")" (rule 93)

ID	shift, and enter state 115
----	----------------------------

DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"_"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 211
Term	goto state 114

State 154

Ins -> Ins WHILE Exp ":" . SmplDcls Ins END (rule 17)

ID	reduce using rule 28
INTDEC	reduce using rule 28
BOOLDEC	reduce using rule 28
CHARDEC	reduce using rule 28
VOIDDEC	reduce using rule 28
FLOATDEC	reduce using rule 28
GLOBAL	reduce using rule 28
IF	reduce using rule 28
END	reduce using rule 28
WHILE	reduce using rule 28
FOR	reduce using rule 28
BEGIN	reduce using rule 28
BREAK	reduce using rule 28
CONTINUE	reduce using rule 28
RETURN	reduce using rule 28
EXIT	reduce using rule 28
READ	reduce using rule 28
WRITE	reduce using rule 28
PRINT	reduce using rule 28
FREE	reduce using rule 28

SmplDcls	goto state 210
----------	----------------

State 155

Exp -> Exp "." . Exp (rule 91)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"_"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128
Exp	goto state 209
Term	goto state 114

State 156

Exp -> Exp "!!" . Exp (rule 90)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"_"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128
Exp	goto state 208
Term	goto state 114

State 157

Exp -> Exp "!=" . Exp (rule 89)



ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"_"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128
Exp	goto state 207
Term	goto state 114

State 158

Exp -> Exp "&&" . Exp (rule 82)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"_"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128
Exp	goto state 206
Term	goto state 114

State 159

Exp -> Exp "||" . Exp (rule 80)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
!"	shift, and enter state 118
"-"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 205
Term	goto state 114

State 160

Exp -> Exp AND . Exp (rule 81)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
!"	shift, and enter state 118
"-"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 204
Term	goto state 114

State 161

Exp -> Exp OR . Exp (rule 79)

ID	shift, and enter state 115
----	----------------------------

DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"_"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 203
Term	goto state 114

State 162

Exp -> Exp ">=" . Exp (rule 87)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"_"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 202
Term	goto state 114

State 163

Exp -> Exp "<=" . Exp (rule 85)

ID	shift, and enter state 115
DATAID	shift, and enter state 116

"("	shift, and enter state 117
"!"	shift, and enter state 118
"_"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128
Exp	goto state 201
Term	goto state 114

State 164

Exp -> Exp ">" . Exp (rule 86)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"_"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128
Exp	goto state 200
Term	goto state 114

State 165

Exp -> Exp "<" . Exp (rule 84)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117

"!"	shift, and enter state 118
"-"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 199
Term	goto state 114

State 166

Exp -> Exp "/" . Exp (rule 75)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"-"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 198
Term	goto state 114

State 167

Exp -> Exp "//" . Exp (rule 76)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118

"-"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128
Exp	goto state 197
Term	goto state 114

State 168

Exp -> Exp "+" . Exp (rule 71)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"-"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128
Exp	goto state 196
Term	goto state 114

State 169

Exp -> Exp "-" . Exp (rule 72)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"-"	shift, and enter state 119

"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 195
Term	goto state 114

State 170

Exp -> Exp "^" . Exp (rule 73)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"-"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 194
Term	goto state 114

State 171

Exp -> Exp "\*" . Exp (rule 74)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"-"	shift, and enter state 119
"*"	shift, and enter state 120

MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 193
Term	goto state 114

State 172

Exp -> Exp "%" . Exp (rule 77)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"-"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 192
Term	goto state 114

State 173

Exp -> Exp "==" . Exp (rule 88)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"-"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121



SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp	goto state 191
Term	goto state 114

State 174

Ins -> Ins FOR ID "=" . INT " " INT " " INT ":" Smp1Dcls Ins END	(rule 18)
Ins -> Ins FOR ID "=" . INT " " INT ":" Smp1Dcls Ins END	(rule 19)
Ins -> Ins FOR ID "=" . ENUM " " ENUM ":" Smp1Dcls Ins END	(rule 20)

INT	shift, and enter state 189
ENUM	shift, and enter state 190

State 175

Ins -> Ins . PRINT "(" STRING PrntArgs ")" ";"	(rule 3)
Ins -> Ins . READ "(" ID ")" ";"	(rule 4)
Ins -> Ins . WRITE "(" ID ")" ";"	(rule 5)
Ins -> Ins . ID "=" Exp ";"	(rule 6)
Ins -> Ins . ID "*=" Exp ";"	(rule 7)
Ins -> Ins . ID "+=" Exp ";"	(rule 8)
Ins -> Ins . BREAK ";"	(rule 9)
Ins -> Ins . CONTINUE ";"	(rule 10)
Ins -> Ins . RETURN ";"	(rule 11)
Ins -> Ins . EXIT ";"	(rule 12)
Ins -> Ins . FREE "(" ID ")" ";"	(rule 13)
Ins -> Ins . FREE "(" DATAID ")" ";"	(rule 14)
Ins -> Ins . READ "(" DATAID ")" ";"	(rule 15)
Ins -> Ins . IF ":" Smp1Dcls Ins NextIf Else END	(rule 16)
Ins -> Ins . WHILE Exp ":" Smp1Dcls Ins END	(rule 17)
Ins -> Ins . FOR ID "=" INT " " INT " " INT ":" Smp1Dcls Ins END	(rule 18)
Ins -> Ins . FOR ID "=" INT " " INT ":" Smp1Dcls Ins END	(rule 19)
Ins -> Ins . FOR ID "=" ENUM " " ENUM ":" Smp1Dcls Ins END	(rule 20)
Ins -> Ins . BEGIN Smp1Dcls Ins END	(rule 21)
Ins -> Ins BEGIN Smp1Dcls Ins . END	(rule 21)

ID	shift, and enter state 89
IF	shift, and enter state 90

END	shift, and enter state 188
WHILE	shift, and enter state 92
FOR	shift, and enter state 93
BEGIN	shift, and enter state 94
BREAK	shift, and enter state 95
CONTINUE	shift, and enter state 96
RETURN	shift, and enter state 97
EXIT	shift, and enter state 98
READ	shift, and enter state 99
WRITE	shift, and enter state 100
PRINT	shift, and enter state 101
FREE	shift, and enter state 102

State 176

Ins -> Ins READ "(" ID . ")" " ";"	(rule 4)
------------------------------------	----------

)"	shift, and enter state 187
----	----------------------------

State 177

Ins -> Ins READ "(" DATAID . ")" " ";"	(rule 15)
--	-----------

)"	shift, and enter state 186
----	----------------------------

State 178

Ins -> Ins WRITE "(" ID . ")" " ";"	(rule 5)
-------------------------------------	----------

)"	shift, and enter state 185
----	----------------------------

State 179

Ins -> Ins PRINT "(" STRING . PrntArgs ")" " ";"	(rule 3)
--	----------

)"	reduce using rule 22
----	----------------------

","	reduce using rule 22
-----	----------------------

PrntArgs	goto state 184
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State 180

Ins -> Ins FREE "(" ID . ")" " ";"	(rule 13)
------------------------------------	-----------

)"	shift, and enter state 183
----	----------------------------

State 181

Ins -> Ins FREE "(" DATAID . ")" ";" (rule 14)

");" shift, and enter state 182

State 182

Ins -> Ins FREE "(" DATAID ")" . ";" (rule 14)

");" shift, and enter state 241

State 183

Ins -> Ins FREE "(" ID ")" . ";" (rule 13)

");" shift, and enter state 240

State 184

Ins -> Ins PRINT "(" STRING PrntArgs . ")" ";" (rule 3)  
PrntArgs -> PrntArgs . "," Exp (rule 23)

");" shift, and enter state 238

"," shift, and enter state 239

State 185

Ins -> Ins WRITE "(" ID ")" . ";" (rule 5)

");" shift, and enter state 237

State 186

Ins -> Ins READ "(" DATAID ")" . ";" (rule 15)

");" shift, and enter state 236

State 187

Ins -> Ins READ "(" ID ")" . ";" (rule 4)

");" shift, and enter state 235

State 188

Ins -> Ins BEGIN SmplDcls Ins END . (rule 21)

ID	reduce using rule 21
IF	reduce using rule 21
ELIF	reduce using rule 21
ELSE	reduce using rule 21
END	reduce using rule 21
WHILE	reduce using rule 21
FOR	reduce using rule 21
BEGIN	reduce using rule 21
BREAK	reduce using rule 21
CONTINUE	reduce using rule 21
RETURN	reduce using rule 21
EXIT	reduce using rule 21
READ	reduce using rule 21
WRITE	reduce using rule 21
PRINT	reduce using rule 21
FREE	reduce using rule 21

State 189

Ins -> Ins FOR ID "=" INT . "|" INT "|" INT ":" SmplDcls Ins END (rule 18)

Ins -> Ins FOR ID "=" INT . "|" INT ":" SmplDcls Ins END (rule 19)

"|" shift, and enter state 234

State 190

Ins -> Ins FOR ID "=" ENUM . "|" ENUM ":" SmplDcls Ins END (rule 20)

"|" shift, and enter state 233

State 191

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)

Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp "==" Exp .	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

"]"	reduce using rule 88
")"	reduce using rule 88
":"	reduce using rule 88
";"	reduce using rule 88
","	reduce using rule 88
."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	fail
"&&"	shift, and enter state 158
"  "	shift, and enter state 159
AND	shift, and enter state 160
OR	shift, and enter state 161
">="	shift, and enter state 162
"<="	shift, and enter state 163
">"	shift, and enter state 164
"<"	shift, and enter state 165
"/"	shift, and enter state 166
"//"	shift, and enter state 167
+"	shift, and enter state 168
-"	shift, and enter state 169
^"	shift, and enter state 170
"*"	shift, and enter state 171
"%"	shift, and enter state 172
"=="	fail

State 192

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)

Exp -> Exp . "/" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp "%" Exp .	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

"]"	reduce using rule 77
")"	reduce using rule 77
":"	reduce using rule 77
";"	reduce using rule 77
","	reduce using rule 77
."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	reduce using rule 77
"&&"	reduce using rule 77
"  "	reduce using rule 77
AND	reduce using rule 77
OR	reduce using rule 77
">="	reduce using rule 77
"<="	reduce using rule 77
">"	reduce using rule 77
"<"	reduce using rule 77
"/"	reduce using rule 77
"//"	reduce using rule 77
"+"	reduce using rule 77
"-"	reduce using rule 77
"^"	shift, and enter state 170
"*"	reduce using rule 77
"%"	reduce using rule 77
"=="	reduce using rule 77

State 193

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)

Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp "*" Exp .	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

"]"	reduce using rule 74
")"	reduce using rule 74
":"	reduce using rule 74
";"	reduce using rule 74
","	reduce using rule 74
."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	reduce using rule 74
"&&"	reduce using rule 74
"  "	reduce using rule 74
AND	reduce using rule 74
OR	reduce using rule 74
">="	reduce using rule 74
"<="	reduce using rule 74
">"	reduce using rule 74
"<"	reduce using rule 74
"/"	reduce using rule 74
"//"	reduce using rule 74
"+"	reduce using rule 74
"-"	reduce using rule 74
"^"	shift, and enter state 170
"*"	reduce using rule 74
"%"	reduce using rule 74
"=="	reduce using rule 74

State 194

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp "^" Exp .	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

"]"	reduce using rule 73
")"	reduce using rule 73
":"	reduce using rule 73
";"	reduce using rule 73
","	reduce using rule 73
."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	reduce using rule 73
"&&"	reduce using rule 73
"  "	reduce using rule 73
AND	reduce using rule 73
OR	reduce using rule 73
">="	reduce using rule 73
"<="	reduce using rule 73
">"	reduce using rule 73
"<"	reduce using rule 73
"/"	reduce using rule 73
"//"	reduce using rule 73
"+"	reduce using rule 73
"-"	reduce using rule 73
"^"	reduce using rule 73
"*"	reduce using rule 73
"%"	reduce using rule 73
"=="	reduce using rule 73



State 195

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp "-" Exp .	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

"]"	reduce using rule 72
")"	reduce using rule 72
":"	reduce using rule 72
";"	reduce using rule 72
","	reduce using rule 72
"."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	reduce using rule 72
"&&"	reduce using rule 72
"  "	reduce using rule 72
AND	reduce using rule 72
OR	reduce using rule 72
">="	reduce using rule 72
"<="	reduce using rule 72
">"	reduce using rule 72
"<"	reduce using rule 72
"/"	shift, and enter state 166
"//"	shift, and enter state 167
"+"	reduce using rule 72
"-"	reduce using rule 72
"^"	shift, and enter state 170
"*"	shift, and enter state 171
"%"	shift, and enter state 172

"=="                    reduce using rule 72

State 196

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp "+" Exp .	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

"]"	reduce using rule 71
")"	reduce using rule 71
":"	reduce using rule 71
";"	reduce using rule 71
","	reduce using rule 71
."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	reduce using rule 71
"&&"	reduce using rule 71
"  "	reduce using rule 71
AND	reduce using rule 71
OR	reduce using rule 71
">="	reduce using rule 71
"<="	reduce using rule 71
">"	reduce using rule 71
"<"	reduce using rule 71
"/"	shift, and enter state 166
"//"	shift, and enter state 167
"+"	reduce using rule 71
"-"	reduce using rule 71

"^"	shift, and enter state 170
"*"	shift, and enter state 171
"%"	shift, and enter state 172
"=="	reduce using rule 71

State 197

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp "//" Exp .	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

"]"	reduce using rule 76
")"	reduce using rule 76
":"	reduce using rule 76
";"	reduce using rule 76
","	reduce using rule 76
."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	reduce using rule 76
"&&"	reduce using rule 76
"  "	reduce using rule 76
AND	reduce using rule 76
OR	reduce using rule 76
">="	reduce using rule 76
"<="	reduce using rule 76
">"	reduce using rule 76
"<"	reduce using rule 76
"/"	reduce using rule 76

"//"	reduce using rule 76
"+"	reduce using rule 76
"-"	reduce using rule 76
"^"	shift, and enter state 170
"*"	reduce using rule 76
"%"	reduce using rule 76
"=="	reduce using rule 76

#### State 198

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp "/" Exp .	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

"]"	reduce using rule 75
")"	reduce using rule 75
":"	reduce using rule 75
";"	reduce using rule 75
","	reduce using rule 75
"."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	reduce using rule 75
"&&"	reduce using rule 75
"  "	reduce using rule 75
AND	reduce using rule 75
OR	reduce using rule 75
">="	reduce using rule 75
"<="	reduce using rule 75

">"	reduce using rule 75
"<"	reduce using rule 75
"/"	reduce using rule 75
"//"	reduce using rule 75
"+"	reduce using rule 75
"-"	reduce using rule 75
"^"	shift, and enter state 170
"*"	reduce using rule 75
"%"	reduce using rule 75
"=="	reduce using rule 75

#### State 199

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp "<" Exp .	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

"]"	reduce using rule 84
")"	reduce using rule 84
":"	reduce using rule 84
";"	reduce using rule 84
","	reduce using rule 84
"."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	reduce using rule 84
"&&"	shift, and enter state 158
"  "	shift, and enter state 159
AND	shift, and enter state 160

OR	shift, and enter state 161
">="	fail
"<="	fail
">"	fail
"<"	fail
"/"	shift, and enter state 166
"//"	shift, and enter state 167
"+"	shift, and enter state 168
"-"	shift, and enter state 169
"^"	shift, and enter state 170
"*"	shift, and enter state 171
"%"	shift, and enter state 172
"=="	reduce using rule 84

#### State 200

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp ">" Exp .	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)
"]"	reduce using rule 86
")"	reduce using rule 86
":"	reduce using rule 86
";"	reduce using rule 86
",,"	reduce using rule 86
","	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	reduce using rule 86

"&&"	shift, and enter state 158
"  "	shift, and enter state 159
AND	shift, and enter state 160
OR	shift, and enter state 161
">="	fail
"<="	fail
">"	fail
"<"	fail
"/"	shift, and enter state 166
"//"	shift, and enter state 167
+"	shift, and enter state 168
-"	shift, and enter state 169
^"	shift, and enter state 170
*"	shift, and enter state 171
%"	shift, and enter state 172
"=="	reduce using rule 86

#### State 201

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp "<=" Exp .	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)
"]"	reduce using rule 85
")"	reduce using rule 85
":"	reduce using rule 85
";"	reduce using rule 85
",,"	reduce using rule 85

"."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	reduce using rule 85
"&&"	shift, and enter state 158
"  "	shift, and enter state 159
AND	shift, and enter state 160
OR	shift, and enter state 161
">="	fail
"<="	fail
">"	fail
"<"	fail
"/"	shift, and enter state 166
"//"	shift, and enter state 167
"+"	shift, and enter state 168
"-"	shift, and enter state 169
"^"	shift, and enter state 170
"*"	shift, and enter state 171
"%"	shift, and enter state 172
"=="	reduce using rule 85

#### State 202

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp ">=" Exp .	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)
"]"	reduce using rule 87
")"	reduce using rule 87



":"	reduce using rule 87
";"	reduce using rule 87
","	reduce using rule 87
"."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	reduce using rule 87
"&&"	shift, and enter state 158
"  "	shift, and enter state 159
AND	shift, and enter state 160
OR	shift, and enter state 161
">="	fail
"<="	fail
">"	fail
"<"	fail
"/"	shift, and enter state 166
"//"	shift, and enter state 167
"+"	shift, and enter state 168
"-"	shift, and enter state 169
"^"	shift, and enter state 170
"*"	shift, and enter state 171
"%"	shift, and enter state 172
"=="	reduce using rule 87

State 203

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp OR Exp .	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

"]"	reduce using rule 79
")"	reduce using rule 79
":"	reduce using rule 79
";"	reduce using rule 79
","	reduce using rule 79
"."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	reduce using rule 79
"&&"	shift, and enter state 158
"  "	shift, and enter state 159
AND	shift, and enter state 160
OR	reduce using rule 79
">="	reduce using rule 79
"<="	reduce using rule 79
">"	reduce using rule 79
"<"	reduce using rule 79
"/"	shift, and enter state 166
"//"	shift, and enter state 167
"+"	shift, and enter state 168
"-"	shift, and enter state 169
"^"	shift, and enter state 170
"*"	shift, and enter state 171
"%"	shift, and enter state 172
"=="	reduce using rule 79

State 204

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp AND Exp .	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)

Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

"]"	reduce using rule 81
")"	reduce using rule 81
":"	reduce using rule 81
";"	reduce using rule 81
",,"	reduce using rule 81
."	shift, and enter state 155
!"	shift, and enter state 156
!="	reduce using rule 81
&&"	shift, and enter state 158
"	shift, and enter state 159
AND	reduce using rule 81
OR	reduce using rule 81
reduce using rule 81	
<="	reduce using rule 81
>"	reduce using rule 81
<"	reduce using rule 81
/"	shift, and enter state 166
//"	shift, and enter state 167
+"	shift, and enter state 168
-"	shift, and enter state 169
^"	shift, and enter state 170
*"	shift, and enter state 171
%"	shift, and enter state 172
=="	reduce using rule 81

State 205

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp "  " Exp .	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)

Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

"]"	reduce using rule 80
")"	reduce using rule 80
":"	reduce using rule 80
";"	reduce using rule 80
",,"	reduce using rule 80
","	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	reduce using rule 80
"&&"	shift, and enter state 158
"  "	reduce using rule 80
AND	reduce using rule 80
OR	reduce using rule 80
">="	reduce using rule 80
"<="	reduce using rule 80
">"	reduce using rule 80
"<"	reduce using rule 80
"/"	shift, and enter state 166
"//"	shift, and enter state 167
"+"	shift, and enter state 168
"-"	shift, and enter state 169
"^"	shift, and enter state 170
"*"	shift, and enter state 171
"%"	shift, and enter state 172
"=="	reduce using rule 80

State 206

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)

Exp -> Exp "&&" Exp .	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

"]"	reduce using rule 82
")"	reduce using rule 82
":"	reduce using rule 82
";"	reduce using rule 82
", "	reduce using rule 82
"."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	reduce using rule 82
"&&"	reduce using rule 82
"  "	reduce using rule 82
AND	reduce using rule 82
OR	reduce using rule 82
<td>reduce using rule 82</td>	reduce using rule 82
<td>reduce using rule 82</td>	reduce using rule 82
"/"	shift, and enter state 166
"//"	shift, and enter state 167
"+"	shift, and enter state 168
"-"	shift, and enter state 169
"^"	shift, and enter state 170
"*"	shift, and enter state 171
"%"	shift, and enter state 172
"=="	reduce using rule 82

State 207

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)

Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp "!=" Exp .	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

"]"	reduce using rule 89
")"	reduce using rule 89
":"	reduce using rule 89
";"	reduce using rule 89
", "	reduce using rule 89
."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	fail
"&&"	shift, and enter state 158
"  "	shift, and enter state 159
AND	shift, and enter state 160
OR	shift, and enter state 161
">="	shift, and enter state 162
"<="	shift, and enter state 163
">"	shift, and enter state 164
"<"	shift, and enter state 165
"/"	shift, and enter state 166
"//"	shift, and enter state 167
+"	shift, and enter state 168
-"	shift, and enter state 169
"^"	shift, and enter state 170
"*"	shift, and enter state 171
"%"	shift, and enter state 172
"=="	fail

State 208

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)

Exp -> Exp . "/" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "!!" Exp .	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

"]"	reduce using rule 90
")"	reduce using rule 90
":"	reduce using rule 90
","	reduce using rule 90
","	reduce using rule 90
."	shift, and enter state 155
"!!"	reduce using rule 90
"!="	reduce using rule 90
"&&"	reduce using rule 90
"  "	reduce using rule 90
AND	reduce using rule 90
OR	reduce using rule 90
">="	reduce using rule 90
"<="	reduce using rule 90
">"	reduce using rule 90
"<"	reduce using rule 90
"/"	reduce using rule 90
"//"	reduce using rule 90
"+"	reduce using rule 90
"-"	reduce using rule 90
"^"	reduce using rule 90
"*"	reduce using rule 90
"%"	reduce using rule 90
"=="	reduce using rule 90

State 209

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)

Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)
Exp -> Exp "." Exp .	(rule 91)

"]"	reduce using rule 91
")"	reduce using rule 91
":"	reduce using rule 91
";"	reduce using rule 91
","	reduce using rule 91
"."	reduce using rule 91
"!!"	reduce using rule 91
"!="	reduce using rule 91
"&&"	reduce using rule 91
"  "	reduce using rule 91
AND	reduce using rule 91
OR	reduce using rule 91
">="	reduce using rule 91
"<="	reduce using rule 91
">"	reduce using rule 91
"<"	reduce using rule 91
"/"	reduce using rule 91
"//"	reduce using rule 91
"+"	reduce using rule 91
"-"	reduce using rule 91
"^"	reduce using rule 91
"*"	reduce using rule 91
"%"	reduce using rule 91
"=="	reduce using rule 91

State 210



```

Ins -> Ins WHILE Exp ":" SmplDcls . Ins END          (rule 17)
SmplDcls -> SmplDcls . IsGlob PrimType Ptrs ID ";"    (rule 29)
SmplDcls -> SmplDcls . IsGlob PrimType EmptyArrs ID ";" (rule 30)
SmplDcls -> SmplDcls . IsGlob PrimType StaticArrs ID ";" (rule 31)
SmplDcls -> SmplDcls . IsGlob PrimType ID ";"        (rule 32)

```

```

ID          reduce using rule 2
INTDEC      reduce using rule 43
BOOLDEC     reduce using rule 43
CHARDEC     reduce using rule 43
VOIDDEC     reduce using rule 43
FLOATDEC    reduce using rule 43
GLOBAL      shift, and enter state 9
IF          reduce using rule 2
END         reduce using rule 2
WHILE       reduce using rule 2
FOR         reduce using rule 2
BEGIN       reduce using rule 2
BREAK       reduce using rule 2
CONTINUE    reduce using rule 2
RETURN      reduce using rule 2
EXIT        reduce using rule 2
READ        reduce using rule 2
WRITE       reduce using rule 2
PRINT       reduce using rule 2
FREE        reduce using rule 2

```

```

Ins        goto state 232
IsGlob     goto state 87

```

State 211

```

Exp -> Exp . "+" Exp          (rule 71)
Exp -> Exp . "-" Exp          (rule 72)
Exp -> Exp . "^" Exp          (rule 73)
Exp -> Exp . "*" Exp          (rule 74)
Exp -> Exp . "/" Exp          (rule 75)
Exp -> Exp . "//" Exp         (rule 76)
Exp -> Exp . "%" Exp          (rule 77)
Exp -> Exp . OR Exp           (rule 79)
Exp -> Exp . "||" Exp         (rule 80)
Exp -> Exp . AND Exp          (rule 81)
Exp -> Exp . "&&" Exp         (rule 82)
Exp -> Exp . "<" Exp          (rule 84)
Exp -> Exp . "<=" Exp        (rule 85)

```

Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)
Exp -> ID "(" Exp . ")"	(rule 93)

)"	shift, and enter state 231
."	shift, and enter state 155
!!"	shift, and enter state 156
!="	shift, and enter state 157
&&"	shift, and enter state 158
"	shift, and enter state 159
AND	shift, and enter state 160
OR	shift, and enter state 161
>="	shift, and enter state 162
<="	shift, and enter state 163
>"	shift, and enter state 164
<"	shift, and enter state 165
/"	shift, and enter state 166
//"	shift, and enter state 167
+"	shift, and enter state 168
-"	shift, and enter state 169
^"	shift, and enter state 170
*"	shift, and enter state 171
%"	shift, and enter state 172
=="	shift, and enter state 173

## State 212

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)

Exp -> Exp . ">" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)
Exp -> ID "[" Exp . "]"	(rule 92)

"]"	shift, and enter state 230
"."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	shift, and enter state 157
"&&"	shift, and enter state 158
"  "	shift, and enter state 159
AND	shift, and enter state 160
OR	shift, and enter state 161
">="	shift, and enter state 162
"<="	shift, and enter state 163
">"	shift, and enter state 164
"<"	shift, and enter state 165
"/"	shift, and enter state 166
"//"	shift, and enter state 167
"+"	shift, and enter state 168
"-"	shift, and enter state 169
"^"	shift, and enter state 170
"*"	shift, and enter state 171
"%"	shift, and enter state 172
"=="	shift, and enter state 173

State 213

Exp -> "(" Exp ")" .	(rule 95)
----------------------	-----------

"]"	reduce using rule 95
")"	reduce using rule 95
":"	reduce using rule 95
";"	reduce using rule 95
","	reduce using rule 95
"."	reduce using rule 95
"!!"	reduce using rule 95
"!="	reduce using rule 95
"&&"	reduce using rule 95
"  "	reduce using rule 95
AND	reduce using rule 95
OR	reduce using rule 95
">="	reduce using rule 95

"<="	reduce using rule 95
">"	reduce using rule 95
"<"	reduce using rule 95
"/"	reduce using rule 95
"//"	reduce using rule 95
"+"	reduce using rule 95
"-"	reduce using rule 95
"^"	reduce using rule 95
"*"	reduce using rule 95
"%"	reduce using rule 95
"=="	reduce using rule 95

State 214

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)
Exp -> MALLOC "(" Exp . ")"	(rule 97)

")"	shift, and enter state 229
."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	shift, and enter state 157
"&&"	shift, and enter state 158
"  "	shift, and enter state 159
AND	shift, and enter state 160
OR	shift, and enter state 161
">="	shift, and enter state 162
"<="	shift, and enter state 163

">"	shift, and enter state 164
"<"	shift, and enter state 165
"/"	shift, and enter state 166
"//"	shift, and enter state 167
"+"	shift, and enter state 168
"-"	shift, and enter state 169
"^"	shift, and enter state 170
"*"	shift, and enter state 171
"%"	shift, and enter state 172
"=="	shift, and enter state 173

State 215

Exp -> sizeof "(" PrimType . ")"	(rule 99)
----------------------------------	-----------

)"	shift, and enter state 228
----	----------------------------

State 216

Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)
Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)
Exp -> sizeof "(" Exp . ")"	(rule 98)

)"	shift, and enter state 227
."	shift, and enter state 155
"!!"	shift, and enter state 156
"!="	shift, and enter state 157
"&&"	shift, and enter state 158

"  "	shift, and enter state 159
AND	shift, and enter state 160
OR	shift, and enter state 161
">="	shift, and enter state 162
"<="	shift, and enter state 163
">"	shift, and enter state 164
"<"	shift, and enter state 165
"/"	shift, and enter state 166
"//"	shift, and enter state 167
"+"	shift, and enter state 168
"-"	shift, and enter state 169
"^"	shift, and enter state 170
"*"	shift, and enter state 171
"%"	shift, and enter state 172
"=="	shift, and enter state 173

State 217

Exp -> GET "(" ENUM . ")" (rule 100)

)" shift, and enter state 226

State 218

Ins -> Ins . PRINT "(" STRING PrntArgs ")" ";"	(rule 3)
Ins -> Ins . READ "(" ID ")" ";"	(rule 4)
Ins -> Ins . WRITE "(" ID ")" ";"	(rule 5)
Ins -> Ins . ID "=" Exp ";"	(rule 6)
Ins -> Ins . ID "*=" Exp ";"	(rule 7)
Ins -> Ins . ID "+=" Exp ";"	(rule 8)
Ins -> Ins . BREAK ";"	(rule 9)
Ins -> Ins . CONTINUE ";"	(rule 10)
Ins -> Ins . RETURN ";"	(rule 11)
Ins -> Ins . EXIT ";"	(rule 12)
Ins -> Ins . FREE "(" ID ")" ";"	(rule 13)
Ins -> Ins . FREE "(" DATAID ")" ";"	(rule 14)
Ins -> Ins . READ "(" DATAID ")" ";"	(rule 15)
Ins -> Ins . IF ":" SmplDcls Ins NextIf Else END	(rule 16)
Ins -> Ins IF ":" SmplDcls Ins . NextIf Else END	(rule 16)
Ins -> Ins . WHILE Exp ":" SmplDcls Ins END	(rule 17)
Ins -> Ins . FOR ID "=" INT " " INT " " INT ":" SmplDcls Ins END	(rule 18)
Ins -> Ins . FOR ID "=" INT " " INT ":" SmplDcls Ins END	(rule 19)
Ins -> Ins . FOR ID "=" ENUM " " ENUM ":" SmplDcls Ins END	(rule 20)
Ins -> Ins . BEGIN SmplDcls Ins END	(rule 21)

ID	shift, and enter state	89
IF	shift, and enter state	90
ELIF	reduce using rule	24
ELSE	reduce using rule	24
END	reduce using rule	24
WHILE	shift, and enter state	92
FOR	shift, and enter state	93
BEGIN	shift, and enter state	94
BREAK	shift, and enter state	95
CONTINUE	shift, and enter state	96
RETURN	shift, and enter state	97
EXIT	shift, and enter state	98
READ	shift, and enter state	99
WRITE	shift, and enter state	100
PRINT	shift, and enter state	101
FREE	shift, and enter state	102
NextIf	goto state	225

$$\text{Ins} \rightarrow \text{Ins ID "}" \text{ Exp "}" \text{ ; " } . \quad (\text{rule 7})$$

State 220

IF	reduce using rule 8
ELIF	reduce using rule 8
ELSE	reduce using rule 8
END	reduce using rule 8
WHILE	reduce using rule 8
FOR	reduce using rule 8
BEGIN	reduce using rule 8
BREAK	reduce using rule 8
CONTINUE	reduce using rule 8
RETURN	reduce using rule 8
EXIT	reduce using rule 8
READ	reduce using rule 8
WRITE	reduce using rule 8
PRINT	reduce using rule 8
FREE	reduce using rule 8

State 221

Ins -> Ins ID "=" Exp ";" . (rule 6)

ID	reduce using rule 6
IF	reduce using rule 6
ELIF	reduce using rule 6
ELSE	reduce using rule 6
END	reduce using rule 6
WHILE	reduce using rule 6
FOR	reduce using rule 6
BEGIN	reduce using rule 6
BREAK	reduce using rule 6
CONTINUE	reduce using rule 6
RETURN	reduce using rule 6
EXIT	reduce using rule 6
READ	reduce using rule 6
WRITE	reduce using rule 6
PRINT	reduce using rule 6
FREE	reduce using rule 6

State 222

SmplDcls -> SmplDcls IsGlob PrimType Ptrs ID ";" . (rule 29)

ID	reduce using rule 29
INTDEC	reduce using rule 29
BOOLDEC	reduce using rule 29
CHARDEC	reduce using rule 29



VOIDDEC	reduce using rule 29
FLOATDEC	reduce using rule 29
GLOBAL	reduce using rule 29
IF	reduce using rule 29
ELIF	reduce using rule 29
ELSE	reduce using rule 29
END	reduce using rule 29
WHILE	reduce using rule 29
FOR	reduce using rule 29
BEGIN	reduce using rule 29
BREAK	reduce using rule 29
CONTINUE	reduce using rule 29
RETURN	reduce using rule 29
EXIT	reduce using rule 29
READ	reduce using rule 29
WRITE	reduce using rule 29
PRINT	reduce using rule 29
FREE	reduce using rule 29

State 223

SmplDcls -> SmplDcls IsGlob PrimType EmptyArrs ID ";" . (rule 30)

ID	reduce using rule 30
INTDEC	reduce using rule 30
BOOLDEC	reduce using rule 30
CHARDEC	reduce using rule 30
VOIDDEC	reduce using rule 30
FLOATDEC	reduce using rule 30
GLOBAL	reduce using rule 30
IF	reduce using rule 30
ELIF	reduce using rule 30
ELSE	reduce using rule 30
END	reduce using rule 30
WHILE	reduce using rule 30
FOR	reduce using rule 30
BEGIN	reduce using rule 30
BREAK	reduce using rule 30
CONTINUE	reduce using rule 30
RETURN	reduce using rule 30
EXIT	reduce using rule 30
READ	reduce using rule 30
WRITE	reduce using rule 30
PRINT	reduce using rule 30
FREE	reduce using rule 30

State 224

SmplDcls -> SmplDcls IsGlob PrimType StaticArrs ID ";" . (rule 31)

ID	reduce using rule 31
INTDEC	reduce using rule 31
BOOLDEC	reduce using rule 31
CHARDEC	reduce using rule 31
VOIDDEC	reduce using rule 31
FLOATDEC	reduce using rule 31
GLOBAL	reduce using rule 31
IF	reduce using rule 31
ELIF	reduce using rule 31
ELSE	reduce using rule 31
END	reduce using rule 31
WHILE	reduce using rule 31
FOR	reduce using rule 31
BEGIN	reduce using rule 31
BREAK	reduce using rule 31
CONTINUE	reduce using rule 31
RETURN	reduce using rule 31
EXIT	reduce using rule 31
READ	reduce using rule 31
WRITE	reduce using rule 31
PRINT	reduce using rule 31
FREE	reduce using rule 31

State 225

Ins -> Ins IF ":" SmplDcls Ins NextIf . Else END (rule 16)

NextIf -> NextIf . ELIF ":" Ins (rule 25)

ELIF	shift, and enter state 248
ELSE	shift, and enter state 249
END	reduce using rule 26

Else goto state 247

State 226

Exp -> GET "(" ENUM ")" . (rule 100)

"]"	reduce using rule 100
")"	reduce using rule 100

":"	reduce using rule 100
";"	reduce using rule 100
","	reduce using rule 100
"."	reduce using rule 100
"!!"	reduce using rule 100
"!="	reduce using rule 100
"&&"	reduce using rule 100
"  "	reduce using rule 100
AND	reduce using rule 100
OR	reduce using rule 100
">="	reduce using rule 100
"<="	reduce using rule 100
">"	reduce using rule 100
"<"	reduce using rule 100
"/"	reduce using rule 100
"//"	reduce using rule 100
"+"	reduce using rule 100
"-"	reduce using rule 100
"^"	reduce using rule 100
"*"	reduce using rule 100
"%"	reduce using rule 100
"=="	reduce using rule 100

State 227

Exp -> SIZEOF "(" Exp ")" . (rule 98)

"]"	reduce using rule 98
")"	reduce using rule 98
":"	reduce using rule 98
";"	reduce using rule 98
","	reduce using rule 98
"."	reduce using rule 98
"!!"	reduce using rule 98
"!="	reduce using rule 98
"&&"	reduce using rule 98
"  "	reduce using rule 98
AND	reduce using rule 98
OR	reduce using rule 98
">="	reduce using rule 98
"<="	reduce using rule 98
">"	reduce using rule 98
"<"	reduce using rule 98
"/"	reduce using rule 98
"//"	reduce using rule 98

"+"	reduce using rule 98
"-"	reduce using rule 98
"^"	reduce using rule 98
"*"	reduce using rule 98
"%"	reduce using rule 98
"=="	reduce using rule 98

State 228

Exp -> SIZEOF "(" PrimType ")" . (rule 99)

"]"	reduce using rule 99
")"	reduce using rule 99
":"	reduce using rule 99
";"	reduce using rule 99
","	reduce using rule 99
."	reduce using rule 99
"!"	reduce using rule 99
"!="	reduce using rule 99
"&&"	reduce using rule 99
"  "	reduce using rule 99
AND	reduce using rule 99
OR	reduce using rule 99
">="	reduce using rule 99
"<="	reduce using rule 99
">"	reduce using rule 99
"<"	reduce using rule 99
"/"	reduce using rule 99
"//"	reduce using rule 99
"+"	reduce using rule 99
"-"	reduce using rule 99
"^"	reduce using rule 99
"*"	reduce using rule 99
"%"	reduce using rule 99
"=="	reduce using rule 99

State 229

Exp -> MALLOC "(" Exp ")" . (rule 97)

"]"	reduce using rule 97
")"	reduce using rule 97
":"	reduce using rule 97
";"	reduce using rule 97
","	reduce using rule 97

"."	reduce using rule 97
"!!"	reduce using rule 97
"!="	reduce using rule 97
"&&"	reduce using rule 97
"  "	reduce using rule 97
AND	reduce using rule 97
OR	reduce using rule 97
">="	reduce using rule 97
"<="	reduce using rule 97
">"	reduce using rule 97
"<"	reduce using rule 97
"/"	reduce using rule 97
"//"	reduce using rule 97
"+"	reduce using rule 97
"-"	reduce using rule 97
"^"	reduce using rule 97
"*"	reduce using rule 97
"%"	reduce using rule 97
"=="	reduce using rule 97

State 230

Exp -> ID "[" Exp "]" . (rule 92)

"]"	reduce using rule 92
")"	reduce using rule 92
":"	reduce using rule 92
";"	reduce using rule 92
","	reduce using rule 92
"."	reduce using rule 92
"!!"	reduce using rule 92
"!="	reduce using rule 92
"&&"	reduce using rule 92
"  "	reduce using rule 92
AND	reduce using rule 92
OR	reduce using rule 92
">="	reduce using rule 92
"<="	reduce using rule 92
">"	reduce using rule 92
"<"	reduce using rule 92
"/"	reduce using rule 92
"//"	reduce using rule 92
"+"	reduce using rule 92
"-"	reduce using rule 92
"^"	reduce using rule 92

"*"	reduce using rule 92
"%"	reduce using rule 92
"=="	reduce using rule 92

State 231

Exp -> ID "(" Exp ")" . (rule 93)

"]"	reduce using rule 93
")"	reduce using rule 93
":"	reduce using rule 93
";"	reduce using rule 93
","	reduce using rule 93
."	reduce using rule 93
"!!"	reduce using rule 93
"!="	reduce using rule 93
"&&"	reduce using rule 93
"  "	reduce using rule 93
AND	reduce using rule 93
OR	reduce using rule 93
">="	reduce using rule 93
"<="	reduce using rule 93
">"	reduce using rule 93
"<"	reduce using rule 93
"/"	reduce using rule 93
"//"	reduce using rule 93
+"	reduce using rule 93
-"	reduce using rule 93
"^"	reduce using rule 93
"*"	reduce using rule 93
"%"	reduce using rule 93
"=="	reduce using rule 93

State 232

Ins -> Ins . PRINT "(" STRING PrntArgs ")" ";"	(rule 3)
Ins -> Ins . READ "(" ID ")" ";"	(rule 4)
Ins -> Ins . WRITE "(" ID ")" ";"	(rule 5)
Ins -> Ins . ID "=" Exp ";"	(rule 6)
Ins -> Ins . ID "*=" Exp ";"	(rule 7)
Ins -> Ins . ID "+=" Exp ";"	(rule 8)
Ins -> Ins . BREAK ";"	(rule 9)
Ins -> Ins . CONTINUE ";"	(rule 10)
Ins -> Ins . RETURN ";"	(rule 11)
Ins -> Ins . EXIT ";"	(rule 12)

```

Ins -> Ins . FREE "(" ID ")" ";" (rule 13)
Ins -> Ins . FREE "(" DATAID ")" ";" (rule 14)
Ins -> Ins . READ "(" DATAID ")" ";" (rule 15)
Ins -> Ins . IF ":" Smp1Dcls Ins NextIf Else END (rule 16)
Ins -> Ins . WHILE Exp ":" Smp1Dcls Ins END (rule 17)
Ins -> Ins WHILE Exp ":" Smp1Dcls Ins . END (rule 17)
Ins -> Ins . FOR ID "=" INT "|" INT "|" INT ":" Smp1Dcls Ins END (rule 18)
Ins -> Ins . FOR ID "=" INT "|" INT ":" Smp1Dcls Ins END (rule 19)
Ins -> Ins . FOR ID "=" ENUM "|" ENUM ":" Smp1Dcls Ins END (rule 20)
Ins -> Ins . BEGIN Smp1Dcls Ins END (rule 21)

```

```

ID          shift, and enter state 89
IF          shift, and enter state 90
END         shift, and enter state 246
WHILE       shift, and enter state 92
FOR         shift, and enter state 93
BEGIN       shift, and enter state 94
BREAK       shift, and enter state 95
CONTINUE    shift, and enter state 96
RETURN      shift, and enter state 97
EXIT        shift, and enter state 98
READ        shift, and enter state 99
WRITE       shift, and enter state 100
PRINT       shift, and enter state 101
FREE        shift, and enter state 102

```

State 233

```

Ins -> Ins FOR ID "=" ENUM "|" . ENUM ":" Smp1Dcls Ins END (rule 20)

```

```

ENUM          shift, and enter state 245

```

State 234

```

Ins -> Ins FOR ID "=" INT "|" . INT "|" INT ":" Smp1Dcls Ins END (rule 18)
Ins -> Ins FOR ID "=" INT "|" . INT ":" Smp1Dcls Ins END (rule 19)

```

```

INT          shift, and enter state 244

```

State 235

```

Ins -> Ins READ "(" ID ")" ";" . (rule 4)

```

```

ID          reduce using rule 4

```

IF	reduce using rule 4
ELIF	reduce using rule 4
ELSE	reduce using rule 4
END	reduce using rule 4
WHILE	reduce using rule 4
FOR	reduce using rule 4
BEGIN	reduce using rule 4
BREAK	reduce using rule 4
CONTINUE	reduce using rule 4
RETURN	reduce using rule 4
EXIT	reduce using rule 4
READ	reduce using rule 4
WRITE	reduce using rule 4
PRINT	reduce using rule 4
FREE	reduce using rule 4

State 236

Ins -> Ins READ "(" DATAID ")" ";" . (rule 15)

ID	reduce using rule 15
IF	reduce using rule 15
ELIF	reduce using rule 15
ELSE	reduce using rule 15
END	reduce using rule 15
WHILE	reduce using rule 15
FOR	reduce using rule 15
BEGIN	reduce using rule 15
BREAK	reduce using rule 15
CONTINUE	reduce using rule 15
RETURN	reduce using rule 15
EXIT	reduce using rule 15
READ	reduce using rule 15
WRITE	reduce using rule 15
PRINT	reduce using rule 15
FREE	reduce using rule 15

State 237

Ins -> Ins WRITE "(" ID ")" ";" . (rule 5)

ID	reduce using rule 5
IF	reduce using rule 5
ELIF	reduce using rule 5
ELSE	reduce using rule 5



END	reduce using rule 5
WHILE	reduce using rule 5
FOR	reduce using rule 5
BEGIN	reduce using rule 5
BREAK	reduce using rule 5
CONTINUE	reduce using rule 5
RETURN	reduce using rule 5
EXIT	reduce using rule 5
READ	reduce using rule 5
WRITE	reduce using rule 5
PRINT	reduce using rule 5
FREE	reduce using rule 5

State 238

Ins -> Ins PRINT "(" STRING PrntArgs ")" . ";" (rule 3)

";" shift, and enter state 243

State 239

PrntArgs -> PrntArgs "," . Exp (rule 23)

ID	shift, and enter state 115
DATAID	shift, and enter state 116
"("	shift, and enter state 117
"!"	shift, and enter state 118
"-"	shift, and enter state 119
"*"	shift, and enter state 120
MALLOC	shift, and enter state 121
SIZEOF	shift, and enter state 122
GET	shift, and enter state 123
TRUE	shift, and enter state 124
FALSE	shift, and enter state 125
CHAR	shift, and enter state 126
INT	shift, and enter state 127
FLOAT	shift, and enter state 128

Exp goto state 242

Term goto state 114

State 240

Ins -> Ins FREE "(" ID ")" ";" . (rule 13)

ID	reduce using rule 13
IF	reduce using rule 13
ELIF	reduce using rule 13
ELSE	reduce using rule 13
END	reduce using rule 13
WHILE	reduce using rule 13
FOR	reduce using rule 13
BEGIN	reduce using rule 13
BREAK	reduce using rule 13
CONTINUE	reduce using rule 13
RETURN	reduce using rule 13
EXIT	reduce using rule 13
READ	reduce using rule 13
WRITE	reduce using rule 13
PRINT	reduce using rule 13
FREE	reduce using rule 13

State 241

Ins -> Ins FREE "(" DATAID ")" ";" . (rule 14)

ID	reduce using rule 14
IF	reduce using rule 14
ELIF	reduce using rule 14
ELSE	reduce using rule 14
END	reduce using rule 14
WHILE	reduce using rule 14
FOR	reduce using rule 14
BEGIN	reduce using rule 14
BREAK	reduce using rule 14
CONTINUE	reduce using rule 14
RETURN	reduce using rule 14
EXIT	reduce using rule 14
READ	reduce using rule 14
WRITE	reduce using rule 14
PRINT	reduce using rule 14
FREE	reduce using rule 14

State 242

PrntArgs -> PrntArgs "," Exp .	(rule 23)
Exp -> Exp . "+" Exp	(rule 71)
Exp -> Exp . "-" Exp	(rule 72)
Exp -> Exp . "^" Exp	(rule 73)

Exp -> Exp . "*" Exp	(rule 74)
Exp -> Exp . "/" Exp	(rule 75)
Exp -> Exp . "//" Exp	(rule 76)
Exp -> Exp . "%" Exp	(rule 77)
Exp -> Exp . OR Exp	(rule 79)
Exp -> Exp . "  " Exp	(rule 80)
Exp -> Exp . AND Exp	(rule 81)
Exp -> Exp . "&&" Exp	(rule 82)
Exp -> Exp . "<" Exp	(rule 84)
Exp -> Exp . "<=" Exp	(rule 85)
Exp -> Exp . ">" Exp	(rule 86)
Exp -> Exp . ">=" Exp	(rule 87)
Exp -> Exp . "==" Exp	(rule 88)
Exp -> Exp . "!=" Exp	(rule 89)
Exp -> Exp . "!!" Exp	(rule 90)
Exp -> Exp . "." Exp	(rule 91)

)"	reduce using rule 23
","	reduce using rule 23
."	shift, and enter state 155
!"	shift, and enter state 156
!="	shift, and enter state 157
&&"	shift, and enter state 158
"	shift, and enter state 159
AND	shift, and enter state 160
OR	shift, and enter state 161
>="	shift, and enter state 162
<="	shift, and enter state 163
>"	shift, and enter state 164
<"	shift, and enter state 165
/"	shift, and enter state 166
//"	shift, and enter state 167
+"	shift, and enter state 168
-"	shift, and enter state 169
^"	shift, and enter state 170
*"	shift, and enter state 171
%"	shift, and enter state 172
=="	shift, and enter state 173

State 243

Ins -> Ins PRINT "(" STRING PrntArgs ")" ";" .	(rule 3)
--	----------

ID	reduce using rule 3
IF	reduce using rule 3

ELIF	reduce using rule 3
ELSE	reduce using rule 3
END	reduce using rule 3
WHILE	reduce using rule 3
FOR	reduce using rule 3
BEGIN	reduce using rule 3
BREAK	reduce using rule 3
CONTINUE	reduce using rule 3
RETURN	reduce using rule 3
EXIT	reduce using rule 3
READ	reduce using rule 3
WRITE	reduce using rule 3
PRINT	reduce using rule 3
FREE	reduce using rule 3

State 244

Ins -> Ins FOR ID "=" INT "|" INT . "|" INT ":" SmplDcls Ins END (rule 18)  
 Ins -> Ins FOR ID "=" INT "|" INT . ":" SmplDcls Ins END (rule 19)

" "	shift, and enter state 254
":"	shift, and enter state 255

State 245

Ins -> Ins FOR ID "=" ENUM "|" ENUM . ":" SmplDcls Ins END (rule 20)

":"	shift, and enter state 253
-----	----------------------------

State 246

Ins -> Ins WHILE Exp ":" SmplDcls Ins END . (rule 17)

ID	reduce using rule 17
IF	reduce using rule 17
ELIF	reduce using rule 17
ELSE	reduce using rule 17
END	reduce using rule 17
WHILE	reduce using rule 17
FOR	reduce using rule 17
BEGIN	reduce using rule 17
BREAK	reduce using rule 17
CONTINUE	reduce using rule 17
RETURN	reduce using rule 17

EXIT	reduce using rule 17
READ	reduce using rule 17
WRITE	reduce using rule 17
PRINT	reduce using rule 17
FREE	reduce using rule 17

State 247

Ins -> Ins IF ":" SmplDcls Ins NextIf Else . END (rule 16)

END shift, and enter state 252

State 248

NextIf -> NextIf ELIF . ":" Ins (rule 25)

":" shift, and enter state 251

State 249

Else -> ELSE . ":" Ins (rule 27)

":" shift, and enter state 250

State 250

Else -> ELSE ":" . Ins (rule 27)

ID	reduce using rule 2
IF	reduce using rule 2
END	reduce using rule 2
WHILE	reduce using rule 2
FOR	reduce using rule 2
BEGIN	reduce using rule 2
BREAK	reduce using rule 2
CONTINUE	reduce using rule 2
RETURN	reduce using rule 2
EXIT	reduce using rule 2
READ	reduce using rule 2
WRITE	reduce using rule 2
PRINT	reduce using rule 2
FREE	reduce using rule 2

Ins goto state 260

State 251

NextIf -> NextIf ELIF ":" . Ins (rule 25)

ID	reduce using rule 2
IF	reduce using rule 2
ELIF	reduce using rule 2
ELSE	reduce using rule 2
END	reduce using rule 2
WHILE	reduce using rule 2
FOR	reduce using rule 2
BEGIN	reduce using rule 2
BREAK	reduce using rule 2
CONTINUE	reduce using rule 2
RETURN	reduce using rule 2
EXIT	reduce using rule 2
READ	reduce using rule 2
WRITE	reduce using rule 2
PRINT	reduce using rule 2
FREE	reduce using rule 2

Ins goto state 259

State 252

Ins -> Ins IF ":" SmplDcls Ins NextIf Else END . (rule 16)

ID	reduce using rule 16
IF	reduce using rule 16
ELIF	reduce using rule 16
ELSE	reduce using rule 16
END	reduce using rule 16
WHILE	reduce using rule 16
FOR	reduce using rule 16
BEGIN	reduce using rule 16
BREAK	reduce using rule 16
CONTINUE	reduce using rule 16
RETURN	reduce using rule 16
EXIT	reduce using rule 16
READ	reduce using rule 16
WRITE	reduce using rule 16
PRINT	reduce using rule 16
FREE	reduce using rule 16

State 253

Ins -> Ins FOR ID "=" ENUM "|" ENUM ":" . Smp1Dcls Ins END (rule 20)

ID	reduce using rule 28
INTDEC	reduce using rule 28
BOOLDEC	reduce using rule 28
CHARDEC	reduce using rule 28
VOIDDEC	reduce using rule 28
FLOATDEC	reduce using rule 28
GLOBAL	reduce using rule 28
IF	reduce using rule 28
END	reduce using rule 28
WHILE	reduce using rule 28
FOR	reduce using rule 28
BEGIN	reduce using rule 28
BREAK	reduce using rule 28
CONTINUE	reduce using rule 28
RETURN	reduce using rule 28
EXIT	reduce using rule 28
READ	reduce using rule 28
WRITE	reduce using rule 28
PRINT	reduce using rule 28
FREE	reduce using rule 28

Smp1Dcls goto state 258

State 254

Ins -> Ins FOR ID "=" INT "|" INT "|" . INT ":" Smp1Dcls Ins END (rule 18)

INT shift, and enter state 257

State 255

Ins -> Ins FOR ID "=" INT "|" INT ":" . Smp1Dcls Ins END (rule 19)

ID	reduce using rule 28
INTDEC	reduce using rule 28
BOOLDEC	reduce using rule 28
CHARDEC	reduce using rule 28
VOIDDEC	reduce using rule 28
FLOATDEC	reduce using rule 28
GLOBAL	reduce using rule 28
IF	reduce using rule 28
END	reduce using rule 28
WHILE	reduce using rule 28

FOR	reduce using rule 28
BEGIN	reduce using rule 28
BREAK	reduce using rule 28
CONTINUE	reduce using rule 28
RETURN	reduce using rule 28
EXIT	reduce using rule 28
READ	reduce using rule 28
WRITE	reduce using rule 28
PRINT	reduce using rule 28
FREE	reduce using rule 28

SmplDcls        goto state 256

State 256

```

Ins -> Ins FOR ID "=" INT "|" INT ":" SmplDcls . Ins END      (rule 19)
SmplDcls -> SmplDcls . IsGlob PrimType Ptrs ID ";"          (rule 29)
SmplDcls -> SmplDcls . IsGlob PrimType EmptyArrs ID ";"      (rule 30)
SmplDcls -> SmplDcls . IsGlob PrimType StaticArrs ID ";"     (rule 31)
SmplDcls -> SmplDcls . IsGlob PrimType ID ";"               (rule 32)

```

ID	reduce using rule 2
INTDEC	reduce using rule 43
BOOLDEC	reduce using rule 43
CHARDEC	reduce using rule 43
VOIDDEC	reduce using rule 43
FLOATDEC	reduce using rule 43
GLOBAL	shift, and enter state 9
IF	reduce using rule 2
END	reduce using rule 2
WHILE	reduce using rule 2
FOR	reduce using rule 2
BEGIN	reduce using rule 2
BREAK	reduce using rule 2
CONTINUE	reduce using rule 2
RETURN	reduce using rule 2
EXIT	reduce using rule 2
READ	reduce using rule 2
WRITE	reduce using rule 2
PRINT	reduce using rule 2
FREE	reduce using rule 2

Ins            goto state 263

IsGlob        goto state 87

State 257



Ins -> Ins FOR ID "=" INT "|" INT "|" INT . ":" Smp1Dcls Ins END (rule 18)

":" shift, and enter state 262

State 258

Ins -> Ins FOR ID "=" ENUM "|" ENUM ":" Smp1Dcls . Ins END (rule 20)

Smp1Dcls -> Smp1Dcls . IsGlob PrimType Ptrs ID ";" (rule 29)

Smp1Dcls -> Smp1Dcls . IsGlob PrimType EmptyArrs ID ";" (rule 30)

Smp1Dcls -> Smp1Dcls . IsGlob PrimType StaticArrs ID ";" (rule 31)

Smp1Dcls -> Smp1Dcls . IsGlob PrimType ID ";" (rule 32)

ID	reduce using rule 2
INTDEC	reduce using rule 43
BOOLDEC	reduce using rule 43
CHARDEC	reduce using rule 43
VOIDDEC	reduce using rule 43
FLOATDEC	reduce using rule 43
GLOBAL	shift, and enter state 9
IF	reduce using rule 2
END	reduce using rule 2
WHILE	reduce using rule 2
FOR	reduce using rule 2
BEGIN	reduce using rule 2
BREAK	reduce using rule 2
CONTINUE	reduce using rule 2
RETURN	reduce using rule 2
EXIT	reduce using rule 2
READ	reduce using rule 2
WRITE	reduce using rule 2
PRINT	reduce using rule 2
FREE	reduce using rule 2

Ins goto state 261

IsGlob goto state 87

State 259

Ins -> Ins . PRINT "(" STRING PrntArgs ")" ";" (rule 3)

Ins -> Ins . READ "(" ID ")" ";" (rule 4)

Ins -> Ins . WRITE "(" ID ")" ";" (rule 5)

Ins -> Ins . ID "=" Exp ";" (rule 6)

Ins -> Ins . ID "\*=" Exp ";" (rule 7)

Ins -> Ins . ID "+=" Exp ";" (rule 8)

Ins -> Ins . BREAK ";" (rule 9)

```

Ins -> Ins . CONTINUE ";" (rule 10)
Ins -> Ins . RETURN ";" (rule 11)
Ins -> Ins . EXIT ";" (rule 12)
Ins -> Ins . FREE "(" ID ")" ";" (rule 13)
Ins -> Ins . FREE "(" DATAID ")" ";" (rule 14)
Ins -> Ins . READ "(" DATAID ")" ";" (rule 15)
Ins -> Ins . IF ":" Smp1Dcls Ins NextIf Else END (rule 16)
Ins -> Ins . WHILE Exp ":" Smp1Dcls Ins END (rule 17)
Ins -> Ins . FOR ID "=" INT "|" INT "|" INT ":" Smp1Dcls Ins END (rule 18)
Ins -> Ins . FOR ID "=" INT "|" INT ":" Smp1Dcls Ins END (rule 19)
Ins -> Ins . FOR ID "=" ENUM "|" ENUM ":" Smp1Dcls Ins END (rule 20)
Ins -> Ins . BEGIN Smp1Dcls Ins END (rule 21)
NextIf -> NextIf ELIF ":" Ins . (rule 25)

```

```

ID          shift, and enter state 89
IF          shift, and enter state 90
ELIF        reduce using rule 25
ELSE        reduce using rule 25
END         reduce using rule 25
WHILE       shift, and enter state 92
FOR         shift, and enter state 93
BEGIN       shift, and enter state 94
BREAK       shift, and enter state 95
CONTINUE    shift, and enter state 96
RETURN      shift, and enter state 97
EXIT        shift, and enter state 98
READ        shift, and enter state 99
WRITE       shift, and enter state 100
PRINT       shift, and enter state 101
FREE        shift, and enter state 102

```

State 260

```

Ins -> Ins . PRINT "(" STRING PrntArgs ")" ";" (rule 3)
Ins -> Ins . READ "(" ID ")" ";" (rule 4)
Ins -> Ins . WRITE "(" ID ")" ";" (rule 5)
Ins -> Ins . ID "=" Exp ";" (rule 6)
Ins -> Ins . ID "*=" Exp ";" (rule 7)
Ins -> Ins . ID "+=" Exp ";" (rule 8)
Ins -> Ins . BREAK ";" (rule 9)
Ins -> Ins . CONTINUE ";" (rule 10)
Ins -> Ins . RETURN ";" (rule 11)
Ins -> Ins . EXIT ";" (rule 12)
Ins -> Ins . FREE "(" ID ")" ";" (rule 13)
Ins -> Ins . FREE "(" DATAID ")" ";" (rule 14)

```

```

Ins -> Ins . READ "(" DATAID ")" ";" (rule 15)
Ins -> Ins . IF ":" Smp1Dcls Ins NextIf Else END (rule 16)
Ins -> Ins . WHILE Exp ":" Smp1Dcls Ins END (rule 17)
Ins -> Ins . FOR ID "=" INT "|" INT "|" INT ":" Smp1Dcls Ins END (rule 18)
Ins -> Ins . FOR ID "=" INT "|" INT ":" Smp1Dcls Ins END (rule 19)
Ins -> Ins . FOR ID "=" ENUM "|" ENUM ":" Smp1Dcls Ins END (rule 20)
Ins -> Ins . BEGIN Smp1Dcls Ins END (rule 21)
Else -> ELSE ":" Ins . (rule 27)

```

```

ID          shift, and enter state 89
IF          shift, and enter state 90
END         reduce using rule 27
WHILE      shift, and enter state 92
FOR        shift, and enter state 93
BEGIN      shift, and enter state 94
BREAK      shift, and enter state 95
CONTINUE   shift, and enter state 96
RETURN     shift, and enter state 97
EXIT       shift, and enter state 98
READ       shift, and enter state 99
WRITE      shift, and enter state 100
PRINT      shift, and enter state 101
FREE       shift, and enter state 102

```

State 261

```

Ins -> Ins . PRINT "(" STRING PrntArgs ")" ";" (rule 3)
Ins -> Ins . READ "(" ID ")" ";" (rule 4)
Ins -> Ins . WRITE "(" ID ")" ";" (rule 5)
Ins -> Ins . ID "=" Exp ";" (rule 6)
Ins -> Ins . ID "*=" Exp ";" (rule 7)
Ins -> Ins . ID "+=" Exp ";" (rule 8)
Ins -> Ins . BREAK ";" (rule 9)
Ins -> Ins . CONTINUE ";" (rule 10)
Ins -> Ins . RETURN ";" (rule 11)
Ins -> Ins . EXIT ";" (rule 12)
Ins -> Ins . FREE "(" ID ")" ";" (rule 13)
Ins -> Ins . FREE "(" DATAID ")" ";" (rule 14)
Ins -> Ins . READ "(" DATAID ")" ";" (rule 15)
Ins -> Ins . IF ":" Smp1Dcls Ins NextIf Else END (rule 16)
Ins -> Ins . WHILE Exp ":" Smp1Dcls Ins END (rule 17)
Ins -> Ins . FOR ID "=" INT "|" INT "|" INT ":" Smp1Dcls Ins END (rule 18)
Ins -> Ins . FOR ID "=" INT "|" INT ":" Smp1Dcls Ins END (rule 19)
Ins -> Ins . FOR ID "=" ENUM "|" ENUM ":" Smp1Dcls Ins END (rule 20)
Ins -> Ins FOR ID "=" ENUM "|" ENUM ":" Smp1Dcls Ins . END (rule 20)

```

Ins -> Ins . BEGIN Smp1Dcls Ins END (rule 21)

ID	shift, and enter state 89
IF	shift, and enter state 90
END	shift, and enter state 266
WHILE	shift, and enter state 92
FOR	shift, and enter state 93
BEGIN	shift, and enter state 94
BREAK	shift, and enter state 95
CONTINUE	shift, and enter state 96
RETURN	shift, and enter state 97
EXIT	shift, and enter state 98
READ	shift, and enter state 99
WRITE	shift, and enter state 100
PRINT	shift, and enter state 101
FREE	shift, and enter state 102

State 262

Ins -> Ins FOR ID "=" INT "|" INT "|" INT ":" . Smp1Dcls Ins END (rule 18)

ID	reduce using rule 28
INTDEC	reduce using rule 28
BOOLDEC	reduce using rule 28
CHARDEC	reduce using rule 28
VOIDDEC	reduce using rule 28
FLOATDEC	reduce using rule 28
GLOBAL	reduce using rule 28
IF	reduce using rule 28
END	reduce using rule 28
WHILE	reduce using rule 28
FOR	reduce using rule 28
BEGIN	reduce using rule 28
BREAK	reduce using rule 28
CONTINUE	reduce using rule 28
RETURN	reduce using rule 28
EXIT	reduce using rule 28
READ	reduce using rule 28
WRITE	reduce using rule 28
PRINT	reduce using rule 28
FREE	reduce using rule 28

Smp1Dcls goto state 265

State 263

```

Ins -> Ins . PRINT "(" STRING PrntArgs ")" ";" (rule 3)
Ins -> Ins . READ "(" ID ")" ";" (rule 4)
Ins -> Ins . WRITE "(" ID ")" ";" (rule 5)
Ins -> Ins . ID "=" Exp ";" (rule 6)
Ins -> Ins . ID "*=" Exp ";" (rule 7)
Ins -> Ins . ID "+=" Exp ";" (rule 8)
Ins -> Ins . BREAK ";" (rule 9)
Ins -> Ins . CONTINUE ";" (rule 10)
Ins -> Ins . RETURN ";" (rule 11)
Ins -> Ins . EXIT ";" (rule 12)
Ins -> Ins . FREE "(" ID ")" ";" (rule 13)
Ins -> Ins . FREE "(" DATAID ")" ";" (rule 14)
Ins -> Ins . READ "(" DATAID ")" ";" (rule 15)
Ins -> Ins . IF ":" Smp1Dcls Ins NextIf Else END (rule 16)
Ins -> Ins . WHILE Exp ":" Smp1Dcls Ins END (rule 17)
Ins -> Ins . FOR ID "=" INT "|" INT "|" INT ":" Smp1Dcls Ins END (rule 18)
Ins -> Ins . FOR ID "=" INT "|" INT ":" Smp1Dcls Ins END (rule 19)
Ins -> Ins FOR ID "=" INT "|" INT ":" Smp1Dcls Ins . END (rule 19)
Ins -> Ins . FOR ID "=" ENUM "|" ENUM ":" Smp1Dcls Ins END (rule 20)
Ins -> Ins . BEGIN Smp1Dcls Ins END (rule 21)

```

ID	shift, and enter state 89
IF	shift, and enter state 90
END	shift, and enter state 264
WHILE	shift, and enter state 92
FOR	shift, and enter state 93
BEGIN	shift, and enter state 94
BREAK	shift, and enter state 95
CONTINUE	shift, and enter state 96
RETURN	shift, and enter state 97
EXIT	shift, and enter state 98
READ	shift, and enter state 99
WRITE	shift, and enter state 100
PRINT	shift, and enter state 101
FREE	shift, and enter state 102

State 264

```

Ins -> Ins FOR ID "=" INT "|" INT ":" Smp1Dcls Ins END . (rule 19)

```

ID	reduce using rule 19
IF	reduce using rule 19
ELIF	reduce using rule 19
ELSE	reduce using rule 19
END	reduce using rule 19

WHILE	reduce using rule 19
FOR	reduce using rule 19
BEGIN	reduce using rule 19
BREAK	reduce using rule 19
CONTINUE	reduce using rule 19
RETURN	reduce using rule 19
EXIT	reduce using rule 19
READ	reduce using rule 19
WRITE	reduce using rule 19
PRINT	reduce using rule 19
FREE	reduce using rule 19

State 265

Ins -> Ins FOR ID "=" INT " " INT " " INT ":" SmpIDcls . Ins END	(rule 18)
SmpIDcls -> SmpIDcls . IsGlob PrimType Ptrs ID ";"	(rule 29)
SmpIDcls -> SmpIDcls . IsGlob PrimType EmptyArrs ID ";"	(rule 30)
SmpIDcls -> SmpIDcls . IsGlob PrimType StaticArrs ID ";"	(rule 31)
SmpIDcls -> SmpIDcls . IsGlob PrimType ID ";"	(rule 32)

ID	reduce using rule 2
INTDEC	reduce using rule 43
BOOLDEC	reduce using rule 43
CHARDEC	reduce using rule 43
VOIDDEC	reduce using rule 43
FLOATDEC	reduce using rule 43
GLOBAL	shift, and enter state 9
IF	reduce using rule 2
END	reduce using rule 2
WHILE	reduce using rule 2
FOR	reduce using rule 2
BEGIN	reduce using rule 2
BREAK	reduce using rule 2
CONTINUE	reduce using rule 2
RETURN	reduce using rule 2
EXIT	reduce using rule 2
READ	reduce using rule 2
WRITE	reduce using rule 2
PRINT	reduce using rule 2
FREE	reduce using rule 2

Ins	goto state 267
IsGlob	goto state 87

State 266

Ins -> Ins FOR ID "=" ENUM "|" ENUM ":" Smp1Dcls Ins END . (rule 20)

ID	reduce using rule 20
IF	reduce using rule 20
ELIF	reduce using rule 20
ELSE	reduce using rule 20
END	reduce using rule 20
WHILE	reduce using rule 20
FOR	reduce using rule 20
BEGIN	reduce using rule 20
BREAK	reduce using rule 20
CONTINUE	reduce using rule 20
RETURN	reduce using rule 20
EXIT	reduce using rule 20
READ	reduce using rule 20
WRITE	reduce using rule 20
PRINT	reduce using rule 20
FREE	reduce using rule 20

State 267

Ins -> Ins . PRINT "(" STRING PrntArgs ")" ";"	(rule 3)
Ins -> Ins . READ "(" ID ")" ";"	(rule 4)
Ins -> Ins . WRITE "(" ID ")" ";"	(rule 5)
Ins -> Ins . ID "=" Exp ";"	(rule 6)
Ins -> Ins . ID "*=" Exp ";"	(rule 7)
Ins -> Ins . ID "+=" Exp ";"	(rule 8)
Ins -> Ins . BREAK ";"	(rule 9)
Ins -> Ins . CONTINUE ";"	(rule 10)
Ins -> Ins . RETURN ";"	(rule 11)
Ins -> Ins . EXIT ";"	(rule 12)
Ins -> Ins . FREE "(" ID ")" ";"	(rule 13)
Ins -> Ins . FREE "(" DATAID ")" ";"	(rule 14)
Ins -> Ins . READ "(" DATAID ")" ";"	(rule 15)
Ins -> Ins . IF ":" Smp1Dcls Ins NextIf Else END	(rule 16)
Ins -> Ins . WHILE Exp ":" Smp1Dcls Ins END	(rule 17)
Ins -> Ins . FOR ID "=" INT " " INT " " INT ":" Smp1Dcls Ins END	(rule 18)
Ins -> Ins FOR ID "=" INT " " INT " " INT ":" Smp1Dcls Ins . END	(rule 18)
Ins -> Ins . FOR ID "=" INT " " INT ":" Smp1Dcls Ins END	(rule 19)
Ins -> Ins . FOR ID "=" ENUM " " ENUM ":" Smp1Dcls Ins END	(rule 20)
Ins -> Ins . BEGIN Smp1Dcls Ins END	(rule 21)

ID	shift, and enter state 89
IF	shift, and enter state 90
END	shift, and enter state 268

WHILE	shift, and enter state 92
FOR	shift, and enter state 93
BEGIN	shift, and enter state 94
BREAK	shift, and enter state 95
CONTINUE	shift, and enter state 96
RETURN	shift, and enter state 97
EXIT	shift, and enter state 98
READ	shift, and enter state 99
WRITE	shift, and enter state 100
PRINT	shift, and enter state 101
FREE	shift, and enter state 102

State 268

Ins -> Ins FOR ID "=" INT "|" INT "|" INT ":" Smp1Dcls Ins END . (rule 18)

ID	reduce using rule 18
IF	reduce using rule 18
ELIF	reduce using rule 18
ELSE	reduce using rule 18
END	reduce using rule 18
WHILE	reduce using rule 18
FOR	reduce using rule 18
BEGIN	reduce using rule 18
BREAK	reduce using rule 18
CONTINUE	reduce using rule 18
RETURN	reduce using rule 18
EXIT	reduce using rule 18
READ	reduce using rule 18
WRITE	reduce using rule 18
PRINT	reduce using rule 18
FREE	reduce using rule 18

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#### Grammar Totals

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Number of rules: 108 Number of terminals: 71 Number of non-terminals: 20  
 Number of states: 269