Compiler Design Mini Project

**Grammar for while and switch constructs of PHP**

**Batch\_id = C8**

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start: “<?php” program

program: statement

statement: block statement | if statement | while statement | switch statement | break statement | continue statement | declaration statement | assignment statement | echo statement | end

end : “?>”

declaration : $ t\_string

var : declaration bracket

bracket : [int] bracket | ε

t\_string : label

label : letter letterdigit | \_ letterdigit

letterdigit : letter letterdigit | digit letterdigit| \_ letterdigit | ε

letter : a..z| A..Z

digit : 0..9

assignment : var assign\_op arith\_expr | var “=” encapsed\_string | prefix\_op var | postfix\_op var | var “=” arr\_decl

arr\_decl : array( inner\_array\_list )

inner\_array\_list : type, inner\_array\_list | type | ε | var\_list | arr\_list

arr\_list : array(inner\_array\_list) , arr\_list | array(inner\_array\_list) | ε

var\_list : var, var\_list | var | ε

type : const\_expr | float

assign\_op : = | += | -= | \*= | /= | .= | %= | &= | |= | ^= | <<= | >>=

prefix\_op : + | - | ! | ~ | ++ | -- | ε

postfix\_op : ++ | -- | ε

arith\_expr : arith\_expr + T | T | arith\_expr - T

T : T \* F | F | T/F

F : t\_string | t\_lnumber | ε

block: { inner\_new\_statement\_list }

inner\_new\_statement\_list : statement inner\_new\_statement\_list | statement | ε

if :if ( logic\_expr ) statement elseif\_branch else\_single

elseif\_branch : elseif ( logic\_expr ) statement | ε

else\_single : else statement | ε

while : while ( logic\_expr ) { inner\_new\_statement\_list } | while ( logic\_expr ) statement

switch : switch ( var ) switch\_case\_list

switch\_case\_list : {case\_list}

case\_list : case const\_expr : inner\_new\_statement\_list cases default : inner\_new\_statement\_list | case const\_expr : inner\_new\_statement\_list cases

cases : case const\_expr : inner\_new\_statement\_list cases | ε

break : break;

continue : continue;

echo : echo echo\_expr\_list;

echo\_expr\_list : encapsed\_string echo\_expr\_list | . var . echo\_expr\_list | ε

t\_lnumber : octal | decimal | hexadecimal ;

boolean : True | False

encapsed\_string : single\_quoted\_constant\_string | double\_quoted\_constant\_string | ε

logic\_expr : rel\_expr | rel\_expr logic\_op logic\_expr

logic\_op : or | and | xor

rel\_expr : rel\_operand rel\_op rel\_operand

rel\_operand : var | arith\_expr | boolean

rel\_op : == | === | !== | < | <= | > | >= | !=

expr : var | arith\_expr | logic\_expr | const\_expr | ( *expr* )

const\_expr : digit | boolean | encapsed\_string