Compiler Project - 1

Team Members -

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Grammar BNF -

<stmt>::= <assignmentStmt> | <declarativeStmt> | <conditionalStmt>

<type-specifier> ::= INT | STRING | BOOLEAN | FLOAT
<operator> ::= ADD|SUB|MUL|DIV|MOD
<variable_list> ::= IDENTIFIER <more_ids>
<more_ids> ::= COMMA <var_list> | e

<plusMinus> ::= + | - | e
<Number> ::= [1-9][0-9]* | 0
<integerLiteral> ::= <plusMinus> <Number>
<floatingLiteral> ::= <integerLiteral> .[0-9][0-9]*
<logicalOperators> ::= OR|AND|NOT
<relationalOperators> ::= EQ|LT|GT|NE|GE|LE

<assignmentOperator> ::= ASSIGNOP
<assignmentStmt> ::= <lhs> ASSIGNOP <rhs> SEMICOLON
<lhs> ::= ID | Square_Open <variable_list> Square_closed
<rhs> ::= <arithmeticExpression>

<arithmeticExpression>::= <arithmeticExpression> <operator> <arithmeticExpression>
<arithmeticExpression>::= PARENTHESES_OPEN <arithmeticExpression>
PARENTHESES_CLOSED | <type-specifier>

<declarativeStmt> ::= <type-specifier> <variable_list> SEMICOLON

<conditionalStmt> ::= IF <booleanExpression> <stmt><otherStmts> ELSE <otherStmts>
<conditionalStmt> ::= IF <booleanExpression> <stmt><otherStmts>

Token List

Pattern	Token	Usage
int	KEYWORD_INT	Keyword int
float	KEYWORD_FLOAT	Keyword float
string	KEYWORD_STRING	Keyword string
boolean	KEYWORD_BOOLEAN	Keyword boolean
while	WHILE	Keyword while
if	IF	Keyword if
else	ELSE	Keyword else
//	N.A	Single line comment
`	N.A	Multi line comment
=	ASSIGNOP	Assignment Operator
+	ADD	Addition Operator
-	SUB	Subtraction Operator
*	MUL	Multiplication Operator
/	DIV	Division Operator
%	MOD	Modulus Operator
[	SQUARE_OPEN	Square Bracket Open
]	SQUARE_CLOSED	Square Bracket Closed
(	PARENTHESES_OPEN	Parentheses Open
)	PARENTHESES_CLOSED	Parentheses Closed
{	CURLY_OPEN	Curly Bracket Open
}	CURLY_CLOSED	Curly Bracket Closed
;	SEMICOLON	Separator

,	COMMA	comma
<	LT	Relational: Less than
<=	LE	Relational: Less than or equal to
==	EQ	Relational: Equal to
!=	NE	Relational: Not Equal to
>	GT	Relational: Greater than
>=	GE	Relational: Greater than equal to
[0-9][0-9]*	INT_NUM	Integer Value
[0-9]*[0-9]* .[0-9][0-9]*	FLOAT	Float Value
["][a-z|A-Z|0-9|Any special Character]["]	STR	String Value
[a-z|A-Z][a-z|A-Z|_|0-9]*	IDENTIFIER	Identifier
&&	AND	Logical and
||	OR	Logical or
!	NOT	Logical not