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COP4020 – Project1 – Scanner + Parser

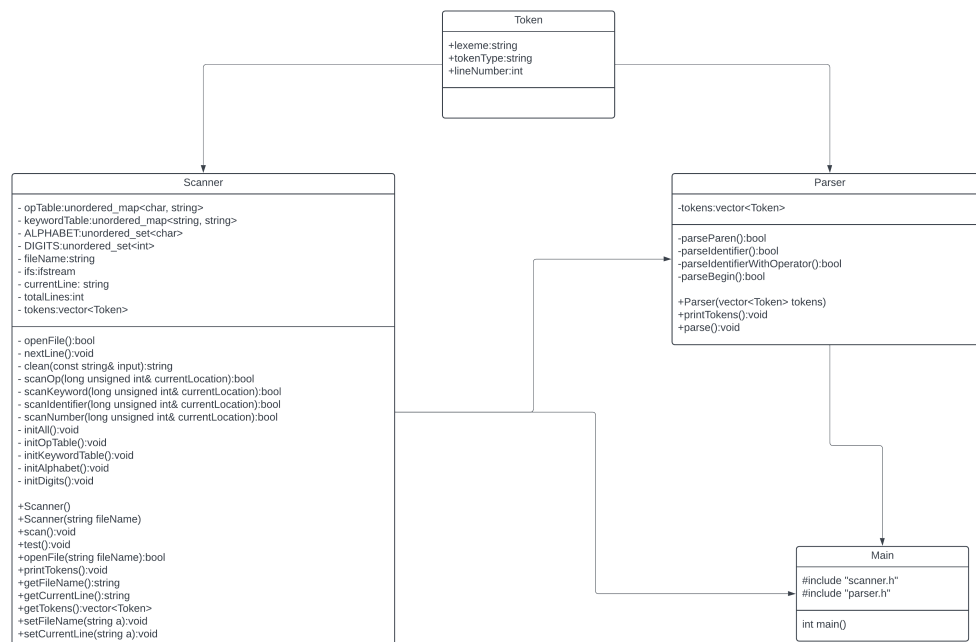
Lexemes:

Lexeme description (RE or verbal)	Examples	Meaning	Token	Attribute 1
[a-zA-z]	variable1	store assignments in case insensitive names	idSym	Variable Name
[~]DD*	-205, 5, 99	Integer literal	intSym	Numerical Value
while	while	Reserved key word for, "while loops"	whileSym	N/A
!=	!=	Inequality	neqSym	N/A
:=	:=	Assignment Operator	assignmentSym	N/A
[+,-,/,*]	5 + 5, 12 * 2, 2 - 2, ~	Arithmetic Operator(s)	arithSym	Operator
;	;	End of statement	eosSym	N/A
~	~205	Negative value operator	negSym	N/A
read	read(variable1)	Take in user input	readSym	N/A
print	print(variable1)	Print to console, takes an expression as argument	printSym	N/A
((variable1...	Left parentheses	lParSym	N/A
)	...variable1)	Right parentheses	rParSym	N/A
{	{#codeBlock...	Left bracket	lBraSym	N/A
}	...#codeBlock}	Right bracket	rBraSym	N/A
#	#code	Comment out code, not to be read by Scanner	commentSym	N/A
[~]?[0-9].[0-9]+	1.99, ~1.99	Float numerical values	floatSym	Numerical Value

EBNF:

Nonterminal	RHS
Assignment	Identifier ":=" Expression ";"
Identifier	idSym
loop	"while" "(" Expression ")" "{" Block "}"
input statement	"read" "(" identifier ")" ";"
output statement	"print" "(" identifier ")" ";"
code block	"{" Statement "}"
expression	Identifier Identifier ("+" "-" "/" "**") Expression
number	Digits Decimals
integer	+Digits
decimal	("+" "-") Digits "." +Digits
letter	[a-Z]
digit	0-9

UML Diagram:



How To Run The Program

1. Navigate to the directory of the project inside a linux shell.
2. Inside a linux shell, type the command “./run” to run all files.

- All files consists of:

a1
a2
a3
a4
a5
a6
a7
a8