



C-COMPILER

Team 9



Team Members: -

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Project Description

Simple C language Compiler that is designed to compile main functions of C language components.

the compiler is design is divided into two phases

Phase-1

- 1) Lex file that contain main tokens used in the project.
- 2) YACC file that contain the Production Rules used in the language as writes an indicator to file either the compiling is success or failor.
- 3) Simple C# windows application GUI used to generate Y-Files and EXE files as well as Compiling Test Cases.

Phase-2

- 1) Symbol table
- 2) Semantic Analyzer
- 3) Enhanced GUI
- 4) Arrays Production Rules

Technologies Used

- 1) Flex: Compile LEX files
- 2) Bison: Compile YACC file
- 3) DEV-C: Generate Executable Files

List of Tokens

OCBRACKET	{
CCBRACKET	}
ORBRACKET	(
CRBRACKET)
SEMICOLON	;
COLON	:
COMMA	,
PLUSEQUAL	+=
MINUSEQUAL	-=
MULTIPLYEQUAL	*=
DIVIDEEQUAL	/=
GREATERTHAN	>
LESSTHAN	<
GREATERTHANOREQUAL	>=
LESSTHANOREQUAL	=<
EQUALEQUAL	==
NOTEQUAL	!=
PLUS	+
MINUS	-
MULTIPLY	*
DIVIDE	/
EXPONENT	^
ASSIGN	=
REM	%
AND	&&
OR	
NOT	!
WHILE	WHILE
FOR	FOR
IF	IF
ELSE	ELSE
PRINT	PRINT
BOOL	Data Type
INT	Data Type
CHAR	Data Type
STRING	Data Type
CONST	Data Type
DO	DO
BREAK	BREAK
SWITCH	SWITCH
CASE	CASE
FALSE	Boolean Value
TRUE	Boolean Value
RET	Return

Associativity List

ASSIGN	Left
GREATERTHAN	Left
LESSTHAN	Left
GREATERTHANOREQUAL	Left
LESSTHANOREQUAL	Left
EQUALEQUAL	Left
NOTEQUAL	Left
AND	Left
OR	Left
NOT	Left
PLUS	Left
MINUS	Left
DIVIDE	Left
MULTIPLY	Left
REM	Left

Production Rules

Variables and Constants declaration.

Mathematical and logical expressions.

Assignment statement.

If-then-else statement, while loops, repeat-until loops, for loops, switch statement.

Block structure (nested scopes where variables may be declared at the beginning of blocks).

Functions.