Topic- mini C++ compiler

Project Members:-

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COMPILATION STEP

WHAT WE HAVE DONE:

The only basic types are boolean, character, string, integer, and real.
A variable name can consist of any combinations of letters, numbers, and the underscore(_).
However, the first character in a variable must be a letter.
This language is case-sensitive.
Statements are evaluated from right to left, top to bottom, with each new statement on a new line.

Comments:

As with any good code, your files should be commented as well. Comments are of course not executed like normal languages. Multiline comments are surrounded by braces {}. Single line comments use the hash mark #. Comments should be written assuming that they will carry over into the code. Comments for variables passed in a function are required and indicated by a colon.

Operators:

Add (+)
Subtract (-)
Multiply (*)
Divide (/)
Modulus (%)
inc (++)
dec (--)
"<"
">"
"<="
">="
"=="
"||"
"&&"

"++"
"--"
">>"
"<<"
">>>"
"+="
"-="
"*="
"/="
"&="
"|="
"^="
"%="
"<<="
">>="
">>>="

PrimitiveType

bool
char
byte
short
int
long
float
double
void

Modifier

abstract
final
public
PROTECTED
PRIVATE
STATIC
TRANSIENT
VOLATILE
NATIVE

Input/Output:-

Input from a user is c++ file . Output for a user to read from the standard output is indicated by the keyword print or printLine followed by what you want to have displayed to the user. If there is an error our code prints to the standard error use the keyword printError.
Our code prints the message if the input cpp file consists any syntax error If the input file contains no error and compiles perfect then there would be no error to display. our compiler not identify.

Work Done:-

Identification of C ++ Programs
Syntax error checking of C ++ programs

Features:-

It can check syntax of a given C++ program and identify errors.

Errors Detected :-

1.Bracketing errors (missing parenthesis, braces and square brackets).
2.Missing semicolons.
3.All type of keyword errors.
4.Most types of operator errors.
5.Syntax errors in different control statements:
6. standard syntax of C++.
7.Syntax error of variable, class, methods, and declarations.
8.Improper inclusion of headers.
9.Errors in passing parameters to the methods of functions.

SHORTCOMINGS:-

1. Semantic errors such as variable not defined is not shown
2. Used standarrd errors defined over lack of grammar.

File Structure:-

cpp.l - Contains the flex file to tokenize the input C++ file for syntax error checking.
cpp.y – Contains the yacc grammar which checks syntax errors in the C++ file.
text.cpp- contains the c++ program

Dependencies :-

flex – Lexical Analyzer
bison – Parser

How to compile:

```
yacc -d cpp.y
flex cpp.l
gcc lex.c.y y.tab.c -lfl -ly
./a.out < text
```