CS3320 - Compilers 1

Summary Of Assignment 1

Study of the error programs:

Program 1(err_1.cl)

The errors of this type are :

Lex and parse errors (more specifically syntax errors)

Keywords cannot be identifiers **(for example: else : Int;)**
Type identifiers begin cannot begin with small letters **(for example:b :int;   )**
Object identifiers begin with small letters **(for example : M: Class <- (new Class)**
Integers are non-empty strings of digits 0-9 **(for example : a : Int <-)**

Program 2(err_2.cl)

The errors of this type are :

Lex and parse errors (more specifically syntax errors)

Strings are enclosed in double quotes "...". **(for example: s:String<- 'This is invalid')**
A non-escaped newline character may not appear in a string. **(for example: s:String<-"This**
                                                                                                          Is not Okay!"
A string may not contain eof **(for example: s:String<-"This is non terminating string };)**

Program 3(err_3.cl)

The errors of this type are :

Lex and parse errors (more specifically syntax errors)

Error : EOF in comment

Comments cannot cross File boundaries

 (for example: class Main{
 main():Object{
 };
 };
 (* -- unclosed comments, crosses file boundaries
)

Program 4(err_4.cl)

The errors of this type are :

Lex and parse errors (more specifically syntax errors)

True , False are case sensitive (the first letter must be be small) **(For example : iF(FaLse))**
All other keywords are not case sensitive **(For example: iF(expr) Then (expr) else (expr) Fi)**

Program 5

A special sequence of keywords denote white spaces in COOL.(For example : '\n'
denote a newline whereas '\N' prints out letter N).

Study of the correct Programs

- In the MIPS code generated by compiling the COOL program, we can broadly observe a set pattern in which the code is emitted.
- Constants like (int_const ,str_const,tags ,Class_ProtoObj and Class_init where the classes get initialized.
- Main.main is the point from which the actual program flow starts and the program functionality occurs in labels in the MIPS code.
- The keywords like sw ,lw,move denote the data transfer between the resistors.