1. **词法分析器设计文档**

一．Token分类

类似于提供的万花筒设计方案，根据VSL词法语法语义文档，可以将TOKEN分为17类如下

enum Token

{

tok\_eof = -1,

FUNC = -2, //关键字'FUNC'

VARIABLE = -3, //标识符

ASSIGN\_SYMBOL = -4, // 赋值

INTEGER = -5, //整数

PRINT = -6, // 关键字'PRINT'

TEXT = -7, // 字符常量

RETURN = -8, //关键字

CONTINUE = -9,

IF = -10,

THEN = -11,

ELSE = -12,

FI = -13,

WHILE = -14,

DO = -15,

DONE = -16,

VAR = -17,

};

结束符tok\_eof,关键字FUNC，PRINT，IF，RETURN，CONTINUE,IF语句，WHILE语句,VAR,以及自定义字符VARIABLE.

注:考虑到VSL接受的数字种类仅限于INTEGER,区别于万花筒的FLOAT，后续均须进行处理（static int NumVal;）

二.返回字符类型

类似于万花筒在处理后获取标识字符

标识符:（{lc\_letter}|{uc\_letter}({lc\_letter}|{uc\_letter}|{digit})\*

if (IdentifierStr == "FUNC")

return FUNC;

if (IdentifierStr == "PRINT")

return PRINT;

if (IdentifierStr == "RETURN")

return RETURN;

if (IdentifierStr == "CONTINUE")

return CONTINUE;

if (IdentifierStr == "IF")

return IF;

if (IdentifierStr == "THEN")

return THEN;

if (IdentifierStr == "ELSE")

return ELSE;

if (IdentifierStr == "FI")

return FI;

if (IdentifierStr == "WHILE")

return WHILE;

if (IdentifierStr == "DO")

return DO;

if (IdentifierStr == "DONE")

return DONE;

if (IdentifierStr == "VAR")

return VAR;

整数:{digit}+

if (isdigit(LastChar)) {

std::string NumStr;

do {

NumStr += LastChar;

LastChar = getchar();

} while (isdigit(LastChar));

NumVal = atoi(NumStr.c\_str());

return INTEGER;

}

赋值符号":=" ASSIGN\_SYMBOL

if (LastChar == ':' && (LastChar = getchar()) == '=') {

LastChar = getchar();

return ASSIGN\_SYMBOL;

}

结束符tok\_eof

if (LastChar == EOF)

return tok\_eof;

其余类似于万花筒