文法设计:

\*\*()内的内容为可选项,可有可无,{}内的内容为多选一,<>内大写为非终结符,小写为终结符

//程序

PROGRAME → <TYPE><subProgram><{><SENTENCE><}>

//句子

<SENTENCE>→ <KEYWORD><CONTENT><;>(<SENTENCE>)

<SENTENCE>→ <CONTENT><;>

<SENTENCE>→<IF>

<SENTENCE>→ <WHILE>

//<WHILE>

<WHILE>→ <while><(>{<CONSTANT>,<IDENTIFIER>}<COMPARE>{<CONSTANT>,<IDENTIFIER>}<)><{><SENTENCE><}>

//<IF>

<IF>→ <if><(><EXPRESSION><COMPARE><EXPRESSION><)><{><SENTENCE><}>(<else>{<{><SENTENCE><}>, <IF>})

//内容

<CONTENT>→ <IDENTIFIER>(<=><EXPRESSION>)(<,><CONTENT>)

//表达式(采用LL(1)分析)

<EXPRESSION>→ {<T>, <EXPRESS><OPTION\_0><T>}

<T>→ {<F>, <T><OPTION\_1><F>}

<F>→ {{<CONSTANT>, <IDENTIFIER>}, <(><EXPRESS><)>}

注: <CONSTANT>,<IDNETIFIER>由扫描器自动机识别,在此不做赘述