Lab2实验报告

基于LL(1)的语法分析器

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# 实验目的

自行定义文法，运用LL(1)方法对输入语句进行语法分析并输出结果，加深对语法分析过程的理解。

# 内容描述

此程序使用Java语言，

# 思路方法

# 假设

# 相关分析过程描述

# 重要数据结构

# 核心算法

# 运行截图

# 问题与解决

# 感受与总结

预处理后的文法如下：

0.S->id=E;

1.S->if(C){S}else{S}

2.S->while(C){S}

3.E->TE’

4.E’->+TE’

5.E’->ε

6.T->FT’

7.T’->\*FT’

8.T’->ε

9.F->(E)

10.F->num

11.F->id

12.C->DC’

13.C’->||DC’

14.C’->ε

15.D->(C)

16.D->id==num

预测分析表

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | id | = | ; | if | ( | ) | { | } | else | while | + | \* | num | || | == | $R |
| S | 0 |  |  | 1 |  |  |  |  |  | 2 |  |  |  |  |  |  |
| E | 3 |  |  |  | 3 |  |  |  |  |  |  |  | 3 |  |  |  |
| E’ |  |  | 5 |  |  | 5 |  |  |  |  | 4 |  |  |  |  | 5 |
| T | 6 |  |  |  | 6 |  |  |  |  |  |  |  | 6 |  |  |  |
| T’ |  |  | 8 |  |  | 8 |  |  |  |  | 8 | 7 |  |  |  | 8 |
| F | 11 |  |  |  | 9 |  |  |  |  |  |  |  | 10 |  |  |  |
| C | 12 |  |  |  | 12 |  |  |  |  |  |  |  |  |  |  |  |
| C’ |  |  |  |  |  | 14 |  |  |  |  |  |  |  | 13 |  | 14 |
| D | 16 |  |  |  | 15 |  |  |  |  |  |  |  |  |  |  |  |