编译原理 第五次作业

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4.7.1

1. 规范LR项集族

```
I0:
    [S' -> ·S  , $]
    [S' -> ·SS+, $], [S' -> ·SS+, a]
    [S' -> ·SS*, $], [S' -> ·SS*, a]
    [S' -> ·a  , $], [S' -> ·a  , a]
I1:
    [S' -> a·  , $], [S' -> a·  , a]
I2:
    [S' -> S·  , $]
    [S' -> S·S+, $], [S' -> S·S+, a]
    [S' -> S·S*, $], [S' -> S·S*, a]
    [S' -> ·SS+, a], [S' -> ·SS+, *], [S' -> ·SS+, +]
    [S' -> ·SS*, a], [S' -> ·SS*, *], [S' -> ·SS*, +]
    [S' -> ·a  , a], [S' -> ·a  , *], [S' -> ·a  , +]
I3:
    [S' -> a·  , a], [S' -> a·  , *], [S' -> a·  , +]
I4:
    [S' -> SS·+, $], [S' -> SS·+, a]
    [S' -> SS·*, $], [S' -> SS·*, a]
    [S' -> S·S+, a], [S' -> S·S+, *], [S' -> S·S+, +]
    [S' -> S·S*, a], [S' -> S·S*, *], [S' -> S·S*, +]
    [S' -> ·SS+, a], [S' -> ·SS+, *], [S' -> ·SS+, +]
    [S' -> ·SS*, a], [S' -> ·SS*, *], [S' -> ·SS*, +]
    [S' -> ·a  , a], [S' -> ·a  , *], [S' -> ·a  , +]
I5:
    [S' -> SS+·, $], [S' -> SS+·, a]
I6:
    [S' -> SS*·, $], [S' -> SS*·, a]
I7:
    [S' -> SS·+, a], [S' -> SS·+, *], [S' -> SS·+, +]
    [S' -> SS·*, a], [S' -> SS·*, *], [S' -> SS·*, +]
    [S' -> S·S+, a], [S' -> S·S+, *], [S' -> S·S+, +]
    [S' -> S·S*, a], [S' -> S·S*, *], [S' -> S·S*, +]
    [S' -> ·SS+, a], [S' -> ·SS+, *], [S' -> ·SS+, +]
    [S' -> ·SS*, a], [S' -> ·SS*, *], [S' -> ·SS*, +]
    [S' -> ·a  , a], [S' -> ·a  , *], [S' -> ·a  , +]
I8:
    [S' -> SS+·, a], [S' -> SS+·, *], [S' -> SS+·, +]
```

```
I9:
    [S' -> SS*·, a], [S' -> SS*·, *], [S' -> SS*·, +]
```

2. LALR项集族:

```
I0:
    [S' -> ·S  , $]
    [S' -> ·SS+, $], [S' -> ·SS+, a]
    [S' -> ·SS*, $], [S' -> ·SS*, a]
    [S' -> ·a  , $], [S' -> ·a  , a]
I1:
    [S' -> S·  , $]
    [S' -> S·S+, $], [S' -> S·S+, a]
    [S' -> S·S*, $], [S' -> S·S*, a]
    [S' -> ·SS+, a], [S' -> ·SS+, *], [S' -> ·SS+, +]
    [S' -> ·SS*, a], [S' -> ·SS*, *], [S' -> ·SS*, +]
    [S' -> ·a  , a], [S' -> ·a  , *], [S' -> ·a  , +]
I2:
    [S' -> SS·+, a], [S' -> SS·+, *], [S' -> SS·+, +], [S' -> SS·+, $]
    [S' -> SS·*, a], [S' -> SS·*, *], [S' -> SS·*, *], [S' -> SS·*, $]
    [S' -> S·S+, a], [S' -> S·S+, *], [S' -> S·S+, +]
    [S' -> S·S*, a], [S' -> S·S*, *], [S' -> S·S*, +]
    [S' -> ·SS+, a], [S' -> ·SS+, *], [S' -> ·SS+, +]
    [S' -> ·SS*, a], [S' -> ·SS*, *], [S' -> ·SS*, +]
    [S' -> ·a  , a], [S' -> ·a  , *], [S' -> ·a  , +]
I3:
    [S' -> a·  , a], [S' -> a·  , *], [S' -> a·  , +], [S' -> a·  , $]
I4:
    [S' -> SS+·, a], [S' -> SS+·, *], [S' -> SS+·, +], [S' -> SS+·, $]
I5:
    [S' -> SS*·, a], [S' -> SS*·, *], [S' -> SS*·, +], [S' -> SS*·, $]
```

5.1.2

产生式	语法规则
$L->En$	$L.val=E.val$
$E->TE'$	$E'.inh=T.val$
	$E.val=E'.syn$
$E'->+TE'_1$	$E'_1.inh=E'.inh+T.val$
	$E'.syn=E'_1.syn$
$E'->\epsilon$	$E'.syn=E'.inh$

产生式	语法规则
$T->FT'$	$T'.inh=F.val$
	$T.val=T'.syn$
$T'->*FT'_1$	$T'_1.inh=T'.inh*F.val,$
	$T'.syn=T'_1.syn$
$T'->\epsilon$	$T'.syn=T'.inh$
$F->(E)$	$F.val=E.val$
$F->digit$	$F.val=digit.lexval$

5.2.2