

Struct属性翻译文法作业

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Struct的文法

$\langle struct \rangle$	$::= \text{'struct' '{' } \langle body \rangle \text{'}' ';'}$
$\langle body \rangle$	$::= \langle declaration \rangle \mid \langle declaration \rangle \langle body \rangle$
$\langle declaration \rangle$	$::= \langle type \rangle \langle identifier \text{ list} \rangle$
$\langle identifier \text{ list} \rangle$	$::= \langle identifier \rangle \text{';' } \mid \langle identifier \rangle \text{' ,' } \langle identifier \text{ list} \rangle$
$\langle identifier \rangle$	$::= \text{IDENTIFIER}$

Struct的属性翻译文法

$\langle struct \rangle_{\uparrow s_1 \downarrow t_2} ::= \text{'struct' '{' } \langle body \rangle_{\uparrow s_2 \downarrow t_2} \text{'}' ';'}$
$\langle body \rangle_{\uparrow s_1 \downarrow t_1} ::= \langle declaration \rangle_{\uparrow new \downarrow old} \mid \langle declaration \rangle_{\uparrow new \downarrow old} \langle body \rangle_{\uparrow s_2 \downarrow t_2}$
$\langle declaration \rangle_{\uparrow new \downarrow old} ::= \langle type \rangle_{\uparrow Type} \langle identifier \text{ list} \rangle_{\uparrow vars} @f_{\uparrow new \downarrow old, vars, Type}$
$\langle identifier \text{ list} \rangle_{\uparrow vars} ::= \langle identifier \rangle_{\uparrow id} \text{';' } @item2list_{\uparrow vars \downarrow id} \mid \langle identifier \rangle_{\uparrow id} \text{' ,' } \langle identifier \text{ list} \rangle_{\uparrow vars, old} @addlist_{\uparrow vars \downarrow id}$
$\langle identifier \rangle_{\uparrow id} ::= \text{IDENTIFIER} @2id_{\uparrow id}$

for的文法

$\langle for \rangle$	$::= \text{'for' '(' } \langle declaration \rangle \text{';' } \langle condition \rangle \text{';' } \langle increment \rangle \text{')' } \langle body \rangle$
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for的属性翻译文法

$\langle for \rangle \leftarrow$	$\text{'for' '(' } \langle declaration \rangle \text{';' } @genlab_{\uparrow x} \langle condition \rangle \text{';' } @brfg_{\uparrow y} @brg_{\uparrow z} @genlab_{\uparrow w} \langle increment \rangle \text{')' }$ $@brp_{\downarrow x} @prodlab_{\downarrow z} \langle body \rangle @prodlab_{\downarrow y}$
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```
1  char *genlab() {
2      return genlab_rand();
3  }
4
5  char *brfg() {
6      char *lab = genlab_rand();
```

```
7      emit("BRF", lab);
8      return lab;
9  }
10
11  char *brg() {
12      char *lab = genlab_rand();
13      emit("BR", lab);
14      return lab;
15  }
16
17  void brp(char *lab) {
18      emit("BR", lab);
19  }
20
21  void prodlab(char *lab) {
22      setlab(lab)
23  }
```