

编译 hwt

4.13

$S \rightarrow id := E \mid \text{if } E \text{ then } S \mid \text{While } E \text{ do } S \mid \text{begin } S; S \text{ end}$
 $\mid \text{break}$

loop

$S' \rightarrow \{S.\text{loop} = 0\} S$

$S \rightarrow \text{id} := E$

$S \rightarrow \text{if } E \text{ then } \{S_1.\text{loop} = S.\text{loop}\} S_1$

$S \rightarrow \text{while } E \text{ then } \{S_1.\text{loop} = 1\} S_1$

$S \rightarrow \text{begin } \{S_1.\text{loop} = S.\text{loop}\} S_1; \{S_2.\text{loop} = S_1.\text{loop}\} S_2 \text{ end}$

$S \rightarrow \text{break } \{ \text{if } (S.\text{loop} == 0) \text{ print ("error")} \}$

4.15

$E \rightarrow E_1 + T \quad \text{val}[top-2] = \text{mknode}(' + ', \text{val}[top-2], \text{val}[top])$

$E \rightarrow E_1 - T \quad \text{val}[top-2] = \text{mknode}(' - ', \text{val}[top-2], \text{val}[top])$

$E \rightarrow T$

$T \rightarrow (E) \quad \text{val}[top-2] = \text{val}[top-1]$

$T \rightarrow \text{id} \quad \text{val}[top] = \text{mkleaf}(\text{id}, \text{val}[top])$

$T \rightarrow \text{num} \quad \text{val}[top] = \text{mkleaf}(\text{num}, \text{val}[top])$



5.5

foo: array(100, record((a x integer) x (b x integer)))

bar: _{pointer} (record((a x integer) x (b x integer)) x integer)

6.5 short 是 2, ~~long~~ long 是 8. 共占 10 字节.

又 ~~long~~ long 8 16 24 ...

只有 b.size 最小为 16 时能保证 ~~long~~ long 对齐 8 字节.

6.6

esp → 局部变量 i

ebp → 老 ebp

控制链 返回地址

参数 x

局部变量 j

老 ebp

返回地址

参数 y

低地址

高地址

栈

