

## Schema di traduzione on-the-fly: Translator

NON TERMINALE	PRODUZIONE
<b>&lt;prog&gt;</b>	$\rightarrow \{ \text{prog.next} = \text{newlabel}(), \text{statlist.next} = \text{prog.next} \} \text{<statlist> } \{ \text{emitlabel}(\text{prog.next}) \} \text{ EOF}$
<b>&lt;statlist&gt;</b>	$\rightarrow \{ \text{stat.next} = \text{newlabel}() \} \text{<stat> } \{ \text{statlistp.next} = \text{statlist.next} \} \text{<statlistp>}$
<b>&lt;statlistp&gt;</b>	$\rightarrow ; \{ \text{stat.next} = \text{newlabel}() \} \text{<stat> } \{ \text{statlistp1.next} = \text{statlistp.next} \} \text{<statlistp1>}$
<b>&lt;statlistp&gt;</b>	$\rightarrow \epsilon$
<b>&lt;stat&gt;</b>	$\rightarrow \text{ID} := \text{<expr> } \{ \text{emit}(\text{istore}, \text{ID}) \}$
<b>&lt;stat&gt;</b>	$\rightarrow \text{print ( <expr> ) } \{ \text{print}() \}$
<b>&lt;stat&gt;</b>	$\rightarrow \text{read ( ID ) } \{ \text{read}(\text{ID}) \}$
<b>&lt;stat&gt;</b>	$\rightarrow \text{case } \{ \text{whenlist.next} = \text{newLabel}(), \text{whenlist.end} = \text{stat.next}() \} \text{<whenlist> else } \{ \text{stat1.next} = \text{stat.next} \} \text{<stat1> } \{ \text{emitLabel}(\text{stat1.next}) \}$
<b>&lt;stat&gt;</b>	$\rightarrow \text{while ( } \{ \text{bexpr.true} = \text{fall}, \text{bexpr.false} = \text{stat.next}, \text{stat1.next} = \text{newlabel}(), \text{emitLabel}(\text{stat1.next}) \} \text{<bexpr> } \text{ ) } \text{<stat1> } \{ \text{emit}(\text{goto stat1.next}), \text{emitLabel}(\text{stat.next}) \}$
<b>&lt;stat&gt;</b>	$\rightarrow \{ \{ \text{statlist.next} = \text{stat.next} \} \text{<statlist> } \}$
<b>&lt;whenlist&gt;</b>	$\rightarrow \{ \text{whenitem.next} = \text{newLabel}() \} \text{<whenitem> } \{ \text{emit}(\text{goto}, \text{whenlist.end}), \text{emitLabel}(\text{whenitem.next}), \text{whenlistp.end} = \text{whenlist.end}, \text{whenlistp.next} = \text{whenlist.next} \} \text{<whenlistp>}$
<b>&lt;whenlistp&gt;</b>	$\rightarrow \{ \text{whenitem.next} = \text{newLabel}() \} \text{<whenitem> } \{ \text{emit}(\text{goto}, \text{whenlistp.end}), \text{emitLabel}(\text{whenitem.next}), \text{whenlistp1.end} = \text{whenlistp.end}, \text{whenlistp1.next} = \text{whenlistp.next} \} \text{<whenlistp1>}$

<b>&lt;whenlistp&gt;</b>	→ $\epsilon$
<b>&lt;whenitem&gt;</b>	→ when ( {bexpr.true = fall, bexpr.false = whenitem.next} <b>&lt;bexpr&gt;</b> ) {stat.next = whenitem.next} <b>&lt;stat&gt;</b>
<b>&lt;bexpr&gt;</b>	→ <b>&lt;expr&gt;</b> RELOP <b>&lt;expr&gt;</b> {if(bexpr.true = fall) then emit(if_icmpNOTrel, bexpr.false) else if(bexpr.false = fall) then emit(if_icmprel, bexpr.true) else emit(if_icmprel,bexpr.true) emit(goto,bexpr.false)}
<b>&lt;expr&gt;</b>	→ <b>&lt;term&gt;</b> <b>&lt;exprp&gt;</b>
<b>&lt;exprp&gt;</b>	→ + <b>&lt;term&gt;</b> {emit(iadd)} <b>&lt;exprp&gt;</b>
<b>&lt;exprp&gt;</b>	→ - <b>&lt;term&gt;</b> {emit(isub)} <b>&lt;exprp&gt;</b>
<b>&lt;exprp&gt;</b>	→ $\epsilon$
<b>&lt;term&gt;</b>	→ <b>&lt;fact&gt;</b> <b>&lt;temp&gt;</b>
<b>&lt;temp&gt;</b>	→ * <b>&lt;fact&gt;</b> {emit(imul)} <b>&lt;temp&gt;</b>
<b>&lt;temp&gt;</b>	→ / <b>&lt;fact&gt;</b> {emit(idiv)} <b>&lt;temp&gt;</b>
<b>&lt;temp&gt;</b>	→ $\epsilon$
<b>&lt;fact&gt;</b>	→ ( <b>&lt;expr&gt;</b> )
<b>&lt;fact&gt;</b>	→ NUM {emit(NUM.val)}
<b>&lt;fact&gt;</b>	→ ID {emit(ID.addr)}