

Tarea 07 - Lenguajes de Programación

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Sintaxis concreta

$Expression ::= Number$
 $Expression ::= -(Expression, Expression)$
 $Expression ::= \mathbf{zero?}(Expression)$
 $Expression ::= \mathbf{if} Expression \mathbf{then} Expression \mathbf{else} Expression$
 $Expression ::= \mathbf{Identifier}$
 $Expression ::= \mathbf{let} Identifier = Expression \mathbf{in} Expression$

Sintaxis abstracta

(const-exp num)
(diff-exp $exp1$ $exp2$)
(zero?-exp $exp1$)
(if-exp $exp1$ $exp2$ $exp3$)
(var-exp var)
(let-exp var $exp1$ $body$)

Interpretación del lenguaje:

(value-of (const-exp n) ρ) = (num-val n)

(value-of (var-exp var) ρ) = $\rho(var)$

(value-of (diff-exp $exp1$ $exp2$) ρ)
= (num-val (- (expval→num (value-of $exp1$ ρ)) (expval→num (value-of $exp2$ ρ))))

(value-of (zero?-exp $exp1$) ρ)
= (**let** ([$val1$ (value-of $exp1$ ρ))] (bool-val (= 0 (expval→num $val1$))))

(value-of (if-exp $exp1$ $exp2$ $exp3$) ρ)
= (**if** (expval→bool (value-of $exp1$ ρ)) (value-of $exp2$ ρ) (value-of $exp3$ ρ))

(value-of (let-exp var $exp1$ $body$) ρ)
= (**let** ([$val1$ (value-of $exp1$ ρ))] (value-of $body$ [$var = val1$] ρ))